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Junos<sup>®</sup> OS

# Routing Protocols and Policies Command Reference

Release

11.4



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Published: 2011-11-08



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#### *Junos® OS Routing Protocols and Policies Command Reference*

Release 11.4

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#### Revision History

October 2011—R1 Junos OS 11.4

The information in this document is current as of the date listed in the revision history.

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# About This Guide

This preface provides the following guidelines for using the *Junos<sup>®</sup> OS Routing Protocols and Policies Command Reference*:

- Junos OS Documentation and Release Notes on page xiii
- Objectives on page xiv
- Audience on page xiv
- Supported Platforms on page xv
- Using the Indexes on page xv
- Documentation Conventions on page xv
- Documentation Feedback on page xvii
- Requesting Technical Support on page xvii

## Junos OS Documentation and Release Notes

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For a list of related Junos OS documentation, see <http://www.juniper.net/techpubs/software/junos/>.

If the information in the latest release notes differs from the information in the documentation, follow the *Junos OS Release Notes*.

To obtain the most current version of all Juniper Networks<sup>®</sup> technical documentation, see the product documentation page on the Juniper Networks website at <http://www.juniper.net/techpubs/>.

Juniper Networks supports a technical book program to publish books by Juniper Networks engineers and subject matter experts with book publishers around the world. These books go beyond the technical documentation to explore the nuances of network architecture, deployment, and administration using the Junos operating system (Junos OS) and Juniper Networks devices. In addition, the Juniper Networks Technical Library, published in conjunction with O'Reilly Media, explores improving network security, reliability, and availability using Junos OS configuration techniques. All the books are for sale at technical bookstores and book outlets around the world. The current list can be viewed at <http://www.juniper.net/books>.



## Objectives

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This guide provides descriptions of the Juniper Networks Junos OS commands that you use to monitor and troubleshoot routing protocols, protocol-independent features, and policies, including firewall filters, forwarding options, and routing policies.

For additional commands, see these guides:

- *Junos OS System Basics and Services Command Reference*
- *Junos OS Interfaces Command Reference*



NOTE: For additional information about the Junos OS—either corrections to or information that might have been omitted from this guide—see the software release notes at <http://www.juniper.net/>.

For information about configuration statements and guidelines related to the commands described in this reference, see the following configuration guides:

- *Junos OS Routing Protocols Configuration Guide*—Includes configuration statements and guidelines for routing protocols and protocol-independent features.
- *Junos OS Routing Policy Configuration Guide*—Includes configuration statements and guidelines for policies, including firewall filters, forwarding options, and routing policies.
- *Junos OS MPLS Applications Configuration Guide*—Includes configuration statements and guidelines for Multiprotocol Label Switching (MPLS) traffic engineering.
- *Junos OS VPNs Configuration Guide*—Includes configuration statements and guidelines for Layer 2 and Layer 3 virtual private networks (VPNs), virtual private LAN service (VPLS), and Layer 2 circuits.

For information about MPLS-related tasks performed by network operations center (NOC) personnel, see the *Junos MPLS Network Operations Guide*.

## Audience

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This guide is designed for network administrators who are configuring and monitoring a Juniper Networks M Series, MX Series, T Series, EX Series, or J Series router or switch.

To use this guide, you need a broad understanding of networks in general, the Internet in particular, networking principles, and network configuration. You must also be familiar with one or more of the following Internet routing protocols:

- Border Gateway Protocol (BGP)
- Distance Vector Multicast Routing Protocol (DVMRP)
- Intermediate System-to-Intermediate System (IS-IS)
- Internet Control Message Protocol (ICMP) router discovery



- Internet Group Management Protocol (IGMP)
- Multiprotocol Label Switching (MPLS)
- Open Shortest Path First (OSPF)
- Protocol-Independent Multicast (PIM)
- Resource Reservation Protocol (RSVP)
- Routing Information Protocol (RIP)
- Simple Network Management Protocol (SNMP)

Personnel operating the equipment must be trained and competent; must not conduct themselves in a careless, willfully negligent, or hostile manner; and must abide by the instructions provided by the documentation.

## Supported Platforms

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For the features described in this manual, the Junos OS currently supports the following platforms:

- J Series
- M Series
- MX Series
- T Series
- EX Series

## Using the Indexes

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This reference contains two indexes: a standard index with topic entries, and an index of commands.

## Documentation Conventions

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[Table 1 on page xvi](#) defines notice icons used in this guide.



Table 1: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.

Table 2 on page xvi defines the text and syntax conventions used in this guide.

Table 2: Text and Syntax Conventions

Convention	Description	Examples
<b>Bold text like this</b>	Represents text that you type.	To enter configuration mode, type the <b>configure</b> command:  <code>user@host&gt; configure</code>
Fixed-width text like this	Represents output that appears on the terminal screen.	<code>user@host&gt; show chassis alarms</code> <code>No alarms currently active</code>
<i>Italic text like this</i>	<ul style="list-style-type: none"> <li>Introduces important new terms.</li> <li>Identifies book names.</li> <li>Identifies RFC and Internet draft titles.</li> </ul>	<ul style="list-style-type: none"> <li>A policy <i>term</i> is a named structure that defines match conditions and actions.</li> <li><i>Junos OS System Basics Configuration Guide</i></li> <li>RFC 1997, <i>BGP Communities Attribute</i></li> </ul>
<i>Italic text like this</i>	Represents variables (options for which you substitute a value) in commands or configuration statements.	Configure the machine's domain name:  [edit] root@# <b>set system domain-name</b> <i>domain-name</i>
Text like this	Represents names of configuration statements, commands, files, and directories; interface names; configuration hierarchy levels; or labels on routing platform components.	<ul style="list-style-type: none"> <li>To configure a stub area, include the <b>stub</b> statement at the [edit protocols ospf area area-id] hierarchy level.</li> <li>The console port is labeled <b>CONSOLE</b>.</li> </ul>
< > (angle brackets)	Enclose optional keywords or variables.	<code>stub &lt;default-metric metric&gt;;</code>



Table 2: Text and Syntax Conventions (*continued*)

Convention	Description	Examples
(pipe symbol)	Indicates a choice between the mutually exclusive keywords or variables on either side of the symbol. The set of choices is often enclosed in parentheses for clarity.	<b>broadcast   multicast</b>  ( <i>string1</i>   <i>string2</i>   <i>string3</i> )
# (pound sign)	Indicates a comment specified on the same line as the configuration statement to which it applies.	<b>rsvp { # Required for dynamic MPLS only</b>
[ ] (square brackets)	Enclose a variable for which you can substitute one or more values.	<b>community name members [</b> <b>community-ids ]</b>
Indentation and braces ( { } )	Identify a level in the configuration hierarchy.	[edit] routing-options { static { route default { nexthop <i>address</i> ; retain; } } }
;(semicolon)	Identifies a leaf statement at a configuration hierarchy level.	
<b>J-Web GUI Conventions</b>		
<b>Bold text like this</b>	Represents J-Web graphical user interface (GUI) items you click or select.	<ul style="list-style-type: none"> <li>In the Logical Interfaces box, select <b>All Interfaces</b>.</li> <li>To cancel the configuration, click <b>Cancel</b>.</li> </ul>
> (bold right angle bracket)	Separates levels in a hierarchy of J-Web selections.	In the configuration editor hierarchy, select <b>Protocols&gt;Ospf</b> .

## Documentation Feedback

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- Document or topic name
- URL or page number
- Software release version (if applicable)

## Requesting Technical Support

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or are covered under warranty, and need postsales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the JTAC User Guide located at <http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf> .
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- Find CSC offerings: <http://www.juniper.net/customers/support/>
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- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>
- Download the latest versions of software and review release notes: <http://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <https://www.juniper.net/alerts/>
- Join and participate in the Juniper Networks Community Forum: <http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://tools.juniper.net/SerialNumberEntitlementSearch/>

## Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at <http://www.juniper.net/cm/> .
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, visit us at <http://www.juniper.net/support/requesting-support.html>



## PART 1

# Protocols

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## CHAPTER 1

# ANCP Operational Mode Commands

Table 3 on page 3 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot Access Node Control Protocol (ANCP) operations. Commands are listed in alphabetical order.

**Table 3: ANCP Operational Mode Commands**

Task	Command
Clear ANCP neighbors.	<code>clear ancp neighbor</code>
Clear ANCP subscriber connections.	<code>clear ancp subscriber</code>
Trigger the access node to run a loopback test on the local loop specified by an ANCP interface or interface set.	<code>request ancp oam interface</code>
Trigger the access node to run a loopback test on the local loop specified by an ANCP neighbor.	<code>request ancp oam neighbor</code>
Display ANCP class-of-service information.	<code>show ancp cos</code>
Display ANCP neighbor information.	<code>show ancp neighbor</code>
Display ANCP subscriber information.	<code>show ancp subscriber</code>



**NOTE:** For information about how to configure ANCP, see the *Junos Subscriber Access Configuration Guide*.



## clear ancp neighbor

<b>Syntax</b>	<code>clear ancp neighbor</code> <code>&lt;ip-address <i>ip-address</i>&gt;</code> <code>&lt;system-name <i>mac-address</i>&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 9.4.
<b>Description</b>	Clear the connection with all ANCP neighbors or with the specified ANCP neighbor.
<b>Options</b>	<p><code>none</code>—Clear all ANCP neighbors.</p> <p><code>ip-address <i>ip-address</i></code>—(Optional) Clear the ANCP neighbor specified by the IP address.</p> <p><code>system-name <i>mac-address</i></code>—(Optional) Clear the ANCP neighbor specified by the MAC address.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">show ancp neighbor on page 13</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear ancp neighbor on page 4</a> <a href="#">show ancp neighbor on page 4</a>
<b>Output Fields</b>	When you enter this command, you are provided no feedback on the status of your request. You can enter the <b>show ancp neighbor</b> command before and after clearing the ANCP neighbors to verify the clear operation.

## Sample Output

**clear ancp neighbor**    user@host> clear ancp neighbor

**show ancp neighbor**    The following sample output displays the connections with ANCP neighbors before and after the **clear ancp neighbor** command was issued.

user@host> show ancp neighbor

IP Address	MAC Address	State	Subscriber Count	Capabilities
10.10.10.2	ba:ad:be:ef:10:10	Established	5	Topo
12.12.12.2	ba:ad:be:ef:10:12	Established	5	Topo
13.13.13.2	ba:ad:be:ef:10:13	Established	5	Topo
14.14.14.2	ba:ad:be:ef:10:14	Established	5	Topo

user@host> clear ancp neighbor ip-address 10.10.10.2

user@host> show ancp neighbor

IP Address	MAC Address	State	Subscriber Count	Capabilities
12.12.12.2	ba:ad:be:ef:10:12	Established	5	Topo



13.13.13.2	ba:ad:be:ef:10:13	Established	5	Topo
14.14.14.2	ba:ad:be:ef:10:14	Established	5	Topo



## clear ancp subscriber

<b>Syntax</b>	<b>clear ancp subscriber</b> <b>&lt;identifier <i>identifier-string</i> &lt;ip-address <i>ip-address</i>   system-name <i>mac-address</i>&gt;&gt;</b>
<b>Release Information</b>	Command introduced in Junos OS Release 11.4.
<b>Description</b>	Clear the connection with all ANCP subscribers or with the specified ANCP subscriber.
<b>Options</b>	<p><b>none</b>—Clear all ANCP subscribers.</p> <p><b>identifier <i>identifier-string</i></b>—(Optional) Clear the ANCP subscriber identified by the access loop ID on all neighbors.</p> <p><b>identifier <i>identifier-string</i> ip-address <i>ip-address</i></b>—(Optional) Clear the ANCP subscriber specified by the access loop ID and the neighbor IP address.</p> <p><b>identifier <i>identifier-string</i> system-name <i>mac-address</i></b>—(Optional) Clear the ANCP subscriber specified by the access loop ID and the neighbor MAC address.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show ancp subscriber on page 18</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show ancp subscriber brief on page 6</a> <a href="#">show ancp subscriber brief on page 7</a> <a href="#">clear ancp subscriber on page 7</a>
<b>Output Fields</b>	When you enter this command, you are provided no feedback on the status of your request. You can enter the <b>show ancp subscriber</b> command before and after clearing the ANCP neighbors to verify the clear operation.

## Sample Output

```

show ancp subscriber brief
user@host> show ancp subscriber brief
Loop Identifier      Type      Interface      Rate      Neighbor
                    Kbps
port-1-10            VDSL2     set-ge-10410   64        10.10.10.2
port-1-11            VDSL2     set-ge-10411   64        11.11.11.2
port-2-10            VDSL2     ge-1/0/4.12    64        10.12.12.2
port-2-10            VDSL2     ge-1/0/4.12    64        10.12.12.3
port-2-11            VDSL2     ge-1/0/4.13    64        10.13.13.2

user@host> clear ancp subscriber identifier port-2-10

user@host> show ancp subscriber brief
Loop Identifier      Type      Interface      Rate      Neighbor
                    Kbps
port-1-10            VDSL2     set-ge-10410   64        10.10.10.2
port-1-11            VDSL2     set-ge-10411   64        11.11.11.2

```



```

                                port-2-11                VDSL2      ge-1/0/4.13        64        10.13.13.2

show ancp subscriber          user@host> show ancp subscriber brief
brief                          Loop Identifier      Type      Interface          Rate      Neighbor
                                Kbps
                                port-1-10            VDSL2     set-ge-10410       64        10.10.10.2
                                port-1-11            VDSL2     set-ge-10411       64        11.11.11.2
                                port-2-10            VDSL2     ge-1/0/4.12        64        10.12.12.2
                                port-2-10            VDSL2     ge-1/0/4.12        64        10.12.12.3
                                port-2-11            VDSL2     ge-1/0/4.13        64        10.13.13.2

                                user@host> clear ancp subscriber identifier port-2-10 ip-address 10.12.12.3

                                user@host> show ancp subscriber brief
                                Loop Identifier      Type      Interface          Rate      Neighbor
                                Kbps
                                port-1-10            VDSL2     set-ge-10410       64        10.10.10.2
                                port-1-11            VDSL2     set-ge-10411       64        11.11.11.2
                                port-2-10            VDSL2     ge-1/0/4.12        64        10.12.12.2
                                port-2-11            VDSL2     ge-1/0/4.13        64        10.13.13.2

clear ancp subscriber        user@host> clear ancp subscriber

```



## request ancp oam interface

---

<b>Syntax</b>	<b>request ancp oam interface</b> <i>(interface-name   interface-set set-name)</i> <count <i>count</i> > <timeout <i>duration</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 11.4.
<b>Description</b>	Trigger the access node to run a loopback test on the local loop between the access node and the customer premises equipment. You must specify either an ANCP interface or an ANCP interface set. The access node responds to the NAS with the results of the test.
<b>Options</b>	<p><i>interface-name</i>—Name of the ANCP interface on whose local loop the loopback test is run.</p> <p><i>interface-set set-name</i>—Name of the ANCP interface set on whose local loop the loopback test is run.</p> <p>count <i>count</i>—(Optional) Number of times a loopback message is sent on the local loop. Range: 1 through 32. Default: 1.</p> <p>timeout <i>duration</i>—(Optional) Period of time in seconds that the NAS waits for a response to the OAM request. Range: 0 through 255. Default: 5.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>Triggering ANCP OAM</li></ul>
<b>List of Sample Output</b>	<a href="#">request ancp oam interface on page 8</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request, including the result of the test, the response code, and the response string returned with the OAM response in the event of failure, an error code is displayed.

## Sample Output

<b>request ancp oam interface</b>	<pre>user@host&gt; request ancp oam interface ge-1/0/4.12 count 5 timeout 40 request succeeded 0x503 : DSL line status showtime DEFAULT RESPONSE</pre>
-----------------------------------	--



## request ancp oam neighbor

<b>Syntax</b>	request ancp oam neighbor (ip-address <i>ip-address</i>   system-name <i>neighbor-name</i> ) subscriber <i>identifier-string</i> <count <i>count</i> > <timeout <i>duration</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 11.4.
<b>Description</b>	Trigger the access node to run a loopback test on the local loop between the access node and the customer premises equipment. You must specify both the access node and the subscriber. The access node responds to the NAS with the results of the test.
<b>Options</b>	<p>ip-address <i>ip-address</i>—IP address that specifies the access node on whose local loop the loopback test is run.</p> <p>system-name <i>neighbor-name</i>—System name that specifies the access node on whose local loop the loopback test is run.</p> <p>subscriber <i>identifier-string</i>—Access identifier that specifies the subscriber on whose local loop the loopback test is run.</p> <p>count <i>count</i>—(Optional) Number of times a loopback message is sent on the local loop. Range: 1 through 32. Default: 1.</p> <p>timeout <i>duration</i>—(Optional) Period of time in seconds that the NAS waits for a response to the OAM request. Range: 0 through 255. Default: 5.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>Triggering ANCP OAM</li> </ul>
<b>List of Sample Output</b>	<a href="#">request ancp oam subscriber on page 9</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request, including the result of the test, the response code, and the response string returned with the OAM response in the event of failure, an error code is displayed.

## Sample Output

```
request ancp oam subscriber user@host> request ancp oam neighbor 10.10.10.1 subscriber "dslam port-1-11"
request succeeded
0x503 : DSL line status showtime
DEFAULT RESPONSE
```



## show ancp cos

<b>Syntax</b>	<code>show ancp cos</code> <code>&lt;identifier <i>identifier</i>&gt;</code> <code>&lt;last-update&gt;</code> <code>&lt;pending-update&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 9.4.
<b>Description</b>	Display information about the CoS state for subscriber traffic.
<b>Options</b>	<p><code>identifier <i>identifier</i></code>—(Optional) Display information about the local loops for the specified access identifier.</p> <p><code>last-update</code>—(Optional) Display the most recently updated CoS information.</p> <p><code>pending-update</code>—(Optional) Display the pending update of CoS information.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show ancp neighbor on page 13</a></li> <li>• <a href="#">show ancp subscriber on page 18</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show ancp cos on page 11</a> <a href="#">show ancp cos last-update on page 11</a> <a href="#">show ancp cos pending-update on page 12</a>
<b>Output Fields</b>	<a href="#">Table 4 on page 10</a> lists the output fields for the <b>show ancp cos</b> command. Output fields are listed in the approximate order in which they appear.

**Table 4: show ancp cos Output Fields**

Field Name	Field Description
<b>QoS Adjust Flag</b>	State of QoS adjust: <b>TRUE</b> (configured) or <b>FALSE</b> (not configured).
<b>Keepalive Timer</b>	Interval between the keepalive messages that ANCP sends to CoS.
<b>Cos State</b>	State of the ANCP-CoS interaction: <ul style="list-style-type: none"> <li>• ANCPD_COS_CONNECT_NEEDED</li> <li>• ANCPD_COS_CONNECT_PENDING</li> <li>• ANCPD_COS_CONNECT_DONE</li> <li>• ANCPD_COS_SESSION_SENT</li> <li>• ANCPD_COS_WRITE_READY</li> </ul>
<b>Connect Time</b>	Time at which ANCP connected to CoS; useful for debugging.
<b>Session Time</b>	Time at which ANCP sent a session connect message to CoS; useful for debugging.



Table 4: show ancp cos Output Fields (*continued*)

Field Name	Field Description
<b>Routing Instance Time</b>	Time at which ANCP sent the routing instance to CoS; useful for debugging.
<b>Keepalive Time</b>	Time at which the last keepalive message was sent.
<b>Rate Update Time</b>	Time at which the shaping rate was last updated.
<b>Type</b>	Subscriber access type: <b>ifl</b> indicates that a single VLAN carries subscriber traffic and <b>iflset</b> indicates that a set of VLANs carries subscriber traffic.
<b>Name</b>	System-wide name of the particular subscriber access.
<b>Index</b>	Access identifier.
<b>Pending Update</b>	Actual downstream data rate to be applied next to this local loop, in Kbps.
<b>Last Update</b>	Actual downstream data rate last applied to this local loop, in Kbps.

## Sample Output

**show ancp cos** user@host> show ancp cos

```

Qos Adjust Flag:      TRUE
Keepalive Timer:      45 secs
Cos State:            WRITE_READY
Connect Time:         Mon Nov 17 15:03:01 2008
Session Time:         Mon Nov 17 15:03:13 2008
Routing Instance Time: Mon Nov 17 15:03:14 2008
Keepalive Time:       Not Set
Rate Update Time:     Mon Nov 17 15:03:15 2008

```

Type	Name	Index	Pending Update	Last Update
iflset	set-ge-10410	1	None	64 Kbps
iflset	set-ge-10411	2	None	64 Kbps
ifl	ge-1/0/4.2	71	None	64 Kbps
ifl	ge-1/0/4.3	72	None	64 Kbps

**show ancp cos last-update** user@host> show ancp cos last-update

```

Qos Adjust Flag:      TRUE
Keepalive Timer:      45 secs
Cos State:            WRITE_READY
Connect Time:         Mon Nov 17 15:03:01 2008
Session Time:         Mon Nov 17 15:03:13 2008
Routing Instance Time: Mon Nov 17 15:03:14 2008
Keepalive Time:       Wed Nov 19 15:32:14 2008
Rate Update Time:     Mon Nov 17 15:03:15 2008

```

Type	Name	Index	Pending Update	Last Update
------	------	-------	----------------	-------------



iflset	iflset0	1	None	64 Kbps
iflset	iflset1	2	None	64 Kbps

**show ancp cos pending-update**      user@host> show ancp cos pending-update

```
Qos Adjust Flag:      TRUE
Keepalive Timer:      45 secs
Cos State:            WRITE_READY
Connect Time:         Mon Nov 17 15:03:01 2008
Session Time:         Mon Nov 17 15:03:13 2008
Routing Instance Time: Mon Nov 17 15:03:14 2008
Keepalive Time:       Wed Nov 19 15:32:29 2008
Rate Update Time:     Mon Nov 17 15:03:15 2008
```



## show ancp neighbor

<b>Syntax</b>	show ancp neighbor <brief   detail   extensive   terse> <ip-address <i>ip-address</i> > <system-name <i>mac-address</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 9.4.
<b>Description</b>	Display information about all ANCP neighbors or the specified ANCP neighbor.
<b>Options</b>	<p>brief   detail   extensive   terse—(Optional) Display the specified level of detail.</p> <p>ip-address <i>ip-address</i>—(Optional) IP address of the ANCP neighbor (access node).</p> <p>system-name <i>mac-address</i>—(Optional) MAC address of the ANCP neighbor (access node).</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show ancp cos on page 10</a></li> <li>• <a href="#">show ancp subscriber on page 18</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show ancp neighbor on page 15</a> <a href="#">show ancp neighbor detail on page 15</a> <a href="#">show ancp neighbor ip-address on page 16</a> <a href="#">show ancp neighbor system-name on page 17</a>
<b>Output Fields</b>	Table 5 on page 13 lists the output fields for the <b>show ancp neighbor</b> command. Output fields are listed in the approximate order in which they appear.

**Table 5: show ancp neighbor Output Fields**

Field Name	Field Description
IP Address	IP address of the ANCP neighbor.
System Name	MAC address of the ANCP neighbor.
State	<p>State of the ANCP adjacency:</p> <ul style="list-style-type: none"> <li>• <b>Established</b>—ANCP session has been established.</li> <li>• <b>Init</b>—ANCP session has been initiated.</li> <li>• <b>SynSent</b>—ANCP has sent a SYN message.</li> <li>• <b>SynReceived</b>—ANCP has sent a SYNACK message.</li> </ul>
Subscriber Count	Number of subscribers associated with the ANCP neighbor (access local loop).



Table 5: show ancp neighbor Output Fields (*continued*)

Field Name	Field Description
<b>Capabilities</b>	Negotiated ANCP capability: <ul style="list-style-type: none"> <li>• <b>Topo</b>—Topology discovery.</li> <li>• <b>OAM</b>—Performance of local Operations Administration Maintenance (OAM) procedures on an access loop controlled by the router.</li> </ul>
<b>TCP Port</b>	TCP port on which ANCP messages are exchanged.
<b>System Instance</b>	Number identifying the ANCP link instance from the edge device's perspective.
<b>Peer Instance</b>	Number identifying the ANCP instance from the access node's perspective. This number is unique and changes when the node or link comes back up after going down.
<b>Timer</b>	Adjacency timer value advertised by the ANCP peer in 100 ms increments; the interval between ANCP ACK messages. This value remains constant for the duration of an ANCP session.
<b>Partition Type</b>	Number that identifies whether partitions are used and how the ID is negotiated: <ul style="list-style-type: none"> <li>• <b>0</b>—No partition.</li> <li>• <b>1</b>—Fixed partition requested.</li> <li>• <b>2</b>—Fixed partition assigned.</li> </ul>
<b>Partition Flag</b>	Number that specifies the type of partition requested: 1 (new adjacency) or 2 (recovered adjacency).
<b>Partition Identifier</b>	Number that associates the ANCP message with a specific partition.
<b>Dead Timer</b>	Remaining period that the edge device waits for adjacency packets from a neighbor before declaring the neighbor to be down. The maximum dead time value is three times the configured adjacency timer value. This field displays the current value based on the time that the last adjacency packet was received.



Table 5: show ancp neighbor Output Fields (*continued*)

Field Name	Field Description
<b>Received</b>	Count of the following ANCP message packets received by the node from the neighbor: <ul style="list-style-type: none"> <li>• Syn Count—Synchronization message used to maintain an adjacency.</li> <li>• Synack Count—Neighbor response to the node's synchronization messages.</li> <li>• Rstack Count—Message indicating that the link to the neighbor needs to be reset.</li> <li>• Ack Count—Acknowledgment message periodically received after an adjacency has been established.</li> <li>• Port Up Count—Status message indicating that a port has transitioned to the up state.</li> <li>• Port Down Count—Status message indicating that a port has transitioned to the down state.</li> <li>• OAM Response Count—Number of OAM responses received in reply to <b>request</b> commands.</li> <li>• Other Count—Count of all other ANCP received message packets that do not fit into one of the other categories.</li> </ul>
<b>Sent</b>	Count of the following ANCP message packets sent by the node: <ul style="list-style-type: none"> <li>• Syn Count—Synchronization message used to maintain an adjacency.</li> <li>• Synack Count—Node response to the neighbor's synchronization messages.</li> <li>• Rstack Count—Message indicating that the link to the node needs to be reset.</li> <li>• Ack Count—Acknowledgment message periodically sent after an adjacency has been established.</li> <li>• OAM Request Count—Number of OAM <b>request</b> commands sent.</li> </ul>
<b>Max Discovery Limit Exceed Count</b>	Number of times that the maximum number of discovery table entries accepted from the neighbor has been exceeded.

## Sample Output

**show ancp neighbor**    user@host> **show ancp neighbor**

IP Address	State	Up Time	Subscriber Count	Capabilities
10.10.10.2	Established	3	2	Topo, OAM
11.11.11.2	Established	3	2	Topo, OAM

**show ancp neighbor detail**    user@host> **show ancp neighbor detail**

```
Neighbor Information
  IP Address       : 192.168.10.1
  System Name      : 00:00:64:1b:01:02
  Up Time          : 38
  TCP Port         : 64959
  State            : Established
  Subscriber Count : 7
  Capabilities     : Topology Discovery
  System Instance  : 11
```



```

Peer Instance : 1
Adjacency Timer (in 100ms) : 50
Peer Adjacency Timer (in 100ms) : 100
Partition Type : 0
Partition Flag : 1
Partition Identifier : 0
Dead Timer : 22
Received Syn Count : 47
Received Synack Count : 48
Received Rstack Count : 2
Received Ack Count : 12
Received Port Up Count : 8
Received Port Down Count : 2
Received Other Count : 0
Sent Syn Count : 48
Sent Synack Count : 47
Sent Rstack Count : 1
Sent Ack Count : 12
Max Discovery Limit Exceed Count : 0
IP Address : 192.168.9.1
System Name : 00:00:64:1c:01:02
Up Time : 36
TCP Port : 61408
State : Established
Subscriber Count : 1
Capabilities : Topology Discovery
System Instance : 12
Peer Instance : 1
Adjacency Timer (in 100ms) : 50
Peer Adjacency Timer (in 100ms) : 100
Partition Type : 0
Partition Flag : 1
Partition Identifier : 0
Dead Timer : 23
Received Syn Count : 24
Received Synack Count : 20
Received Rstack Count : 2
Received Ack Count : 9
Received Port Up Count : 5
Received Port Down Count : 0
Received OAM Responses Count : 2
Received Other Count : 0
Sent Syn Count : 20
Sent Synack Count : 24
Sent Rstack Count : 1
Sent Ack Count : 9
Sent OAM Requests Count : 4
Max Discovery Limit Exceed Count : 0

```

```

show ancp neighbor user@host> show ancp neighbor 10.10.10.2
ip-address
Neighbor Information
IP Address : 10.10.10.2
System Name : ba:ad:be:ef:10:10
TCP Port : 3332
State : Established
Subscriber Count : 5
Capabilities : Topology Discovery
System Instance : 6
Peer Instance : 1695
Timer : 250

```



```

Partition Type      : 0
Partition Flag      : 1
Partition Identifier : 0
Dead Timer          : 63

```

```

show ancp neighbor user@host> show ancp neighbor ba:ad:be:ef:10:10 detail
system-name

```

```

Neighbor Information
IP Address           : 10.100.0.1
System Name          : 00:00:64:1b:01:02
Up Time              : 19
TCP Port             : 1028
State                : Established
Subscriber Count     : 2
Capabilities          : Topology Discovery, OAM
System Instance      : 1
Peer Instance        : 10
Adjacency Timer (in 100ms) : 100
Peer Adjacency Timer (in 100ms) : 250
Partition Type       : 0
Partition Flag       : 1
Partition Identifier  : 0
Dead Timer           : 55
Received Syn Count    : 1

Received Synack Count : 1
Received Rstack Count : 0
Received Ack Count    : 1
Received Port Up Count : 34
Received Port Down Count : 0
Received OAM Responses Count : 2
Received Other Count  : 0
Sent Syn Count        : 1
Sent Synack Count     : 1
Sent Rstack Count     : 0
Sent Ack Count        : 3
Sent OAM Requests Count : 4
Max Discovery Limit Exceed Count : 3

```



## show ancp subscriber

<b>Syntax</b>	<pre>show ancp subscriber &lt;brief   detail&gt; &lt;identifier <i>identifier</i>&gt; &lt;neighbor <i>ip-address</i>&gt;</pre>
<b>Release Information</b>	Command introduced in Junos OS Release 9.4.
<b>Description</b>	Display information about all subscribers (local access loops), the identified subscriber, or the subscriber associated with the specified ANCP neighbor (access node).
<b>Options</b>	<p>brief   detail—(Optional) Display the specified level of detail.</p> <p>identifier <i>identifier</i>—(Optional) Display information about the subscriber specified by the access identifier.</p> <p>neighbor (<i>ip-address</i> —(Optional) Display information about the local loops connected to the access node specified by the IP address.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear ancp subscriber on page 6</a></li> <li>• <a href="#">show ancp cos on page 10</a></li> <li>• <a href="#">show ancp neighbor on page 13</a></li> </ul>
<b>List of Sample Output</b>	<p><a href="#">show ancp subscriber brief on page 20</a></p> <p><a href="#">show ancp subscriber detail on page 21</a></p> <p><a href="#">show ancp subscriber identifier identifier-string detail on page 21</a></p>
<b>Output Fields</b>	Table 6 on page 18 lists the output fields for the <b>show ancp subscriber</b> command. Output fields are listed in the approximate order in which they appear.

**Table 6: show ancp subscriber Output Fields**

Field Name	Field Description
<b>Loop Identifier</b>	Access loop identifier as sent by the access node and configured to map the subscriber to an interface.
<b>Type</b>	Type of digital subscriber line employed by the access node: <b>ADSL1</b> , <b>ADSL2</b> , <b>ADSL2+</b> , <b>VDSL1</b> , <b>VDSL2</b> , <b>SDSL</b> , or <b>UNKNOWN</b> .
<b>State</b>	State of the DSL line: <b>Idle</b> , <b>Show Time</b> , or <b>Silent</b> .
<b>Rate Kbps</b>	Actual downstream data rate for this local loop.
<b>Neighbor</b>	IP address of ANCP neighbor (access node).



Table 6: show ancp subscriber Output Fields (*continued*)

Field Name	Field Description
<b>Access Node Identifier</b>	Access node identifier as sent by the access node and configured to map the subscriber to an interface.
<b>Neighbor IP Address</b>	IP address of the ANCP neighbor (access node).
<b>Aggregate Circuit Identifier Binary</b>	Binary identifier for the VLAN circuit ID.
<b>DSL Type</b>	Type of digital subscriber line employed by the access node: <b>ADSL1</b> , <b>ADSL2</b> , <b>ADSL2+</b> , <b>VDSL1</b> , <b>VDSL2</b> , <b>SDSL</b> , or <b>UNKNOWN</b> .
<b>Interface Type</b>	Type of interface employed for subscriber traffic: <b>ifl</b> for a single VLAN or <b>interface-set</b> for a configured group of VLANs.
<b>Interface</b>	Name of the interface set or logical interface.
<b>DSL Line State</b>	State of the DSL line: <b>Idle</b> , <b>Show Time</b> , or <b>Silent</b> .
<b>Actual Net Data Upstream</b>	Actual upstream data rate for this local loop, in Kbps.
<b>Actual Net Data Downstream</b>	Actual downstream data rate for this local loop, in Kbps.
<b>DSL Line Data Link</b>	Data link protocol employed on the access loop: <b>AAL5</b> or <b>Ethernet</b> .
<b>DSL Line Encapsulation</b>	Encapsulation type on the access loop, for Ethernet only: <ul style="list-style-type: none"> <li>• <b>0</b>—NA, type not conveyed</li> <li>• <b>1</b>—Untagged Ethernet</li> <li>• <b>2</b>—Single-tagged Ethernet</li> </ul>
<b>DSL Line Encapsulation Payload</b>	Payload carried across the access loop: <ul style="list-style-type: none"> <li>• <b>0</b>—NA, type not conveyed</li> <li>• <b>1</b>—PPPoA LLC</li> <li>• <b>2</b>—PPPoA null</li> <li>• <b>3</b>—IPoA LLC</li> <li>• <b>4</b>—IPoA null</li> <li>• <b>5</b>—Ethernet over AAL5 LLC with FCS</li> <li>• <b>6</b>—Ethernet over AAL5 LLC without FCS</li> <li>• <b>7</b>—Ethernet over AAL5 null with FCS</li> <li>• <b>8</b>—Ethernet over AAL5 null without FCS</li> </ul>
<b>Minimum Net Data Upstream</b>	Minimum upstream data rate desired by the operator for this local loop, in Kbps.



Table 6: show ancp subscriber Output Fields (*continued*)

Field Name	Field Description
<b>Minimum Net Data Downstream</b>	Minimum downstream data rate desired by the operator for this local loop, in Kbps.
<b>Maximum Net Data Upstream</b>	Maximum upstream data rate desired by the operator for this local loop, in Kbps.
<b>Maximum Net Data Downstream</b>	Maximum downstream data rate desired by the operator for this local loop, in Kbps.
<b>Attainable Net Data Upstream</b>	Maximum attainable upstream data rate for this local loop, in Kbps.
<b>Attainable Net Data Downstream</b>	Maximum attainable downstream data rate for this local loop, in Kbps.
<b>Minimum Low Power Data Downstream</b>	Minimum downstream data rate desired by the operator for this local loop in low power state, in Kbps.
<b>Minimum Low Power Data Upstream</b>	Minimum upstream data rate desired by the operator for this local loop in low power state, in Kbps.
<b>Maximum Interleave Delay Downstream</b>	Maximum interleaving delay for downstream data, in milliseconds.
<b>Maximum Interleave Delay Upstream</b>	Maximum interleaving delay for upstream data, in milliseconds.
<b>Actual Interleave Delay Downstream</b>	Actual interleaving delay for downstream data, in milliseconds.
<b>Actual Interleave Delay Upstream</b>	Actual interleaving delay for upstream data, in milliseconds.

## Sample Output

```

show ancp subscriber brief
user@host> show ancp subscriber brief

  Loop Identifier      Type      Interface      Rate      Neighbor
  -----
  port-1-10           VDSL2     set-ge-10410    64         10.10.10.2
  port-1-11           VDSL2     set-ge-10411    64         11.11.11.2
  port-2-10           VDSL2     ge-1/0/4.12     64         10.12.12.2
  port-2-11           VDSL2     ge-1/0/4.13     64         10.13.13.2

```



```

show ancp subscriber user@host> show ancp subscriber detail
detail
Subscriber Information
  Access Loop Identifier : port-2-11
    Neighbor IP Address      : 10.11.11.2
    Aggregate Circuit Identifier Binary : 0/0
    DSL Type                 : VDSL2
    Interface Type           : ifl
    Interface                : ge-1/0/4.10
    DSL Line State           : Show Time
    Actual Net Data Upstream : 64
    Actual Net Data Downstream : 64
    DSL Line Data Link       : AAL5
    DSL Line Encapsulation   : N/A
    DSL Line Encapsulation Payload : N/A
    Minimum Net Data Upstream : 64
    Minimum Net Data Downstream : 64
    Maximum Net Data Upstream : 64
    Maximum Net Data Downstream : 64
    Attainable Net Data Upstream : 64
    Attainable Net Data Downstream : 64
    Minimum Low Power Data Downstream : 64
    Minimum Low Power Data Upstream : 64
    Maximum Interleave Delay Downstream : 50
    Maximum Interleave Delay Upstream : 50
    Actual Interleave Delay Downstream : 50
    Actual Interleave Delay Upstream : 50
  Access Loop Identifier : port-1-11
    Neighbor IP Address      : 10.11.11.2
    Aggregate Circuit Identifier Binary : 0/0
    DSL Type                 : DSL 0
    Interface Type           : interface-set
    Interface                : set-ge-10411
    DSL Line State           : Show Time
    Actual Net Data Upstream : 64
    Actual Net Data Downstream : 64
    DSL Line Data Link       : AAL5
    DSL Line Encapsulation   : N/A
    DSL Line Encapsulation Payload : N/A
    Minimum Net Data Upstream : 64
    Minimum Net Data Downstream : 64
    Maximum Net Data Upstream : 64
    Maximum Net Data Downstream : 64
    Attainable Net Data Upstream : 64
    Attainable Net Data Downstream : 64
    Minimum Low Power Data Downstream : 64
    Minimum Low Power Data Upstream : 64
    Maximum Interleave Delay Downstream : 50
    Maximum Interleave Delay Upstream : 50
    Actual Interleave Delay Downstream : 50
    Actual Interleave Delay Upstream : 50

show ancp subscriber user@host> show ancp subscriber identifier port-1-11 detail
identifier
identifier-string detail
  Access Loop Identifier : port-1-11
    Neighbor IP Address      : 10.11.11.2
    Aggregate Circuit Identifier Binary : 0/0
    DSL Type                 : DSL 0
    Interface Type           : interface-set
    Interface                : set-ge-10411

```



DSL Line State	: Show Time
Actual Net Data Upstream	: 64
Actual Net Data Downstream	: 64
DSL Line Data Link	: AAL5
DSL Line Encapsulation	: N/A
DSL Line Encapsulation Payload	: N/A
Minimum Net Data Upstream	: 64
Minimum Net Data Downstream	: 64
Maximum Net Data Upstream	: 64
Maximum Net Data Downstream	: 64
Attainable Net Data Upstream	: 64
Attainable Net Data Downstream	: 64
Minimum Low Power Data Downstream	: 64
Minimum Low Power Data Upstream	: 64
Maximum Interleave Delay Downstream	: 50
Maximum Interleave Delay Upstream	: 50
Actual Interleave Delay Downstream	: 50
Actual Interleave Delay Upstream	: 50



## CHAPTER 2

# BFD Operational Mode Commands

Table 7 on page 23 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot Bidirectional Forwarding Detection (BFD) sessions. Commands are listed in alphabetical order.

Table 7: BFD Operational Mode Commands

Task	Command
Clear BFD parameters.	<code>clear bfd adaptation</code>
Clear BFD sessions.	<code>clear bfd session</code>
Display BFD session statistics.	<code>show bfd session</code>



**NOTE:** The protocol client for which the BFD session is active can be either IS-IS or OSPF.



**NOTE:** For information about how to configure BFD, see the *Junos Routing Protocols Configuration Guide*.



## clear bfd adaptation

---

<b>Syntax</b>	<code>clear bfd adaptation</code> <code>&lt;address session-address&gt;</code> <code>&lt;discriminator discr-number&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	<p>Clear adaptation for Bidirectional Forwarding Detection (BFD) sessions. BFD is a simple hello mechanism that detects failures in a network. Configured BFD interval timers can change, adapting to network situations. Use this command to return BFD interval timers to their configured values.</p> <p>The <b>clear bfd adaptation</b> command is hitless, meaning that the command does not affect traffic flow on the routing device.</p>
<b>Options</b>	<p>none—Clear adaptation for all BFD sessions.</p> <p><code>address session-address</code>—(Optional) Clear adaptation for all BFD sessions matching the specified address.</p> <p><code>discriminator discr-number</code>—(Optional) Clear adaptation for the local BFD session matching the specified discriminator.</p>
<b>Additional Information</b>	For more information, see the description of the <b>bfd-liveness-detection</b> configuration statement in the <i>Junos Routing Protocols Configuration Guide</i> .
<b>Required Privilege Level</b>	clear
<b>List of Sample Output</b>	<a href="#">clear bfd adaptation on page 24</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

**clear bfd adaptation**     user@host> clear bfd adaptation



## clear bfd session

---

<b>Syntax</b>	clear bfd session <address <i>session-address</i> > <discriminator <i>discr-number</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Drop one or more Bidirectional Forwarding Detection (BFD) sessions.
<b>Options</b>	<p>none—Drop all BFD sessions.</p> <p>address <i>session-address</i>—(Optional) Drop all BFD sessions matching the specified address.</p> <p>discriminator <i>discr-number</i>—(Optional) Drop the local BFD session matching the specified discriminator.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show bfd session on page 26</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear bfd session on page 25</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

```
clear bfd session  user@host> clear bfd session
```



## show bfd session

<b>Syntax</b>	<pre>show bfd session &lt;brief   detail   extensive   summary&gt; &lt;address address&gt; &lt;discriminator discriminator&gt; &lt;logical-system (all   logical-system-name)&gt; &lt;prefix address&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p><b>discriminator</b> and <b>address</b> options introduced in Junos OS Release 8.2.</p> <p><b>prefix</b> option introduced in Junos OS Release 9.0.</p>
<b>Description</b>	Display information about active Bidirectional Forwarding Detection (BFD) sessions.
<b>Options</b>	<p><b>none</b>—(Same as <b>brief</b>) Display information about active BFD sessions.</p> <p><b>brief   detail   extensive   summary</b>—(Optional) Display the specified level of output.</p> <p><b>address address</b>—(Optional) Display information about the BFD session for the specified neighbor address.</p> <p><b>discriminator discriminator</b>—(Optional) Display information about the BFD session using the specified local discriminator.</p> <p><b>logical-system (all   logical-system-name)</b>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><b>prefix address</b>—(Optional) Display information about all of the BFD sessions for the specified LDP forwarding equivalence class (FEC).</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear bfd session on page 25</a></li> </ul>
<b>List of Sample Output</b>	<p><a href="#">show bfd session on page 30</a></p> <p><a href="#">show bfd session brief on page 30</a></p> <p><a href="#">show bfd session detail on page 30</a></p> <p><a href="#">show bfd session detail (with Authentication) on page 30</a></p> <p><a href="#">show bfd session address extensive on page 30</a></p> <p><a href="#">show bfd session extensive on page 31</a></p> <p><a href="#">show bfd session extensive (with Authentication) on page 31</a></p> <p><a href="#">show bfd session summary on page 32</a></p>
<b>Output Fields</b>	Table 8 on page 27 describes the output fields for the <b>show bfd session</b> command. Output fields are listed in the approximate order in which they appear.



Table 8: show bfd session Output Fields

Field Name	Field Description	Level of Output
<b>Address</b>	Address on which the BFD session is active.	<b>brief detail extensive</b> none
<b>State</b>	State of the BFD session: <b>Up</b> , <b>Down</b> , <b>Init</b> (initializing), or <b>Failing</b> .	<b>brief detail extensive</b> none
<b>Interface</b>	Interface on which the BFD session is active.	<b>brief detail extensive</b> none
<b>Detect Time</b>	Negotiated time interval, in seconds, used to detect BFD control packets.	<b>brief detail extensive</b> none
<b>Transmit Interval</b>	Time interval, in seconds, used by the transmitting system to send BFD control packets.	<b>brief detail extensive</b> none
<b>Multiplier</b>	Negotiated multiplier by which the time interval is multiplied to determine the detection time for the transmitting system.	<b>detail extensive</b>
<b>Session up time</b>	How long a BFD session has been established.	<b>detail extensive</b>
<b>Client</b>	Protocol for which the BFD session is active: <b>ISIS</b> , <b>OSPF</b> , or <b>Static</b> .	<b>detail extensive</b>
<b>TX interval</b>	Time interval, in seconds, used by the host system to transmit BFD control packets.	<b>brief detail extensive</b> none
<b>RX interval</b>	Time interval, in seconds, used by the host system to receive BFD control packets.	<b>brief detail extensive</b> none
<b>Authenticate</b>	Indicates that BFD authentication is configured.	<b>detail extensive</b>
<b>keychain</b>	Name of the security authentication keychain being used by a specific client.  BFD authentication information for a client is provided in a single line and includes the <b>keychain</b> , <b>algo</b> , and <b>mode</b> parameters. Multiple clients may be configured on a BFD session.	<b>extensive</b>
<b>algo</b>	BFD authentication algorithm being used for a specific client: <b>keyed-md5</b> , <b>keyed-sha-1</b> , <b>meticulous-keyed-md5</b> , <b>meticulous-keyed-sha-1</b> , or <b>simple-password</b> .  BFD authentication information for a client is provided in a single line and includes the <b>keychain</b> , <b>algo</b> , and <b>mode</b> parameters. Multiple clients may be configured on a BFD session.	<b>extensive</b>
<b>mode</b>	Level of BFD authentication enforcement being used by a specific client: <b>strict</b> or <b>loose</b> . Strict enforcement indicates authentication is configured at both ends of the session (the default). Loose enforcement indicates that one end of the session may not be authenticated.  BFD authentication information for a client is provided in a single line and includes the <b>keychain</b> , <b>algo</b> , and <b>mode</b> parameters. Multiple clients may be configured on a BFD session.	<b>extensive</b>



Table 8: show bfd session Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Local diagnostic</b>	Local diagnostic information about failing BFD sessions.	<b>detail extensive</b>
<b>Remote diagnostic</b>	Remote diagnostic information about failing BFD sessions.	<b>detail extensive</b>
<b>Remote state</b>	Reports whether the remote system's BFD packets have been received and whether the remote system is receiving transmitted control packets.	<b>detail extensive</b>
<b>Version</b>	BFD version: 0 or 1.	<b>extensive</b>
<b>Replicated</b>	The <b>replicated</b> flag appears when nonstop routing is configured and the BFD session has been replicated to the backup Routing Engine.	<b>detail extensive</b>
<b>Min async interval</b>	Minimum amount of time, in seconds, between asynchronous control packet transmissions across the BFD session.	<b>extensive</b>
<b>Min slow interval</b>	Minimum amount of time, in seconds, between synchronous control packet transmissions across the BFD session.	<b>extensive</b>
<b>Adaptive async TX interval</b>	Transmission interval being used because of adaptation.	<b>extensive</b>
<b>RX interval</b>	Minimum required receive interval.	<b>extensive</b>
<b>Local min TX interval</b>	Minimum amount of time, in seconds, between control packet transmissions on the local system.	<b>extensive</b>
<b>Local min RX interval</b>	Minimum amount of time, in seconds, between control packet detections on the local system.	<b>extensive</b>
<b>Remote min TX interval</b>	Minimum amount of time, in seconds, between control packet transmissions on the remote system.	<b>extensive</b>
<b>Remote min RX interval</b>	Minimum amount of time, in seconds, between control packet detections on the remote system.	<b>extensive</b>
<b>Threshold transmission interval</b>	Threshold for notification if the transmission interval increases.	<b>extensive</b>
<b>Threshold for detection time</b>	Threshold for notification if the detection time increases.	<b>extensive</b>
<b>Local discriminator</b>	Authentication code used by the local system to identify that BFD session.	<b>extensive</b>
<b>Remote discriminator</b>	Authentication code used by the remote system to identify that BFD session.	<b>extensive</b>
<b>Echo mode</b>	Information about the state of echo transmissions on the BFD session.	<b>extensive</b>



Table 8: show bfd session Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Prefix</b>	LDP FEC address associated with the BFD session.	All levels
<b>Egress, Destination</b>	Displays the LDP FEC destination address. This field is displayed only on a router at the egress of an LDP FEC, where the BFD session has an LDP Operation, Administration, and Maintenance (OAM) client.	All levels
<b>Remote is control-plane independent</b>	<p>The BFD session on the remote peer is running on its Packet Forwarding Engine. In this case, when the remote node undergoes a graceful restart, the local peer can help the remote peer with the graceful restart.</p> <p>The following BFD sessions are not distributed to the Packet Forwarding Engine: multihop sessions, tunnel-encapsulated sessions, and sessions over aggregated Ethernet and integrated routing and bridging (IRB) interfaces.</p>	<b>extensive</b>
<b>Authentication</b>	<p>Summary status of BFD authentication:</p> <ul style="list-style-type: none"> <li>• <b>status—enabled/active</b> indicates authentication is configured and active. <b>enabled/inactive</b> indicates authentication is configured but not active. This only occurs when the remote end of the session does not support authentication and loose checking is configured.</li> <li>• <b>keychain</b>—Name of the security authentication keychain associated with the specified BFD session.</li> <li>• <b>algo</b>—BFD authentication algorithm being used: <b>keyed-md5</b>, <b>keyed-sha-1</b>, <b>meticulous-keyed-md5</b>, <b>meticulous-keyed-sha-1</b>, or <b>simple-password</b>.</li> <li>• <b>mode</b>—Level of BFD authentication enforcement: <b>strict</b> or <b>loose</b>. Strict enforcement indicates authentication is configured at both ends of the session (the default). Loose enforcement indicates that one end of the session may not be authenticated.</li> </ul> <p>This information is only shown if BFD authentication is configured.</p>	<b>extensive</b>
<b>sessions</b>	Total number of active BFD sessions.	All levels
<b>clients</b>	Total number of clients that are hosting active BFD sessions.	All levels
<b>Cumulative transmit rate</b>	Total number of BFD control packets transmitted per second on all active sessions.	All levels
<b>Cumulative receive rate</b>	Total number of BFD control packets received per second on all active sessions.	All levels
<b>Multi-hop, min-recv-TTL</b>	Minimum time to live (TTL) accepted if the session is configured for multihop.	<b>extensive</b>
<b>route table</b>	Route table used if the session is configured for multihop.	<b>extensive</b>
<b>local address</b>	Local address of source used if the session is configured for multihop.	<b>extensive</b>



## Sample Output

```

show bfd session      user@host> show bfd session

Address          State    Interface    Detect Time    Transmit
10.9.1.33        Up      so-7/1/0.0   0.600         Interval 0.200 Multiplier
10.9.1.29        Up      ge-4/0/0.0   0.600         0.200        3

2 sessions, 2 clients
Cumulative transmit rate 10.0 pps, cumulative receive rate 10.0 pps

```

**show bfd session brief** The output for the **show bfd session brief** command is identical to that for the **show bfd session** command. For sample output, see [show bfd session on page 30](#).

```

show bfd session      user@host> show bfd session detail
detail

Address          State    Interface    Detect Time    Transmit
10.9.1.33        Up      so-7/1/0.0   0.600         Interval 0.200 Multiplier
                  Client OSPF, TX interval 0.200, RX interval 0.200, multiplier 3
                  Session up time 3d 00:34
                  Local diagnostic None, remote diagnostic None
                  Remote state Up, version 1
                  Replicated
10.9.1.29        Up      ge-4/0/0.0   0.600         0.200        3
                  Client ISIS L2, TX interval 0.200, RX interval 0.200, multiplier 3
                  Session up time 3d 00:29, previous down time 00:00:01
                  Local diagnostic NbrSignal, remote diagnostic AdminDown
                  Remote state Up, version 1

2 sessions, 2 clients
Cumulative transmit rate 10.0 pps, cumulative receive rate 10.0 pps

```

```

show bfd session      user@host> show bfd session detail
detail (with
Authentication)

Address          State    Interface    Detect Time    Transmit
10.9.1.33        Up      so-7/1/0.0   0.600         Interval 0.200 Multiplier
                  Client OSPF, TX interval 0.200, RX interval 0.200, multiplier 3, Authenticate
                  Session up time 3d 00:34
                  Local diagnostic None, remote diagnostic None
                  Remote state Up, version 1
                  Replicated
10.9.1.29        Up      ge-4/0/0.0   0.600         0.200        3
                  Client ISIS L2, TX interval 0.200, RX interval 0.200, multiplier 3
                  Session up time 3d 00:29, previous down time 00:00:01
                  Local diagnostic NbrSignal, remote diagnostic AdminDown
                  Remote state Up, version 1

2 sessions, 2 clients
Cumulative transmit rate 10.0 pps, cumulative receive rate 10.0 pps

```

```

show bfd session      user@host> show bfd session 10.255.245.212 extensive
address extensive

Address          State    Interface    Detect Time    Transmit
10.255.245.212   Up      ge-4/0/0.0   1.200         Interval 0.400 Multiplier
                  Client Static, TX interval 0.400, RX interval 0.400, multiplier 3
                  Session up time 00:17:03, previous down time 00:00:14
                  Local diagnostic CtlExpire, remote diagnostic NbrSignal
                  Remote state Up, version 1

```



```

Replicated
Min async interval 0.400, min slow interval 1.000
Adaptive async tx interval 0.400, rx interval 0.400
Local min tx interval 0.400, min rx interval 0.400, multiplier 3
Remote min tx interval 0.400, min rx interval 0.400, multiplier 3
Threshold transmission interval 0.000, Threshold for detection time 0.000
Local discriminator 6, remote discriminator 16
Echo mode disabled/inactive
Multi-hop, min-recv-TTL 255, route-table 0, local-address 10.255.245.205

```

1 sessions, 1 clients

Cumulative transmit rate 2.5 pps, cumulative receive rate 2.5 pps

**show bfd session  
extensive**

user@host> show bfd session extensive

Address	State	Interface	Detect Time	Transmit Interval	Multiplier
10.9.1.33	Up	so-7/1/0.0	0.600	0.200	3

```

Client OSPF, TX interval 0.200, RX interval 0.200, multiplier 3
Session up time 3d 00:34
Local diagnostic None, remote diagnostic None
Remote state Up, version 1
Replicated
Min async interval 0.200, min slow interval 1.000
Adaptive async tx interval 0.200, rx interval 0.200
Local min tx interval 0.200, min rx interval 0.200, multiplier 3
Remote min tx interval 0.100, min rx interval 0.100, multiplier 3
Threshold transmission interval 0.000, Threshold for detection time 0.000
Local discriminator 11, remote discriminator 80
Echo mode disabled/inactive

```

10.9.1.29	Up	ge-4/0/0.0	0.600	0.200	3
-----------	----	------------	-------	-------	---

```

Client ISIS L2, TX interval 0.200, RX interval 0.200, multiplier 3
Session up time 3d 00:30, previous down time 00:00:01
Local diagnostic NbrSignal, remote diagnostic AdminDown
Remote state Up, version 1
Replicated
Min async interval 0.200, min slow interval 1.000
Adaptive async tx interval 0.200, rx interval 0.200
Local min tx interval 0.200, min rx interval 0.200, multiplier 3
Remote min tx interval 0.200, min rx interval 0.200, multiplier 3
Threshold transmission interval 0.000, Threshold for detection time 0.000
Local discriminator 12, remote discriminator 11
Echo mode disabled/inactive
Remote is control-plane independent

```

2 sessions, 2 clients

Cumulative transmit rate 10.0 pps, cumulative receive rate 10.0 pps

**show bfd session  
extensive (with  
Authentication)**

user@host> show bfd session extensive

Address	State	Interface	Detect Time	Transmit Interval	Multiplier
192.168.208.26	Up	so-1/0/0.0	2.400	0.800	10

```

Client Static, TX interval 0.600, RX interval 0.600, Authenticate
keychain bfd, algo keyed-md5, mode loose
Session up time 00:18:07
Local diagnostic None, remote diagnostic NbrSignal
Remote state Up, version 1
Replicated

```



```

Min async interval 0.600, min slow interval 1.000
Adaptive async TX interval 0.600, RX interval 0.600
Local min TX interval 0.600, minimum RX interval 0.600, multiplier 10
Remote min TX interval 0.800, min RX interval 0.800, multiplier 3
Local discriminator 2, remote discriminator 3
Echo mode disabled/inactive
Authentication enabled/active, keychain bfd, algo keyed-md5, mode loose

```

```

1 sessions, 1 clients
Cumulative transmit rate 1.2 pps, cumulative receive rate 1.2 pps

```

```

show bfd session summary user@host> show bfd session summary
2 sessions, 2 clients
Cumulative transmit rate 10.0 pps, cumulative receive rate 10.0 pps

```



## CHAPTER 3

# BGP Operational Mode Commands

Table 9 on page 33 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot the Border Gateway Protocol (BGP). Commands are listed in alphabetical order.

**Table 9: BGP Operational Mode Commands**

Task	Command
Remove damping information.	<code>clear bgp damping</code>
Remove entries from the neighbor database.	<code>clear bgp neighbor</code>
Request BGP to refresh routes.	<code>clear bgp table</code>
Display information about the BGP Monitoring Protocol.	<code>show bgp bmp</code>
Display entries in the BGP group database.	<code>show bgp group</code>
Display traffic statistics for BGP groups.	<code>show bgp group traffic-statistics</code>
Display entries in the BGP neighbor database.	<code>show bgp neighbor</code>
Display the BGP state replication status for nonstop active routing-enabled devices.	<code>show bgp replication</code>
Display BGP summary information.	<code>show bgp summary</code>
Display BGP damping parameters.	<code>show policy damping</code>



**NOTE:** For more BGP-related commands, such as `show route protocol`, `show route instance`, and `show route table`, see Protocol-Independent Routing Operational Mode Commands.



**NOTE:** For information about how to configure BGP, see the *Junos Routing Protocols Configuration Guide*.



## clear bgp damping

---

<b>Syntax</b>	clear bgp damping <logical-system (all   <i>logical-system-name</i> )> < <i>prefix</i> >
<b>Syntax (EX Series Switch and QFX Series)</b>	clear bgp damping < <i>prefix</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Clear BGP route flap damping information.
<b>Options</b>	none—Clear all BGP route flap damping information.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.  <i>prefix</i> —(Optional) Clear route flap damping information for only the specified destination prefix.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show policy damping on page 71</a></li><li>• <a href="#">show route damping on page 445</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear bgp damping on page 34</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

clear bgp damping     user@host> clear bgp damping



## clear bgp neighbor

<b>Syntax</b>	<pre>clear bgp neighbor &lt;as <i>as-number</i>&gt; &lt;instance <i>instance-name</i>&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;neighbor&gt; &lt;soft   soft-inbound&gt; &lt;soft-minimum-igp&gt;</pre>
<b>Syntax (EX Series Switch and QFX Series)</b>	<pre>clear bgp neighbor &lt;as <i>as-number</i>&gt; &lt;instance <i>instance-name</i>&gt; &lt;neighbor&gt; &lt;soft   soft-inbound&gt; &lt;soft-minimum-igp&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p>
<b>Description</b>	<p>Perform one of the following tasks:</p> <ul style="list-style-type: none"> <li>Change the state of one or more BGP neighbors to <b>IDLE</b>. For neighbors in the <b>ESTABLISHED</b> state, this command drops the TCP connection to the neighbors and then reestablishes the connection.</li> <li>(<b>soft</b> or <b>soft-inbound</b> keyword only) Reapply export policies or import policies, respectively, and send refresh updates to one or more BGP neighbors without changing their state.</li> </ul>
<b>Options</b>	<p><b>none</b>—Change the state of all BGP neighbors to <b>IDLE</b>.</p> <p><b>as <i>as-number</i></b>—(Optional) Apply this command only to neighbors in the specified autonomous system (AS).</p> <p><b>instance <i>instance-name</i></b>—(Optional) Apply this command only to neighbors for the specified routing instance.</p> <p><b>logical-system (all   <i>logical-system-name</i>)</b>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><b>neighbor</b>—(Optional) IP address of a BGP peer. Apply this command only to the specified neighbor.</p> <p><b>soft</b>—(Optional) Reapply any export policies and send refresh updates to neighbors without clearing the state.</p> <p><b>soft-inbound</b>—(Optional) Reapply any import policies and send refresh updates to neighbors without clearing the state.</p>



soft-minimum-igp—(Optional) Provides soft refresh of the outbound state when the interior gateway protocol (IGP) metric is reset.

**Required Privilege Level** clear

**Related Documentation**

- [show bgp neighbor on page 50](#)

**List of Sample Output** [clear bgp neighbor on page 36](#)

**Output Fields** When you enter this command, you are provided feedback on the status of your request.

## Sample Output

**clear bgp neighbor** user@host> clear bgp neighbor



## clear bgp table

<b>Syntax</b>	<code>clear bgp table <i>table-name</i></code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code>
<b>Syntax (EX Series Switch and QFX Series)</b>	<code>clear bgp table <i>table-name</i></code>
<b>Release Information</b>	Command introduced in Junos OS Release 9.0. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Request that BGP refresh routes in a specified routing table.
<b>Options</b>	<code>logical-system (all   <i>logical-system-name</i>)</code> —(Optional) Perform this operation on all logical systems or on a particular logical system.  <code><i>table-name</i></code> —Request that BGP refresh routes in the specified table.
<b>Additional Information</b>	In some cases, a prefix limit is associated with a routing table for a VPN instance. When this limit is exceeded (for example, because of a network misconfiguration), some routes might not be inserted in the table. Such routes need to be added to the table after the network issue is resolved. Use the <b>clear bgp table</b> command to request that BGP refresh routes in a VPN instance table.
<b>Required Privilege Level</b>	clear
<b>List of Sample Output</b>	<a href="#">clear bgp table private.inet.0 on page 37</a> <a href="#">clear bgp table inet.6 logical-system all on page 37</a> <a href="#">clear bgp table private.inet.6 logical-system ls1 on page 37</a> <a href="#">clear bgp table logical-system all inet.0 on page 37</a> <a href="#">clear bgp table logical-system ls2 private.inet.0 on page 38</a>
<b>Output Fields</b>	This command produces no output.

## Sample Output

```

clear bgp table private.inet.0
user@host> clear bgp table private.inet.0

clear bgp table inet.6 logical-system all
user@host> clear bgp table inet.6 logical-system all

clear bgp table private.inet.6 logical-system ls1
user@host> clear bgp table private.inet.6 logical-system ls1

clear bgp table logical-system all inet.0
user@host> clear bgp table logical-system all inet.0

```



```
clear bgp table    user@host> clear bgp table logical-system ls2 private.inet.0
logical-system ls2
private.inet.0
```



## show bgp bmp

<b>Syntax</b>	<b>show bgp bmp</b>
<b>Release Information</b>	Command introduced in Junos OS Release 9.5. Command introduced in Junos OS Release 9.5 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display information about the BGP Monitoring Protocol (BMP).
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show bgp bmp on page 39</a>
<b>Output Fields</b>	<a href="#">Table 10 on page 39</a> lists the output fields for the <b>show bgp bmp</b> command. Output fields are listed in the approximate order in which they appear.

**Table 10: show bgp bmp Output Fields**

Field Name	Field Description
<b>BMP station address/port</b>	IP address and port number of the monitoring station to which BGP Monitoring Protocol (BMP) statistics are sent.
<b>BMP session state</b>	Status of the BMP session: <b>UP</b> or <b>DOWN</b> .
<b>Memory consumed by BMP</b>	Memory used by the active BMP session.
<b>Statistics timeout</b>	Amount of time, in seconds, between transmissions of BMP data to the monitoring station.
<b>Memory limit</b>	Threshold, in bytes, at which the routing device stops collecting BMP data.
<b>Memory-connect retry timeout</b>	Amount of time, in seconds, after which the routing device attempts to resume a BMP session that was ended after the configured memory threshold was exceeded.

## Sample Output

```

show bgp bmp  user@host> show bgp bmp
                BMP station address/port: 172.24.24.157+5454
                BMP session state: DOWN
                Memory consumed by BMP: 0
                Statistics timeout: 15
                Memory limit: 10485760
                Memory connect retry timeout: 600

```







## show bgp group

<b>Syntax</b>	<pre>show bgp group &lt;brief   detail   summary&gt; &lt;group-name&gt; &lt;exact-instance instance-name&gt; &lt;instance instance-name&gt; &lt;logical-system (all   logical-system-name)&gt; &lt;rtf&gt;</pre>
<b>Syntax (EX Series Switch and QFX Series)</b>	<pre>show bgp group &lt;brief   detail   summary&gt; &lt;group-name&gt; &lt;exact-instance instance-name&gt; &lt;instance instance-name&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p> <p><b>exact-instance</b> option introduced in Junos OS Release 11.4.</p>
<b>Description</b>	Display information about the configured BGP groups.
<b>Options</b>	<p><b>none</b>—Display group information about all BGP groups.</p> <p><b>brief   detail   summary</b>—(Optional) Display the specified level of output.</p> <p><b>group-name</b>—(Optional) Display group information for the specified group.</p> <p><b>exact-instance instance-name</b>—(Optional) Display information for the specified instance only.</p> <p><b>instance instance-name</b>—(Optional) Display information about BGP groups for all routing instances whose name begins with this string (for example, <b>cust1</b>, <b>cust11</b>, and <b>cust111</b> are all displayed when you run the <b>show bgp group instance cust1</b> command). The instance name can be master for the main instance, or any valid configured instance name or its prefix.</p> <p><b>logical-system (all   logical-system-name)</b>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><b>rtf</b>—(Optional) Display BGP group route targeting information.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<p><a href="#">show bgp group on page 45</a></p> <p><a href="#">show bgp group brief on page 45</a></p> <p><a href="#">show bgp group detail on page 46</a></p> <p><a href="#">show bgp group rtf detail on page 47</a></p> <p><a href="#">show bgp group summary on page 47</a></p>



**Output Fields** Table 11 on page 42 describes the output fields for the **show bgp group** command. Output fields are listed in the approximate order in which they appear.

**Table 11: show bgp group Output Fields**

Field Name	Field Description	Level of Output
<b>Group Type or Group</b>	Type of BGP group: <b>Internal</b> or <b>External</b> .	All levels
<b>AS</b>	AS number of the peer. For internal BGP (IBGP), this number is the same as <b>Local AS</b> .	<b>brief detail</b> none
<b>Local AS</b>	AS number of the local routing device.	<b>brief detail</b> none
<b>Name</b>	Name of a specific BGP group.	<b>brief detail</b> none
<b>Index</b>	Unique index number of a BGP group.	<b>brief detail</b> none
<b>Flags</b>	Flags associated with the BGP group. This field is used by Juniper Networks customer support.	<b>brief detail</b> none
<b>Holdtime</b>	Maximum number of seconds allowed to elapse between successive keepalive or update messages that BGP receives from a peer in the BGP group, after which the connection to the peer is closed and routing devices through that peer become unavailable.	<b>brief detail</b> none
<b>Export</b>	Export policies configured for the BGP group with the <b>export</b> statement.	<b>brief detail</b> none
<b>MED tracks IGP metric update delay</b>	Time, in seconds, that updates to multiple exit discriminator (MED) are delayed. Also displays the time remaining before the interval is set to expire	All levels
<b>Traffic Statistics Interval</b>	Time between sample periods for labeled-unicast traffic statistics, in seconds.	<b>brief detail</b> none
<b>Total peers</b>	Total number of peers in the group.	<b>brief detail</b> none
<b>Established</b>	Number of peers in the group that are in the established state.	All levels



Table 11: show bgp group Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Active/Received/Accepted/Damped</b>	<p>Multipurpose field that displays information about BGP peer sessions. The field's contents depend upon whether a session is established and whether it was established in the main routing device or in a routing instance.</p> <ul style="list-style-type: none"> <li>If a peer is not established, the field shows the state of the peer session: <b>Active</b>, <b>Connect</b>, or <b>Idle</b>.</li> <li>If a BGP session is established in the main routing device, the field shows the number of active, received, accepted, and damped routes that are received from a neighbor and appear in the <b>inet.0</b> (main) and <b>inet.2</b> (multicast) routing tables. For example, <b>8/10/10/2</b> and <b>2/4/4/0</b> indicate the following: <ul style="list-style-type: none"> <li>8 active routes, 10 received routes, 10 accepted routes, and 2 damped routes from a BGP peer appear in the <b>inet.0</b> routing table.</li> <li>2 active routes, 4 received routes, 4 accepted routes, and no damped routes from a BGP peer appear in the <b>inet.2</b> routing table.</li> </ul> </li> </ul>	<b>summary</b>
<b>ip-addresses</b>	List of peers who are members of the group. The address is followed by the peer's port number.	All levels
<b>Route Queue Timer</b>	Number of seconds until queued routes are sent. If this time has already elapsed, this field displays the number of seconds by which the updates are delayed.	<b>detail</b>
<b>Route Queue</b>	Number of prefixes that are queued up for sending to the peers in the group.	<b>detail</b>
<b>inet.number</b>	<p>Number of active, received, accepted, and damped routes in the routing table. For example, <b>inet.0: 7/10/9/0</b> indicates the following:</p> <ul style="list-style-type: none"> <li>7 active routes, 10 received routes, 9 accepted routes, and no damped routes from a BGP peer appear in the <b>inet.0</b> routing table.</li> </ul>	none



Table 11: show bgp group Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Table inet.number</b>	Information about the routing table. <ul style="list-style-type: none"> <li>• <b>Received prefixes</b>—Total number of prefixes from the peer, both active and inactive, that are in the routing table.</li> <li>• <b>Active prefixes</b>—Number of prefixes received from the peer that are active in the routing table.</li> <li>• <b>Suppressed due to damping</b>—Number of routes currently inactive because of damping or other reasons. These routes do not appear in the forwarding table and are not exported by routing protocols.</li> <li>• <b>Advertised prefixes</b>—Number of prefixes advertised to a peer.</li> <li>• <b>Received external prefixes</b>—Total number of prefixes from the external BGP (EBGP) peers, both active and inactive, that are in the routing table.</li> <li>• <b>Active external prefixes</b>—Number of prefixes received from the EBGP peers that are active in the routing table.</li> <li>• <b>Externals suppressed</b>—Number of routes received from EBGP peers currently inactive because of damping or other reasons.</li> <li>• <b>Received internal prefixes</b>—Total number of prefixes from the IBGP peers, both active and inactive, that are in the routing table.</li> <li>• <b>Active internal prefixes</b>—Number of prefixes received from the IBGP peers that are active in the routing table.</li> <li>• <b>Internals suppressed</b>—Number of routes received from IBGP peers currently inactive because of damping or other reasons.</li> <li>• <b>RIB State</b>—Status of the graceful restart process for this routing table: <b>BGP restart is complete</b>, <b>BGP restart in progress</b>, <b>VPN restart in progress</b>, or <b>VPN restart is complete</b>.</li> </ul>	<b>detail</b>
<b>Groups</b>	Total number of groups.	All levels
<b>Peers</b>	Total number of peers.	All levels
<b>External</b>	Total number of external peers.	All levels
<b>Internal</b>	Total number of internal peers.	All levels
<b>Down peers</b>	Total number of unavailable peers.	All levels
<b>Flaps</b>	Total number of flaps that occurred.	All levels
<b>Table</b>	Name of a routing table.	<b>brief</b> , none
<b>Tot Paths</b>	Total number of routes.	<b>brief</b> , none
<b>Act Paths</b>	Number of active routes.	<b>brief</b> , none
<b>Suppressed</b>	Number of routes currently inactive because of damping or other reasons. These routes do not appear in the forwarding table and are not exported by routing protocols.	<b>brief</b> , none



Table 11: show bgp group Output Fields (*continued*)

Field Name	Field Description	Level of Output
History	Number of withdrawn routes stored locally to keep track of damping history.	brief, none
Damp State	Number of active routes with a figure of merit greater than zero, but lower than the threshold at which suppression occurs.	brief, none
Pending	Routes being processed by the BGP import policy.	brief, none
Group	Group the peer belongs to in the BGP configuration.	detail
Receive mask	Mask of the received target included in the advertised route.	detail
Entries	Number of route entries received.	detail
Target	Route target that is to be passed by route-target filtering. If a route advertised from the provider edge (PE) routing device matches an entry in the route-target filter, the route is passed to the peer.	detail
Mask	Mask which specifies that the peer receive routes with the given route target.	detail

## Sample Output

```

show bgp group user@host> show bgp group
Group Type: Internal AS: 1 Local AS: 1
Name: ibgp Index: 0 Flags: <Export Eval>
Holdtime: 0
Total peers: 1 Established: 1
22.0.0.2+63821
inet.0: 1/1/1/0
bgp.l3vpn.0: 4/4/4/0
bgp.mdt.0: 1/1/1/0
VPN-A.inet.0: 4/4/4/0
VPN-A.mdt.0: 1/1/1/0

Groups: 1 Peers: 1 External: 0 Internal: 1 Down peers: 0 Flaps: 7
Table Tot Paths Act Paths Suppressed History Damp State Pending
inet.0 1 1 0 0 0 0
bgp.l3vpn.0 4 4 0 0 0 0
bgp.mdt.0 1 1 0 0 0 0
VPN-A.inet.0 4 4 0 0 0 0
VPN-A.mdt.0 1 1 0 0 0 0

```

```

show bgp group brief user@host> show bgp group brief
Group Type: Internal AS: 1 Local AS: 1
Name: ibgp Index: 0 Flags: <Export Eval>
Holdtime: 0
Total peers: 3 Established: 0
22.0.0.2
22.0.0.8
22.0.0.5

```



Groups: 1	Peers: 3	External: 0	Internal: 3	Down peers: 3	Flaps: 3
Table	Tot Paths	Act Paths	Suppressed	History Damp	State Pending
bgp.l3vpn.0	0	0	0	0	0
bgp.mdt.0	0	0	0	0	0
VPN-A.inet.0	0	0	0	0	0
VPN-A.mdt.0	0	0	0	0	0

**show bgp group detail**

```

user@host> show bgp group detail
Group Type: Internal      AS: 1                      Local AS: 1
Name: ibgp                Index: 0                   Flags: <Export Eval>
Holdtime: 0
Total peers: 3            Established: 0
22.0.0.2
22.0.0.8
22.0.0.5

```

Groups: 1	Peers: 3	External: 0	Internal: 3	Down peers: 3	Flaps: 3
-----------	----------	-------------	-------------	---------------	----------

```

Table bgp.l3vpn.0
  Received prefixes:      0
  Accepted prefixes:      0
  Active prefixes:        0
  Suppressed due to damping: 0
  Received external prefixes: 0
  Active external prefixes: 0
  Externals suppressed:   0
  Received internal prefixes: 0
  Active internal prefixes: 0
  Internals suppressed:   0
  RIB State: BGP restart is complete
  RIB State: VPN restart is complete
Table bgp.mdt.0
  Received prefixes:      0
  Accepted prefixes:      0
  Active prefixes:        0
  Suppressed due to damping: 0
  Received external prefixes: 0
  Active external prefixes: 0
  Externals suppressed:   0
  Received internal prefixes: 0
  Active internal prefixes: 0
  Internals suppressed:   0
  RIB State: BGP restart is complete
  RIB State: VPN restart is complete
Table VPN-A.inet.0
  Received prefixes:      0
  Accepted prefixes:      0
  Active prefixes:        0
  Suppressed due to damping: 0
  Received external prefixes: 0
  Active external prefixes: 0
  Externals suppressed:   0
  Received internal prefixes: 0
  Active internal prefixes: 0
  Internals suppressed:   0
  RIB State: BGP restart is complete
  RIB State: VPN restart is complete
Table VPN-A.mdt.0
  Received prefixes:      0
  Accepted prefixes:      0
  Active prefixes:        0

```



```

Suppressed due to damping: 0
Received external prefixes: 0
Active external prefixes: 0
Externals suppressed: 0
Received internal prefixes: 0
Active internal prefixes: 0
Internals suppressed: 0
RIB State: BGP restart is complete
RIB State: VPN restart is complete

```

```

show bgp group rtf detail user@host> show bgp group rtf detail
Group: asbr
  Receive mask: 00000001
  Table: bgp.rtarget.0
    Target
    109:1/64
    109:2/64
    701:1/64
    10458:2/64
    Flags: Filter Entries: 4
    Mask
    00000001
    00000001
    00000001
    00000001

Group: mesh_0
  Receive mask: 0000000e
  Table: bgp.rtarget.0
    Target
    109:1/64
    701:1/64
    701:2/64
    10458:1/64
    10458:2/64
    10458:3/64
    10458:5/64
    10458:6/64
    10458:7/64
    10458:8/64
    10458:10/64
    Flags: Filter Entries: 12
    Mask
    00000002
    00000002
    00000002
    0000000e
    00000006
    00000006
    00000006
    00000006
    00000004
    00000008
    00000008
    00000002

show bgp group summary user@host> show bgp group summary
Group      Type      Peers      Established      Active/Received/Accepted/Damped
ibgp       Internal  3           0
Groups: 1 Peers: 3 External: 0 Internal: 3 Down peers: 3 Flaps: 3
  bgp.l3vpn.0 : 0/0/0/0 External: 0/0/0/0 Internal: 0/0/0/0
  bgp.mdt.0 : 0/0/0/0 External: 0/0/0/0 Internal: 0/0/0/0
  VPN-A.inet.0 : 0/0/0/0 External: 0/0/0/0 Internal: 0/0/0/0
  VPN-A.mdt.0 : 0/0/0/0 External: 0/0/0/0 Internal: 0/0/0/0

```



## show bgp group traffic-statistics

<b>Syntax</b>	show bgp group traffic-statistics <brief   detail> <group-name> <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display the traffic statistics for configured Border Gateway Protocol (BGP) groups.
<b>Options</b>	<p>none—Display traffic statistics for all BGP groups.</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>group-name—(Optional) Display BGP traffic statistics for only the specified group.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show bgp group traffic-statistics (Per-Group-Label Not Configured) on page 49</a> <a href="#">show bgp group traffic-statistics (Per-Group-Label Configured) on page 49</a>
<b>Output Fields</b>	Table 12 on page 48 describes the output fields for the <b>show bgp group traffic-statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 12: show bgp group traffic-statistics Output Fields**

Field Name	Field Description
<b>Group name</b>	Name of a specific BGP group.
<b>Group Index</b>	Index number for the BGP group.
<b>NLRI</b>	Network layer reachability information (NLRI) indicating the source of the traffic statistics for the BGP group.
<b>FEC</b>	Forwarding equivalence classes (FECs) associated with the BGP group.
<b>Packets</b>	Number of packets sent through each FEC.
<b>Bytes</b>	Number of bytes transmitted through each FEC.
<b>EgressAS</b>	Autonomous system (AS) number of the egress router.
<b>AdvLabel</b>	Label associated with each FEC.



## Sample Output

```

show bgp group traffic-statistics user@host> show bgp group traffic-statistics
(Per-Group-Label Not Configured)
Group Name: ext1      Group Index: 0      NLRI: inet-labeled-unicast
FEC      Packets      Bytes      EgressAS      AdvLabel
10.255.245.55      0      0      I      100224
10.255.245.57      0      0      I      100240
100.101.0.0      550      48400      25      100256
100.102.0.0      550      48400      25      100256
100.103.0.0      550      48400      25      100272
100.104.0.0      550      48400      25      100272
192.168.25.0      0      0      I      100288

Group Name: ext2      Group Index: 1      NLRI: inet-labeled-unicast
FEC      Packets      Bytes      EgressAS      AdvLabel
10.255.245.55      0      0      I      100224
10.255.245.57      0      0      I      100240
100.101.0.0      550      48400      25      100256
100.102.0.0      550      48400      25      100256
100.103.0.0      550      48400      25      100272
100.104.0.0      550      48400      25      100272
192.168.25.0      0      0      I      100288

show bgp group traffic-statistics user@host> show bgp group traffic-statistics
(Per-Group-Label Configured)
Group Name: ext1      Group Index: 0      NLRI: inet-labeled-unicast
FEC      Packets      Bytes      EgressAS      AdvLabel
10.255.245.55      0      0      I      100384
10.255.245.57      0      0      I      100400
100.101.0.0      101      8888      25      100416
100.102.0.0      101      8888      25      100416
100.103.0.0      0      0      25      100432
100.104.0.0      0      0      25      100432
192.168.25.0      0      0      I      100448

Group Name: ext2      Group Index: 1      NLRI: inet-labeled-unicast
FEC      Packets      Bytes      EgressAS      AdvLabel
10.255.245.55      0      0      I      100304
10.255.245.57      0      0      I      100320
100.101.0.0      0      0      25      100336
100.102.0.0      0      0      25      100336
100.103.0.0      101      8888      25      100352
100.104.0.0      101      8888      25      100352
192.168.25.0      0      0      I      100368

```



## show bgp neighbor

<b>Syntax</b>	<pre>show bgp neighbor &lt;exact-instance <i>instance-name</i>&gt; &lt;instance <i>instance-name</i>&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;neighbor-address&gt; &lt;orf (detail   <i>neighbor-address</i>)</pre>
<b>Syntax (EX Series Switch and QFX Series)</b>	<pre>show bgp neighbor &lt;instance <i>instance-name</i>&gt; &lt;exact-instance <i>instance-name</i>&gt; &lt;neighbor-address&gt; &lt;orf (<i>neighbor-address</i>   detail)</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p> <p><b>orf</b> option introduced in Junos OS Release 9.2.</p> <p><b>exact-instance</b> option introduced in Junos OS Release 11.4.</p>
<b>Description</b>	Display information about BGP peers.
<b>Options</b>	<p><b>none</b>—Display information about all BGP peers.</p> <p><b>exact-instance <i>instance-name</i></b>—(Optional) Display information for the specified instance only.</p> <p><b>instance <i>instance-name</i></b>—(Optional) Display information about BGP peers for all routing instances whose name begins with this string (for example, <b>cust1</b>, <b>cust11</b>, and <b>cust111</b> are all displayed when you run the <b>show bgp neighbor instance cust1</b> command).</p> <p><b>logical-system (all   <i>logical-system-name</i>)</b>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><b>neighbor-address</b>—(Optional) Display information for only the BGP peer at the specified IP address.</p> <p><b>orf (detail   <i>neighbor-address</i>)</b>—(Optional) Display outbound route-filtering information for all BGP peers or only for the BGP peer at the specified IP address. The default is to display brief output. Use the <b>detail</b> option to display detailed output.</p>
<b>Additional Information</b>	For information about the <b>local-address</b> , <b>nlri</b> , <b>hold-time</b> , and <b>preference</b> statements, see the <a href="#">Junos OS Routing Protocols Configuration Guide</a> .
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">clear bgp neighbor on page 35</a></li> </ul>



**List of Sample Output** [show bgp neighbor on page 57](#)  
[show bgp neighbor \(CLNS\) on page 58](#)  
[show bgp neighbor \(Layer 2 VPN\) on page 58](#)  
[show bgp neighbor \(Layer 3 VPN\) on page 60](#)  
[show bgp neighbor neighbor-address on page 61](#)  
[show bgp neighbor neighbor-address on page 62](#)  
[show bgp neighbor orf neighbor-address detail on page 63](#)

**Output Fields** [Table 13 on page 51](#) describes the output fields for the **show bgp neighbor** command. Output fields are listed in the approximate order in which they appear.

**Table 13: show bgp neighbor Output Fields**

Field Name	Field Description
<b>Peer</b>	Address of the BGP neighbor. The address is followed by the neighbor port number.
<b>AS</b>	AS number of the peer.
<b>Local</b>	Address of the local routing device. The address is followed by the peer port number.
<b>Type</b>	Type of peer: <b>Internal</b> or <b>External</b> .
<b>State</b>	<p>Current state of the BGP session:</p> <ul style="list-style-type: none"> <li>• <b>Active</b>—BGP is initiating a transport protocol connection in an attempt to connect to a peer. If the connection is successful, BGP sends an Open message.</li> <li>• <b>Connect</b>—BGP is waiting for the transport protocol connection to be completed.</li> <li>• <b>Established</b>—The BGP session has been established, and the peers are exchanging update messages.</li> <li>• <b>Idle</b>—This is the first stage of a connection. BGP is waiting for a Start event.</li> <li>• <b>OpenConfirm</b>—BGP has acknowledged receipt of an open message from the peer and is waiting to receive a keepalive or notification message.</li> <li>• <b>OpenSent</b>—BGP has sent an open message and is waiting to receive an open message from the peer.</li> </ul>
<b>Flags</b>	<p>Internal BGP flags:</p> <ul style="list-style-type: none"> <li>• <b>Aggregate Label</b>—BGP has aggregated a set of incoming labels (labels received from the peer) into a single forwarding label.</li> <li>• <b>CleanUp</b>—The peer session is being shut down.</li> <li>• <b>Delete</b>—This peer has been deleted.</li> <li>• <b>Idled</b>—This peer has been permanently idled.</li> <li>• <b>ImportEval</b>—At the last commit operation, this peer was identified as needing to reevaluate all received routes.</li> <li>• <b>Initializing</b>—The peer session is initializing.</li> <li>• <b>SendRtn</b>—Messages are being sent to the peer.</li> <li>• <b>Sync</b>—This peer is synchronized with the rest of the peer group.</li> <li>• <b>TryConnect</b>—Another attempt is being made to connect to the peer.</li> <li>• <b>Unconfigured</b>—This peer is not configured.</li> <li>• <b>WriteFailed</b>—An attempt to write to this peer failed.</li> </ul>



Table 13: show bgp neighbor Output Fields (*continued*)

Field Name	Field Description
<b>Last state</b>	<p>Previous state of the BGP session:</p> <ul style="list-style-type: none"> <li>• <b>Active</b>—BGP is initiating a transport protocol connection in an attempt to connect to a peer. If the connection is successful, BGP sends an Open message.</li> <li>• <b>Connect</b>—BGP is waiting for the transport protocol connection to be completed.</li> <li>• <b>Established</b>—The BGP session has been established, and the peers are exchanging update messages.</li> <li>• <b>Idle</b>—This is the first stage of a connection. BGP is waiting for a Start event.</li> <li>• <b>OpenConfirm</b>—BGP has acknowledged receipt of an open message from the peer and is waiting to receive a keepalive or notification message.</li> <li>• <b>OpenSent</b>—BGP has sent an open message and is waiting to receive an open message from the peer.</li> </ul>
<b>Last event</b>	<p>Last activity that occurred in the BGP session:</p> <ul style="list-style-type: none"> <li>• <b>Closed</b>—The BGP session closed.</li> <li>• <b>ConnectRetry</b>—The transport protocol connection failed, and BGP is trying again to connect.</li> <li>• <b>HoldTime</b>—The session ended because the hold timer expired.</li> <li>• <b>KeepAlive</b>—The local routing device sent a BGP keepalive message to the peer.</li> <li>• <b>Open</b>—The local routing device sent a BGP open message to the peer.</li> <li>• <b>OpenFail</b>—The local routing device did not receive an acknowledgment of a BGP open message from the peer.</li> <li>• <b>RecvKeepAlive</b>—The local routing device received a BGP keepalive message from the peer.</li> <li>• <b>RecvNotify</b>—The local routing device received a BGP notification message from the peer.</li> <li>• <b>RecvOpen</b>—The local routing device received a BGP open message from the peer.</li> <li>• <b>RecvUpdate</b>—The local routing device received a BGP update message from the peer.</li> <li>• <b>Start</b>—The peering session started.</li> <li>• <b>Stop</b>—The peering session stopped.</li> <li>• <b>TransportError</b>—A TCP error occurred.</li> </ul>
<b>Last error</b>	<p>Last error that occurred in the BGP session:</p> <ul style="list-style-type: none"> <li>• <b>Cease</b>—An error occurred, such as a version mismatch, that caused the session to close.</li> <li>• <b>Finite State Machine Error</b>—In setting up the session, BGP received a message that it did not understand.</li> <li>• <b>Hold Time Expired</b>—The session's hold time expired.</li> <li>• <b>Message Header Error</b>—The header of a BGP message was malformed.</li> <li>• <b>Open Message Error</b>—A BGP open message contained an error.</li> <li>• <b>None</b>—No errors occurred in the BGP session.</li> <li>• <b>Update Message Error</b>—A BGP update message contained an error.</li> </ul>
<b>Export</b>	Name of the export policy that is configured on the peer.
<b>Import</b>	Name of the import policy that is configured on the peer.



Table 13: show bgp neighbor Output Fields (*continued*)

Field Name	Field Description
<b>Options</b>	Configured BGP options: <ul style="list-style-type: none"> <li>• <b>AddressFamily</b>—Configured address family: <b>inet</b> or <b>inet-vpn</b>.</li> <li>• <b>AuthKeyChain</b>—Authentication key change is enabled.</li> <li>• <b>DropPathAttributes</b>—Certain path attributes are configured to be dropped from neighbor updates during inbound processing.</li> <li>• <b>GracefulRestart</b>—Graceful restart is configured.</li> <li>• <b>HoldTime</b>—Hold time configured with the <b>hold-time</b> statement. The hold time is three times the interval at which keepalive messages are sent.</li> <li>• <b>IgnorePathAttributes</b>—Certain path attributes are configured to be ignored in neighbor updates during inbound processing.</li> <li>• <b>Local Address</b>—Address configured with the <b>local-address</b> statement.</li> <li>• <b>Multihop</b>—Allow BGP connections to external peers that are not on a directly connected network.</li> <li>• <b>NLRI</b>—Configured MBGP state for the BGP group: <b>multicast</b>, <b>unicast</b>, or both if you have configured <b>nlri any</b>.</li> <li>• <b>Peer AS</b>—Configured peer autonomous system (AS).</li> <li>• <b>Preference</b>—Preference value configured with the <b>preference</b> statement.</li> <li>• <b>Refresh</b>—Configured to refresh automatically when the policy changes.</li> <li>• <b>Rib-group</b>—Configured routing table group.</li> </ul>
<b>Path-attributes dropped</b>	Path attribute codes that are dropped from neighbor updates.
<b>Path-attributes ignored</b>	Path attribute codes that are ignored during neighbor updates.
<b>Authentication key change</b>	(appears only if the <b>authentication-keychain</b> statement has been configured) Name of the authentication keychain enabled.
<b>Authentication algorithm</b>	(appears only if the <b>authentication-algorithm</b> statement has been configured) Type of authentication algorithm enabled: <b>hmac</b> or <b>md5</b> .
<b>Address families configured</b>	Names of configured address families for the VPN.
<b>Local Address</b>	Address of the local routing device.
<b>Holdtime</b>	Hold time configured with the <b>hold-time</b> statement. The hold time is three times the interval at which keepalive messages are sent.
<b>Flags for NLRI inet-label-unicast</b>	Flags related to labeled-unicast: <ul style="list-style-type: none"> <li>• <b>TrafficStatistics</b>—Collection of statistics for labeled-unicast traffic is enabled.</li> </ul>



Table 13: show bgp neighbor Output Fields (*continued*)

Field Name	Field Description
<b>Traffic statistics</b>	Information about labeled-unicast traffic statistics: <ul style="list-style-type: none"> <li>• <b>Options</b>—Options configured for collecting statistics about labeled-unicast traffic.</li> <li>• <b>File</b>—Name and location of statistics log files.</li> <li>• <b>size</b>—Size of all the log files, in bytes.</li> <li>• <b>files</b>—Number of log files.</li> </ul>
<b>Traffic Statistics Interval</b>	Time between sample periods for labeled-unicast traffic statistics, in seconds.
<b>Preference</b>	Preference value configured with the <b>preference</b> statement.
<b>Number of flaps</b>	Number of times the BGP session has gone down and then come back up.
<b>Peer ID</b>	Router identifier of the peer.
<b>Peer Index</b>	Index that is unique within the BGP group to which the peer belongs.
<b>Local ID</b>	Router identifier of the local routing device.
<b>Local Interface</b>	Name of the interface on the local routing device.
<b>Active holdtime</b>	Hold time that the local routing device negotiated with the peer.
<b>Keepalive Interval</b>	Keepalive interval, in seconds.
<b>BFD</b>	Status of BFD failure detection.
<b>Local Address</b>	Name of directly connected interface over which direct EBGP peering is established.
<b>NLRI for restart configured on peer</b>	Names of address families configured for restart.
<b>NLRI advertised by peer</b>	Address families supported by the peer: <b>unicast</b> or <b>multicast</b> .
<b>NLRI for this session</b>	Address families being used for this session.
<b>Peer supports Refresh capability</b>	Remote peer's ability to send and request full route table readvertisement (route refresh capability). For more information, see RFC 2918, <i>Route Refresh Capability for BGP-4</i> .
<b>Restart time configured on peer</b>	Configured time allowed for restart on the neighbor.
<b>Stale routes from peer are kept for</b>	When graceful restart is negotiated, the maximum time allowed to hold routes from neighbors after the BGP session has gone down.
<b>Peer does not support Restarter functionality</b>	Graceful restart restarter-mode is disabled on the peer.



Table 13: show bgp neighbor Output Fields (*continued*)

Field Name	Field Description
Peer does not support Receiver functionality	Graceful restart helper-mode is disabled on the peer.
Restart time requested by this peer	Restart time requested by this neighbor during capability negotiation.
Restart flag received from the peer	When this field appears, the BGP speaker has restarted (Restarting), and this peer should not wait for the <b>end-of-rib</b> marker from the speaker before advertising routing information to the speaker.
NLRI that peer supports restart for	Neighbor supports graceful restart for this address family.
NLRI peer can save forwarding state	Neighbor supporting this address family saves all forwarding states.
NLRI that peer saved forwarding for	Neighbor saves all forwarding states for this address family.
NLRI that restart is negotiated for	Router supports graceful restart for this address family.
NLRI of received end-of-rib markers	Address families for which end-of-routing-table markers are received from the neighbor.
NLRI of all end-of-rib markers sent	Address families for which end-of-routing-table markers are sent to the neighbor.
Peer supports 4 byte AS extension (peer-as 1)	Peer understands 4-byte AS numbers in BGP messages. The peer is running Junos OS Release 9.1 or later.
NLRIs for which peer can receive multiple paths	Appears in the command output of the local router if the downstream peer is configured to receive multiple BGP routes to a single destination, instead of only receiving the active route.  Possible value is <b>inet-unicast</b> .
NLRIs for which peer can send multiple paths: inet-unicast	Appears in the command output of the local router if the upstream peer is configured to send multiple BGP routes to a single destination, instead of only sending the active route.  Possible value is <b>inet-unicast</b> .



Table 13: show bgp neighbor Output Fields (*continued*)

Field Name	Field Description
<b>Table inet.number</b>	<p>Information about the routing table:</p> <ul style="list-style-type: none"> <li>• <b>RIB State</b>—BGP is in the graceful restart process for this routing table: <b>restart is complete</b> or <b>restart in progress</b>.</li> <li>• <b>Bit</b>—Number that represents the entry in the routing table for this peer.</li> <li>• <b>Send state</b>—State of the BGP group: <b>in sync</b>, <b>not in sync</b>, or <b>not advertising</b>.</li> <li>• <b>Active prefixes</b>—Number of prefixes received from the peer that are active in the routing table.</li> <li>• <b>Received prefixes</b>—Total number of prefixes from the peer, both active and inactive, that are in the routing table.</li> <li>• <b>Accepted prefixes</b>—Total number of prefixes from the peer that have been accepted by a routing policy.</li> <li>• <b>Suppressed due to damping</b>—Number of routes currently inactive because of damping or other reasons. These routes do not appear in the forwarding table and are not exported by routing protocols.</li> </ul>
<b>Last traffic (seconds)</b>	Last time any traffic was received from the peer or sent to the peer, and the last time the local routing device checked.
<b>Input messages</b>	Messages that BGP has received from the receive socket buffer, showing the total number of messages, number of update messages, number of times a policy is changed and refreshed, and the buffer size in octets. The buffer size is 16 KB.
<b>Output messages</b>	Messages that BGP has written to the transmit socket buffer, showing the total number of messages, number of update messages, number of times a policy is changed and refreshed, and the buffer size in octets. The buffer size is 16 KB.
<b>Input dropped path attributes</b>	<p>Information about dropped path attributes:</p> <ul style="list-style-type: none"> <li>• <b>Code</b>—Path attribute code.</li> <li>• <b>Count</b>—Path attribute count.</li> </ul>
<b>Input ignored path attributes</b>	<p>Information about ignored path attributes:</p> <ul style="list-style-type: none"> <li>• <b>Code</b>—Path attribute code.</li> <li>• <b>Count</b>—Path attribute count.</li> </ul>
<b>Output queue</b>	Number of BGP packets that are queued to be transmitted to a particular neighbor for a particular routing table. Output queue 0 is for unicast NLRIs, and queue 1 is for multicast NLRIs.
<b>Trace options</b>	Configured tracing of BGP protocol packets and operations.
<b>Trace file</b>	Name of the file to receive the output of the tracing operation.
<b>Filter Updates recv</b>	<p>(<b>orf</b> option only) Number of outbound-route filters received for each configured address family.</p> <p><b>NOTE:</b> The counter is cumulative. For example, the counter is increased after the remote peer either resends or clears the outbound route filtering prefix list.</p>



Table 13: show bgp neighbor Output Fields (*continued*)

Field Name	Field Description
<b>Immediate</b>	( <b>orf</b> option only) Number of route updates received with the immediate flag set. The immediate flag indicates that the BGP peer should readvertise the updated routes.  <b>NOTE:</b> The counter is cumulative. For example, the counter is increased after the remote peer either resends or clears the outbound route filtering prefix list.
<b>Filter</b>	( <b>orf</b> option only) Type of prefix filter received: <b>prefix-based</b> or <b>extended-community</b> .
<b>Received filter entries</b>	( <b>orf</b> option only) List of received filters displayed.
<b>seq</b>	( <b>orf</b> option only) Numerical order assigned to this prefix entry among all the received outbound route filter prefix entries.
<b>prefix</b>	( <b>orf</b> option only) Address for the prefix entry that matches the filter.
<b>minlength</b>	( <b>orf</b> option only) Minimum prefix length, in bits, required to match this prefix.
<b>maxlength</b>	( <b>orf</b> option only) Maximum prefix length, in bits, required to match this prefix.
<b>match</b>	( <b>orf</b> option only) For this prefix match, whether to <b>permit</b> or <b>deny</b> route updates.

## Sample Output

```

show bgp neighbor user@host > show bgp neighbor
Peer: 1.1.1.4+179 AS 2          Local: 1.1.1.2+62084 AS 2
  Type: Internal    State: Established    Flags: <ImportEval Sync>
  Last State: OpenConfirm    Last Event: RecvKeepAlive
  Last Error: None
  Options: <Preference LocalAddress AddressFamily Rib-group Refresh>
  Address families configured: inet-vpn-unicast
  Local Address: 1.1.1.2 Holdtime: 90 Preference: 170
  Number of flaps: 0
  Peer ID: 1.1.1.4          Local ID: 1.1.1.2          Active Holdtime: 90
  Keepalive Interval: 30          Peer index: 0
  BFD: disabled, down
  NLRI for restart configured on peer: inet-vpn-unicast
  NLRI advertised by peer: inet-vpn-unicast
  NLRI for this session: inet-vpn-unicast
  Peer supports Refresh capability (2)
  Stale routes from peer are kept for: 300
  Peer does not support Restarter functionality
  Peer does not support Receiver functionality
  NLRI that restart is negotiated for: inet-vpn-unicast
  NLRI of received end-of-rib markers: inet-vpn-unicast
  NLRI of all end-of-rib markers sent: inet-vpn-unicast
  Peer supports 4 byte AS extension (peer-as 2)
  Peer does not support Addpath
  Table bgp.13vpn.0
    RIB State: BGP restart is complete
    RIB State: VPN restart is complete
    Send state: not advertising
    Active prefixes:          2

```



```

Received prefixes:          2
Accepted prefixes:          2
Suppressed due to damping:  0
Table red.inet.0 Bit: 20001
RIB State: BGP restart is complete
RIB State: VPN restart is complete
Send state: in sync
Active prefixes:            2
Received prefixes:          2
Accepted prefixes:          2
Suppressed due to damping:  0
Advertised prefixes:        2
Last traffic (seconds): Received 16   Sent 11   Checked 10
Input messages:  Total 193   Updates 3     Refreshes 0     Octets 3816
Output messages: Total 196   Updates 2     Refreshes 0     Octets 3932
Output Queue[0]: 0
Output Queue[1]: 0

```

```

show bgp neighbor (CLNS) user@host> show bgp neighbor
Peer: 10.245.245.1+179 AS 200 Local: 10.245.245.3+3770 AS 100
Type: External State: Established Flags: <ImportEval Sync>
Last State: OpenConfirm Last Event: RecvKeepAlive
Last Error: None
Options: <Multihop Preference LocalAddress HoldTime AddressFamily PeerAS
Rib-group Refresh>
Address families configured: iso-vpn-unicast
Local Address: 10.245.245.3 Holdtime: 90 Preference: 170
Number of flaps: 0
Peer ID: 10.245.245.1 Local ID: 10.245.245.3 Active Holdtime: 90
Keepalive Interval: 30 Peer index: 0
NLRI advertised by peer: iso-vpn-unicast
NLRI for this session: iso-vpn-unicast
Peer supports Refresh capability (2)
Table bgp.isovpn.0 Bit: 10000
RIB State: BGP restart is complete
RIB State: VPN restart is complete
Send state: in sync
Active prefixes:            3
Received prefixes:          3
Suppressed due to damping:  0
Advertised prefixes:        3
Table aaaa.iso.0
RIB State: BGP restart is complete
RIB State: VPN restart is complete
Send state: not advertising
Active prefixes:            3
Received prefixes:          3
Suppressed due to damping:  0
Last traffic (seconds): Received 6   Sent 5   Checked 5
Input messages:  Total 1736 Updates 4     Refreshes 0     Octets 33385
Output messages: Total 1738 Updates 3     Refreshes 0     Octets 33305
Output Queue[0]: 0
Output Queue[1]: 0

```

```

show bgp neighbor (Layer 2 VPN) user@host> show bgp neighbor
Peer: 10.69.103.2 AS 65100 Local: 10.69.103.1 AS 65103
Type: External State: Active Flags: <ImportEval>
Last State: Idle Last Event: Start
Last Error: None
Export: [ BGP-INET-import ]

```



```

Options: <Preference LocalAddress HoldTime GracefulRestart AddressFamily PeerAS
Refresh>
Address families configured: inet-unicast
Local Address: 10.69.103.1 Holdtime: 90 Preference: 170
Number of flaps: 0
Peer: 10.69.104.2      AS 65100 Local: 10.69.104.1      AS 65104
Type: External      State: Active      Flags: <ImportEval>
Last State: Idle      Last Event: Start
Last Error: None
Export: [ BGP-L-import ]
Options: <Preference LocalAddress HoldTime GracefulRestart AddressFamily PeerAS
Refresh>
Address families configured: inet-labeled-unicast
Local Address: 10.69.104.1 Holdtime: 90 Preference: 170
Number of flaps: 0
Peer: 10.255.14.182+179 AS 69      Local: 10.255.14.176+2131 AS 69
Type: Internal      State: Established      Flags: <ImportEval>
Last State: OpenConfirm      Last Event: RecvKeepAlive
Last Error: None
Options: <Preference LocalAddress HoldTime GracefulRestart AddressFamily
Rib-group Refresh>
Address families configured: inet-vpn-unicast l2vpn
Local Address: 10.255.14.176 Holdtime: 90 Preference: 170
Number of flaps: 0
Peer ID: 10.255.14.182      Local ID: 10.255.14.176      Active Holdtime: 90
Keepalive Interval: 30
NLRI for restart configured on peer: inet-vpn-unicast l2vpn
NLRI advertised by peer: inet-vpn-unicast l2vpn
NLRI for this session: inet-vpn-unicast l2vpn
Peer supports Refresh capability (2)
Restart time configured on the peer: 120
Stale routes from peer are kept for: 300
Restart time requested by this peer: 120
NLRI that peer supports restart for: inet-vpn-unicast l2vpn
NLRI peer can save forwarding state: inet-vpn-unicast l2vpn
NLRI that peer saved forwarding for: inet-vpn-unicast l2vpn
NLRI that restart is negotiated for: inet-vpn-unicast l2vpn
NLRI of received end-of-rib markers: inet-vpn-unicast l2vpn
Table bgp.l3vpn.0 Bit: 10000
  RIB State: BGP restart in progress
  RIB State: VPN restart in progress
  Send state: in sync
  Active prefixes:          10
  Received prefixes:        10
  Suppressed due to damping: 0
Table bgp.l2vpn.0 Bit: 20000
  RIB State: BGP restart in progress
  RIB State: VPN restart in progress
  Send state: in sync
  Active prefixes:          1
  Received prefixes:        1
  Suppressed due to damping: 0
Table BGP-INET.inet.0 Bit: 30000
  RIB State: BGP restart in progress
  RIB State: VPN restart in progress
  Send state: in sync
  Active prefixes:          2
  Received prefixes:        2
  Suppressed due to damping: 0
Table BGP-L.inet.0 Bit: 40000
  RIB State: BGP restart in progress

```



```

RIB State: VPN restart in progress
Send state: in sync
Active prefixes:          2
Received prefixes:        2
Suppressed due to damping: 0
Table LDP.inet.0 Bit: 50000
RIB State: BGP restart is complete
RIB State: VPN restart in progress
Send state: in sync
Active prefixes:          1
Received prefixes:        1
Suppressed due to damping: 0
Table OSPF.inet.0 Bit: 60000
RIB State: BGP restart is complete
RIB State: VPN restart in progress
Send state: in sync
Active prefixes:          2
Received prefixes:        2
Suppressed due to damping: 0
Table RIP.inet.0 Bit: 70000
RIB State: BGP restart is complete
RIB State: VPN restart in progress
Send state: in sync
Active prefixes:          2
Received prefixes:        2
Suppressed due to damping: 0
Table STATIC.inet.0 Bit: 80000
RIB State: BGP restart is complete
RIB State: VPN restart in progress
Send state: in sync
Active prefixes:          1
Received prefixes:        1
Suppressed due to damping: 0
Table L2VPN.l2vpn.0 Bit: 90000
RIB State: BGP restart is complete
RIB State: VPN restart in progress
Send state: in sync
Active prefixes:          1
Received prefixes:        1
Suppressed due to damping: 0
Last traffic (seconds): Received 0    Sent 0    Checked 0
Input messages: Total 14    Updates 13    Refreshes 0    Octets 1053
Output messages: Total 3    Updates 0    Refreshes 0    Octets 105
Output Queue[0]: 0
Output Queue[1]: 0
Output Queue[2]: 0
Output Queue[3]: 0
Output Queue[4]: 0
Output Queue[5]: 0
Output Queue[6]: 0
Output Queue[7]: 0
Output Queue[8]: 0

```

**show bgp neighbor**  
(Layer 3 VPN)

```

user@host> show bgp neighbor
Peer: 4.4.4.4+179    AS 10045 Local: 5.5.5.5+1214    AS 10045
Type: Internal    State: Established    Flags: <ImportEval>
Last State: OpenConfirm    Last Event: RecvKeepAlive
Last Error: None
Export: [ match-all ] Import: [ match-all ]
Options: <Preference LocalAddress HoldTime GracefulRestart AddressFamily
Rib-group Refresh>

```



```

Address families configured: inet-vpn-unicast
Local Address: 5.5.5.5 Holdtime: 90 Preference: 170
Flags for NLRI inet-labeled-unicast: TrafficStatistics
Traffic Statistics: Options: all File: /var/log/bstat.log
                                size 131072 files 10

Traffic Statistics Interval: 60
Number of flaps: 0
Peer ID: 192.168.1.110    Local ID: 192.168.1.111    Active Holdtime: 90
Keepalive Interval: 30
NLRI for restart configured on peer: inet-vpn-unicast
NLRI advertised by peer: inet-vpn-unicast
NLRI for this session: inet-vpn-unicast
Peer supports Refresh capability (2)
Restart time configured on the peer: 120
Stale routes from peer are kept for: 300
Restart time requested by this peer: 120
NLRI that peer supports restart for: inet-vpn-unicast
NLRI peer can save forwarding state: inet-vpn-unicast
NLRI that peer saved forwarding for: inet-vpn-unicast
NLRI that restart is negotiated for: inet-vpn-unicast
NLRI of received end-of-rib markers: inet-vpn-unicast
NLRI of all end-of-rib markers sent: inet-vpn-unicast
Table bgp.13vpn.0 Bit: 10000
  RIB State: BGP restart is complete
  RIB State: VPN restart is complete
  Send state: in sync
  Active prefixes:          2
  Received prefixes:        2
  Suppressed due to damping: 0
Table vpn-green.inet.0 Bit: 20001
  RIB State: BGP restart is complete
  RIB State: VPN restart is complete
  Send state: in sync
  Active prefixes:          2
  Received prefixes:        2
  Suppressed due to damping: 0
Last traffic (seconds): Received 15    Sent 20    Checked 20
Input messages: Total 40    Updates 2    Refreshes 0    Octets 856
Output messages: Total 44    Updates 2    Refreshes 0    Octets 1066
Output Queue[0]: 0
Output Queue[1]: 0
Trace options: detail packets
Trace file: /var/log/bgpgr.log size 131072 files 10

```

```

show bgp neighbor neighbor-address user@host> show bgp neighbor 192.168.1.111
Peer: 10.255.245.12+179 AS 35 Local: 10.255.245.13+2884 AS 35
Type: Internal State: Established (route reflector client)Flags: <Sync>
Last State: OpenConfirm Last Event: RecvKeepAlive
Last Error: None
Options: <Preference LocalAddress HoldTime Cluster AddressFamily Rib-group
Refresh>
Address families configured: inet-vpn-unicast inet-labeled-unicast
Local Address: 10.255.245.13 Holdtime: 90 Preference: 170
Flags for NLRI inet-vpn-unicast: AggregateLabel
Flags for NLRI inet-labeled-unicast: AggregateLabel
Number of flaps: 0
Peer ID: 10.255.245.12    Local ID: 10.255.245.13    Active Holdtime: 90
Keepalive Interval: 30
BFD: disabled
NLRI advertised by peer: inet-vpn-unicast inet-labeled-unicast
NLRI for this session: inet-vpn-unicast inet-labeled-unicast

```



```

Peer supports Refresh capability (2)
Restart time configured on the peer: 300
Stale routes from peer are kept for: 60
Restart time requested by this peer: 300
NLRI that peer supports restart for: inet-unicast inet6-unicast
NLRI that restart is negotiated for: inet-unicast inet6-unicast
NLRI of received end-of-rib markers: inet-unicast inet6-unicast
NLRI of all end-of-rib markers sent: inet-unicast inet6-unicast
Table inet.0 Bit: 10000
  RIB State: restart is complete
  Send state: in sync
  Active prefixes: 4
  Received prefixes: 6
  Suppressed due to damping: 0
Table inet6.0 Bit: 20000
  RIB State: restart is complete
  Send state: in sync
  Active prefixes: 0
  Received prefixes: 2
  Suppressed due to damping: 0
Last traffic (seconds): Received 3    Sent 3    Checked 3
Input messages: Total 9    Updates 6    Refreshes 0    Octets 403
Output messages: Total 7    Updates 3    Refreshes 0    Octets 365
Output Queue[0]: 0
Output Queue[1]: 0
Trace options: detail packets
Trace file: /var/log/bgpgnr size 131072 files 10

```

```

show bgp neighbor user@host> show bgp neighbor 192.168.4.222
neighbor-address Peer: 192.168.4.222+4902 AS 65501 Local: 192.168.4.221+179 AS 65500
  Type: External    State: Established    Flags: <Sync>
  Last State: OpenConfirm    Last Event: RecvKeepAlive
  Last Error: Cease
  Export: [ export-policy ] Import: [ import-policy ]
  Options: <Preference HoldTime AddressFamily PeerAS PrefixLimit Refresh>
  Address families configured: inet-unicast inet-multicast
  Holdtime: 60000 Preference: 170
  Number of flaps: 4
  Last flap event: RecvUpdate
  Error: 'Cease' Sent: 5 Recv: 0
  Peer ID: 10.255.245.6    Local ID: 10.255.245.5    Active Holdtime: 60000
  Keepalive Interval: 20000    Peer index: 0
  BFD: disabled, down
  Local Interface: fxp0.0
  NLRI advertised by peer: inet-unicast inet-multicast
  NLRI for this session: inet-unicast inet-multicast
  Peer supports Refresh capability (2)
  Table inet.0 Bit: 10000
    RIB State: BGP restart is complete
    Send state: in sync
    Active prefixes:      8
    Received prefixes:    10
    Accepted prefixes:    10
    Suppressed due to damping: 0
    Advertised prefixes:  3
  Table inet.2 Bit: 20000
    RIB State: BGP restart is complete
    Send state: in sync
    Active prefixes:      0
    Received prefixes:    0
    Accepted prefixes:    0

```



```

    Suppressed due to damping:    0
    Advertised prefixes:          0
    Last traffic (seconds): Received 357 Sent 357 Checked 357
    Input messages: Total 4 Updates 2 Refreshes 0 Octets 211
    Output messages: Total 4 Updates 1 Refreshes 0 Octets 147
    Output Queue[0]: 0
    Output Queue[1]: 0
    Trace options: all
    Trace file: /var/log/bgp size 10485760 files 10

```

```

show bgp neighbor orf 192.168.165.56 detail
neighbor-address detail
user@host > show bgp neighbor orf 192.168.165.56 detail
Peer: 192.168.165.56+179 Type: External
Group: ext1

inet-unicast
  Filter updates rcv:          1 Immediate:          1
  Filter: prefix-based receive
  Received filter entries:
    seq 1: prefix 2.2.2.2/32: minlen 32: maxlen 32: match deny:

inet6-unicast
  Filter updates rcv:          0 Immediate:          1
  Filter: prefix-based receive
  Received filter entries:
    *: *

```



## show bgp replication

<b>Syntax</b>	<b>show bgp replication</b>
<b>Release Information</b>	Command introduced in JUNOS Release 8.5. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Displays the status of BGP state replication between the master and backup Routing Engines on devices that have nonstop active routing configured on them.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show bgp replication (for Master) on page 65</a> <a href="#">show bgp replication (for Backup) on page 65</a>
<b>Output Fields</b>	<a href="#">Table 14 on page 64</a> lists the output fields for the <b>show bgp replication</b> command. Output fields are listed in the approximate order in which they appear.

**Table 14: show bgp replication Output Fields**

Field Name	Field Description
<b>session state</b>	State of the current internal BGP state replication session, Up or Down, and the duration for which the session has been in the indicated state.
<b>flaps</b>	Total number of flaps that occurred.
<b>protocol state</b>	Current state of the protocol operation, Active, Connect, Idle, and the duration for which the protocol has been in the indicated state.
<b>synchronization state</b>	Synchronization state at the time of executing the command. The states can be: <ul style="list-style-type: none"> <li>• <b>Idle</b></li> <li>• <b>Neighbor</b>—Indicates that the neighbor state synchronization is in progress.</li> <li>• <b>AckWait</b>—Indicates that the request processing is over.</li> <li>• <b>ORF</b>—Indicates that the outbound routing filter synchronization is in progress.</li> <li>• <b>RIB</b>—Indicates that the routing table synchronization is in progress.</li> <li>• <b>Complete</b></li> </ul>
<b>number of peers waiting</b>	Total number of peers waiting for various messages: <ul style="list-style-type: none"> <li>• <b>AckWait</b>—Number of peers waiting for a connection establishment or completed acknowledgment messages.</li> <li>• <b>SoWait</b>—Number of peers waiting for TCP socket-related operations.</li> <li>• <b>Scheduled</b>—Number of peers being synchronized.</li> </ul>



Table 14: show bgp replication Output Fields (*continued*)

Field Name	Field Description
<b>messages sent</b>	<p>Number of various types of messages that have been sent since internal replication session became active:</p> <ul style="list-style-type: none"> <li>• <b>Open</b>—Number of Open messages sent.</li> <li>• <b>Establish</b>—Number of connection establishment acknowledgment messages sent.</li> <li>• <b>Update</b>—Number of update messages sent.</li> <li>• <b>Error</b>—Number of error messages sent.</li> <li>• <b>Complete</b>—Number of connection complete acknowledgment messages sent.</li> </ul>
<b>messages received</b>	<p>Total number of messages received:</p> <ul style="list-style-type: none"> <li>• <b>Open</b>—Number of Open messages received.</li> <li>• <b>Request</b>—Number of request messages received: <ul style="list-style-type: none"> <li>• <b>Wildcard</b>—Number of requests received that used wildcards in the target address.</li> <li>• <b>Targeted</b>—Number of requests received that used a specific address.</li> </ul> </li> <li>• <b>EstablishAck</b>—Number of connection establishment acknowledgement messages received.</li> <li>• <b>CompleteAck</b>—Number of connection completed acknowledgement messages received.</li> </ul>

## Sample Output

```

show bgp replication (for Master) user@host> show bgp replication
Synchronization master:
  Session state: Up, Since: 44:07
  Flaps: 0
  Protocol state: Idle, Since: 14
  Synchronization state: Complete
  Number of peers waiting: AckWait: 0, SoWait: 0, Scheduled: 0
  Messages sent: Open 1, Establish 924, Update 381, Error 60, Complete 114
  Messages received: Open 1, Request 1 wildcard 113 targeted, EstablishAck 924,
  CompleteAck 114

show bgp replication (for Backup) user@host> show bgp replication
Synchronization backup:
  State: Established 13 ago
  , Unsync timer: 2

  Unsync entry queue:
    Instance: 0 Neighbor: 30.30.30.1 elapsed: 7
    Instance: 0 Neighbor: 40.40.40.3 elapsed: 7
    Instance: 0 Neighbor: 40.40.40.4 elapsed: 7
    Instance: 0 Neighbor: 40.40.40.5 elapsed: 7
    Instance: 0 Neighbor: 40.40.40.6 elapsed: 7
    Instance: 0 Neighbor: 40.40.40.1 elapsed: 7
    Instance: 0 Neighbor: 40.40.40.2 elapsed: 7

```



## show bgp summary

<b>Syntax</b>	<pre>show bgp summary &lt;exact-instance <i>instance-name</i>&gt; &lt;instance <i>instance-name</i>&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt;</pre>
<b>Syntax (EX Series Switch and QFX Series)</b>	<pre>show bgp summary &lt;exact-instance <i>instance-name</i>&gt; &lt;instance <i>instance-name</i>&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p> <p><b>exact-instance</b> option introduced in Junos OS Release 11.4.</p>
<b>Description</b>	Display BGP summary information.
<b>Options</b>	<p>none—Display BGP summary information for all routing instances.</p> <p><b>exact-instance</b> <i>instance-name</i>—(Optional) Display information for the specified instance only.</p> <p><b>instance</b> <i>instance-name</i>—(Optional) Display information for all routing instances whose name begins with this string (for example, <b>cust1</b>, <b>cust11</b>, and <b>cust111</b> are all displayed when you run the <b>show bgp summary instance cust1</b> command). The instance name can be master for the main instance, or any valid configured instance name or its prefix.</p> <p><b>logical-system</b> (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<p><a href="#">show bgp summary (When a Peer Is Not Established) on page 69</a></p> <p><a href="#">show bgp summary (When a Peer Is Established) on page 69</a></p> <p><a href="#">show bgp summary (CLNS) on page 69</a></p> <p><a href="#">show bgp summary (Layer 2 VPN) on page 69</a></p> <p><a href="#">show bgp summary (Layer 3 VPN) on page 70</a></p>
<b>Output Fields</b>	<p><a href="#">Table 15 on page 66</a> describes the output fields for the <b>show bgp summary</b> command. Output fields are listed in the approximate order in which they appear.</p>

**Table 15: show bgp summary Output Fields**

Field Name	Field Description
Groups	Number of BGP groups.
Peers	Number of BGP peers.



Table 15: show bgp summary Output Fields (*continued*)

Field Name	Field Description
<b>Down peers</b>	Number of down BGP peers.
<b>Table</b>	Name of routing table.
<b>Tot Paths</b>	Total number of paths.
<b>Act Paths</b>	Number of active routes.
<b>Suppressed</b>	Number of routes currently inactive because of damping or other reasons. These routes do not appear in the forwarding table and are not exported by routing protocols.
<b>History</b>	Number of withdrawn routes stored locally to keep track of damping history.
<b>Damp State</b>	Number of routes with a figure of merit greater than zero, but still active because the value has not reached the threshold at which suppression occurs.
<b>Pending</b>	Routes in process by BGP import policy.
<b>Peer</b>	Address of each BGP peer. Each peer has one line of output.
<b>AS</b>	Peer's AS number.
<b>InPkt</b>	Number of packets received from the peer.
<b>OutPkt</b>	Number of packets sent to the peer.
<b>OutQ</b>	Number of BGP packets that are queued to be transmitted to a particular neighbor. It normally is 0 because the queue usually is emptied quickly.
<b>Flaps</b>	Number of times the BGP session has gone down and then come back up.
<b>Last Up/Down</b>	Last time since the neighbor transitioned to or from the established state.



Table 15: show bgp summary Output Fields (*continued*)

Field Name	Field Description
<b>State #Active /Received/Accepted /Damped</b>	<p>Multipurpose field that displays information about BGP peer sessions. The field's contents depend upon whether a session is established and whether it was established on the main routing device or in a routing instance.</p> <ul style="list-style-type: none"> <li>If a peer is not established, the field shows the state of the peer session: <b>Active</b>, <b>Connect</b>, or <b>Idle</b>.</li> <li>If a BGP session is established on the main routing device, the field shows the number of active, received, accepted, and damped routes that are received from a neighbor and appear in the <b>inet.0</b> (main) and <b>inet.2</b> (multicast) routing tables. For example, <b>8/10/10/2</b> and <b>2/4/4/0</b> indicate the following: <ul style="list-style-type: none"> <li>8 active routes, 10 received routes, 10 accepted routes, and 2 damped routes from a BGP peer appear in the <b>inet.0</b> routing table.</li> <li>2 active routes, 4 received routes, 4 accepted routes, and no damped routes from a BGP peer appear in the <b>inet.2</b> routing table.</li> </ul> </li> <li>If a BGP session is established in a routing instance, the field indicates the established (<b>Establ</b>) state, identifies the specific routing table that receives BGP updates, and shows the number of active, received, and damped routes that are received from a neighbor. For example, <b>Establ VPN-AB.inet.0: 2/4/0</b> indicates the following: <ul style="list-style-type: none"> <li>The BGP session is established.</li> <li>Routes are received in the <b>VPN-AB.inet.0</b> routing table.</li> <li>The local routing device has two active routes, four received routes, and no damped routes from a BGP peer.</li> </ul> </li> </ul> <p>When a BGP session is established, the peers are exchanging update messages.</p>



## Sample Output

```

show bgp summary (When a Peer Is Not Established) user@host> show bgp summary
Groups: 2 Peers: 4 Down peers: 1
Table inet.0 Tot Paths 6 Act Paths 4 Suppressed 0 History 0 Damp 0 State 0 Pending 0
Peer AS InPkt OutPkt OutQ Flaps Last Up/Dwn
State|#Active/Received/Damped...
10.0.0.3 65002 86 90 0 2 42:54 0/0/0
0/0/0
10.0.0.4 65002 90 91 0 1 42:54 0/2/0
0/0/0
10.0.0.6 65002 87 90 0 3 3 Active
10.1.12.1 65001 89 89 0 1 42:54 4/4/0
0/0/0

show bgp summary (When a Peer Is Established) user@host> show bgp summary
Groups: 1 Peers: 3 Down peers: 0
Table inet.0 Tot Paths 6 Act Paths 4 Suppressed 0 History 0 Damp 0 State 0 Pending 0
Peer AS InPkt OutPkt OutQ Flaps Last Up/Dwn
State|#Active/Received/Damped...
10.0.0.2 65002 88675 88652 0 2 42:38 2/4/0
0/0/0
10.0.0.3 65002 54528 54532 0 1 2w4d22h 0/0/0
0/0/0
10.0.0.4 65002 51597 51584 0 0 2w3d22h 2/2/0
0/0/0

show bgp summary (CLNS) user@host> show bgp summary
Groups: 1 Peers: 1 Down peers: 0
Peer AS InPkt OutPkt OutQ Flaps Last Up/Dwn
State|#Active/Received/Damped...
10.245.245.1 200 1735 1737 0 0 14:26:12 Establ
bgp.isovpn.0: 3/3/0
aaaa.iso.0: 3/3/0

show bgp summary (Layer 2 VPN) user@host> show bgp summary
Groups: 1 Peers: 5 Down peers: 0
Table bgp.l2vpn.0 Tot Paths 1 Act Paths 1 Suppressed 0 History 0 Damp 0 State 0 Pending 0
inet.0 0 0 0 0 0 0
Peer AS InPkt OutPkt OutQ Flaps Last Up/Dwn State|#Active/Received/Damped...
10.255.245.35 65299 72 74 0 1 19:00 Establ
bgp.l2vpn.0: 1/1/0
frame-vpn.l2vpn.0: 1/1/0
10.255.245.36 65299 2164 2423 0 4 19:50 Establ
bgp.l2vpn.0: 0/0/0
frame-vpn.l2vpn.0: 0/0/0
10.255.245.37 65299 36 37 0 4 17:07 Establ
inet.0: 0/0/0
10.255.245.39 65299 138 168 0 6 53:48 Establ

```



```

    bgp.12vpn.0: 0/0/0
    frame-vpn.12vpn.0: 0/0/0
10.255.245.69 65299      134      140      0      6      53:42 Estab1
    inet.0: 0/0/0

```

**show bgp summary**  
(Layer 3 VPN)

```

user@host> show bgp summary
Groups: 2 Peers: 2 Down peers: 0
Table      Tot Paths  Act Paths Suppressed  History Damp State Pending
bgp.13vpn.0      2      2      0      0      0      0
Peer          AS      InPkt      OutPkt      OutQ      Flaps Last Up/Dwn
State|#Active/Received/Damped...
10.39.1.5      2      21      22      0      0      6:26 Estab1
  VPN-AB.inet.0: 1/1/0
10.255.71.15   1      19      21      0      0      6:17 Estab1
  bgp.13vpn.0: 2/2/0
  VPN-A.inet.0: 1/1/0
  VPN-AB.inet.0: 2/2/0
  VPN-B.inet.0: 1/1/0

```



## show policy damping

<b>Syntax</b>	show policy damping <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and QFX Series)</b>	show policy damping
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display information about BGP route flap damping parameters.
<b>Options</b>	none—Display information about BGP route flap damping parameters.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Additional Information</b>	In the output from this command, figure-of-merit values correlate with the probability of future instability of a routing device. Routes with higher figure-of-merit values are suppressed for longer periods of time. The figure-of-merit value decays exponentially over time. A figure-of-merit value of zero is assigned to each new route. The value is increased each time the route is withdrawn or readvertised, or when one of its path attributes changes.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• “Configuring BGP Flap Damping Parameters” in the <a href="#">Junos OS Routing Policy Configuration Guide</a></li> <li>• <a href="#">clear bgp damping on page 34</a></li> <li>• <a href="#">show route damping on page 445</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show policy damping on page 72</a>
<b>Output Fields</b>	<a href="#">Table 16 on page 71</a> describes the output fields for the <b>show policy damping</b> command. Output fields are listed in the approximate order in which they appear.

**Table 16: show policy damping Output Fields**

Field Name	Field Description
<b>Halflife</b>	Decay half-life, in minutes. The value represents the period during which the accumulated figure-of-merit value is reduced by half if the route remains stable. If a route has flapped, but then becomes stable, the figure-of-merit value for the route decays exponentially. For example, for a route with a figure-of-merit value of 1500, if no incidents occur, its figure-of-merit value is reduced to 750 after 15 minutes and to 375 after another 15 minutes.



Table 16: show policy damping Output Fields (*continued*)

Field Name	Field Description
<b>Reuse merit</b>	Figure-of-merit value below which a suppressed route can be used again. A suppressed route becomes reusable when its figure-of-merit value decays to a value below a reuse threshold, and the route once again is considered usable and can be installed in the forwarding table and exported from the routing table.
<b>Suppress/cutoff merit</b>	Figure-of-merit value above which a route is suppressed for use or inclusion in advertisements. When a route's figure-of-merit value reaches a particular level, called the cutoff or suppression threshold, the route is suppressed. When a route is suppressed, the routing table no longer installs the route into the forwarding table and no longer exports this route to any of the routing protocols.
<b>Maximum suppress time</b>	Maximum hold-down time, in minutes. The value represents the maximum time that a route can be suppressed no matter how unstable it has been before this period of stability.
<b>Computed values</b>	<ul style="list-style-type: none"> <li>• <b>Merit ceiling</b>—Maximum merit that a flapping route can collect.</li> <li>• <b>Maximum decay</b>—Maximum decay half-life, in minutes.</li> </ul>

## Sample Output

```

show policy damping user@host> show policy damping
Default damping information:
  Halflife: 15 minutes
  Reuse merit: 750 Suppress/cutoff merit: 3000
  Maximum suppress time: 60 minutes
  Computed values:
    Merit ceiling: 12110
    Maximum decay: 6193
Damping information for "standard-damping":
  Halflife: 10 minutes
  Reuse merit: 4000 Suppress/cutoff merit: 8000
  Maximum suppress time: 30 minutes
  Computed values:
    Merit ceiling: 32120
    Maximum decay: 12453

```



## CHAPTER 4

# ES-IS Operational Mode Commands

Table 17 on page 73 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot the End System-to-Intermediate System (ES-IS) protocol. Commands are listed in alphabetical order.

**Table 17: ES-IS Operational Mode Commands**

Task	Command
Clear ES-IS adjacencies.	<code>clear esis adjacency</code>
Clear ES-IS statistics for packets sent or received.	<code>clear esis statistics</code>
Display ES-IS adjacencies.	<code>show esis adjacency</code>
Display ES-IS interfaces.	<code>show esis interface</code>
Display ES-IS statistics for packets sent or received.	<code>show esis statistics</code>



**NOTE:** ES-IS is supported only on J Series routers. For information about how to configure ES-IS, see the *J Series Services Router Basic LAN and WAN Access Configuration Guide* or the *Junos OS Routing Protocols Configuration Guide*.



## clear esis adjacency

---

<b>Syntax</b>	clear esis adjacency <instance <i>instance-name</i> > <interface <i>interface-name</i> > <neighbor>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	(J Series routers only) Clear End System-to-Intermediate System (ES-IS) adjacencies.
<b>Options</b>	none—Clear all ES-IS adjacencies.  instance <i>instance-name</i> —(Optional) Clear adjacencies for the specified routing instance only.  interface <i>interface-name</i> —(Optional) Clear adjacencies for the specified interface only.  neighbor—(Optional) Clear adjacencies for the specified neighbor only.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show esis adjacency on page 76</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear esis adjacency on page 74</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

clear esis adjacency    user@host> clear esis adjacency



## clear esis statistics

---

<b>Syntax</b>	clear esis statistics <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	(J Series routers only) Clear End System-to-Intermediate System (ES-IS) packet statistics.
<b>Options</b>	none—Clear ES-IS packet statistics for all routing instances.  instance <i>instance-name</i> —(Optional) Clear ES-IS packet statistics for the specified routing instance only.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show esis statistics on page 80</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear esis statistics on page 75</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

**clear esis statistics**    user@host> clear esis statistics



## show esis adjacency

<b>Syntax</b>	show esis adjacency <brief   detail   extensive> <esis-neighbor-id> <instance <i>instance-name</i> > <interface <i>interface-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	(J Series routers only) Display End System-to-Intermediate System (ES-IS) adjacencies.
<b>Options</b>	<p>none—(Same as <b>brief</b>) Display all ES-IS adjacencies.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p>esis-neighbor-id—(Optional) Display adjacencies for the specified neighbor's network service access point (NSAP) only.</p> <p>instance <i>instance-name</i>—(Optional) Display adjacencies for the specified routing instance only.</p> <p>interface <i>interface-name</i>—(Optional) Display adjacencies for the specified interface only.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">clear esis adjacency on page 74</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show esis adjacency on page 77</a> <a href="#">show esis adjacency brief on page 77</a> <a href="#">show esis adjacency detail on page 77</a> <a href="#">show esis adjacency extensive on page 77</a>
<b>Output Fields</b>	Table 18 on page 76 describes the output fields for the <b>show esis adjacency</b> command. Output fields are listed in the approximate order in which they appear.

Table 18: show esis adjacency Output Fields

Field Name	Field Description	Level of Output
<b>Nbr Type</b>	Type of network service access point (NSAP) of this neighbor.	<b>brief</b> none
<b>NSAP/NET</b>	NSAP of this neighbor.	All levels
<b>Type</b>	Type of NSAP of this neighbor.	<b>detail</b> <b>extensive</b>
<b>Hold (secs)</b>	Holdtime interval advertised by this neighbor.	<b>brief</b> none
<b>Interface</b>	Interface through which the neighbor is reachable.	All levels



Table 18: show esis adjacency Output Fields (*continued*)

Field Name	Field Description	Level of Output
Advertised holdtime	Holdtime interval advertised by this neighbor.	detail extensive
Expires in	How long until the adjacency expires, in seconds.	detail extensive
SNPA	Subnetwork point of attachment (MAC address of the neighbor).	detail extensive
Transition log	List of recent transitions. <ul style="list-style-type: none"> <li>• <b>When</b>—Time of advertisement from this neighbor.</li> <li>• <b>State</b>—State of the adjacency: <b>Up</b>, <b>Down</b>, <b>New</b>, <b>One-way</b>, <b>Initializing</b>, or <b>Rejected</b>.</li> <li>• <b>Event</b>—Event causing the state.</li> <li>• <b>Down reason</b>—Reason the adjacency is down.</li> </ul>	extensive

## Sample Output

```

show esis adjacency user@host> show esis adjacency
                    Nbr   NSAP/NET                               Hold Interface
                    Type                                     (secs)
IS   47.0005.80ff.f800.0000.0108.0001.0102.5501.6008    135 fe-0/0/0.0

show esis adjacency brief The output for the show esis adjacency brief command is identical to that for the show
                           esis adjacency command. For sample output, see show esis adjacency on page 77.

show esis adjacency detail user@host> show esis adjacency detail
                           NSAP/NET: 47.0005.80ff.f800.0000.0108.0001.0102.5501.6008, Type: IS
                           Interface: fe-0/0/0.0, Advertised hold time: 180 secs, Expires in: 173 secs
                           SNPA: 0:5:85:c1:73:71

show esis adjacency extensive user@host> show esis adjacency extensive
                           NSAP/NET: 47.0005.80ff.f800.0000.0108.0001.0102.5501.6008, Type: IS
                           Interface: fe-0/0/0.0, Advertised hold time: 180 secs, Expires in: 167 secs
                           SNPA: 0:5:85:c1:73:71
                           Transition log:
                           When           State      Event           Down reason
                           Sun Nov 26 22:07:35 Up         Received ISH

```



## show esis interface

<b>Syntax</b>	show esis interface <brief   detail   extensive> <instance <i>instance-name</i> > <interface <i>interface-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	(J Series routers only) Display End System-to-Intermediate System (ES-IS) interface information.
<b>Options</b>	<p>none—(Same as <b>brief</b>) Display information for all configured ES-IS interfaces.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p>instance <i>instance-name</i>—(Optional) Display configured interfaces for the specified routing instance only.</p> <p>interface <i>interface-name</i>—(Optional) Display information about the specified interface only.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show esis interface on page 79</a> <a href="#">show esis interface brief on page 79</a> <a href="#">show esis interface detail on page 79</a> <a href="#">show esis interface extensive on page 79</a>
<b>Output Fields</b>	Table 19 on page 78 describes the output fields for the <b>show esis interface</b> command. Output fields are listed in the approximate order in which they appear.

Table 19: show esis interface Output Fields

Field Name	Field Description	Level of Output
Interface	Interface through which the adjacency is made.	All levels
Receives	Types of hello messages that are received.	All levels
Sends	Types of hello messages that are sent.	All levels
Hello interval	Interface's hello interval, in seconds.	All levels
Adjacencies or Num Adj	Number of adjacencies established on this interface.	All levels
Holdtime	Interface's hold time, in seconds.	detail extensive
State	Internal implementation information.	detail extensive



Table 19: show esis interface Output Fields (*continued*)

Field Name	Field Description	Level of Output
End system configuration timer	Time, in seconds, for the end system to configure itself for ES-IS.	detail extensive
Interface index	Index value.	detail extensive
NET used in hello	Network entity title used in hello messages.	detail extensive

## Sample Output

**show esis interface** user@host> **show esis interface**

Interface	Receives	Sends	Hello Interval	Num Adj
fe-0/0/0.0	ISH	ISH	60.00	1
lo0.0	ISH	-	60.00	0

**show esis interface brief** The output for the **show esis interface brief** command is identical to that for the **show esis interface** command. For sample output, see [show esis interface on page 79](#).

**show esis interface detail** user@host> **show esis interface detail**

```
Interface: fe-0/0/0.0
  Receives: ISH, Sends: ISH, Hello interval: 60.00
  Adjacencies: 1, Holdtime: 180, End system configuration timer: 180
  Interface index: 68, State: 0x2
  NET used in hello: 47.0005.80ff.f800.0000.0108.0001.0102.5501.6007

Interface: lo0.0
  Receives: ISH, Sends: - , Hello interval: 60.00
  Adjacencies: 0, Holdtime: 180, End system configuration timer: 180
  Interface index: 64, State: 0x2
  NET used in hello: 47.0005.80ff.f800.0000.0108.0001.0102.5501.6007
```

**show esis interface extensive** The output for the **show esis interface extensive** command is identical to that for the **show esis interface detail** command. For sample output, see [show esis interface detail on page 79](#).



## show esis statistics

<b>Syntax</b>	show esis statistics <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	(J Series routers only) Display End System-to-Intermediate System (ES-IS) packet statistics.
<b>Options</b>	none—Display ES-IS packet statistics for all routing instances.  instance <i>instance-name</i> —(Optional) Display ES-IS statistics for the specified routing instance only.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear esis statistics on page 75</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show esis statistics on page 80</a>
<b>Output Fields</b>	<a href="#">Table 20 on page 80</a> describes the output fields for the <b>show esis statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 20: show esis statistics Output Fields**

Field Name	Field Description
<b>PDU type</b>	Protocol data unit type.
<b>Received</b>	Number of PDUs received since IS-IS started or since the statistics were set to zero.
<b>Processed</b>	Number of PDUs received less the number dropped.
<b>Drops</b>	Number of PDUs dropped.
<b>Sent</b>	Number of PDUs transmitted since IS-IS started or since the statistics were set to zero.
<b>Total packets received/sent</b>	Total number of PDUs received and transmitted since IS-IS started or since the statistics were set to zero.

## Sample Output

```

show esis statistics user@host> show esis statistics
PDU type  Received  Processed  Drops    Sent
ESH              3         3        0        8
ISH             11        10        1        4
RD              0         0        0        0

```



Unknown	0	0	0	0
Totals	14	13	1	12
Total packets received: 14 sent: 0				







## CHAPTER 5

# IP Multicast Operational Mode Commands

Table 21 on page 83 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot IP multicast. In the table, the commands are listed in alphabetical order.

**Table 21: IP Multicast Operational Mode Commands**

Task	Command
Clear Automatic Multicast Tunneling (AMT) protocol statistics.	<code>clear amt statistics</code>
Clear Automatic Multicast Tunneling (AMT) protocol state.	<code>clear amt tunnel</code>
Clear Internet Group Management Protocol (IGMP) group members.	<code>clear igmp membership</code>
Clear IGMP snooping membership information.	<code>clear igmp snooping membership</code>
Clear IGMP snooping statistics.	<code>clear igmp snooping statistics</code>
Clear IGMP statistics.	<code>clear igmp statistics</code>
Clear Multicast Listener Discovery (MLD) group members.	<code>clear mld membership</code>
Clear MLD statistics.	<code>clear mld statistics</code>
Clear Multicast Source Discovery Protocol (MSDP) source active cache.	<code>clear msdp cache</code>
Clear MSDP statistics.	<code>clear msdp statistics</code>
Clear multicast bandwidth admissions.	<code>clear multicast bandwidth-admission</code>
Clear multicast scope.	<code>clear multicast scope</code>
Clear multicast sessions.	<code>clear multicast sessions</code>



Table 21: IP Multicast Operational Mode Commands (*continued*)

Task	Command
Clear multicast snooping statistics.	<code>clear multicast snooping statistics</code>
Clear multicast statistics.	<code>clear multicast statistics</code>
Clear Pragmatic General Multicast (PGM) negative acknowledgments (NAKs).	<code>clear pgm negative-acknowledgments</code>
Clear PGM source-path messages.	<code>clear pgm source-path-messages</code>
Clear PGM statistics.	<code>clear pgm statistics</code>
Clear the Protocol Independent Multicast (PIM) join and prune states.	<code>clear pim join</code>
Redistribute PIM joins among available links.	<code>clear pim join-distribution</code>
Clear PIM register message counters.	<code>clear pim register</code>
Clear PIM statistics.	<code>clear pim statistics</code>
Rebalance multicast tunnel (MT) interfaces.	<code>request pim multicast-tunnel rebalance</code>
Display Automatic Multicast Tunneling (AMT) protocol tunnel statistics.	<code>show amt statistics</code>
Display summary information about the Automatic Multicast Tunneling (AMT) protocol.	<code>show amt summary</code>
Display information about the Automatic Multicast Tunneling (AMT) dynamic tunnels.	<code>show amt tunnel</code>
Display the status of interfaces on which Distance Vector Multicast Routing Protocol (DVMRP) is configured.	<code>show dvmrp interfaces</code>
Display DVMRP neighbors.	<code>show dvmrp neighbors</code>
Display DVMRP prefixes.	<code>show dvmrp prefix</code>
Display DVMRP prunes.	<code>show dvmrp prunes</code>
Display members of IGMP groups.	<code>show igmp group</code>
Display members of IGMP groups by interface.	<code>show igmp interface</code>
Display IGMP snooping interface information.	<code>show igmp snooping interface</code>
Display IGMP snooping membership information.	<code>show igmp snooping membership</code>



Table 21: IP Multicast Operational Mode Commands (*continued*)

Task	Command
Display IGMP snooping statistics.	<code>show igmp snooping statistics</code>
Display IGMP statistics.	<code>show igmp statistics</code>
Display members of MLD groups.	<code>show mld group</code>
Display members of MLD groups by interface.	<code>show mld interface</code>
Display MLD statistics.	<code>show mld statistics</code>
Display MSDP peers.	<code>show msdp</code>
Display multicast sources learned from MSDP.	<code>show msdp source</code>
Display the MSDP source-active cache.	<code>show msdp source-active</code>
Display MSDP statistics.	<code>show msdp statistics</code>
Display backup PE router group information when ingress PE redundancy is configured.	<code>show multicast backup-pe-groups</code>
Display configuration information about IP multicast flow maps.	<code>show multicast flow-map</code>
Display multicast interface bandwidth information.	<code>show multicast interface</code>
Display multicast network configuration.	<code>show multicast mrinfo</code>
Display entries in the multicast next-hop table.	<code>show multicast next-hops</code>
Display configuration information about PIM-to-IGMP message translation, also known as PIM-to-IGMP proxy.	<code>show multicast pim-to-igmp-proxy</code>
Display configuration information about PIM-to-MLD message translation, also known as PIM-to-MLD proxy.	<code>show multicast pim-to-mld-proxy</code>
Display entries in the multicast forwarding cache.	<code>show multicast route</code>
Display multicast reverse-path-forwarding calculations.	<code>show multicast rpf</code>
Display administratively scoped addresses.	<code>show multicast scope</code>
Display multicast snooping next-hops	<code>show multicast snooping next-hops</code>
Display announced multicast sessions.	<code>show multicast sessions</code>
Display multicast snooping route.	<code>show multicast snooping route</code>



Table 21: IP Multicast Operational Mode Commands (*continued*)

Task	Command
Display multicast snooping statistics.	<code>show multicast snooping statistics</code>
Display multicast statistics.	<code>show multicast statistics</code>
Display most active multicast groups.	<code>show multicast usage</code>
Display sent or received NAKs.	<code>show pgm negative-acknowledgments</code>
Display PGM source-path messages.	<code>show pgm source-path-messages</code>
Display PGM statistics.	<code>show pgm statistics</code>
Display bootstrap routers.	<code>show pim bootstrap</code>
Display the status of interfaces on which PIM is configured.	<code>show pim interfaces</code>
Display PIM (*,RP) join and prune states.	<code>show pim join</code>
Display PIM data-driven multicast distribution trees (MDTs).	<code>show pim mdt</code>
Display the information cached from multicast distribution tree (MDT) join TLV packets received by all PE routers in a PIM-enabled VPN routing and forwarding (VRF)-instance.	<code>show pim mdt data-mdt-joins</code>
Display PIM neighbors.	<code>show pim neighbors</code>
Display rendezvous points.	<code>show pim rps</code>
Display PIM source RPF state.	<code>show pim source</code>
Display PIM statistics.	<code>show pim statistics</code>
Display Session Announcement Protocol (SAP) addresses.	<code>show sap listen</code>
Test MSDP peers.	<code>test msdp</code>



**NOTE:** For information about the `mtrace` commands used to monitor IP multicast traffic in real time, see the *Junos System Basics and Services Command Reference*. For information about how to configure IP multicast, see the *Junos Multicast Protocols Configuration Guide*.



## clear igmp membership

<b>Syntax</b>	clear igmp membership <group <i>address-range</i> > <interface <i>interface-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	clear igmp membership <group <i>address-range</i> > <interface <i>interface-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Clear Internet Group Management Protocol (IGMP) group members.
<b>Options</b>	<p>none—Clear all IGMP members on all interfaces and for all address ranges.</p> <p>group <i>address-range</i>—(Optional) Clear all IGMP members that are in a particular address range. An example of a range is <b>224.2/16</b>. If you omit the destination prefix length, the default is <b>/32</b>.</p> <p>interface <i>interface-name</i>—(Optional) Clear all IGMP group members on an interface.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show igmp group on page 123</a></li> <li>• <a href="#">show igmp interface on page 127</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear igmp membership on page 87</a> <a href="#">clear igmp membership interface on page 88</a> <a href="#">clear igmp membership group on page 88</a>
<b>Output Fields</b>	See <a href="#">show igmp group</a> for an explanation of output fields.

## Sample Output

**clear igmp membership** The following sample output displays IGMP group information before and after the **clear igmp membership** command is entered:

```
user@host> show igmp group
Interface      Group           Last Reported   Timeout
so-0/0/0       224.2.127.253   10.1.128.1      186
so-0/0/0       224.2.127.254   10.1.128.1      186
so-0/0/0       239.255.255.255 10.1.128.1      187
so-0/0/0       224.1.127.255   10.1.128.1      188
```



```

local      224.0.0.6      (null)      0
local      224.0.0.5      (null)      0
local      224.2.127.254  (null)      0
local      239.255.255.255 (null)      0
local      224.0.0.2      (null)      0
local      224.0.0.13     (null)      0

```

```

user@host> clear igmp membership
Clearing Group Membership Info for so-0/0/0
Clearing Group Membership Info for so-1/0/0
Clearing Group Membership Info for so-2/0/0

```

```

user@host> show igmp group
Interface      Group      Last Reported  Timeout
local          224.0.0.6  (null)         0
local          224.0.0.5  (null)         0
local          224.2.127.254 (null)         0
local          239.255.255.255 (null)         0
local          224.0.0.2  (null)         0
local          224.0.0.13 (null)         0

```

#### clear igmp membership interface

The following sample output displays IGMP group information before and after the **clear igmp membership interface** command is issued:

```

user@host> show igmp group
Interface      Group      Last Reported  Timeout
so-0/0/0       224.2.127.253 10.1.128.1     210
so-0/0/0       239.255.255.255 10.1.128.1     210
so-0/0/0       224.1.127.255 10.1.128.1     215
so-0/0/0       224.2.127.254 10.1.128.1     216
local          224.0.0.6  (null)         0
local          224.0.0.5  (null)         0
local          224.2.127.254 (null)         0
local          239.255.255.255 (null)         0
local          224.0.0.2  (null)         0
local          224.0.0.13 (null)         0

```

```

user@host> clear igmp membership interface so-0/0/0
Clearing Group Membership Info for so-0/0/0

```

```

user@host> show igmp group
Interface      Group      Last Reported  Timeout
local          224.0.0.6  (null)         0
local          224.0.0.5  (null)         0
local          224.2.127.254 (null)         0
local          239.255.255.255 (null)         0
local          224.0.0.2  (null)         0
local          224.0.0.13 (null)         0

```

#### clear igmp membership group

The following sample output displays IGMP group information before and after the **clear igmp membership group** command is entered:

```

user@host> show igmp group
Interface      Group      Last Reported  Timeout
so-0/0/0       224.2.127.253 10.1.128.1     210
so-0/0/0       239.255.255.255 10.1.128.1     210
so-0/0/0       224.1.127.255 10.1.128.1     215

```



so-0/0/0	224.2.127.254	10.1.128.1	216
local	224.0.0.6	(null)	0
local	224.0.0.5	(null)	0
local	224.2.127.254	(null)	0
local	239.255.255.255	(null)	0
local	224.0.0.2	(null)	0
local	224.0.0.13	(null)	0

user@host> clear igmp membership group 239.225/16

Clearing Group Membership Range 239.225.0.0/16 on so-0/0/0

Clearing Group Membership Range 239.225.0.0/16 on so-1/0/0

Clearing Group Membership Range 239.225.0.0/16 on so-2/0/0

user@host> show igmp group

Interface	Group	Last Reported	Timeout
so-0/0/0	224.1.127.255	10.1.128.1	231
so-0/0/0	224.2.127.254	10.1.128.1	233
so-0/0/0	224.2.127.253	10.1.128.1	236
local	224.0.0.6	(null)	0
local	224.0.0.5	(null)	0
local	224.2.127.254	(null)	0
local	239.255.255.255	(null)	0
local	224.0.0.2	(null)	0
local	224.0.0.13	(null)	0



## clear igmp snooping membership

---

<b>Syntax</b>	<code>clear igmp snooping membership</code> <code>&lt;group   source address&gt;</code> <code>&lt;instance <i>instance-name</i>&gt;</code> <code>&lt;interface <i>interface-name</i>&gt;</code> <code>&lt;learning-domain <i>learning-domain-name</i>&gt;</code> <code>&lt;vlan-id <i>vlan-identifier</i>&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 8.5.
<b>Description</b>	Clear IP IGMP snooping membership information.
<b>Options</b>	<p>none—Clear IGMP snooping membership for all supported address families on all interfaces.</p> <p><code>group   source address</code>—(Optional) Clear IGMP snooping membership for the specified multicast group or source address.</p> <p><code>instance <i>instance-name</i></code>—(Optional) Clear IGMP snooping membership for the specified instance.</p> <p><code>interface <i>interface-name</i></code>—(Optional) Clear IGMP snooping membership on a specific interface.</p> <p><code>learning-domain <i>learning-domain-name</i></code>—(Optional) Perform this operation on all learning domains or on a particular learning domain.</p> <p><code>vlan-id <i>vlan-identifier</i></code>—(Optional) Perform this operation on a particular VLAN.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show igmp snooping membership on page 133</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear igmp snooping membership on page 90</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

### Sample Output

<code>clear igmp snooping membership</code>	<code>user@host&gt; clear igmp snooping membership</code>
---	---



## clear igmp snooping statistics

<b>Syntax</b>	clear igmp snooping statistics <instance <i>instance-name</i> > <interface <i>interface-name</i> > <learning-domain (all   <i>learning-domain-name</i> )> <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced in Junos OS Release 8.5.
<b>Description</b>	Clear IP IGMP snooping statistics.
<b>Options</b>	<p>none—Clear IGMP snooping statistics for all supported address families on all interfaces.</p> <p>instance <i>instance-name</i>—(Optional) Clear IGMP snooping statistics for the specified instance.</p> <p>interface <i>interface-name</i>—(Optional) Clear IGMP snooping statistics on a specific interface.</p> <p>learning-domain (all   <i>learning-domain-name</i>)—(Optional) Perform this operation on all learning domains or on a particular learning domain.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show igmp snooping statistics on page 136</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear igmp snooping statistics on page 91</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

```
clear igmp snooping statistics  user@host> clear igmp snooping statistics
```



## clear igmp statistics

<b>Syntax</b>	clear igmp statistics <interface <i>interface-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	clear igmp statistics <interface <i>interface-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Clear Internet Group Management Protocol (IGMP) statistics.
<b>Options</b>	none—Clear IGMP statistics on all interfaces.  interface <i>interface-name</i> —(Optional) Clear IGMP statistics for the specified interface only.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show igmp statistics on page 139</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear igmp statistics on page 92</a>
<b>Output Fields</b>	See <a href="#">show igmp statistics</a> for an explanation of output fields.

## Sample Output

**clear igmp statistics** The following sample output displays IGMP statistics information before and after the **clear igmp statistics** command is entered:

```

user@host> show igmp statistics
IGMP packet statistics for all interfaces
IGMP Message type      Received      Sent  Rx errors
Membership Query        8883         459      0
V1 Membership Report    0            0        0
DVMRP                   19784        35476     0
PIM V1                  18310         0        0
Cisco Trace              0            0        0
V2 Membership Report    0            0        0
Group Leave              0            0        0
Mtrace Response          0            0        0
Mtrace Request           0            0        0
Domain Wide Report       0            0        0
V3 Membership Report     0            0        0
Other Unknown types      0            0        0
IGMP v3 unsupported type 0            0        0
IGMP v3 source required for SSM 0            0        0

```



```
IGMP v3 mode not applicable for SSM 0
```

```
IGMP Global Statistics
```

```
Bad Length 0
Bad Checksum 0
Bad Receive If 0
Rx non-local 1227
```

```
user@host> clear igmp statistics
```

```
user@host> show igmp statistics
```

```
IGMP packet statistics for all interfaces
```

IGMP Message type	Received	Sent	Rx errors
Membership Query	0	0	0
V1 Membership Report	0	0	0
DVMRP	0	0	0
PIM V1	0	0	0
Cisco Trace	0	0	0
V2 Membership Report	0	0	0
Group Leave	0	0	0
Mtrace Response	0	0	0
Mtrace Request	0	0	0
Domain Wide Report	0	0	0
V3 Membership Report	0	0	0
Other Unknown types			0
IGMP v3 unsupported type			0
IGMP v3 source required for SSM			0
IGMP v3 mode not applicable for SSM			0
IGMP Global Statistics			
Bad Length	0		
Bad Checksum	0		
Bad Receive If	0		
Rx non-local	0		



## clear mld membership

---

<b>Syntax</b>	<code>clear mld membership</code> <code>&lt;group <i>group-name</i>&gt;   &lt;interface <i>interface-name</i>&gt;</code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Clear Multicast Listener Discovery (MLD) group membership.
<b>Options</b>	<b>none</b> —Clear all MLD memberships.  <code>group <i>group-name</i></code> —(Optional) Clear MLD membership for the specified group.  <code>interface <i>interface-name</i></code> —(Optional) Clear MLD group membership for the specified interface.  <code>logical-system (all   <i>logical-system-name</i>)</code> —(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show mld group on page 142</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear mld membership on page 94</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

### Sample Output

`clear mld membership`     `user@host> clear mld membership`



## clear mld statistics

---

<b>Syntax</b>	clear mld statistics <interface <i>interface-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Clear Multicast Listener Discovery (MLD) statistics.
<b>Options</b>	none—(Same as <b>logical-system all</b> ) Clear MLD statistics for all interfaces.  interface <i>interface-name</i> —(Optional) Clear MLD statistics for the specified interface.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show mld statistics on page 149</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear mld statistics on page 95</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

clear mld statistics     user@host> clear mld statistics



## clear msdp cache

---

<b>Syntax</b>	<code>clear msdp cache</code> <code>&lt;instance <i>instance-name</i>&gt;</code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code> <code>&lt;peer <i>peer address</i>&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Clear the entries in the Multicast Source Discovery Protocol (MSDP) source-active cache.
<b>Options</b>	<p>none—Clear entries in the MSDP source-active cache for all instances, logical systems, and peers.</p> <p>instance <i>instance-name</i>—(Optional) Clear entries for a specific MSDP instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>peer <i>peer-address</i>—(Optional) Clear the MSDP source-active cache entries learned from a specific peer.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show msdp source-active on page 156</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear msdp cache on page 96</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

`clear msdp cache`     `user@host> clear msdp cache`



## clear msdp statistics

---

<b>Syntax</b>	clear msdp statistics <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )> <peer <i>peer-address</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Clear Multicast Source Discovery Protocol (MSDP) peer statistics.
<b>Options</b>	<p>none—Clear MSDP statistics for all peers.</p> <p>instance <i>instance-name</i>—(Optional) Clear statistics for the specified instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>peer <i>peer-address</i>—(Optional) Clear the statistics for the specified peer.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show msdp statistics on page 158</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear msdp statistics on page 97</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

clear msdp statistics     user@host> clear msdp statistics



## clear multicast bandwidth-admission

<b>Syntax</b>	<pre>clear multicast bandwidth-admission &lt;group <i>group-address</i>&gt; &lt;inet   inet6&gt; &lt;instance <i>instance-name</i>&gt; &lt;interface <i>interface-name</i>&gt; &lt;source <i>source-address</i>&gt;</pre>
<b>Release Information</b>	<p>Command introduced in Junos OS Release 8.3.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p>
<b>Description</b>	Reapply IP multicast bandwidth admissions.
<b>Options</b>	<p><b>none</b>—Reapply multicast bandwidth admissions for all IPv4 forwarding entries in the master routing instance.</p> <p><i>group group-address</i>—(Optional) Reapply multicast bandwidth admissions for the specified group.</p> <p><b>inet</b>—(Optional) Reapply multicast bandwidth admission settings for IPv4 flows.</p> <p><b>inet6</b>—(Optional) Reapply multicast bandwidth admission settings for IPv6 flows.</p> <p><i>instance instance-name</i>—(Optional) Reapply multicast bandwidth admission settings for the specified instance. If you do not specify an instance, the command applies to the master routing instance.</p> <p><i>interface interface-name</i>—(Optional) Examines the corresponding outbound interface in the relevant entries and acts as follows:</p> <ul style="list-style-type: none"> <li>• If the interface is congested, and it was admitted previously, it is removed.</li> <li>• If the interface was rejected previously, the <b>clear multicast bandwidth-admission</b> command enables the interface to be admitted as long as enough bandwidth exists on the interface.</li> <li>• If you do not specify an interface, issuing the <b>clear multicast bandwidth-admission</b> command readmits any previously rejected interface for the relevant entries as long as enough bandwidth exists on the interface.</li> </ul> <p>To manually reject previously admitted outbound interfaces, you must specify the interface.</p> <p><i>source source-address</i>—(Optional) Use with the <b>group</b> option to reapply multicast bandwidth admission settings for the specified (source, group) entry.</p>
<b>Required Privilege Level</b>	clear



Related Documentation	<ul style="list-style-type: none"><li>• <a href="#">show multicast interface on page 164</a></li></ul>
List of Sample Output	<a href="#">clear multicast bandwidth-admission on page 99</a>
Output Fields	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

<code>clear multicast bandwidth-admission</code>	<code>user@host&gt; clear multicast bandwidth-admission</code>
--	--



## clear multicast scope

---

<b>Syntax</b>	clear multicast scope <inet   inet6> <interface <i>interface-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	clear multicast scope <inet   inet6> <interface <i>interface-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 7.6. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>inet6</b> option introduced in Junos OS Release 10.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Clear IP multicast scope statistics.
<b>Options</b>	none—(Same as <b>logical-system all</b> ) Clear multicast scope statistics.  inet—(Optional) Clear multicast scope statistics for IPv4 family addresses.  inet6—(Optional) Clear multicast scope statistics for IPv6 family addresses.  interface <i>interface-name</i> —(Optional) Clear multicast scope statistics on a specific interface.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show multicast scope on page 182</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear multicast scope on page 100</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

**clear multicast scope**     user@host> clear multicast scope



## clear multicast sessions

---

<b>Syntax</b>	clear multicast sessions <logical-system (all   <i>logical-system-name</i> )> < <i>regular-expression</i> >
<b>Syntax (EX Series Switch and the QFX Series)</b>	clear multicast sessions < <i>regular-expression</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Clear IP multicast sessions.
<b>Options</b>	<p>none—(Same as <b>logical-system all</b>) Clear multicast sessions.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>regular-expression</i>—(Optional) Clear only multicast sessions that contain the specified regular expression.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show multicast sessions on page 184</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear multicast sessions on page 101</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

```
clear multicast sessions  user@host> clear multicast sessions
```



## clear multicast snooping statistics

---

<b>Syntax</b>	clear multicast snooping statistics <instance <i>instance-name</i> > <interface <i>interface-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced in Junos OS Release 8.5.
<b>Description</b>	Clear IP multicast snooping statistics.
<b>Options</b>	<p>none—Clear multicast snooping statistics for all supported address families on all interfaces.</p> <p>instance <i>instance-name</i>—(Optional) Clear multicast snooping statistics for the specified instance.</p> <p>interface <i>interface-name</i>—(Optional) Clear multicast snooping statistics on a specific interface.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show multicast snooping statistics on page 192</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear multicast snooping statistics on page 102</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

### Sample Output

clear multicast snooping statistics	user@host> clear multicast snooping statistics
--	--



## clear multicast statistics

<b>Syntax</b>	clear multicast statistics <inet   inet6> <instance <i>instance-name</i> > <interface <i>interface-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	clear multicast statistics <inet   inet6> <instance <i>instance-name</i> > <interface <i>interface-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Clear IP multicast statistics.
<b>Options</b>	<p>none—Clear multicast statistics for all supported address families on all interfaces.</p> <p>inet—(Optional) Clear multicast statistics for IPv4 family addresses.</p> <p>inet6—(Optional) Clear multicast statistics for IPv6 family addresses.</p> <p>instance <i>instance-name</i>—(Optional) Clear multicast statistics for the specified instance.</p> <p>interface <i>interface-name</i>—(Optional) Clear multicast statistics on a specific interface.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show multicast statistics on page 195</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear multicast statistics on page 103</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

```
clear multicast statistics  user@host> clear multicast statistics
```



## clear pgm negative-acknowledgments

---

<b>Syntax</b>	clear pgm negative-acknowledgments
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Clear the Pragmatic General Multicast (PGM) negative acknowledgment (NAK) state received.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show pgm negative-acknowledgments on page 201</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear pgm negative-acknowledgments on page 104</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

### Sample Output

clear pgm negative-acknowledgments	user@host> clear pgm negative-acknowledgments
------------------------------------	---



## clear pgm source-path-messages

---

<b>Syntax</b>	clear pgm source-path-messages
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Clear Pragmatic General Multicast (PGM) source-path messages.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show pgm source-path-messages on page 203</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear pgm source-path-messages on page 105</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

### Sample Output

<b>clear pgm source-path-messages</b>	user@host> clear pgm source-path-messages
---------------------------------------	---



## clear pgm statistics

---

<b>Syntax</b>	clear pgm statistics
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Clear Pragmatic General Multicast (PGM) statistics.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show pgm statistics on page 204</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear pgm statistics on page 106</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

clear pgm statistics	user@host> clear pgm statistics
----------------------	---------------------------------



## clear pim join

<b>Syntax</b>	clear pim join <group-address> <inet   inet6> <instance instance-name> <logical-system (all   logical-system-name)>
<b>Syntax (EX Series Switch and the QFX Series)</b>	clear pim join <group-address> <inet   inet6> <instance instance-name>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Clear the Protocol Independent Multicast (PIM) join and prune states.
<b>Options</b>	<p>none—Clear the PIM join and prune states for all groups, family addresses, and instances.</p> <p>group-address—(Optional) Clear the PIM join and prune states for a group address.</p> <p>inet   inet6—(Optional) Clear the PIM join and prune states for IPv4 or IPv6 family addresses, respectively.</p> <p>instance instance-name—(Optional) Clear the join and prune states for a specific PIM-enabled routing instance.</p> <p>logical-system (all   logical-system-name)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Additional Information</b>	The <b>clear pim join</b> command cannot be used to clear the PIM join and prune state on a backup Routing Engine when nonstop active routing is enabled.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show pim join on page 212</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear pim join on page 107</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

```
clear pim join    user@host> clear pim join
```



## clear pim join-distribution

---

<b>Syntax</b>	<code>clear pim join-distribution</code> <code>&lt;instance <i>instance-name</i>&gt;</code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 10.0.
<b>Description</b>	<p>Redistribute the Protocol Independent Multicast (PIM) join states.</p> <p>You can find out if there are multiple paths available for a source (for example, an RP) with the output of the <b>show pim source</b> command.</p> <p>When you include the <b>join-load-balance</b> statement in the configuration, the PIM join states are distributed evenly on available equal-cost multipath links. When an upstream neighbor link fails, Junos OS redistributes the PIM join states to the remaining links. However, when new links are added or the failed link is restored, the existing PIM joins are not redistributed to the new link. New flows will be distributed to the new links. However, in a network without new joins and prunes, the new link is not used for multicast traffic. The <b>clear pim join-distribution</b> command redistributes the existing flows to the new upstream neighbors. Redistributing the existing flows causes traffic to be disrupted, so we recommend that you run the <b>clear pim join-distribution</b> command during a maintenance window.</p>
<b>Options</b>	<p>none—Redistribute the PIM join states for the default master instance.</p> <p>instance <i>instance-name</i>—(Optional) Redistribute the join states for a specific PIM-enabled routing instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Additional Information</b>	The <b>clear pim join-distribution</b> command cannot be used to redistribute the PIM join states on a backup Routing Engine when nonstop active routing is enabled.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show pim neighbors on page 225</a></li><li>• <a href="#">show pim join on page 212</a></li><li>• join-load-balance in the <i>Multicast Protocols Configuration Guide</i></li></ul>
<b>List of Sample Output</b>	<a href="#">clear pim join-distribution on page 109</a>
<b>Output Fields</b>	When you enter this command, you are provided no feedback on the status of your request. You can enter the <b>show pim join</b> command before and after distributing the join state to verify the operation.



### Sample Output

```
clear pim      user@host> clear pim join-distribution
join-distribution
```



## clear pim register

---

<b>Syntax</b>	clear pim register <inet   inet6> <instance <i>instance-name</i> > <interface <i>interface-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	clear pim register <inet   inet6> <instance <i>instance-name</i> > <interface <i>interface-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 7.6. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Clear Protocol Independent Multicast (PIM) register message counters.
<b>Options</b>	none—Clear PIM register message counters for all family addresses, instances, and interfaces.  inet   inet6—(Optional) Clear PIM register message counters for IPv4 or IPv6 family addresses, respectively.  instance <i>instance-name</i> —(Optional) Clear register message counters for a specific PIM-enabled routing instance.  interface <i>interface-name</i> —(Optional) Clear PIM register message counters for a specific interface.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Additional Information</b>	The <b>clear pim register</b> command cannot be used to clear the PIM register state on a backup Routing Engine when nonstop active routing is enabled.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show pim statistics on page 236</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear pim register on page 110</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

clear pim register     user@host> clear pim register







## clear pim statistics

---

<b>Syntax</b>	clear pim statistics <inet   inet6> <instance <i>instance-name</i> > <interface <i>interface-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	clear pim statistics <inet   inet6> <instance <i>instance-name</i> > <interface <i>interface-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Clear Protocol Independent Multicast (PIM) statistics.
<b>Options</b>	none—Clear PIM statistics for all family addresses, instances, and interfaces.  inet   inet6—(Optional) Clear PIM statistics for IPv4 or IPv6 family addresses, respectively.  instance <i>instance-name</i> —(Optional) Clear statistics for a specific PIM-enabled routing instance.  interface <i>interface-name</i> —(Optional) Clear PIM statistics for a specific interface.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Additional Information</b>	The <b>clear pim statistics</b> command cannot be used to clear the PIM statistics on a backup Routing Engine when nonstop active routing is enabled.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show pim statistics on page 236</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear pim statistics on page 112</a>
<b>Output Fields</b>	See <a href="#">show pim statistics</a> for an explanation of output fields.

## Sample Output

**clear pim statistics** The following sample output displays PIM statistics before and after the **clear pim statistics** command is entered:

```
user@host> show pim statistics
```



PIM statistics on all interfaces:

PIM Message type	Received	Sent	Rx errors
Hello	0	0	0
Register	0	0	0
Register Stop	0	0	0
Join Prune	0	0	0
Bootstrap	0	0	0
Assert	0	0	0
Graft	0	0	0
Graft Ack	0	0	0
Candidate RP	0	0	0
V1 Query	2111	4222	0
V1 Register	0	0	0
V1 Register Stop	0	0	0
V1 Join Prune	14200	13115	0
V1 RP Reachability	0	0	0
V1 Assert	0	0	0
V1 Graft	0	0	0
V1 Graft Ack	0	0	0

PIM statistics summary for all interfaces:

Unknown type	0
V1 Unknown type	0
Unknown Version	0
Neighbor unknown	0
Bad Length	0
Bad Checksum	0
Bad Receive If	0
Rx Intf disabled	2007
Rx V1 Require V2	0
Rx Register not RP	0
RP Filtered Source	0
Unknown Reg Stop	0
Rx Join/Prune no state	1040
Rx Graft/Graft Ack no state	0

...

user@host> clear pim statistics

user@host> show pim statistics

PIM statistics on all interfaces:

PIM Message type	Received	Sent	Rx errors
Hello	0	0	0
Register	0	0	0
Register Stop	0	0	0
Join Prune	0	0	0
Bootstrap	0	0	0
Assert	0	0	0
Graft	0	0	0
Graft Ack	0	0	0
Candidate RP	0	0	0
V1 Query	1	0	0
V1 Register	0	0	0

...



## request pim multicast-tunnel rebalance

---

<b>Syntax</b>	request pim multicast-tunnel rebalance <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	request pim multicast-tunnel rebalance <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 10.2. Command introduced in Junos OS Release 10.2 for EX Series switches.
<b>Description</b>	Rebalance the assignment of multicast tunnel encapsulation interfaces across available tunnel-capable PICs or across a configured list of tunnel-capable PICs. You can determine whether a rebalance is necessary by running the <b>show pim interfaces instance <i>instance-name</i></b> command.
<b>Options</b>	none—Re-create and rebalance all tunnel interfaces for all routing instances.  instance <i>instance-name</i> —Re-create and rebalance all tunnel interfaces for a specific instance.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	maintenance
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show pim interfaces on page 209</a></li><li>• Load Balancing Multicast Tunnel Interfaces Among Available PICs in the <i>Junos Multicast Protocols Configuration Guide</i></li></ul>
<b>Output Fields</b>	This command produces no output. To verify the operation of the command, run the <b>show pim interface instance <i>instance-name</i></b> before and after running the <b>request pim multicast-tunnel rebalance</b> command.



## show dvmrp interfaces

<b>Syntax</b>	show dvmrp interfaces <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display information about Distance Vector Multicast Routing Protocol (DVMRP)–enabled interfaces.
<b>Options</b>	none—(Same as <b>logical-system all</b> ) Display information about DVMRP-enabled interfaces.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show dvmrp interfaces on page 116</a>
<b>Output Fields</b>	<a href="#">Table 22 on page 115</a> describes the output fields for the <b>show dvmrp interfaces</b> command. Output fields are listed in the approximate order in which they appear.

**Table 22: show dvmrp interfaces Output Fields**

Field Name	Field Description
<b>Interface</b>	Name of the interface.
<b>State</b>	State of the interface: <b>up</b> or <b>down</b> .
<b>Leaf</b>	Whether the interface is a leaf (that is, whether it has no neighbors) or whether it has neighbors.
<b>Metric</b>	Interface metric: a value from 1 through 31.
<b>Announce</b>	Number of routes the interface is announcing.
<b>Mode</b>	DVMRP mode: <ul style="list-style-type: none"> <li>• <b>Forwarding</b>—DVMRP does both the routing and the multicast data forwarding.</li> <li>• <b>Unicast-routing</b>—DVMRP does only the routing. Forwarding of the multicast data packets can be done by enabling PIM on the interface.</li> </ul>



## Sample Output

```
show dvmrp interfaces  user@host> show dvmrp interfaces
Interface State Leaf Metric Announce Mode
fxp0.0    Up    N    1    4 Forwarding
fxp1.0    Up    N    1    4 Forwarding
fxp2.0    Up    N    1    3 Forwarding
lo0.0     Up    Y    1    0 Unicast-routing
```



## show dvmrp neighbors

<b>Syntax</b>	show dvmrp neighbors <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display information about Distance Vector Multicast Routing Protocol (DVMRP) neighbors.
<b>Options</b>	<p>none—(Same as <b>logical-system all</b>) Display information about DVMRP neighbors.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show dvmrp neighbors on page 118</a>
<b>Output Fields</b>	<p><a href="#">Table 23 on page 117</a> describes the output fields for the <b>show dvmrp neighbors</b> command. Output fields are listed in the approximate order in which they appear.</p>

**Table 23: show dvmrp neighbors Output Fields**

Field Name	Field Description
<b>Neighbor</b>	Address of the neighboring DVMRP router.
<b>Interface</b>	Interface through which the neighbor is reachable.
<b>Version</b>	Version of DVMRP that the neighbor is running, in the format <i>majorminor</i> .
<b>Flags</b>	<p>Information about the neighbor:</p> <ul style="list-style-type: none"> <li>• <b>1</b>—One way. The local router has seen the neighbor, but the neighbor has not seen the local router.</li> <li>• <b>G</b>—Neighbor supports generation ID.</li> <li>• <b>L</b>—Neighbor is a leaf router.</li> <li>• <b>M</b>—Neighbor supports mtrace.</li> <li>• <b>N</b>—Neighbor supports netmask in prunes and grafts.</li> <li>• <b>P</b>—Neighbor supports pruning.</li> <li>• <b>S</b>—Neighbor supports SNMP.</li> </ul>
<b>Routes</b>	Number of routes learned from the neighbor.
<b>Timeout</b>	How long until the DVMRP neighbor information times out, in seconds.
<b>Transitions</b>	Number of generation ID changes that have occurred since the local router learned about the neighbor.



## Sample Output

```
show dvmp neighbors user@host> show dvmp neighbors
Neighbor      Interface      Version  Flags    Routes  Timeout  Transitions
192.168.1.1    ipip.0         3.255    PGM      3       28       1
```



## show dvmrp prefix

<b>Syntax</b>	show dvmrp prefix <brief   detail> <logical-system (all   <i>logical-system-name</i> )> <prefix>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display information about Distance Vector Multicast Routing Protocol (DVMRP) prefixes.
<b>Options</b>	<p>none—Display standard information about all DVMRP prefixes.</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>prefix—(Optional) Display information about specific prefixes.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show dvmrp prefix on page 120</a> <a href="#">show dvmrp prefix brief on page 120</a> <a href="#">show dvmrp prefix detail on page 120</a>
<b>Output Fields</b>	<p><a href="#">Table 24 on page 119</a> describes the output fields for the <b>show dvmrp prefix</b> command. Output fields are listed in the approximate order in which they appear.</p>

**Table 24: show dvmrp prefix Output Fields**

Field Name	Field Description	Level of Output
Prefix	DVMRP route.	All levels
Next hop	Next hop from which the route was learned.	All levels
Age	Last time that the route was refreshed.	All levels
<i>multicast-group</i>	Multicast group address.	<b>detail</b>
Prunes sent	Number of prunes sent to the multicast group.	<b>detail</b>
Grafts sent	Number of grafts sent to the multicast group.	<b>detail</b>
Cache lifetime	Lifetime of the group in the multicast cache, in seconds.	<b>detail</b>
Prune lifetime	Lifetime remaining and total lifetime of prunes, in seconds.	<b>detail</b>



## Sample Output

```
show dvmrp prefix user@host> show dvmrp prefix
Prefix           Next hop      Age
10.38.0.0         /30 10.38.0.1 00:06:17
10.38.0.4         /30 10.38.0.5 00:06:13
10.38.0.8         /30 10.38.0.2 00:00:04
10.38.0.12        /30 10.38.0.6 00:00:04
10.255.14.114     /32 10.255.14.114 00:06:17
10.255.14.142     /32 10.38.0.2 00:00:04
10.255.14.144     /32 10.38.0.2 00:00:04
10.255.70.15      /32 10.38.0.6 00:00:04
192.168.14.0      /24 192.168.14.114 00:06:17
192.168.195.40    /30 192.168.195.41 00:06:17
192.168.195.92    /30 10.38.0.2 00:00:04
```

**show dvmrp prefix brief** The output for the **show dvmrp prefix brief** command is identical to that for the **show dvmrp prefix** command.

```
show dvmrp prefix user@host> show dvmrp prefix detail
detail
Prefix           Next hop      Age
10.38.0.0         /30 10.38.0.1 00:06:28
10.38.0.4         /30 10.38.0.5 00:06:24
10.38.0.8         /30 10.38.0.2 00:00:15
10.38.0.12        /30 10.38.0.6 00:00:15
10.255.14.114     /32 10.255.14.114 00:06:28
10.255.14.142     /32 10.38.0.2 00:00:15
10.255.14.144     /32 10.38.0.2 00:00:15
10.255.70.15      /32 10.38.0.6 00:00:15
192.168.14.0      /24 192.168.14.114 00:06:28
192.168.195.40    /30 192.168.195.41 00:06:28
192.168.195.92    /30 10.38.0.2 00:00:15
```



## show dvmrp prunes

<b>Syntax</b>	show dvmrp prunes <all   rx   tx> <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display information about active Distance Vector Multicast Routing Protocol (DVMRP) prunes.
<b>Options</b>	<p>none—Display received and transmitted DVMRP prune information.</p> <p>all—(Optional) Display information about all received and transmitted prunes.</p> <p>rx—(Optional) Display information about received prunes.</p> <p>tx—(Optional) Display information about transmitted prunes.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show dvmrp prunes on page 121</a>
<b>Output Fields</b>	<a href="#">Table 25 on page 121</a> describes the output fields for the <b>show dvmrp prunes</b> command. Output fields are listed in the approximate order in which they appear.

**Table 25: show dvmrp prunes Output Fields**

Field Name	Field Description
<b>Group</b>	Group address.
<b>Source prefix</b>	Prefix for the prune.
<b>Timeout</b>	How long until the prune message expires, in seconds.
<b>Neighbor</b>	Neighbor to which the prune was sent or from which the prune was received.

## Sample Output

```

show dvmrp prunes user@host> show dvmrp prunes
Group           Source prefix      Timeout Neighbor
224.0.1.1       128.112.0.0       /12    7077 192.168.1.1
224.0.1.32      160.0.0.0         /3     7087 192.168.1.1
224.2.123.4     136.0.0.0         /5     6955 192.168.1.1
224.2.127.1     129.0.0.0         /8     7046 192.168.1.1
224.2.135.86    128.102.128.0     /17    7071 192.168.1.1
224.2.135.86    129.0.0.0         /8     7074 192.168.1.1

```



```
224.2.135.86 130.0.0.0 /7 7071 192.168.1.1
...
```



## show igmp group

<b>Syntax</b>	show igmp group <brief   detail> <group-name> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	show igmp group <brief   detail> <group-name>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display Internet Group Management Protocol (IGMP) group membership information.
<b>Options</b>	none—Display standard information about membership for all IGMP groups.  brief   detail—(Optional) Display the specified level of output.  group-name—(Optional) Display group membership for the specified IP address only.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">clear igmp membership on page 87</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show igmp group (Include Mode) on page 124</a> <a href="#">show igmp group (Exclude Mode) on page 125</a> <a href="#">show igmp group brief on page 125</a> <a href="#">show igmp group detail on page 125</a>
<b>Output Fields</b>	Table 26 on page 123 describes the output fields for the <b>show igmp group</b> command. Output fields are listed in the approximate order in which they appear.

**Table 26: show igmp group Output Fields**

Field Name	Field Description	Level of Output
<b>Interface</b>	Name of the interface that received the IGMP membership report. A name of <b>local</b> indicates that the local routing device joined the group itself.	All levels
<b>Group</b>	Group address.	All levels
<b>Group Mode</b>	Mode the SSM group is operating in: <b>Include</b> or <b>Exclude</b> .	All levels
<b>Source</b>	Source address.	All levels



Table 26: show igmp group Output Fields (*continued*)

Field Name	Field Description	Level of Output
Source timeout	Time remaining until the group traffic is no longer forwarded. The timer is refreshed when a listener in include mode sends a report. A group in exclude mode or configured as a static group displays a zero timer.	detail
Last reported by	Address of the host that last reported membership in this group.	All levels
Timeout	Time remaining until the group membership is removed.	brief none
Group timeout	Time remaining until a group in exclude mode moves to include mode. The timer is refreshed when a listener in exclude mode sends a report. A group in include mode or configured as a static group displays a zero timer.	detail
Type	Type of group membership: <ul style="list-style-type: none"> <li>• <b>Dynamic</b>—Host reported the membership.</li> <li>• <b>Static</b>—Membership is configured.</li> </ul>	All levels

### Sample Output

```

show igmp group (Include Mode) user@host> show igmp group
Interface: t1-0/1/0.0
  Group: 232.1.1.1
    Group mode: Include
    Source: 10.0.0.2
    Last reported by: 10.9.5.2
    Timeout:      24 Type: Dynamic
  Group: 232.1.1.1
    Group mode: Include
    Source: 10.0.0.3
    Last reported by: 10.9.5.2
    Timeout:      24 Type: Dynamic
  Group: 232.1.1.1
    Group mode: Include
    Source: 10.0.0.4
    Last reported by: 10.9.5.2
    Timeout:      24 Type: Dynamic
  Group: 232.1.1.2
    Group mode: Include
    Source: 10.0.0.4
    Last reported by: 10.9.5.2
    Timeout:      24 Type: Dynamic
Interface: t1-0/1/1.0
Interface: ge-0/2/2.0
Interface: ge-0/2/0.0
Interface: local
  Group: 224.0.0.2
    Source: 0.0.0.0
    Last reported by: Local
    Timeout:      0 Type: Dynamic
  Group: 224.0.0.22
    Source: 0.0.0.0

```



```

Last reported by: Local
Timeout:          0 Type: Dynamic

```

**show igmp group  
(Exclude Mode)**

```

user@host> show igmp group
Interface: t1-0/1/0.0
Interface: t1-0/1/1.0
Interface: ge-0/2/2.0
Interface: ge-0/2/0.0
Interface: local
  Group: 224.0.0.2
    Source: 0.0.0.0
    Last reported by: Local
    Timeout:          0 Type: Dynamic
  Group: 224.0.0.22
    Source: 0.0.0.0
    Last reported by: Local
    Timeout:          0 Type: Dynamic

```

**show igmp group brief** The output for the **show igmp group brief** command is identical to that for the **show igmp group** command.

**show igmp group detail**

```

user@host> show igmp group detail
Interface: t1-0/1/0.0
  Group: 232.1.1.1
    Group mode: Include
    Source: 10.0.0.2
    Source timeout: 12
    Last reported by: 10.9.5.2
    Group timeout:          0 Type: Dynamic
  Group: 232.1.1.1
    Group mode: Include
    Source: 10.0.0.3
    Source timeout: 12
    Last reported by: 10.9.5.2
    Group timeout:          0 Type: Dynamic
  Group: 232.1.1.1
    Group mode: Include
    Source: 10.0.0.4
    Source timeout: 12
    Last reported by: 10.9.5.2
    Group timeout:          0 Type: Dynamic
  Group: 232.1.1.2
    Group mode: Include
    Source: 10.0.0.4
    Source timeout: 12
    Last reported by: 10.9.5.2
    Group timeout:          0 Type: Dynamic
Interface: t1-0/1/1.0
Interface: ge-0/2/2.0
Interface: ge-0/2/0.0
Interface: local
  Group: 224.0.0.2
    Group mode: Exclude
    Source: 0.0.0.0
    Source timeout: 0
    Last reported by: Local
    Group timeout:          0 Type: Dynamic
  Group: 224.0.0.22
    Group mode: Exclude
    Source: 0.0.0.0

```



```
Source timeout: 0
Last reported by: Local
Group timeout:    0 Type: Dynamic
```



## show igmp interface

<b>Syntax</b>	show igmp interface <brief   detail> <interface-name> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	show igmp interface <brief   detail> <interface-name>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display information about Internet Group Management Protocol (IGMP)-enabled interfaces.
<b>Options</b>	none—Display standard information about all IGMP-enabled interfaces.  brief   detail—(Optional) Display the specified level of output.  <i>interface-name</i> —(Optional) Display information about the specified IGMP-enabled interface only.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear igmp membership on page 87</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show igmp interface on page 129</a> <a href="#">show igmp interface brief on page 129</a> <a href="#">show igmp interface detail on page 129</a>
<b>Output Fields</b>	<a href="#">Table 27 on page 127</a> describes the output fields for the <b>show igmp interface</b> command. Output fields are listed in the approximate order in which they appear.

Table 27: show igmp interface Output Fields

Field Name	Field Description	Level of Output
Interface	Name of the interface.	All levels
Querier	Address of the routing device that has been elected to send membership queries.	All levels
State	State of the interface: <b>Up</b> or <b>Down</b> .	All levels



Table 27: show igmp interface Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>SSM Map Policy</b>	Name of the source-specific multicast (SSM) map policy at the IGMP interface.	All levels
<b>SSM Map Policy</b>	Name of the source-specific multicast (SSM) map policy that has been applied to the interface.	All levels
<b>Timeout</b>	How long until the IGMP querier is declared to be unreachable, in seconds.	All levels
<b>Version</b>	IGMP version being used on the interface: 1, 2, or 3.	All levels
<b>Groups</b>	Number of groups on the interface.	All levels
<b>Immediate Leave</b>	State of the immediate leave option: <ul style="list-style-type: none"> <li>• <b>On</b>—Indicates that the router removes a host from the multicast group as soon as the router receives a leave group message from a host associated with the interface.</li> <li>• <b>Off</b>—Indicates that after receiving a leave group message, instead of removing a host from the multicast group immediately, the router sends a group query to determine if another receiver responds.</li> </ul>	All levels
<b>Promiscuous Mode</b>	State of the promiscuous mode option: <ul style="list-style-type: none"> <li>• <b>On</b>—Indicates that the router can accept IGMP reports from subnetworks that are not associated with its interfaces.</li> <li>• <b>Off</b>—Indicates that the router can accept IGMP reports only from subnetworks that are associated with its interfaces.</li> </ul>	All levels
<b>Passive</b>	State of the passive mode option: <ul style="list-style-type: none"> <li>• <b>On</b>—Indicates that the router can run IGMP on the interface but not send or receive control traffic such as IGMP reports, queries, and leaves.</li> <li>• <b>Off</b>—Indicates that the router can run IGMP on the interface and send or receive control traffic such as IGMP reports, queries, and leaves.</li> </ul> <p>The <b>passive</b> statement enables you to selectively activate up to two out of a possible three available query or control traffic options. When enabled, the following options appear after the <b>on</b> state declaration:</p> <ul style="list-style-type: none"> <li>• <b>send-general-query</b>—The interface sends general queries.</li> <li>• <b>send-group-query</b>—The interface sends group-specific and group-source-specific queries.</li> <li>• <b>allow-receive</b>—The interface receives control traffic</li> </ul>	All levels
<b>OIF map</b>	Name of the OIF map associated with the interface.	All levels
<b>SSM map</b>	Name of the source-specific multicast (SSM) map (if configured) used on the interface.	All levels



Table 27: show igmp interface Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Configured Parameters</b>	<p>Information configured by the user:</p> <ul style="list-style-type: none"> <li><b>IGMP Query Interval</b>—Interval (in seconds) at which this router sends membership queries when it is the querier.</li> <li><b>IGMP Query Response Interval</b>—Time (in seconds) that the router waits for a report in response to a general query.</li> <li><b>IGMP Last Member Query Interval</b>—Time (in seconds) that the router waits for a report in response to a group-specific query.</li> <li><b>IGMP Robustness Count</b>—Number of times the router retries a query.</li> </ul>	All levels
<b>Derived Parameters</b>	<p>Derived information:</p> <ul style="list-style-type: none"> <li><b>IGMP Membership Timeout</b>—Timeout period (in seconds) for group membership. If no report is received for these groups before the timeout expires, the group membership is removed.</li> <li><b>IGMP Other Querier Present Timeout</b>—Time (in seconds) that the router waits for the IGMP querier to send a query.</li> </ul>	All levels

## Sample Output

<b>show igmp interface</b>	<pre> user@host&gt; show igmp interface Interface: at-0/3/1.0   Querier: 10.111.30.1   State:      Up Timeout:  None Version:  2 Groups:    4   SSM Map Policy: ssm-policy-A Interface: so-1/0/0.0   Querier: 10.111.10.1   State:      Up Timeout:  None Version:  2 Groups:    2   SSM Map Policy: ssm-policy-B Interface: so-1/0/1.0   Querier: 10.111.20.1   State:      Up Timeout:  None Version:  2 Groups:    4   SSM Map Policy: ssm-policy-C Immediate Leave: On Promiscuous Mode: Off  Configured Parameters: IGMP Query Interval: 125.0 IGMP Query Response Interval: 10.0 IGMP Last Member Query Interval: 1.0 IGMP Robustness Count: 2  Derived Parameters: IGMP Membership Timeout: 260.0 IGMP Other Querier Present Timeout: 255.0 </pre>
<b>show igmp interface brief</b>	The output for the <b>show igmp interface brief</b> command is identical to that for the <b>show igmp interface</b> command. For sample output, see <a href="#">show igmp interface on page 129</a> .
<b>show igmp interface detail</b>	The output for the <b>show igmp interface detail</b> command is identical to that for the <b>show igmp interface</b> command. For sample output, see <a href="#">show igmp interface on page 129</a> .



## show igmp snooping interface

<b>Syntax</b>	show igmp snooping interface <i>interface-name</i> <brief   detail> <bridge-domain <i>bridge-domain-name</i> > <virtual-switch <i>virtual-switch-name</i> > <vlan-id <i>vlan-identifier</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 8.5.
<b>Description</b>	Display IGMP snooping interface information.
<b>Options</b>	<p>none—Display detailed information.</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>bridge-domain <i>bridge-domain-name</i>—(Optional) Display information about a particular bridge domain.</p> <p>virtual-switch <i>virtual-switch-name</i>—(Optional) Display information about a particular virtual switch.</p> <p>vlan-id <i>vlan-identifier</i>—(Optional) Display information about a particular VLAN.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show igmp snooping membership on page 133</a></li> <li>• <a href="#">show igmp snooping statistics on page 136</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show igmp snooping interface on page 131</a> <a href="#">show igmp snooping interface (Group Limit Configured) on page 132</a>
<b>Output Fields</b>	<p><a href="#">Table 28 on page 130</a> lists the output fields for the <b>show igmp snooping interface</b> command. Output fields are listed in the approximate order in which they appear.</p>

**Table 28: show igmp snooping interface Output Fields**

Field Name	Field Description	Level of Output
Routing-instance	Routing instance for IGMP snooping.	All levels
Learning Domain	Learning domain for snooping.	All levels
IGMP Query Interval	Frequency (in seconds) with which this router sends membership queries when it is the querier.	detail
IGMP Query Response Interval	Time (in seconds) that the router waits for a response to a general query.	detail



Table 28: show igmp snooping interface Output Fields (*continued*)

Field Name	Field Description	Level of Output
IGMP Last Member Query Interval	Time (in seconds) that the router waits for a report in response to a group-specific query.	detail
IGMP Robustness Count	Number of times the router retries a query.	detail
immediate-leave	State of immediate leave: <b>On</b> or <b>Off</b> .	All levels
router-interface	Router interfaces that are part of this learning domain.	All levels
Group limit	Maximum number of (source,group) pairs allowed per interface. When a group limit is not configured, this field is not shown.	All levels
interface	Interfaces that are being snooped in this learning domain.	All levels
Groups	Number of groups on the interface.	none
State	State of the interface: <b>Up</b> or <b>Down</b> .	none
Up Groups	Number of active multicast groups attached to the logical interface.	All levels
IGMP Membership Timeout	Timeout for group membership. If no report is received for these groups before the timeout expires, the group membership is removed.	none
IGMP Other Querier Present Timeout	Time that the router waits for the IGMP querier to send a query.	none

## Sample Output

```

show igmp snooping interface  user@host> show igmp snooping interface
                               Instance: bridge-domain bar

                               Learning-Domain: default
                               Interface: ge-0/1/0.200
                                   State:          Up Groups:      0
                                   Immediate leave: Off
                                   Router interface: yes
                               Interface: ge-0/1/2.200
                                   State:          Up Groups:      2
                                   Immediate leave: On
                                   Router interface: no
                               Interface: ge-0/1/3.200
                                   State:          Up Groups:      1
                                   Immediate leave: Off
                                   Router interface: no

                               Configured Parameters:
                               IGMP Query Interval: 130.0
                               IGMP Query Response Interval: 15.0
                               IGMP Last Member Query Interval: 2.0
                               IGMP Robustness Count: 3

```



Derived Parameters:  
IGMP Membership Timeout: 405.0  
IGMP Other Querier Present Timeout: 397.500

## Sample Output

```
show igmp snooping interface (Group Limit Configured) user@host> show igmp snooping interface instance vpls1
Instance: vpls1
Learning-Domain: default
Interface: ge-1/3/9.0
  State:          Up Groups:      0
  Immediate leave: Off
  Router interface: yes
Interface: ge-1/3/8.0
  State:          Up Groups:      0
  Immediate leave: Off
  Router interface: yes
  Group limit:    1000

Configured Parameters:
IGMP Query Interval: 125.0
IGMP Query Response Interval: 10.0
IGMP Last Member Query Interval: 1.0
IGMP Robustness Count: 2
```



## show igmp snooping membership

<b>Syntax</b>	show igmp snooping membership <brief   detail> <bridge-domain <i>bridge-domain-name</i> > <group <i>group-name</i> > <virtual-switch <i>virtual-switch-name</i> > <vlan-id <i>vlan-identifier</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 8.5.
<b>Description</b>	Display IGMP snooping membership information.
<b>Options</b>	<p>none—Display detailed information.</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>bridge-domain <i>bridge-domain-name</i>—(Optional) Display information about a particular bridge domain.</p> <p>group <i>group-name</i> —(Optional) Display information about this group address.</p> <p>virtual-switch <i>virtual-switch-name</i>—(Optional) Display information about a particular virtual switch.</p> <p>vlan-id <i>vlan-identifier</i>—(Optional) Display information about a particular VLAN.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show igmp snooping interface on page 130</a></li> <li>• <a href="#">show igmp snooping statistics on page 136</a></li> <li>• <a href="#">clear igmp snooping membership on page 90</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show igmp snooping membership on page 134</a> <a href="#">show igmp snooping membership (Exclude Mode) on page 135</a> <a href="#">show igmp snooping membership interface ge-0/1/2.200 on page 135</a> <a href="#">show igmp snooping membership vlan-id 1 on page 135</a>
<b>Output Fields</b>	Table 29 on page 133 lists the output fields for the <b>show igmp snooping membership</b> command. Output fields are listed in the approximate order in which they appear.

**Table 29: show igmp snooping membership Output Fields**

Field Name	Field Description	Level of Output
Instance	Routing instance for IGMP snooping.	All levels
Learning Domain	Learning domain for snooping.	All levels
Interface	Interface on which this router is a proxy.	detail



Table 29: show igmp snooping membership Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Up Groups</b>	Number of active multicast groups attached to the logical interface.	All levels
<b>Group</b>	Multicast group address in the membership database.	All levels
<b>Group Mode</b>	Mode the SSM group is operating in: <b>Include</b> or <b>Exclude</b> .	All levels
<b>Source</b>	Source address used on queries.	<b>detail</b>
<b>Last reported by</b>	Address of source last replying to the query.	<b>detail</b>
<b>Group Timeout</b>	Time remaining until a group in exclude mode moves to include mode. The timer is refreshed when a listener in exclude mode sends a report. A group in include mode or configured as a static group displays a zero timer.	All levels
<b>Timeout</b>	Length of time (in seconds) left until the entry is purged.	<b>detail</b>
<b>Type</b>	Way that the group membership information was learned: <ul style="list-style-type: none"> <li>• <b>Dynamic</b>—Group membership was learned by the IGMP protocol.</li> <li>• <b>Static</b>—Group membership was learned by configuration.</li> </ul>	<b>detail</b>
<b>Include receiver</b>	Source address of receiver included in membership with timeout (in seconds).	<b>detail</b>

## Sample Output

```

show igmp snooping membership  user@host> show igmp snooping membership
                                Instance: vpls2

                                Learning-Domain: vlan-id 2
                                Interface: ge-3/0/0.2
                                Up Groups:      0
                                Interface: ge-3/1/0.2
                                Up Groups:      0
                                Interface: ge-3/1/5.2
                                Up Groups:      0

                                Instance: vpls1

                                Learning-Domain: vlan-id 1
                                Interface: ge-3/0/0.1
                                Up Groups:      0
                                Interface: ge-3/1/0.1
                                Up Groups:      0
                                Interface: ge-3/1/5.1
                                Up Groups:      1
                                Group: 225.10.10.1
                                Group mode: Exclude
                                Source: 0.0.0.0
                                Last reported by: 100.6.85.2
                                Group timeout:    173 Type: Dynamic

```



```

show igmp snooping      user@host> show igmp snooping membership
membership (Exclude      Instance: vpls2
Mode)                   Learning-Domain: vlan-id 2
                           Interface: ge-3/0/0.2
                           Up Groups:      0
                           Interface: ge-3/1/0.2
                           Up Groups:      0
                           Interface: ge-3/1/5.2
                           Up Groups:      0

                           Instance: vpls1

                           Learning-Domain: vlan-id 1
                           Interface: ge-3/0/0.1
                           Up Groups:      0
                           Interface: ge-3/1/0.1
                           Up Groups:      0
                           Interface: ge-3/1/5.1
                           Up Groups:      1
                               Group: 225.10.10.1
                                   Group mode: Exclude
                                   Source: 0.0.0.0
                                   Last reported by: 100.6.85.2
                                   Group timeout:      173 Type: Dynamic

show igmp snooping      user@host> show igmp snooping membership interface
membership interface      Instance: bridge-domain bar
ge-0/1/2.200            Learning-Domain: default
                           Interface: ge-0/1/2.200
                               Group: 225.1.1.1
                                   Source: 0.0.0.0
                                   Timeout:      391 Type: Static
                               Group: 232.1.1.1
                                   Source: 192.168.1.1
                                   Timeout:      0 Type: Static

show igmp snooping      user@host> show igmp snooping membership vlan-id 1
membership vlan-id 1      Instance: vpls2

                           Instance: vpls1

                           Learning-Domain: vlan-id 1
                           Interface: ge-3/0/0.1
                           Up Groups:      0
                           Interface: ge-3/1/0.1
                           Up Groups:      0
                           Interface: ge-3/1/5.1
                           Up Groups:      1
                               Group: 225.10.10.1
                                   Group mode: Exclude
                                   Source: 0.0.0.0
                                   Last reported by: 100.6.85.2
                                   Group timeout:      209 Type: Dynamic

```



## show igmp snooping statistics

<b>Syntax</b>	show igmp snooping statistics <brief   detail> <bridge-domain <i>bridge-domain-name</i> > <virtual-switch <i>virtual-switch-name</i> > <vlan-id <i>vlan-identifier</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 8.5.
<b>Description</b>	Display IGMP snooping statistics.
<b>Options</b>	<p>none—(Optional) Display detailed information.</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>bridge-domain <i>bridge-domain-name</i>—(Optional) Display information about a particular bridge domain.</p> <p>virtual-switch <i>virtual-switch-name</i>—(Optional) Display information about a particular virtual switch.</p> <p>vlan-id <i>vlan-identifier</i>—(Optional) Display information about a particular VLAN.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show igmp snooping interface on page 130</a></li> <li>• <a href="#">show igmp snooping membership on page 133</a></li> <li>• <a href="#">clear igmp snooping statistics on page 91</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show igmp snooping statistics on page 137</a>
<b>Output Fields</b>	Table 30 on page 136 lists the output fields for the <b>show igmp snooping statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 30: show igmp snooping statistics Output Fields**

Field Name	Field Description	Level of Output
Routing-instance	Routing instance for IGMP snooping.	All levels
IGMP packet statistics	Heading for IGMP snooping statistics for all interfaces or for the specified interface.	All levels
learning-domain	Appears at end of “IGMP packets statistics” line.	All levels



Table 30: show igmp snooping statistics Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>IGMP Message type</b>	Summary of IGMP statistics: <ul style="list-style-type: none"> <li>• <b>Membership Query</b>—Number of membership queries sent and received.</li> <li>• <b>V1 Membership Report</b>—Number of version 1 membership reports sent and received.</li> <li>• <b>DVMRP</b>—Number of DVMRP messages sent or received.</li> <li>• <b>PIM V1</b>—Number of PIM version 1 messages sent or received.</li> <li>• <b>Cisco Trace</b>—Number of Cisco trace messages sent or received.</li> <li>• <b>V2 Membership Report</b>—Number of version 2 membership reports sent or received.</li> <li>• <b>Group Leave</b>—Number of group leave messages sent or received.</li> <li>• <b>Domain Wide Report</b>—Number of domain-wide reports sent or received.</li> <li>• <b>V3 Membership Report</b>—Number of version 3 membership reports sent or received.</li> <li>• <b>Other Unknown types</b>—Number of unknown message types received.</li> <li>• <b>IGMP v3 unsupported type</b>—Number of messages received with unknown and unsupported IGMP version 3 message types.</li> <li>• <b>IGMP v3 source required for SSM</b>—Number of IGMP version 3 messages received that contained no source.</li> <li>• <b>IGMP v3 mode not applicable for SSM</b>—Number of IGMP version 3 messages received that did not contain a mode applicable for source-specific multicast (SSM).</li> </ul>	All levels
<b>Received</b>	Number of messages received.	All levels
<b>Sent</b>	Number of messages sent.	All levels
<b>Rx errors</b>	Number of received packets that contained errors.	All levels
<b>IGMP Global Statistics</b>	Summary of IGMP snooping statistics for all interfaces. <ul style="list-style-type: none"> <li>• <b>Bad Length</b>—Number of messages received with length errors so severe that further classification could not occur.</li> <li>• <b>Bad Checksum</b>—Number of messages received with a bad IP checksum. No further classification was performed.</li> <li>• <b>Rx non-local</b>—Number of messages received from senders that are not local.</li> </ul>	All levels

## Sample Output

```

show igmp snooping statistics user@host> show igmp snooping statistics
                                Routing-instance foo

                                IGMP packet statistics for all interfaces in learning-domain vlan-100

                                IGMP Message type      Received      Sent  Rx errors
                                Membership Query         89           51         0
                                V1 Membership Report       0            0         0
                                DVMRP                    0            0         0
                                PIM V1                   0            0         0
                                Cisco Trace               0            0         0

```



V2 Membership Report	139	0	0
Group Leave	0	0	0
Domain Wide Report	0	0	0
V3 Membership Report	136	0	0
Other Unknown types			0
IGMP v3 unsupported type			0
IGMP v3 source required for SSM			23
IGMP v3 mode not applicable for SSM			0

IGMP Global Statistics			
Bad Length	0		
Bad Checksum	0		
Rx non-local	0		

#### Routing-instance bar

IGMP packet statistics for all interfaces in learning-domain vlan-100

IGMP Message type	Received	Sent	Rx errors
Membership Query	89	51	0
V1 Membership Report	0	0	0
DVMRP	0	0	0
PIM V1	0	0	0
Cisco Trace	0	0	0
V2 Membership Report	139	0	0
Group Leave	0	0	0
Domain Wide Report	0	0	0
V3 Membership Report	136	0	0
Other Unknown types			0
IGMP v3 unsupported type			0
IGMP v3 source required for SSM			23
IGMP v3 mode not applicable for SSM			0

IGMP Global Statistics	
Bad Length	0
Bad Checksum	0
Rx non-local	0



## show igmp statistics

<b>Syntax</b>	show igmp statistics <brief   detail> <interface <i>interface-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	show igmp statistics <brief   detail> <interface <i>interface-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display Internet Group Management Protocol (IGMP) statistics.
<b>Options</b>	none—Display IGMP statistics for all interfaces.  brief   detail—(Optional) Display the specified level of output.  interface <i>interface-name</i> —(Optional) Display IGMP statistics about the specified interface only.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">clear igmp statistics on page 92</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show igmp statistics on page 140</a> <a href="#">show igmp statistics interface on page 141</a>
<b>Output Fields</b>	<a href="#">Table 31 on page 139</a> describes the output fields for the <b>show igmp statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 31: show igmp statistics Output Fields**

Field Name	Field Description
IGMP packet statistics	Heading for IGMP packet statistics for all interfaces or for the specified interface name.



Table 31: show igmp statistics Output Fields (*continued*)

Field Name	Field Description
<b>IGMP Message type</b>	<p>Summary of IGMP statistics:</p> <ul style="list-style-type: none"> <li>• <b>Membership Query</b>—Number of membership queries sent and received.</li> <li>• <b>V1 Membership Report</b>—Number of version 1 membership reports sent and received.</li> <li>• <b>DVMRP</b>—Number of DVMRP messages sent or received.</li> <li>• <b>PIM V1</b>—Number of PIM version 1 messages sent or received.</li> <li>• <b>Cisco Trace</b>—Number of Cisco trace messages sent or received.</li> <li>• <b>V2 Membership Report</b>—Number of version 2 membership reports sent or received.</li> <li>• <b>Group Leave</b>—Number of group leave messages sent or received.</li> <li>• <b>Mtrace Response</b>—Number of Mtrace response messages sent or received.</li> <li>• <b>Mtrace Request</b>—Number of Mtrace request messages sent or received.</li> <li>• <b>Domain Wide Report</b>—Number of domain-wide reports sent or received.</li> <li>• <b>V3 Membership Report</b>—Number of version 3 membership reports sent or received.</li> <li>• <b>Other Unknown types</b>—Number of unknown message types received.</li> <li>• <b>IGMP v3 unsupported type</b>—Number of messages received with unknown and unsupported IGMP version 3 message types.</li> <li>• <b>IGMP v3 source required for SSM</b>—Number of IGMP version 3 messages received that contained no source.</li> <li>• <b>IGMP v3 mode not applicable for SSM</b>—Number of IGMP version 3 messages received that did not contain a mode applicable for source-specific multicast (SSM).</li> </ul>
<b>Received</b>	Number of messages received.
<b>Sent</b>	Number of messages sent.
<b>Rx errors</b>	Number of received packets that contained errors.
<b>IGMP Global Statistics</b>	<p>Summary of IGMP statistics for all interfaces.</p> <ul style="list-style-type: none"> <li>• <b>Bad Length</b>—Number of messages received with length errors so severe that further classification could not occur.</li> <li>• <b>Bad Checksum</b>—Number of messages received with a bad IP checksum. No further classification was performed.</li> <li>• <b>Bad Receive If</b>—Number of messages received on an interface not enabled for IGMP.</li> <li>• <b>Rx non-local</b>—Number of messages received from senders that are not local.</li> <li>• <b>Timed out</b>—Number of groups that timed out as a result of not receiving an explicit leave message.</li> <li>• <b>Rejected Report</b>—Number of reports dropped because of the IGMP group policy.</li> <li>• <b>Total Interfaces</b>—Number of interfaces configured to support IGMP.</li> </ul>

## Sample Output

```

show igmp statistics  user@host> show igmp statistics
IGMP packet statistics for all interfaces
IGMP Message type    Received      Sent  Rx errors
Membership Query      8883         459      0
V1 Membership Report    0            0        0
DVMRP                  0            0        0
PIM V1                 0            0        0

```



Cisco Trace	0	0	0
V2 Membership Report	0	0	0
Group Leave	0	0	0
Mtrace Response	0	0	0
Mtrace Request	0	0	0
Domain Wide Report	0	0	0
V3 Membership Report	0	0	0
Other Unknown types			0
IGMP v3 unsupported type			0
IGMP v3 source required for SSM			0
IGMP v3 mode not applicable for SSM			0
IGMP Global Statistics			
Bad Length	0		
Bad Checksum	0		
Bad Receive If	0		
Rx non-local	1227		
Timed out	0		
Rejected Report	0		
Total Interfaces	2		

```

show igmp statistics user@host> show igmp statistics interface fe-1/0/1.0
interface           IGMP interface packet statistics for fe-1/0/1.0
IGMP Message type   Received      Sent  Rx errors
Membership Query     0            230      0
V1 Membership Report 0             0        0

```



## show mld group

<b>Syntax</b>	show mld group <brief   detail> <group-name> <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display information about Multicast Listener Discovery (MLD) group membership.
<b>Options</b>	<p>none—Display standard information about all MLD groups.</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>group-name—(Optional) Display MLD information about the specified group.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">clear mld membership on page 94</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show mld group (Include Mode) on page 143</a> <a href="#">show mld group (Exclude Mode) on page 143</a> <a href="#">show mld group brief on page 144</a> <a href="#">show mld group detail (Include Mode) on page 144</a> <a href="#">show mld group detail (Exclude Mode) on page 145</a>
<b>Output Fields</b>	<a href="#">Table 32 on page 142</a> describes the output fields for the <b>show mld group</b> command. Output fields are listed in the approximate order in which they appear.

Table 32: show mld group Output Fields

Field Name	Field Description	Level of Output
<b>Interface</b>	Name of the interface that received the MLD membership report; <b>local</b> means that the local router joined the group itself.	All levels
<b>Group</b>	Group address.	All levels
<b>Source</b>	Source address.	All levels
<b>Group Mode</b>	Mode the SSM group is operating in: <b>Include</b> or <b>Exclude</b> .	All levels
<b>Last reported by</b>	Address of the host that last reported membership in this group.	All levels



Table 32: show mld group Output Fields (*continued*)

Field Name	Field Description	Level of Output
Source timeout	Time remaining until the group traffic is no longer forwarded. The timer is refreshed when a listener in include mode sends a report. A group in exclude mode or configured as a static group displays a zero timer.	detail
Timeout	Time remaining until the group membership is removed.	brief none
Group timeout	Time remaining until a group in exclude mode moves to include mode. The timer is refreshed when a listener in exclude mode sends a report. A group in include mode or configured as a static group displays a zero timer.	detail
Type	Type of group membership: <ul style="list-style-type: none"> <li>• <b>Dynamic</b>—Host reported the membership.</li> <li>• <b>Static</b>—Membership is configured.</li> </ul>	All levels

### Sample Output

```

show mld group (Include Mode) user@host> show mld group
Interface: fe-0/1/2.0
  Group: ff02::1:ff05:1a67
    Group mode: Include
    Source: ::
    Last reported by: fe80::2e0:81ff:fe05:1a67
    Timeout: 245 Type: Dynamic
  Group: ff02::1:ffa8:c35e
    Group mode: Include
    Source: ::
    Last reported by: fe80::2e0:81ff:fe05:1a67
    Timeout: 241 Type: Dynamic
  Group: ff02::2:43e:d7f6
    Group mode: Include
    Source: ::
    Last reported by: fe80::2e0:81ff:fe05:1a67
    Timeout: 244 Type: Dynamic
  Group: ff05::2
    Group mode: Include
    Source: ::
    Last reported by: fe80::2e0:81ff:fe05:1a67
    Timeout: 244 Type: Dynamic
Interface: local
  Group: ff02::2
    Source: ::
    Last reported by: Local
    Timeout: 0 Type: Dynamic
  Group: ff02::16
    Source: ::
    Last reported by: Local
    Timeout: 0 Type: Dynamic

show mld group (Exclude Mode) user@host> show mld group
Interface: ge-0/2/2.0
Interface: ge-0/2/0.0
  Group: ff02::6

```



```

Source: ::
Last reported by: fe80::21f:12ff:feb6:4b3a
Timeout: 245 Type: Dynamic
Group: ff02::16
Source: ::
Last reported by: fe80::21f:12ff:feb6:4b3a
Timeout: 28 Type: Dynamic
Interface: local
Group: ff02::2
Source: ::
Last reported by: Local
Timeout: 0 Type: Dynamic
Group: ff02::16
Source: ::
Last reported by: Local
Timeout: 0 Type: Dynamic

```

**show mld group brief** The output for the **show mld group brief** command is identical to that for the **show mld group** command. For sample output, see [show mld group \(Include Mode\) on page 143](#) [show mld group \(Exclude Mode\) on page 143](#).

```

show mld group detail (Include Mode) user@host> show mld group detail
Interface: fe-0/1/2.0
Group: ff02::1:ff05:1a67
Group mode: Include
Source: ::
Last reported by: fe80::2e0:81ff:fe05:1a67
Timeout: 224 Type: Dynamic
Group: ff02::1:ffa8:c35e
Group mode: Include
Source: ::
Last reported by: fe80::2e0:81ff:fe05:1a67
Timeout: 220 Type: Dynamic
Group: ff02::2:43e:d7f6
Group mode: Include
Source: ::
Last reported by: fe80::2e0:81ff:fe05:1a67
Timeout: 223 Type: Dynamic
Group: ff05::2
Group mode: Include
Source: ::
Last reported by: fe80::2e0:81ff:fe05:1a67
Timeout: 223 Type: Dynamic
Interface: so-1/0/1.0
Group: ff02::2
Group mode: Include
Source: ::
Last reported by: fe80::280:42ff:fe15:f445
Timeout: 258 Type: Dynamic
Interface: local
Group: ff02::2
Group mode: Include
Source: ::
Last reported by: Local
Timeout: 0 Type: Dynamic
Group: ff02::16
Source: ::
Last reported by: Local
Timeout: 0 Type: Dynamic

```



```
show mld group detail (Exclude Mode) user@host> show mld group detail
Interface: ge-0/2/2.0
Interface: ge-0/2/0.0
  Group: ff02::6
    Group mode: Exclude
    Source: ::
    Source timeout: 0
    Last reported by: fe80::21f:12ff:feb6:4b3a
    Group timeout: 226 Type: Dynamic
  Group: ff02::16
    Group mode: Exclude
    Source: ::
    Source timeout: 0
    Last reported by: fe80::21f:12ff:feb6:4b3a
    Group timeout: 246 Type: Dynamic
Interface: local
  Group: ff02::2
    Group mode: Exclude
    Source: ::
    Source timeout: 0
    Last reported by: Local
    Group timeout: 0 Type: Dynamic
  Group: ff02::16
    Group mode: Exclude
    Source: ::
    Source timeout: 0
    Last reported by: Local
    Group timeout: 0 Type: Dynamic
```



## show mld interface

<b>Syntax</b>	show mld interface <brief   detail> <interface-name> <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display information about Multicast Listener Discovery (MLD)-enabled interfaces.
<b>Options</b>	<p>none—Display standard information about all MLD-enabled interfaces.</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>interface-name—(Optional) Display information about the specified interface.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear mld membership on page 94</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show mld interface on page 148</a> <a href="#">show mld interface brief on page 148</a> <a href="#">show mld interface detail on page 148</a>
<b>Output Fields</b>	<p><a href="#">Table 33 on page 146</a> describes the output fields for the <b>show mld interface</b> command. Output fields are listed in the approximate order in which they appear.</p>

**Table 33: show mld interface Output Fields**

Field Name	Field Description	Level of Output
<b>Interface</b>	Name of the interface.	All levels
<b>Querier</b>	Address of the router that has been elected to send membership queries.	All levels
<b>State</b>	State of the interface: <b>Up</b> or <b>Down</b> .	All levels
<b>SSM Map Policy</b>	Name of the source-specific multicast (SSM) map policy that has been applied to the interface.	All levels
<b>SSM Map Policy</b>	Name of the source-specific multicast (SSM) map policy at the MLD interface.	All levels
<b>Timeout</b>	How long until the MLD querier is declared to be unreachable, in seconds.	All levels
<b>Version</b>	MLD version being used on the interface: 1 or 2.	All levels



Table 33: show mld interface Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Groups</b>	Number of groups on the interface.	All levels
<b>Passive</b>	<p>State of the passive mode option:</p> <ul style="list-style-type: none"> <li>• <b>On</b>—Indicates that the router can run IGMP or MLD on the interface but not send or receive control traffic such as IGMP or MLD reports, queries, and leaves.</li> <li>• <b>Off</b>—Indicates that the router can run IGMP or MLD on the interface and send or receive control traffic such as IGMP or MLD reports, queries, and leaves.</li> </ul> <p>The <b>passive</b> statement enables you to selectively activate up to two out of a possible three available query or control traffic options. When enabled, the following options appear after the <b>on</b> state declaration:</p> <ul style="list-style-type: none"> <li>• <b>send-general-query</b>—The interface sends general queries.</li> <li>• <b>send-group-query</b>—The interface sends group-specific and group-source-specific queries.</li> <li>• <b>allow-receive</b>—The interface receives control traffic</li> </ul>	All levels
<b>OIF map</b>	Name of the OIF map associated to the interface.	All levels
<b>SSM map</b>	Name of the source-specific multicast (SSM) map used on the interface, if configured.	All levels
<b>Immediate Leave</b>	<p>State of the immediate leave option:</p> <ul style="list-style-type: none"> <li>• <b>On</b>—Indicates that the router removes a host from the multicast group as soon as the router receives a multicast listener done message from a host associated with the interface.</li> <li>• <b>Off</b>—Indicates that after receiving a multicast listener done message, instead of removing a host from the multicast group immediately, the router sends a group query to determine if another receiver responds.</li> </ul>	All levels
<b>Configured Parameters</b>	<p>Information configured by the user.</p> <ul style="list-style-type: none"> <li>• <b>MLD Query Interval (.1 secs)</b>—Interval at which this router sends membership queries when it is the querier.</li> <li>• <b>MLD Query Response Interval (.1 secs)</b>—Time that the router waits for a report in response to a general query.</li> <li>• <b>MLD Last Member Query Interval (.1 secs)</b>—Time that the router waits for a report in response to a group-specific query.</li> <li>• <b>MLD Robustness Count</b>—Number of times the router retries a query.</li> </ul>	All levels
<b>Derived Parameters</b>	<p>Derived information.</p> <ul style="list-style-type: none"> <li>• <b>MLD Membership Timeout (.1 secs)</b>—Timeout period for group membership. If no report is received for these groups before the timeout expires, the group membership will be removed.</li> <li>• <b>MLD Other Querier Present Timeout (.1 secs)</b>—Time that the router waits for the IGMP querier to send a query.</li> </ul>	All levels



## Sample Output

```

show mld interface user@host> show mld interface
Interface: fe-0/0/0
  Querier: None
  State: Up      Timeout:      0    Version:  1    Groups:    0
  SSM Map Policy: ssm-policy-A
Interface: at-0/3/1.0
  Querier: 8038::c0a8:c345
  State: Up      Timeout:    None    Version:  1    Groups:    0
  SSM Map Policy: ssm-policy-B
Interface: fe-1/0/1.0
  Querier: ::192.168.195.73
  State: Up      Timeout:    None    Version:  1    Groups:    3
  SSM Map Policy: ssm-policy-C
  SSM map: ipv6map1
Immediate Leave: On

Configured Parameters:
MLD Query Interval (.1 secs): 1250
MLD Query Response Interval (.1 secs): 100
MLD Last Member Query Interval (.1 secs): 10
MLD Robustness Count: 2

Derived Parameters:
MLD Membership Timeout (.1secs): 2600
MLD Other Querier Present Timeout (.1 secs): 2550

```

**show mld interface brief** The output for the **show mld interface brief** command is identical to that for the **show mld interface** command. For sample output, see [show mld interface on page 148](#).

**show mld interface detail** The output for the **show mld interface detail** command is identical to that for the **show mld interface** command. For sample output, see [show mld interface on page 148](#).



## show mld statistics

<b>Syntax</b>	show mld statistics <interface <i>interface-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display information about Multicast Listener Discovery (MLD) statistics.
<b>Options</b>	<p>none—Display MLD statistics for all interfaces.</p> <p>interface <i>interface-name</i>—(Optional) Display statistics about the specified interface.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear mld statistics on page 95</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show mld statistics on page 150</a> <a href="#">show mld statistics interface on page 151</a>
<b>Output Fields</b>	<p><a href="#">Table 34 on page 149</a> describes the output fields for the <b>show mld statistics</b> command. Output fields are listed in the approximate order in which they appear.</p>

**Table 34: show mld statistics Output Fields**

Field Name	Field Description
Received	Number of received packets.
Sent	Number of transmitted packets.
Rx errors	Number of received packets that contained errors.



Table 34: show mld statistics Output Fields (*continued*)

Field Name	Field Description
<b>MLD Message type</b>	Summary of MLD statistics. <ul style="list-style-type: none"> <li>• <b>Listener Query (v1/v2)</b>—Number of membership queries sent and received.</li> <li>• <b>Listener Report (v1)</b>—Number of version 1 membership reports sent and received.</li> <li>• <b>Listener Done (v1/v2)</b>—Number of Listener Done messages sent and received.</li> <li>• <b>Listener Report (v2)</b>—Number of version 2 membership reports sent and received.</li> <li>• <b>Other Unknown types</b>—Number of unknown message types received.</li> <li>• <b>MLD v2 source required for SSM</b>—Number of MLD version 2 messages received that contained no source.</li> <li>• <b>MLD v2 mode not applicable for SSM</b>—Number of MLD version 2 messages received that did not contain a mode applicable for source-specific multicast (SSM).</li> </ul>
<b>MLD Global Statistics</b>	Summary of MLD statistics for all interfaces. <ul style="list-style-type: none"> <li>• <b>Bad Length</b>—Number of messages received with length errors so severe that further classification could not occur.</li> <li>• <b>Bad Checksum</b>—Number of messages received with an invalid IP checksum. No further classification was performed.</li> <li>• <b>Bad Receive If</b>—Number of messages received on an interface not enabled for MLD.</li> <li>• <b>Rx non-local</b>—Number of messages received from nonlocal senders.</li> <li>• <b>Timed out</b>—Number of groups that timed out as a result of not receiving an explicit leave message.</li> <li>• <b>Rejected Report</b>—Number of reports dropped because of the MLD group policy.</li> <li>• <b>Total Interfaces</b>—Number of interfaces configured to support IGMP.</li> </ul>

## Sample Output

```

show mld statistics user@host> show mld statistics
MLD packet statistics for all interfaces
MLD Message type      Received      Sent  Rx errors
Listener Query (v1/v2)      0           2      0
Listener Report (v1)        0           0      0
Listener Done (v1/v2)       0           0      0
Listener Report (v2)        0           0      0
Other Unknown types                0
MLD v2 source required for SSM      2
MLD v2 mode not applicable for SSM  0

MLD Global Statistics
Bad Length                0
Bad Checksum              0
Bad Receive If            0
Rx non-local              0
Timed out                 0

```



```

Rejected Report          0
Total Interfaces         2

show mld statistics      user@host> show mld statistics interface fe-1/0/1.0
interface               MLD interface packet statistics for fe-1/0/1.0
MLD Message type        Received      Sent    Rx errors
Listener Query (v1/v2)   0          2        0
Listener Report (v1)     0          0        0
Listener Done (v1/v2)    0          0        0
Listener Report (v2)     0          0        0
Other Unknown types      0          0        0
MLD v2 source required for SSM 2
MLD v2 mode not applicable for SSM 0

MLD Global Statistics
Bad Length               0
Bad Checksum             0
Bad Receive If           0
Rx non-local             0
Timed out                0
Rejected Report          0
Total Interfaces         2

```



## show msdp

<b>Syntax</b>	<pre>show msdp &lt;brief   detail&gt; &lt;instance <i>instance-name</i>&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;peer <i>peer-address</i>&gt;</pre>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display Multicast Source Discovery Protocol (MSDP) information.
<b>Options</b>	<p>none—Display standard MSDP information for all routing instances.</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>instance <i>instance-name</i>—(Optional) Display information for the specified instance only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>peer <i>peer-address</i>—(Optional) Display information about the specified peer only,</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show msdp source on page 154</a></li> <li>• <a href="#">show msdp source-active on page 156</a></li> <li>• <a href="#">show msdp statistics on page 158</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show msdp on page 153</a> <a href="#">show msdp brief on page 153</a> <a href="#">show msdp detail on page 153</a>
<b>Output Fields</b>	<a href="#">Table 35 on page 152</a> describes the output fields for the <b>show msdp</b> command. Output fields are listed in the approximate order in which they appear.

**Table 35: show msdp Output Fields**

Field Name	Field Description	Level of Output
Peer address	IP address of the peer.	All levels
Local address	Local address of the peer.	All levels
State	Status of the MSDP connection: <b>Listen</b> , <b>Established</b> , or <b>Inactive</b> .	All levels
Last up/down	Time at which the most recent peer-state change occurred.	All levels
Peer-Group	Peer group name.	All levels



Table 35: show msdp Output Fields (*continued*)

Field Name	Field Description	Level of Output
SA Count	Number of source-active cache entries advertised by each peer that were accepted, compared to the number that were received, in the format <i>number-accepted/number-received</i> .	All levels
Peer Connect Retries	Number of peer connection retries.	detail
State timer expires	Number of seconds before another message is sent to a peer.	detail
Peer Times out	Number of seconds to wait for a response from the peer before the peer is declared unavailable.	detail
SA accepted	Number of entries in the source-active cache accepted from the peer.	detail
SA received	Number of entries in the source-active cache received by the peer.	detail

## Sample Output

```

show msdp user@host> show msdp
Peer address    Local address  State          Last up/down  Peer-Group  SA Count
198.32.8.193    198.32.8.195  Established    5d 19:25:44   North23     120/150
198.32.8.194    198.32.8.195  Established    3d 19:27:27   North23     300/345
198.32.8.196    198.32.8.195  Established    5d 19:39:36   North23     10/13
198.32.8.197    198.32.8.195  Established    5d 19:32:27   North23     5/6
198.32.8.198    198.32.8.195  Established    3d 19:33:04   North23     2305/3000

```

**show msdp brief** The output for the **show msdp brief** command is identical to that for the **show msdp** command. For sample output, see [show msdp on page 153](#).

```

show msdp detail user@host> show msdp detail
Peer: 10.255.70.15
Local address: 10.255.70.19
State: Established
Peer Connect Retries: 0
State timer expires: 22
Peer Times out: 49
SA accepted: 0
SA received: 0

```



## show msdp source

---

<b>Syntax</b>	<code>show msdp source</code> <code>&lt;instance <i>instance-name</i>&gt;</code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code> <code>&lt;source-address&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display multicast sources learned from Multicast Source Discovery Protocol (MSDP).
<b>Options</b>	<p>none—Display standard MSDP source information for all routing instances.</p> <p>instance <i>instance-name</i>—(Optional) Display information for the specified instance only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>source-address</i>—(Optional) IP address and optional prefix length. Display information for the specified source address only.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show msdp on page 152</a></li><li>• <a href="#">show msdp source-active on page 156</a></li><li>• <a href="#">show msdp statistics on page 158</a></li></ul>
<b>List of Sample Output</b>	<a href="#">show msdp source on page 155</a>



**Output Fields** Table 36 on page 155 describes the output fields for the **show msdp source** command. Output fields are listed in the approximate order in which they appear.

**Table 36: show msdp source Output Fields**

Field Name	Field Description
Source address	IP address of the source.
/Len	Length of the prefix for this IP address.
Type	Discovery method for this multicast source: <ul style="list-style-type: none"> <li>• <b>Configured</b>—Source-active limit explicitly configured for this source.</li> <li>• <b>Dynamic</b>—Source-active limit established when this source was discovered.</li> </ul>
Maximum	Source-active limit applied to this source.
Threshold	Source-active threshold applied to this source.
Exceeded	Number of source-active messages received from this source exceeding the established maximum.

### Sample Output

```

show msdp source user@host> show msdp source
Source address /Len  Type      Maximum  Threshold  Exceeded
0.0.0.0        /0    Configured    5         none       0
10.1.0.0       /16   Configured    500       none       0
10.1.1.1       /32   Configured    10000     none       0
10.1.1.2       /32   Dynamic       6936     none       0
10.1.5.5       /32   Dynamic       500       none      123
10.2.1.1       /32   Dynamic        2         none       0

```



## show msdp source-active

---

<b>Syntax</b>	<code>show msdp source-active</code> <code>&lt;brief   detail&gt;</code> <code>&lt;group <i>group</i>&gt;</code> <code>&lt;instance <i>instance-name</i>&gt;</code> <code>&lt;local&gt;</code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code> <code>&lt;originator <i>originator</i>&gt;</code> <code>&lt;peer <i>peer-address</i>&gt;</code> <code>&lt;source <i>source-address</i>&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display the Multicast Source Discovery Protocol (MSDP) source-active cache.
<b>Options</b>	<p><code>none</code>—Display standard MSDP source-active cache information for all routing instances.</p> <p><code>brief   detail</code>—(Optional) Display the specified level of output.</p> <p><code>group <i>group</i></code>—(Optional) Display source-active cache information for the specified group.</p> <p><code>instance <i>instance-name</i></code>—(Optional) Display information for the specified instance.</p> <p><code>local</code>—(Optional) Display all source-active caches originated by this router.</p> <p><code>logical-system (all   <i>logical-system-name</i>)</code>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><code>originator <i>originator</i></code>—(Optional) Display information about the peer that originated the source-active cache entries.</p> <p><code>peer <i>peer-address</i></code>—(Optional) Display the source-active cache of the specified peer.</p> <p><code>source <i>source-address</i></code>—(Optional) Display the source-active cache of the specified source.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show msdp on page 152</a></li><li>• <a href="#">show msdp source on page 154</a></li><li>• <a href="#">show msdp statistics on page 158</a></li></ul>
<b>List of Sample Output</b>	<a href="#">show msdp source-active on page 157</a> <a href="#">show msdp source-active brief on page 157</a> <a href="#">show msdp source-active detail on page 157</a>
<b>Output Fields</b>	<a href="#">Table 37 on page 157</a> describes the output fields for the <b>show msdp source-active</b> command. Output fields are listed in the approximate order in which they appear.



Table 37: show msdp source-active Output Fields

Field Name	Field Description
Group address	Multicast address of the group.
Source address	IP address of the source.
Peer address	IP address of the peer.
Originator	Address of the rendezvous point (RP) that originated the message.
Flags	Flags: Accept, Reject, or Filtered.

### Sample Output

```

show msdp source-active user@host> show msdp source-active
Group address  Source address  Peer address  Originator  Flags
230.0.0.0      192.168.195.46  local        10.255.14.30  Accept
230.0.0.1      192.168.195.46  local        10.255.14.30  Accept
230.0.0.2      192.168.195.46  local        10.255.14.30  Accept
230.0.0.3      192.168.195.46  local        10.255.14.30  Accept
230.0.0.4      192.168.195.46  local        10.255.14.30  Accept

```

**show msdp source-active brief** The output for the **show msdp source-active brief** command is identical to that for the **show msdp source-active** command. For sample output, see [show msdp source-active on page 157](#).

**show msdp source-active detail** The output for the **show msdp source-active detail** command is identical to that for the **show msdp source-active** command. For sample output, see [show msdp source-active on page 157](#).



## show msdp statistics

<b>Syntax</b>	show msdp statistics <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )> <peer <i>peer-address</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display statistics about Multicast Source Discovery Protocol (MSDP) peers.
<b>Options</b>	<p>none—Display statistics about all MSDP peers for all routing instances.</p> <p>instance <i>instance-name</i>—(Optional) Display statistics about a specific MSDP instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>peer <i>peer-address</i>—(Optional) Display statistics about a particular MSDP peer.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear msdp statistics on page 97</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show msdp statistics on page 159</a>
<b>Output Fields</b>	<a href="#">Table 38 on page 158</a> describes the output fields for the <b>show msdp statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 38: show msdp statistics Output Fields**

Field Name	Field Description
Global active source limit exceeded	Number of times all peers have exceeded configured active source limits.
Peer	Address of peer.
Last State Change	How long ago the peer state changed.
Last message received from the peer	How long ago the last message was received from the peer.
RPF Failures	Number of reverse path forwarding (RPF) failures.
Remote Closes	Number of times the remote peer closed.
Peer Timeouts	Number of peer timeouts.
SA messages sent	Number of source-active messages sent.



Table 38: show msdp statistics Output Fields (*continued*)

Field Name	Field Description
SA messages received	Number of source-active messages received.
SA request messages sent	Number of source-active request messages sent.
SA request messages received	Number of source-active request messages received.
SA response messages sent	Number of source-active response messages sent.
SA response messages received	Number of source-active response messages received.
Active source exceeded	Number of times this peer has exceeded configured source-active limits.
Keepalive messages sent	Number of keepalive messages sent.
Keepalive messages received	Number of keepalive messages received.
Unknown messages received	Number of unknown messages received.
Error messages received	Number of error messages received.

## Sample Output

```

show msdp statistics user@host> show msdp statistics
Global active source exceeded: 0

Peer: 10.255.245.39
Last State Change: 11:54:49 (00:24:59)
Last message received from peer: 11:53:32 (00:26:16)
RPF Failures: 0
Remote Closes: 0
Peer Timeouts: 0
SA messages sent: 376
SA messages received: 459
SA request messages sent: 0
SA request messages received: 0
SA response messages sent: 0
SA response messages received: 0
Active source exceeded: 0
Keepalive messages sent: 17
Keepalive messages received: 19
Unknown messages received: 0
Error messages received: 0

```



## show multicast backup-pe-groups

<b>Syntax</b>	show multicast backup-pe-groups <address <i>pe-address</i> > <group <i>group-name</i> > <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced in Junos OS Release 9.0.
<b>Description</b>	Display backup PE router group information when ingress PE redundancy is configured. Ingress PE redundancy provides a backup resource when point-to-multipoint LSPs are configured for multicast distribution.
<b>Options</b>	<p>none—Display standard information about all backup PE groups.</p> <p>address <i>pe-address</i>—(Optional) Display the groups that a PE address is associated with.</p> <p>group <i>group</i>—(Optional) Display the backup PE group information for a particular group.</p> <p>instance <i>instance-name</i>—(Optional) Display backup PE group information for a specific multicast instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show multicast backup-pe-groups on page 161</a>
<b>Output Fields</b>	<a href="#">Table 39 on page 160</a> describes the output fields for the <b>show multicast backup-pe-groups</b> command. Output fields are listed in the approximate order in which they appear.

**Table 39: show multicast backup-pe-groups Output Fields**

Field Name	Field Description
Backup PE Group	Group name.
Designated PE	Primary PE router. Address of the PE router that is currently forwarding traffic on the static route.
Transitions	Number of times that the designated PE router has transitioned from the most eligible PE router to a backup PE router and back again to the most eligible PE router.
Last Transition	Time of the most recent transition.
Local Address	Address of the local PE router.
Backup PE List	List of PE routers that are configured to be backups for the group.



## Sample Output

```
show multicast backup-pe-groups user@host> show multicast backup-pe-groups
Instance: master

Backup PE group: b1
  Designated PE: 10.255.165.7
  Transitions: 1
  Last Transition: 03:15:01
  Local Address: 10.255.165.7
  Backup PE List:
    10.255.165.8

Backup PE group: b2
  Designated PE: 10.255.165.7
  Transitions: 2
  Last Transition: 02:58:20
  Local Address: 10.255.165.7
  Backup PE List:
    10.255.165.9
    10.255.165.8
```



## show multicast flow-map

<b>Syntax</b>	show multicast flow-map <brief   detail> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	show multicast flow-map <brief   detail>
<b>Release Information</b>	Command introduced in Junos OS Release 8.2. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display configuration information about IP multicast flow maps.
<b>Options</b>	none—Display configuration information about IP multicast flow maps on all systems.  brief   detail—(Optional) Display the specified level of output.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show multicast flow-map on page 163</a> <a href="#">show multicast flow-map detail on page 163</a>
<b>Output Fields</b>	<a href="#">Table 40 on page 162</a> describes the output fields for the <b>show multicast flow-map</b> command. Output fields are listed in the approximate order in which they appear.

**Table 40: show multicast flow-map Output Fields**

Field Name	Field Description	Levels of Output
<b>Name</b>	Name of the flow map.	All levels
<b>Policy</b>	Name of the policy associated with the flow map.	All levels
<b>Cache-timeout</b>	Cache timeout value assigned to the flow map.	All levels
<b>Bandwidth</b>	Bandwidth setting associated with the flow map.	All levels
<b>Adaptive</b>	Whether or not adaptive mode is enabled for the flow map.	none
<b>Flow-map</b>	Name of the flow map.	<b>detail</b>
<b>Adaptive Bandwidth</b>	Whether or not adaptive mode is enabled for the flow map.	<b>detail</b>
<b>Redundant Sources</b>	Redundant sources defined for the same destination group.	<b>detail</b>



## Sample Output

```
show multicast flow-map user@host> show multicast flow-map
Instance: master
Name      Policy      Cache timeout      Bandwidth Adaptive
map2      policy2     never              2000000 no
map1      policy1     60 seconds        2000000 no
```

## Sample Output

```
show multicast flow-map detail user@host> show multicast flow-map detail
Instance: master
Flow-map: map1
Policy:      policy1
Cache Timeout: 600 seconds
Bandwidth:   2000000
Adaptive Bandwidth: yes
Redundant Sources: 11.11.11.11
Redundant Sources: 11.11.11.12
Redundant Sources: 11.11.11.13
```



## show multicast interface

<b>Syntax</b>	show multicast interface <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	show multicast interface
<b>Release Information</b>	Command introduced in Junos OS Release 8.3. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display bandwidth information about IP multicast interfaces.
<b>Options</b>	none—Display all interfaces that have multicast configured.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show multicast interface on page 165</a>
<b>Output Fields</b>	<a href="#">Table 41 on page 164</a> describes the output fields for the <b>show multicast interface</b> command. Output fields are listed in the approximate order in which they appear.

**Table 41: show multicast interface Output Fields**

Field Name	Field Description
<b>Interface</b>	Name of the multicast interface.
<b>Maximum bandwidth (bps)</b>	Maximum bandwidth setting, in bits per second, for this interface.
<b>Remaining bandwidth (bps)</b>	Amount of bandwidth, in bits per second, remaining on the interface.
<b>Mapped bandwidth deduction (bps)</b>	<p>Amount of bandwidth, in bits per second, used by any flows that are mapped to the interface.</p> <p><b>NOTE:</b> Adding the mapped bandwidth deduction value to the local bandwidth deduction value results in the total deduction value for the interface.</p> <p>This field does not appear in the output when the no QoS adjustment feature is disabled.</p>



Table 41: show multicast interface Output Fields (*continued*)

Field Name	Field Description
<b>Local bandwidth deduction (bps)</b>	<p>Amount of bandwidth, in bits per second, used by any mapped flows that are traversing the interface.</p> <p><b>NOTE:</b> Adding the mapped bandwidth deduction value to the local bandwidth deduction value results in the total deduction value for the interface.</p> <p>This field does not appear in the output when the no QoS adjustment feature is disabled.</p>
<b>Reverse OIF mapping</b>	<p>State of the reverse OIF mapping feature (<b>on</b> or <b>off</b>).</p> <p><b>NOTE:</b> This field does not appear in the output when the no QoS adjustment feature is disabled.</p>
<b>Reverse OIF mapping no QoS adjustment</b>	<p>State of the no QoS adjustment feature (<b>on</b> or <b>off</b>) for interfaces that are using reverse OIF mapping.</p> <p><b>NOTE:</b> This field does not appear in the output when the no QoS adjustment feature is disabled.</p>
<b>Leave timer</b>	<p>Amount of time a mapped interface remains active after the last mapping ends.</p> <p><b>NOTE:</b> This field does not appear in the output when the no QoS adjustment feature is disabled.</p>
<b>No QoS adjustment</b>	<p>State (<b>on</b>) of the no QoS adjustment feature when this feature is enabled.</p> <p><b>NOTE:</b> This field does not appear in the output when the no QoS adjustment feature is disabled.</p>

## Sample Output

```

show multicast user@host> show multicast interface
interface      Maximum bandwidth (bps) Remaining bandwidth (bps)
fe-0/0/3       100000000                0
fe-0/0/3.210   10000000                -2000000
fe-0/0/3.220   100000000               100000000
fe-0/0/3.230   20000000                18000000
fe-0/0/2.200   100000000               100000000

```



## show multicast minfo

<b>Syntax</b>	<code>show multicast minfo</code> <code>&lt;host&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display configuration information about IP multicast networks, including neighboring multicast router addresses.
<b>Options</b>	<code>none</code> —Display configuration information about all multicast networks.  <code>host</code> —(Optional) Display configuration information about a particular host. Replace <code>host</code> with a hostname or IP address.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show multicast minfo on page 167</a>
<b>Output Fields</b>	<a href="#">Table 42 on page 166</a> describes the output fields for the <b>show multicast minfo</b> command. Output fields are listed in the approximate order in which they appear.

Table 42: show multicast minfo Output Fields

Field Name	Field Description
<i>source-address</i>	Query address, hostname (DNS name or IP address of the source address), and multicast protocol version or the software version of another vendor.
<i>ip-address-1—&gt;ip-address-2</i>	Queried router interface address and directly attached neighbor interface address, respectively.
<i>(name or ip-address)</i>	Name or IP address of neighbor.
<i>[metric/threshold/type/flags]</i>	Neighbor's multicast profile: <ul style="list-style-type: none"> <li><b>metric</b>—Always has a value of 1, because <b>minfo</b> queries the directly connected interfaces of a device.</li> <li><b>threshold</b>—Multicast threshold time-to-live (TTL). The range of values is 0 through 255.</li> <li><b>type</b>—Multicast connection type: <b>pim</b> or <b>tunnel</b>.</li> <li><b>flags</b>—Flags for this route: <ul style="list-style-type: none"> <li><b>querier</b>—Queried router is the designated router for the neighboring session.</li> <li><b>leaf</b>—Link is a leaf in the multicast network.</li> <li><b>down</b>—Link status indicator.</li> </ul> </li> </ul>



## Sample Output

```
show multicast mrinfo user@host> show multicast mrinfo 10.35.4.1
10.35.4.1 (10.35.4.1) [version 12.0]:
  192.168.195.166 -> 0.0.0.0 (local) [1/0/pim/querier/leaf]
  10.38.20.1 -> 0.0.0.0 (local) [1/0/pim/querier/leaf]
  10.47.1.1 -> 10.47.1.2 (10.47.1.2) [1/5/pim]
  0.0.0.0 -> 0.0.0.0 (local) [1/0/pim/down]
```



## show multicast next-hops

<b>Syntax</b>	<pre>show multicast next-hops &lt;brief   detail&gt; &lt;identifier-number&gt; &lt;inet   inet6&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt;</pre>
<b>Syntax (EX Series Switch and the QFX Series)</b>	<pre>show multicast next-hops &lt;brief   detail&gt; &lt;identifier-number&gt; &lt;inet   inet6&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>inet6</b> option introduced in Junos OS Release 10.0 for EX Series switches.</p> <p><b>detail</b> option display of next-hop ID number introduced in Junos OS Release 11.1 for M Series and T Series routers and EX Series switches.</p>
<b>Description</b>	Display the entries in the IP multicast next-hop table.
<b>Options</b>	<p><b>none</b>—Display standard information about all entries in the multicast next-hop table for all supported address families.</p> <p><b>brief   detail</b>—(Optional) Display the specified level of output.</p> <p>When you include the <b>detail</b> option on M Series and T Series routers and EX Series switches, the downstream interface name includes the next-hop ID number in parentheses, in the form <b>fe-0/1/2.0-(1048574)</b> where <b>1048574</b> is the next-hop ID number.</p> <p><b>identifier-number</b>—(Optional) Show a particular next hop by ID number. The range of values is 1 through <b>65,535</b>.</p> <p><b>inet   inet6</b>—(Optional) Display entries for IPv4 or IPv6 family addresses, respectively.</p> <p><b>logical-system (all   <i>logical-system-name</i>)</b>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<p><a href="#">show multicast next-hops on page 169</a></p> <p><a href="#">show multicast next-hops brief on page 169</a></p> <p><a href="#">show multicast next-hops detail on page 169</a></p>
<b>Output Fields</b>	<p><a href="#">Table 43 on page 169</a> describes the output fields for the <b>show multicast next-hops</b> command. Output fields are listed in the approximate order in which they appear.</p>



Table 43: show multicast next-hops Output Fields

Field Name	Field Description
Family	Protocol family (such as <b>INET</b> ).
ID	Next-hop identifier of the prefix. The identifier is returned by the routing device's Packet Forwarding Engine.
Refcount	Number of cache entries that are using this next hop.
KRefcount	Kernel reference count for the next hop.
Downstream interface	Interface names associated with each multicast next-hop ID.

### Sample Output

```

user@host> show multicast next-hops
Family: INET
ID      Refcount  KRefcount Downstream interface
262142      4          2 so-1/0/0.0
262143      2          1 mt-1/1/0.49152
262148      2          1 mt-1/1/0.32769

```

The output for the **show multicast next-hops brief** command is identical to that for the **show multicast next-hops** command. For sample output, see [show multicast next-hops on page 169](#).

```

user@host> show multicast next-hops detail
Family: INET
ID      Refcount  KRefcount Downstream interface
1048577      2          1 fe-0/1/2.0-(1048574)
                                ge-0/2/3.0-(1048576)

```



## show multicast pim-to-igmp-proxy

<b>Syntax</b>	show multicast pim-to-igmp-proxy <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	show multicast pim-to-igmp-proxy <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 9.6. Command introduced in Junos OS Release 9.6 for EX Series switches. <b>instance</b> option introduced in Junos OS Release 10.0. <b>instance</b> option introduced in Junos OS Release 10.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display configuration information about PIM-to-IGMP message translation, also known as PIM-to-IGMP proxy.
<b>Options</b>	<p>none—Display configuration information about PIM-to-IGMP message translation for all routing instances.</p> <p>instance <i>instance-name</i>—(Optional) Display configuration information about PIM-to-IGMP message translation for a specific multicast instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show multicast pim-to-igmp-proxy on page 171</a> <a href="#">show multicast pim-to-igmp-proxy instance on page 171</a>
<b>Output Fields</b>	<a href="#">Table 44 on page 170</a> describes the output fields for the <b>show multicast pim-to-igmp-proxy</b> command. Output fields are listed in the order in which they appear.

**Table 44: show multicast pim-to-igmp-proxy Output Fields**

Field Name	Field Description
<b>Instance</b>	Routing instance. Default instance is <b>master</b> (inet.0 routing table).
<b>Proxy state</b>	State of PIM-to-IGMP message translation, also known as PIM-to-IGMP proxy, on the configured upstream interfaces: <b>enabled</b> or <b>disabled</b> .
<b><i>interface-name</i></b>	Name of upstream interface (no more than two allowed) on which PIM-to-IGMP message translation is configured.



## Sample Output

```
show multicast pim-to-igmp-proxy user@host> show multicast pim-to-igmp-proxy
Instance: master Proxy state: enabled
ge-0/1/0.1
ge-0/1/0.2

show multicast pim-to-igmp-proxy instance VPN-A user@host> show multicast pim-to-igmp-proxy instance VPN-A
Instance: VPN-A Proxy state: enabled
ge-0/1/0.1
```



## show multicast pim-to-mld-proxy

<b>Syntax</b>	show multicast pim-to-mld-proxy <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	show multicast pim-to-mld-proxy <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 9.6. Command introduced in Junos OS Release 9.6 for EX Series switches. <b>instance</b> option introduced in Junos OS Release 10.0. <b>instance</b> option introduced in Junos OS Release 10.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display configuration information about PIM-to-MLD message translation, also known as PIM-to-MLD proxy.
<b>Options</b>	<p>none—Display configuration information about PIM-to-MLD message translation for all routing instances.</p> <p>instance <i>instance-name</i>—(Optional) Display configuration information about PIM-to-MLD message translation for a specific multicast instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show multicast pim-to-mld-proxy on page 173</a> <a href="#">show multicast pim-to-mld-proxy instance on page 173</a>
<b>Output Fields</b>	<a href="#">Table 45 on page 172</a> describes the output fields for the <b>show multicast pim-to-mld-proxy</b> command. Output fields are listed in the order in which they appear.

**Table 45: show multicast pim-to-mld-proxy Output Fields**

Field Name	Field Description
Proxy state	State of PIM-to-MLD message translation, also known as PIM-to-MLD proxy, on the configured upstream interfaces: <b>enabled</b> or <b>disabled</b> .
<i>interface-name</i>	Name of upstream interface (no more than two allowed) on which PIM-to-MLD message translation is configured.



## Sample Output

```
show multicast pim-to-mld-proxy user@host> show multicast pim-to-mld-proxy
Instance: master Proxy state: enabled
ge-0/5/0.1
ge-0/5/0.2

show multicast pim-to-mld-proxy instance VPN-A user@host> show multicast pim-to-mld-proxy instance VPN-A
Instance: VPN-A Proxy state: enabled
ge-0/5/0.1
```



## show multicast route

---

<b>Syntax</b>	<pre>show multicast route &lt;brief   detail   extensive   summary&gt; &lt;active   all   inactive&gt; &lt;group group&gt; &lt;inet   inet6&gt; &lt;instance instance name&gt; &lt;logical-system (all   logical-system-name)&gt; &lt;regular-expression&gt; &lt;source-prefix source-prefix&gt;</pre>
<b>Syntax (EX Series Switch and the QFX Series)</b>	<pre>show multicast route &lt;brief   detail   extensive   summary&gt; &lt;active   all   inactive&gt; &lt;group group&gt; &lt;inet   inet6&gt; &lt;instance instance name&gt; &lt;regular-expression&gt; &lt;source-prefix source-prefix&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches.</p>
<b>Description</b>	<p>Display the entries in the IP multicast forwarding table. You can display similar information with the <b>show route table inet.1</b> command.</p>
<b>Options</b>	<p><b>none</b>—Display standard information about all entries in the multicast forwarding table for all routing instances.</p> <p><b>brief   detail   extensive   summary</b>—(Optional) Display the specified level of output.</p> <p><b>active   all   inactive</b>—(Optional) Display all active entries, all entries, or all inactive entries, respectively, in the multicast forwarding table.</p> <p><b>group group</b>—(Optional) Display the cache entries for a particular group.</p> <p><b>inet   inet6</b>—(Optional) Display multicast forwarding table entries for IPv4 or IPv6 family addresses, respectively.</p> <p><b>instance instance-name</b>—(Optional) Display entries in the multicast forwarding table for a specific multicast instance.</p> <p><b>logical-system (all   logical-system-name)</b>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><b>regular-expression</b>—(Optional) Display information about the multicast forwarding table entries that match a UNIX OS-style regular expression.</p> <p><b>source-prefix source-prefix</b>—(Optional) Display the cache entries for a particular source prefix.</p>



**Required Privilege Level** view

**List of Sample Output** [show multicast route on page 176](#)  
[show multicast route brief on page 176](#)  
[show multicast route detail on page 176](#)  
[show multicast route instance <instance-name> extensive on page 177](#)  
[show multicast route summary on page 177](#)

**Output Fields** [Table 46 on page 175](#) describes the output fields for the **show multicast route** command. Output fields are listed in the approximate order in which they appear.

**Table 46: show multicast route Output Fields**

Field Name	Field Description	Level of Output
<b>family</b>	IPv4 address family ( <b>INET</b> ) or IPv6 address family ( <b>INET6</b> ).	All levels
<b>Group</b>	Group address.	All levels
<b>Source</b>	Prefix and length of the source as it is in the multicast forwarding table.	All levels
<b>Upstream interface</b>	Name of the interface on which the packet with this source prefix is expected to arrive.	All levels
<b>Downstream interface list</b>	List of interface names to which the packet with this source prefix is forwarded.	All levels
<b>Session description</b>	Name of the multicast session.	<b>detail extensive</b>
<b>Statistics</b>	Rate at which packets are being forwarded for this source and group entry (in Kbps and pps), and number of packets that have been forwarded to this prefix. If one or more of the kilobits per second packet forwarding statistic queries fails or times out, the statistics field displays <b>Forwarding statistics are not available</b> .  <b>NOTE:</b> On QFX Series switches, this field does not report valid statistics.	<b>detail extensive</b>
<b>Next-hop ID</b>	Next-hop identifier of the prefix. The identifier is returned by the routing device's Packet Forwarding Engine and is also displayed in the output of the <b>show multicast nexthops</b> command.	<b>detail extensive</b>
<b>Upstream protocol</b>	Protocol running on the interface on which the packet with this source prefix is expected to arrive.	<b>detail extensive</b>
<b>Route type</b>	Type of multicast route. Values can be (S,G) or (*G).	<b>summary</b>
<b>Route state</b>	Whether the group is <b>Active</b> or <b>Inactive</b> .	<b>summary extensive</b>
<b>Route count</b>	Number of multicast routes.	<b>summary</b>
<b>Forwarding state</b>	Whether the prefix is pruned or forwarding.	<b>extensive</b>



Table 46: show multicast route Output Fields (*continued*)

Field Name	Field Description	Level of Output
Cache lifetime/timeout	Number of seconds until the prefix is removed from the multicast forwarding table. A value of <b>never</b> indicates a permanent forwarding entry. A value of <b>forever</b> indicates routes that do not have keepalive times.	extensive
Wrong incoming interface notifications	Number of times that the upstream interface was not available.	extensive
Uptime	Time since the creation of a multicast route.	extensive

## Sample Output

```

user@host> show multicast route
Family: INET

Group: 228.0.0.0
Source: 10.255.14.144/32
Upstream interface: local
Downstream interface list:
so-1/0/0.0

Group: 239.1.1.1
Source: 10.255.14.144/32
Upstream interface: local
Downstream interface list:
so-1/0/0.0

Group: 239.1.1.1
Source: 10.255.70.15/32
Upstream interface: so-1/0/0.0
Downstream interface list:
mt-1/1/0.49152

Family: INET6

```

**show multicast route brief** The output for the **show multicast route brief** command is identical to that for the **show multicast route** command. For sample output, see [show multicast route on page 176](#).

```

user@host> show multicast route detail
Family: INET

Group: 228.0.0.0
Source: 10.255.14.144/32
Upstream interface: local
Downstream interface list:
so-1/0/0.0
Session description: Unknown
Statistics: 8 kbps, 100 pps, 45272 packets
Next-hop ID: 262142
Upstream protocol: PIM

Group: 239.1.1.1
Source: 10.255.14.144/32

```



```

Upstream interface: local
Downstream interface list:
  so-1/0/0.0
Session description: Administratively Scoped
Statistics: 0 kbps, 0 pps, 13404 packets
Next-hop ID: 262142
Upstream protocol: PIM

```

```

Group: 239.1.1.1
Source: 10.255.70.15/32
Upstream interface: so-1/0/0.0
Downstream interface list:
  mt-1/1/0.49152
Session description: Administratively Scoped
Statistics: 46 kbps, 1000 pps, 921077 packets

Next-hop ID: 262143
Upstream protocol: PIM

```

```
Family: INET6
```

```

show multicast route instance
<instance-name>
extensive
user@host> show multicast route instance mvpn extensive
Family: INET

Group: 239.10.10.10
Source: 2.0.0.2/32
Upstream interface: xe-0/0/0.102
Downstream interface list:
  xe-10/3/0.0 xe-0/3/0.0 xe-0/0/0.106 xe-0/0/0.105
  xe-0/0/0.103 xe-0/0/0.104 xe-0/0/0.107 xe-0/0/0.108
Session description: Administratively Scoped
Statistics: 256 kbps, 3998 pps, 670150 packets
Next-hop ID: 1048579
Upstream protocol: MVPN
Route state: Active
Forwarding state: Forwarding
Cache lifetime/timeout: forever
Wrong incoming interface notifications: 58
Uptime: 00:00:04

```

```

show multicast route summary
user@host> show multicast route summary
Instance: master Family: INET

Route type  Route state  Route count
(S,G)       Active         2
(S,G)       Inactive       3

Instance: master Family: INET6

```



## show multicast rpf

---

<b>Syntax</b>	show multicast rpf <inet   inet6> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )> <prefix> <summary>
<b>Syntax (EX Series Switch and the QFX Series)</b>	show multicast rpf <inet   inet6> <instance <i>instance-name</i> > <prefix> <summary>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display information about multicast reverse-path-forwarding (RPF) calculations.
<b>Options</b>	none—Display RPF calculation information for all supported address families.  inet   inet6—(Optional) Display the RPF calculation information for IPv4 or IPv6 family addresses, respectively.  instance <i>instance-name</i> —(Optional) Display information about multicast RPF calculations for a specific multicast instance.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.  prefix—(Optional) Display the RPF calculation information for the specified prefix.  summary—(Optional) Display a summary of all multicast RPF information.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show multicast rpf on page 179</a> <a href="#">show multicast rpf inet6 on page 180</a> <a href="#">show multicast rpf prefix on page 181</a> <a href="#">show multicast rpf summary on page 181</a>



**Output Fields** Table 47 on page 179 describes the output fields for the **show multicast rpf** command. Output fields are listed in the approximate order in which they appear.

**Table 47: show multicast rpf Output Fields**

Field Name	Field Description
Instance	Name of the routing instance. (Displayed when multicast is configured within a routing instance.)
Source prefix	Prefix and length of the source as it exists in the multicast forwarding table.
Protocol	How the route was learned.
Interface	Upstream RPF interface.
Neighbor	Upstream RPF neighbor.

## Sample Output

```

show multicast rpf user@host> show multicast rpf

Multicast RPF table: inet.0, 12 entries

0.0.0.0/0
  Protocol: Static

10.255.14.132/32
  Protocol: Direct
  Interface: lo0.0

10.255.245.91/32
  Protocol: IS-IS
  Interface: so-1/1/1.0
  Neighbor: 192.168.195.21

127.0.0.1/32
Inactive172.16.0.0/12
Protocol: Static
Interface: fxp0.0
Neighbor: 192.168.14.254

192.168.0.0/16
Protocol: Static
Interface: fxp0.0
Neighbor: 192.168.14.254

192.168.14.0/24
Protocol: Direct
Interface: fxp0.0

192.168.14.132/32
Protocol: Local

192.168.195.20/30
Protocol: Direct

```



```
Interface: so-1/1/1.0
192.168.195.22/32
Protocol: Local

192.168.195.36/30
Protocol: IS-IS
Interface: so-1/1/1.0
Neighbor: 192.168.195.21
```

```
show multicast rpf inet6  user@host> show multicast rpf inet6
inet6 Multicast RPF table: inet6.0, 12 entries

::10.255.14.132/128
    Protocol: Direct
    Interface: lo0.0

::10.255.245.91/128
    Protocol: IS-IS
    Interface: so-1/1/1.0
    Neighbor: fe80::2a0:a5ff:fe28:2e8c

::192.168.195.20/126
    Protocol: Direct
    Interface: so-1/1/1.0

::192.168.195.22/128
    Protocol: Local

::192.168.195.36/126
    Protocol: IS-IS
    Interface: so-1/1/1.0
    Neighbor: fe80::2a0:a5ff:fe28:2e8c

::192.168.195.76/126
    Protocol: Direct
    Interface: fe-2/2/0.0

::192.168.195.77/128
    Protocol: Local

fe80::/64
    Protocol: Direct
    Interface: so-1/1/1.0

fe80::290:69ff:fe0c:993a/128
    Protocol: Local

fe80::2a0:a5ff:fe12:84f/128
    Protocol: Direct
    Interface: lo0.0

ff02::2/128
    Protocol: PIM

ff02::d/128
```



Protocol: PIM

```
show multicast rpf prefix user@host> show multicast rpf ff02::/16
Multicast RPF table: inet6.0, 13 entries
ff02::2/128
Protocol: PIM
ff02::d/128
Protocol: PIM
...
```

```
show multicast rpf summary user@host> show multicast rpf summary
Multicast RPF table: inet.0, 16 entries
Multicast RPF table: inet6.0, 12 entries
```



## show multicast scope

<b>Syntax</b>	show multicast scope <inet   inet6> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	show multicast scope <inet   inet6> <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display administratively scoped IP multicast information.
<b>Options</b>	<p>none—Display standard information about administratively scoped multicast information for all supported address families in all routing instances.</p> <p>inet   inet6—(Optional) Display scoped multicast information for IPv4 or IPv6 family addresses, respectively.</p> <p>instance <i>instance-name</i>—(Optional) Display administratively scoped information for a specific multicast instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show multicast scope on page 183</a> <a href="#">show multicast scope inet on page 183</a> <a href="#">show multicast scope inet6 on page 183</a>
<b>Output Fields</b>	Table 48 on page 182 describes the output fields for the <b>show multicast scope</b> command. Output fields are listed in the approximate order in which they appear.

**Table 48: show multicast scope Output Fields**

Field Name	Field Description
Scope name	Name of the multicast scope.
Group Prefix	Range of multicast groups that are scoped.
Interface	Interface that is the boundary of the administrative scope.
Resolve Rejects	Number of kernel resolve rejects.



## Sample Output

```

show multicast scope user@host> show multicast scope

Scope name      Group Prefix      Interface      Resolve
Rejects
232-net          232.232.0.0/16    fe-0/0/0.1     0
local            239.255.0.0/16    fe-0/0/0.1     0
local            ff05::/16         fe-0/0/0.1     0
larry            ff05::1234/128    fe-0/0/0.1     0

```

```

show multicast scope user@host> show multicast scope inet

Scope name      Group Prefix      Interface      Resolve
Rejects
232-net          232.232.0.0/16    fe-0/0/0.1     0
local            239.255.0.0/16    fe-0/0/0.1     0

```

```

show multicast scope user@host> show multicast scope inet6

Scope name      Group Prefix      Interface      Resolve
Rejects
local            ff05::/16         fe-0/0/0.1     0
larry            ff05::1234/128    fe-0/0/0.1     0

```



## show multicast sessions

<b>Syntax</b>	show multicast sessions <brief   detail   extensive> <logical-system (all   <i>logical-system-name</i> )> < <i>regular-expression</i> >
<b>Syntax (EX Series Switch and the QFX Series)</b>	show multicast sessions <brief   detail   extensive> < <i>regular-expression</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display information about announced IP multicast sessions.
<b>Options</b>	none—Display standard information about all multicast sessions for all routing instances.  brief   detail   extensive—(Optional) Display the specified level of output.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.  <i>regular-expression</i> —(Optional) Display information about announced sessions that match a UNIX-style regular expression.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show multicast sessions on page 185</a> <a href="#">show multicast sessions regular-expression detail on page 185</a>
<b>Output Fields</b>	<a href="#">Table 49 on page 184</a> describes the output fields for the <b>show multicast sessions</b> command. Output fields are listed in the approximate order in which they appear.

**Table 49: show multicast sessions Output Fields**

Field Name	Field Description
<i>session-name</i>	Name of the known announced multicast sessions.



## Sample Output

```

show multicast sessions user@host> show multicast sessions
1-Department of Biological Sciences, LSU
...
Monterey Bay - DockCam
Monterey Bay - JettyCam
Monterey Bay - StandCam
Monterey DockCam
Monterey DockCam / ROV cam
...
NASA TV (MPEG-1)
...
UO Broadcast - NASA Videos - 25 Years of Progress
UO Broadcast - NASA Videos - Journey through the Solar System
UO Broadcast - NASA Videos - Life in the Universe
UO Broadcast - NASA Videos - Nasa and the Airplane
UO Broadcasts OPB's Oregon Story
UO DOD News Clips
UO Medical Management of Biological Casualties (1)
UO Medical Management of Biological Casualties (2)
UO Medical Management of Biological Casualties (3)
...
376 active sessions.

show multicast sessions "NASA TV" detail user@host> show multicast sessions "NASA TV" detail
regular-expression sessions SDP Version: 0 Originated by: -@128.223.83.33
detail Session: NASA TV (MPEG-1)
Description: NASA television in MPEG-1 format, provided by Private University.
Please contact the UO if you have problems with this feed.
Email: Your Name Here <multicast@lists.private.edu>
Phone: Your Name Here <888/555-1212>
Bandwidth: AS:1000
Start time: permanent
Stop time: none
Attribute: type:broadcast
Attribute: tool:IP/TV Content Manager 3.4.14
Attribute: live:capture:1
Attribute: x-iptv-capture:mp1s
Media: video 54302 RTP/AVP 32 31 96 97
Connection Data: 224.2.231.45 ttl 127
Attribute: quality:8
Attribute: framerate:30
Attribute: rtpmap:96 WBIH/90000
Attribute: rtpmap:97 MP4V-ES/90000
Attribute: x-iptv-svr:video 128.223.91.191 live
Attribute: fntp:32 type=mpeg1
Media: audio 28848 RTP/AVP 14 0 96 3 5 97 98 99 100 101 102 10 11 103 104 105 106
Connection Data: 224.2.145.37 ttl 127
Attribute: rtpmap:96 X-WAVE/8000
Attribute: rtpmap:97 L8/8000/2
Attribute: rtpmap:98 L8/8000
Attribute: rtpmap:99 L8/22050/2
Attribute: rtpmap:100 L8/22050
Attribute: rtpmap:101 L8/11025/2
Attribute: rtpmap:102 L8/11025
Attribute: rtpmap:103 L16/22050/2
Attribute: rtpmap:104 L16/22050

```



1 matching sessions.



## show multicast snooping next-hops

<b>Syntax</b>	show multicast snooping next-hops <brief   detail>
<b>Release Information</b>	Command introduced in Junos OS Release 11.2.
<b>Description</b>	Display information about the IP multicast snooping next-hops.
<b>Options</b>	brief   detail—(Optional) Display the specified level of output.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show multicast snooping statistics on page 192</a></li> <li>• <a href="#">clear multicast snooping statistics on page 102</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show multicast snooping next-hops on page 188</a>
<b>Output Fields</b>	<a href="#">Table 50 on page 187</a> describes the output fields for the <b>show multicast snooping next-hops</b> command. Output fields are listed in the approximate order in which they appear.

**Table 50: show multicast snooping next-hops Output Fields**

Field Name	Field Description
<b>Family</b>	Protocol family for which multicast snooping next hops are displayed: <b>INET</b> or <b>INET6</b> .
<b>Refcount</b>	Number of cache entries that are using this next hop.
<b>KRefcount</b>	Kernel reference count for the next hop.
<b>Downstream interface</b>	Interface names associated with each multicast next-hop ID.
<b>Nexthop Id</b>	Identifier for the next-hop.



## Sample Output

```
show multicast      user@host> show multicast snooping next-hops
snooping next-hops  Family: INET
                    ID      Refcount KRefCount Downstream interface Nexthop Id
                    1048574      4      1 ge-0/1/0.1000
                                           ge-0/1/2.1000
                                           ge-0/1/3.1000

                    1048574      4      1 ge-0/1/0.1000-(2000)
                                           1048575
                                           1048576

                    1048575      2      0 ge-0/1/2.1000-(2001)
                                           ge-0/1/3.1000-(2002)

                    1048576      2      0 lsi.1048578-(2003)
                                           lsi.1048579-(2004)
```



## show multicast snooping route

<b>Syntax</b>	show multicast snooping route <brief   detail   extensive> <active   all   inactive> <bridge-domain <i>bridge-domain-name</i> > <group <i>group</i> > <instance <i>instance-name</i> > <mesh-group <i>mesh-group-name</i> > < <i>regular-expression</i> > <source-prefix <i>source-prefix</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 8.5.
<b>Description</b>	Display the entries in the IP multicast snooping forwarding table. You can display some of this information with the <b>show route table inet.1</b> command.
<b>Options</b>	<p>none—Display standard information about all entries in the multicast snooping table for all virtual switches and all bridge domains.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p>active   all   inactive—(Optional) Display all active entries, all entries, or all inactive entries, respectively, in the multicast snooping table.</p> <p>bridge-domain <i>bridge-domain</i>—(Optional) Display the entries for a particular bridge domain.</p> <p>group <i>group</i>—(Optional) Display the entries for a particular group.</p> <p>instance <i>instance-name</i>—(Optional) Display the entries for a multicast instance.</p> <p>mesh-group <i>mesh-group-name</i>—(Optional) Display the entries for a particular mesh group.</p> <p><i>regular-expression</i>—(Optional) Display information about the multicast forwarding table entries that match a UNIX-style regular expression.</p> <p>source-prefix <i>source-prefix</i>—(Optional) Display the entries for a particular source prefix.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show multicast snooping route bridge-domain on page 190</a> <a href="#">show multicast snooping route instance vs on page 190</a>
<b>Output Fields</b>	<a href="#">Table 51 on page 189</a> describes the output fields for the <b>show multicast snooping route</b> command. Output fields are listed in the approximate order in which they appear.

Table 51: show multicast snooping route Output Fields

Field Name	Field Description	Level of Output
NextHop Bulking	Displays whether next-hop bulk updating is <b>ON</b> or <b>OFF</b> (only for routing-instance type of <b>virtual switch</b> or <b>vpls</b> ).	All levels



Table 51: show multicast snooping route Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Family</b>	IPv4 address family ( <b>INET</b> ) or IPv6 address family ( <b>INET6</b> ).	All levels
<b>Group</b>	Group address.	All levels
<b>Source</b>	Prefix and length of the source as it is in the multicast forwarding table.	All levels
<b>Routing-instance</b>	Name of the routing instance to which this routing information applies. (Displayed when multicast is configured within a routing instance.)	All levels
<b>Learning Domain</b>	Name of the learning domain to which this routing information applies.	<b>detail extensive</b>
<b>Statistics</b>	Rate at which packets are being forwarded for this source and group entry (in Kbps and pps), and number of packets that have been forwarded to this prefix.	<b>detail extensive</b>
<b>Next-hop ID</b>	Next-hop identifier of the prefix. The identifier is returned by the router's Packet Forwarding Engine and is also displayed in the output of the <b>show multicast nexthops</b> command.	<b>detail extensive</b>
<b>Route state</b>	Whether the group is <b>Active</b> or <b>Inactive</b> .	<b>extensive</b>
<b>Forwarding state</b>	Whether the prefix is <b>Pruned</b> or <b>Forwarding</b> .	<b>extensive</b>
<b>Cache lifetime/timeout</b>	Number of seconds until the prefix is removed from the multicast forwarding table. A value of <b>never</b> indicates a permanent forwarding entry.	<b>extensive</b>

## Sample Output

```

show multicast snooping route bridge-domain user@host> show multicast snooping route bridge-domain br-dom-1 extensive
Family: INET
Group: 232.1.1.1
Source: 192.168.3.100/32
Downstream interface list:
  ge-0/1/0.200
Statistics: 0 kbps, 0 pps, 1 packets
Next-hop ID: 1048577
Route state: Active
Forwarding state: Forwarding
Cache lifetime/timeout: 240 seconds

show multicast snooping route instance vs user@host> show multicast snooping route instance vs
Nexthop Bulking: ON
Family: INET
Group: 224.0.0.0
  Bridge-domain: vsid500
Group: 225.1.0.1
  Bridge-domain: vsid500

```



```
Downstream interface list: vsid500  
ge-0/3/8.500 ge-1/1/9.500 ge1/2/5.500
```



## show multicast snooping statistics

<b>Syntax</b>	show multicast snooping statistics <instance <i>instance-name</i> > <interface <i>interface-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced in Junos OS Release 8.5.
<b>Description</b>	Display IP multicast snooping statistics.
<b>Options</b>	<p>none—Display multicast snooping statistics for all supported address families for all routing instances.</p> <p>instance <i>instance-name</i>—(Optional) Display statistics for a specific routing instance.</p> <p>interface <i>interface-name</i>—(Optional) Display statistics for a specific interface.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Additional Information</b>	The input and output interface multicast snooping statistics are consistent, but not timely. They are constructed from the forwarding statistics, which are gathered at 30-second intervals. Therefore, the output from this command always lags the true count by up to 30 seconds.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">clear multicast snooping statistics on page 102</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show multicast snooping statistics on page 194</a>
<b>Output Fields</b>	<a href="#">Table 52 on page 192</a> describes the output fields for the <b>show multicast snooping statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 52: show multicast snooping statistics Output Fields**

Field Name	Field Description
<b>Routing-instance</b>	Name of the routing instance. (Displayed when multicast is configured within a routing instance.)
<b>Family</b>	Protocol family for which multicast statistics are displayed: <b>INET</b> or <b>INET6</b> .
<b>Interface</b>	Name of the interface for which statistics are being reported.
<b>Routing Protocol</b>	Primary multicast protocol on the interface: <b>PIM</b> , <b>DVMRP</b> for <b>INET</b> , or <b>PIM</b> for <b>INET6</b> .
<b>Mismatch</b>	Number of multicast packets that did not arrive on the correct upstream interface.



Table 52: show multicast snooping statistics Output Fields (*continued*)

Field Name	Field Description
<b>Kernel Resolve</b>	Number of resolve requests processed by the primary multicast protocol on the interface.
<b>Resolve No Route</b>	Number of resolve requests that were ignored because there was no route to the source.
<b>In Kbytes</b>	Total accumulated incoming packets (in KB) since the last time the <b>clear multicast snooping statistics</b> command was issued.
<b>Out Kbytes</b>	Total accumulated outgoing packets (in KB) since the last time the <b>clear multicast snooping statistics</b> command was issued.
<b>Mismatch error</b>	Number of mismatches that were ignored because of internal errors.
<b>Mismatch No Route</b>	Number of mismatches that were ignored because there was no route to the source.
<b>Routing Notify</b>	Number of times that the multicast routing system has been notified of a new multicast source by a multicast routing protocol.
<b>Resolve Error</b>	Number of resolve requests that were ignored because of internal errors.
<b>In packets</b>	Total number of incoming packets since the last time the <b>clear multicast snooping statistics</b> command was issued.
<b>Out packets</b>	Total number of outgoing packets since the last time the <b>clear multicast snooping statistics</b> command was issued.



## Sample Output

```
show multicast snooping statistics user@host> show multicast snooping statistics
Routing-instance: foo
Family: INET
Interface: fe-0/0/2.200
  Routing protocol: PIM Mismatch error: 0
  Mismatch: 0 Mismatch no route: 0
  Kernel resolve: 22 Routing notify: 0
  Resolve no route: 0 Resolve error: 0
  Resolve filtered: 0 Notify filtered: 0
  In kbytes: 0 In packets: 0
  Out kbytes: 0 Out packets: 0

Routing-instance: bar
Family: INET
Interface: fe-0/1/2.200
  Routing protocol: PIM Mismatch error: 0
  Mismatch: 0 Mismatch no route: 0
  Kernel resolve: 22 Routing notify: 0
  Resolve no route: 0 Resolve error: 0
  Resolve filtered: 0 Notify filtered: 0
  In kbytes: 0 In packets: 0
  Out kbytes: 0 Out packets: 0
```



## show multicast statistics

<b>Syntax</b>	show multicast statistics <inet   inet6> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display IP multicast statistics.
<b>Options</b>	<p>none—Display multicast statistics for all supported address families for all routing instances.</p> <p>inet   inet6—(Optional) Display multicast statistics for IPv4 or IPv6 family addresses, respectively.</p> <p>instance <i>instance-name</i>—(Optional) Display statistics for a specific routing instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Additional Information</b>	The input and output interface multicast statistics are consistent, but not timely. They are constructed from the forwarding statistics, which are gathered at 30-second intervals. Therefore, the output from this command always lags the true count by up to 30 seconds.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear multicast statistics on page 103</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show multicast statistics on page 197</a>
<b>Output Fields</b>	<a href="#">Table 53 on page 195</a> describes the output fields for the <b>show multicast statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 53: show multicast statistics Output Fields**

Field Name	Field Description
Family	Protocol family for which multicast statistics are displayed: <b>INET</b> or <b>INET6</b> .
Interface	Name of the interface for which statistics are being reported.
Routing Protocol	Primary multicast protocol on the interface: <b>PIM</b> , <b>DVMRP</b> for <b>INET</b> , or <b>PIM</b> for <b>INET6</b> .
Mismatch	Number of multicast packets that did not arrive on the correct upstream interface.
Kernel Resolve	Number of resolve requests processed by the primary multicast protocol on the interface.



Table 53: show multicast statistics Output Fields (*continued*)

Field Name	Field Description
<b>Resolve No Route</b>	Number of resolve requests that were ignored because there was no route to the source.
<b>In Kbytes</b>	Total accumulated incoming packets (in KB) since the last time the <b>clear multicast statistics</b> command was issued.
<b>Out Kbytes</b>	Total accumulated outgoing packets (in KB) since the last time the <b>clear multicast statistics</b> command was issued.
<b>Mismatch error</b>	Number of mismatches that were ignored because of internal errors.
<b>Mismatch No Route</b>	Number of mismatches that were ignored because there was no route to the source.
<b>Routing Notify</b>	Number of times that the multicast routing system has been notified of a new multicast source by a multicast routing protocol .
<b>Resolve Error</b>	Number of resolve requests that were ignored because of internal errors.
<b>In Packets</b>	Total number of incoming packets since the last time the <b>clear multicast statistics</b> command was issued.
<b>Out Packets</b>	Total number of outgoing packets since the last time the <b>clear multicast statistics</b> command was issued.
<b>Resolve requests on interfaces not enabled for multicast <i>n</i></b>	Number of resolve requests on interfaces that are not enabled for multicast that have accumulated since the <b>clear multicast statistics</b> command was last issued.
<b>Resolve requests with no route to source <i>n</i></b>	Number of resolve requests with no route to the source that have accumulated since the <b>clear multicast statistics</b> command was last issued.
<b>Routing notifications on interfaces not enabled for multicast <i>n</i></b>	Number of routing notifications on interfaces not enabled for multicast that have accumulated since the <b>clear multicast statistics</b> command was last issued.
<b>Routing notifications with no route to source <i>n</i></b>	Number of routing notifications with no route to the source that have accumulated since the <b>clear multicast statistics</b> command was last issued.
<b>Interface Mismatches on interfaces not enabled for multicast <i>n</i></b>	Number of interface mismatches on interfaces not enabled for multicast that have accumulated since the <b>clear multicast statistics</b> command was last issued.
<b>Group Membership on interfaces not enabled for multicast <i>n</i></b>	Number of group memberships on interfaces not enabled for multicast that have accumulated since the <b>clear multicast statistics</b> command was last issued.



## Sample Output

```

show multicast statistics user@host> show multicast statistics
Address family: INET
Interface: fe-0/0/0
  Routing Protocol:      PIM  Mismatch error:      0
  Mismatch:              0    Mismatch No Route:    0
  Kernel Resolve:        10    Routing Notify:       0
  Resolve No Route:      0    Resolve Error:        0
  In Kbytes:             4641  In Packets:           50454
  Out Kbytes:            0    Out Packets:          0
Interface: so-0/1/1.0
  Routing Protocol:      PIM  Mismatch error:      0
  Mismatch:              0    Mismatch No Route:    0
  Kernel Resolve:        0    Routing Notify:       0
  Resolve No Route:      0    Resolve Error:        0
  In Kbytes:             0    In Packets:           0
  Out Kbytes:            4641  Out Packets:          50454

Resolve requests on interfaces not enabled for multicast 0
Resolve requests with no route to source 0
Routing notifications on interfaces not enabled for multicast 0
Routing notifications with no route to source 0
Interface Mismatches on interfaces not enabled for multicast 0
Group Membership on interfaces not enabled for multicast 25

Address family: INET6
Interface: fe-0/0/0.0
  Routing Protocol:      PIM  Mismatch error:      0
  Mismatch:              0    Mismatch No Route:    0
  Kernel Resolve:        0    Routing Notify:       0
  Resolve No Route:      0    Resolve Error:        0
  In Kbytes:             0    In Packets:           0
  Out Kbytes:            0    Out Packets:          0
Interface: so-0/1/1.0
  Routing Protocol:      PIM  Mismatch error:      0
  Mismatch:              0    Mismatch No Route:    0
  Kernel Resolve:        0    Routing Notify:       0
  Resolve No Route:      0    Resolve Error:        0
  In Kbytes:             0    In Packets:           0
  Out Kbytes:            0    Out Packets:          0

Resolve requests on interfaces not enabled for multicast 0
Resolve requests with no route to source 0
Routing notifications on interfaces not enabled for multicast 0
Routing notifications with no route to source 0
Interface Mismatches on interfaces not enabled for multicast 0
Group Membership on interfaces not enabled for multicast 0

```



## show multicast usage

<b>Syntax</b>	show multicast usage <brief   detail> <inet   inet6> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	show multicast usage <brief   detail> <inet   inet6> <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display usage information about the 10 most active Distance Vector Multicast Routing Protocol (DVMRP) or Protocol Independent Multicast (PIM) groups.
<b>Options</b>	<p>none—Display multicast usage information for all supported address families for all routing instances.</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>inet   inet6—(Optional) Display usage information for IPv4 or IPv6 family addresses, respectively.</p> <p>instance <i>instance-name</i>—(Optional) Display information about the most active DVMRP or PIM groups for a specific multicast instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show multicast usage on page 199</a> <a href="#">show multicast usage brief on page 199</a> <a href="#">show multicast usage instance on page 199</a> <a href="#">show multicast usage detail on page 199</a>
<b>Output Fields</b>	Table 54 on page 198 describes the output fields for the <b>show multicast usage</b> command. Output fields are listed in the approximate order in which they appear.

**Table 54: show multicast usage Output Fields**

Field Name	Field Description
<b>Instance</b>	Name of the routing instance. (Displayed when multicast is configured within a routing instance.)



Table 54: show multicast usage Output Fields (*continued*)

Field Name	Field Description
<b>Group</b>	Group address.
<b>Sources</b>	Number of sources.
<b>Packets</b>	Number of packets that have been forwarded to this prefix. If one or more of the packets forwarded statistic queries fails or times out, the packets field displays <b>unavailable</b> .
<b>Bytes</b>	Number of bytes that have been forwarded to this prefix. If one or more of the packets forwarded statistic queries fails or times out, the bytes field displays <b>unavailable</b> .
<b>Prefix</b>	IP address.
<b>/len</b>	Prefix length.
<b>Groups</b>	Number of multicast groups.

## Sample Output

```

user@host> show multicast usage
Group          Sources Packets      Bytes
228.0.0.0      1       52847      4439148
239.1.1.1      2       13450      1125530

Prefix         /len Groups Packets      Bytes
10.255.14.144  /32  2       66254      5561304
10.255.70.15   /32  1        43       3374...
```

**show multicast usage brief** The output for the **show multicast usage brief** command is identical to that for the **show multicast usage** command. For sample output, see [show multicast usage on page 199](#).

```

user@host> show multicast usage instance VPN-A
Group          Sources Packets      Bytes
224.2.127.254  1       5538      509496
224.0.1.39     1        13        624
224.0.1.40     1        13        624

Prefix         /len Groups Packets      Bytes
192.168.195.34 /32  1       5538      509496
10.255.14.30   /32  1        13        624
10.255.245.91  /32  1        13        624
...
```

```

user@host> show multicast usage detail
Group          Sources Packets      Bytes
228.0.0.0      1       53159      4465356
  Source: 10.255.14.144 /32 Packets: 53159 Bytes: 4465356
239.1.1.1      2       13450      1125530
  Source: 10.255.14.144 /32 Packets: 13407 Bytes: 1122156
```



Source: 10.255.70.15 /32 Packets: 43 Bytes: 3374

Prefix	/len	Groups	Packets	Bytes
10.255.14.144	/32	2	66566	5587512
Group: 228.0.0.0			Packets: 53159	Bytes: 4465356
Group: 239.1.1.1			Packets: 13407	Bytes: 1122156
10.255.70.15	/32	1	43	3374
Group: 239.1.1.1			Packets: 43	Bytes: 3374



## show pgm negative-acknowledgments

<b>Syntax</b>	show pgm negative-acknowledgments
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display the sent or received Pragmatic General Multicast (PGM) negative acknowledgments (NAKs), the source-path message (SPM) sequence number being negatively acknowledged, and the current state of repair.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show pgm negative-acknowledgments on page 202</a>
<b>Output Fields</b>	<a href="#">Table 55 on page 201</a> describes the output fields for the <b>show pgm negative-acknowledgments</b> command. Output fields are listed in the approximate order in which they appear.

**Table 55: show pgm negative-acknowledgments Output Fields**

Field Name	Field Description
<b>Global source id</b>	Global source identifier (GSI), which combines with the source port to determine the transport session identifier (TSI).
<b>Network layer address</b>	Network layer address of the local system.
<b>Source port</b>	Source port number, which is combined with the GSI to determine the TSI.
<b>SPM sequence number</b>	Numeric sequence identifier of the source-path message.
<b>Window (trailing/leading sequence)</b>	Range of sequence numbers used by the source for sequentially numbering and transmitting the most recent packets. The trailing (or left) edge of the transmit window is the sequence number of the oldest data packet available for repair from a source. The leading (or right) edge of the transmit window is defined as the sequence number of the most recent data packet a source has transmitted.
<b>Outstanding NAKS</b>	<p>Total number of outstanding negative acknowledgments sent or received by the local system. NAK packets indicate that a packet in the expected original data sequence has been detected as missing.</p> <ul style="list-style-type: none"> <li>• <b>Sequence number</b>—Numeric sequence identifier of the source-path message.</li> <li>• <b>Group</b>—Group address.</li> <li>• <b>Source</b>—Multicast source.</li> <li>• <b>Interface</b>—Interface name.</li> <li>• <b>Receiver</b>—IP address receiving the multicast.</li> </ul>



## Sample Output

```
show pgm negative-acknowledgments  user@host> show pgm negative-acknowledgments
Global source ID: 010203040506 Source port: 1111
Network layer address: 10.38.0.1
SPM sequence number: 1
Window (trailing/leading sequence): 0/1
Outstanding NAKs:
    Sequence number: 1
    Group: 225.1.1.1
    Source: 192.168.195.121
    Interface: t3-0/2/0:0 Receiver: 10.38.0.10
```



## show pgm source-path-messages

<b>Syntax</b>	show pgm source-path-messages
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display the Pragmatic General Multicast (PGM) source-path messages received.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show pgm source-path-messages on page 203</a>
<b>Output Fields</b>	<a href="#">Table 56 on page 203</a> describes the output fields for the <b>show pgm source-path-messages</b> command. Output fields are listed in the approximate order in which they appear.

**Table 56: show pgm source-path-messages Output Fields**

Field Name	Field Description
<b>Global source ID</b>	Global source identifier (GSI), which combines with the source port to determine the transport session identifier (TSI).
<b>Port</b>	Source port number, which combines with the GSI to determine the TSI.
<b>SPM number</b>	Numeric sequence identifier of the source-path message.
<b>Trail number</b>	Sequence number of the oldest data packet available for repair from a source.
<b>Lead number</b>	Sequence number of the most recent data packet a source has transmitted.
<b>Network layer address</b>	Network layer address of the local system.

## Sample Output

```

show pgm source-path-messages user@host> show pgm source-path-messages
Global source ID Port SPM number Trail number Lead number Network layer address
010203040506    1111          1          0          1 10.38.0.1

```



## show pgm statistics

<b>Syntax</b>	show pgm statistics
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display Pragmatic General Multicast (PGM) packet statistics, including general loss and repair statistics.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show pgm statistics on page 206</a>
<b>Output Fields</b>	<a href="#">Table 57 on page 204</a> describes the output fields for the <b>show pgm statistics</b> command. Output fields are listed in the approximate order in which they appear.

Table 57: show pgm statistics Output Fields

Field Name	Field Description
PGM type, # received, # sent	<p>Number of packets received and sent for the following PGM packet types:</p> <ul style="list-style-type: none"> <li><b>SPM</b>—Number of total source path messages received and sent by the local system. Source path messages (SPMs) are sent by a source to establish the source path state in network elements and to provide the transmit-window state to receivers.</li> <li><b>POLL</b>—Total number of poll requests received and sent by the local system.</li> <li><b>POLR</b>—Total number of poll responses received and sent by the local system.</li> <li><b>ODATA</b>—Total number of original data packets received and sent by the local system.</li> <li><b>RDATA</b>—Total number of repair data packets received and sent by the local system. RDATA packets are generated in response to negative acknowledgments (NAKs), which indicate a missing packet from the original data sequence.</li> <li><b>NAK</b>—Total number of negative acknowledgments received and sent by the local system. NAK packets indicate that a packet in the expected original data sequence has been detected as missing.</li> <li><b>NULLNAK</b>—Total number of null negative acknowledgments received and sent by the local system. NULLNAKs are transmitted by a designated local repairer that receives NAKs redirected to it by either receivers or network elements to provide flow-control feedback to a source.</li> <li><b>NCF</b>—Total number of NAK confirmations received and sent by the local system. NAK confirmations are generated in response to NAK packets that are received.</li> <li><b>SPMR</b>—Total number of source path message requests (SPMRs) received and sent by the local system. SPMRs are used to solicit a source path message from a source in a nonimplosive way. The typical application is for late-joining receivers to solicit source path messages directly from a source in order to be able to send NAKs for missing packets, without having to wait for a regularly scheduled source path message from that source.</li> <li><b>OTHER</b>—Total number of other PGM packets received and sent by the local system.</li> </ul>
packets shorter than minimum PGM header length	Total number of packets received with headers that are shorter than the minimum required PGM header length.



Table 57: show pgm statistics Output Fields (*continued*)

Field Name	Field Description
packets received with incorrect check sum	Total number of packets received with an incorrect checksum. The checksum field is the 1's complement of the 1's complement sum of the entire PGM packet, including the header.
packets received with zero check sum	Total number of packets received with a zero checksum. If the computed checksum is zero, it is transmitted as all ones. A value of zero in this field means that the transmitter generated no checksum.
packets received with TSDU length incorrect	Total number of packets received with an incorrect Transport Service Data Unit (TSDU) length (16 bits).
packets received with SPM length incorrect	Total number of packets received with an incorrect source path message length.
packets received with unknown SPM address family	Total number of packets received with an unknown source path message address family indicator (AFI).
packets received with NAK length incorrect	Total number of packets received with an incorrect NAK length.
packets received with unknown NAK address family	Total number of packets received with an unknown NAK address family indicator (AFI).
packets received with NAK for unknown TSI	Total number of NAK packets received with an unknown transport session identifier (TSI).
packets received when NAK throttled	Total number of packets received when NAK is throttled.
packets received with NCF length incorrect	Total number of packets received with an incorrect NAK confirmation length.
packets received with unknown NCF address family	Total number of packets received with an unknown NAK confirmation address family indicator (AFI).
packets received with NCF for unknown TSI	Total number of NAK confirmation packets received with an unknown transport session identifier (TSI).
packets received with RDATA length incorrect	Total number of packets received with an incorrect RDATA length.
packets received with RDATA for unknown TSI	Total number of RDATA packets received with an unknown transport session identifier (TSI).



## Sample Output

```
show pgm statistics user@host> show pgm statistics
PGM type      # received  # sent
SPM            0          0
POLL           0          0
POLR           0          0
ODATA          0          0
RDATA          0          0
NAK            0          0
NULLNAK        0          0
NCF            0          0
SPMR           0          0
OTHER          0          0

packets shorter than minimum PGM header length :      0
packets received with incorrect check sum       :      0
packets received with zero check sum            :      0
packets received with TSdu length incorrect     :      0
packets received with SPM length incorrect      :      0
packets received with unknown SPM address family:      0
packets received with NAK length incorrect      :      0
packets received with unknown NAK address family:      0
packets received with NAK for unknown TSI       :      0
packets received when NAK throttled             :      0
packets received with NCF length incorrect      :      0
packets received with unknown NCF address family:      0
packets received with NCF for unknown TSI       :      0
packets received with RDATA length incorrect    :      0
packets received with RDATA for unknown TSI     :      0
```



## show pim bootstrap

<b>Syntax</b>	show pim bootstrap <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	show pim bootstrap <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>instance</b> option introduced in Junos OS Release 10.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	For sparse mode only, display information about Protocol Independent Multicast (PIM) bootstrap routers.
<b>Options</b>	none—Display PIM bootstrap router information for all routing instances.  instance <i>instance-name</i> —(Optional) Display information about bootstrap routers for a specific PIM-enabled routing instance.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show pim bootstrap on page 208</a> <a href="#">show pim bootstrap instance on page 208</a>
<b>Output Fields</b>	<a href="#">Table 58 on page 207</a> describes the output fields for the <b>show pim bootstrap</b> command. Output fields are listed in the approximate order in which they appear.

**Table 58: show pim bootstrap Output Fields**

Field Name	Field Description
<b>Instance</b>	Name of the routing instance.
<b>BSR</b>	Bootstrap router.
<b>Pri</b>	Priority of the routing device as elected to be the bootstrap router.
<b>Local address</b>	Local routing device address.
<b>Pri</b>	Local routing device address priority to be elected as the bootstrap router.
<b>State</b>	Local routing device election state: <b>Candidate</b> , <b>Elected</b> , or <b>Ineligible</b> .



Table 58: show pim bootstrap Output Fields (*continued*)

Field Name	Field Description
<b>Timeout</b>	How long until the local routing device declares the bootstrap router to be unreachable, in seconds.

## Sample Output

```

show pim bootstrap user@host> show pim bootstrap
Instance: PIM.master

BSR                Pri Local address      Pri State      Timeout
None                0 10.255.71.46        0 InEligible    0
feco:1:1:1:1:0:aff:785c 34 feco:1:1:1:1:0:aff:7c12 0 InEligible    0

show pim bootstrap instance user@host> show pim bootstrap instance VPN-A
Instance: PIM.VPN-A

BSR                Pri Local address      Pri State      Timeout
None                0 192.168.196.105      0 InEligible    0

```



## show pim interfaces

<b>Syntax</b>	show pim interfaces <inet   inet6> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	show pim interfaces <inet   inet6> <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display information about the interfaces on which Protocol Independent Multicast (PIM) is configured.
<b>Options</b>	<p>none—Display interface information for all family addresses for all routing instances.</p> <p>inet   inet6—(Optional) Display interface information for IPv4 or IPv6 family addresses, respectively.</p> <p>instance <i>instance-name</i>—(Optional) Display information about interfaces for a specific PIM-enabled routing instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show pim interfaces on page 210</a> <a href="#">show pim interfaces inet on page 211</a> <a href="#">show pim interfaces inet6 on page 211</a>
<b>Output Fields</b>	Table 59 on page 209 describes the output fields for the <b>show pim interfaces</b> command. Output fields are listed in the approximate order in which they appear.

Table 59: show pim interfaces Output Fields

Field Name	Field Description
Instance	Name of the routing instance.
Name	Interface name.
State	State of the interface. The state also is displayed in the <b>show interfaces</b> command.



Table 59: show pim interfaces Output Fields (*continued*)

Field Name	Field Description
<b>Mode</b>	<p>PIM mode running on the interface:</p> <ul style="list-style-type: none"> <li>• <b>B</b>—In bidirectional mode, multicast groups are carried across the network over bidirectional shared trees. This type of tree minimizes PIM routing state, which is especially important in networks with numerous and dispersed senders and receivers.</li> <li>• <b>S</b>—In sparse mode, routing devices must join and leave multicast groups explicitly. Upstream routing devices do not forward multicast traffic to this routing device unless this device has sent an explicit request (using a join message) to receive multicast traffic.</li> <li>• <b>Dense</b>—Unlike sparse mode, where data is forwarded only to routing devices sending an explicit request, dense mode implements a flood-and-prune mechanism, similar to DVMRP (the first multicast protocol used to support the multicast backbone). (Not supported on QFX Series.)</li> <li>• <b>Sparse-Dense</b>—Sparse-dense mode allows the interface to operate on a per-group basis in either sparse or dense mode. A group specified as <b>dense</b> is not mapped to a rendezvous point (RP). Instead, data packets destined for that group are forwarded using PIM-Dense Mode (PIM-DM) rules. A group specified as <b>sparse</b> is mapped to an RP, and data packets are forwarded using PIM-Sparse Mode (PIM-SM) rules. (Not supported on QFX Series.)</li> </ul>
<b>IP</b>	Version number of the address family on the interface: 4 (IPv4) or 6 (IPv6).
<b>V</b>	PIM version running on the interface: 1 or 2.
<b>State</b>	<p>State of PIM on the interface:</p> <ul style="list-style-type: none"> <li>• <b>Active</b>—Bidirectional mode is enabled on the interface and on all PIM neighbors.</li> <li>• <b>DR</b>—Designated router.</li> <li>• <b>NotCap</b>—Bidirectional mode is not enabled on the interface. This can happen when bidirectional PIM is not configured locally, when one of the neighbors is not configured for bidirectional PIM, or when one of the neighbors has not implemented the bidirectional PIM protocol.</li> <li>• <b>NotDR</b>—Not the designated router.</li> <li>• <b>P2P</b>—Point to point.</li> </ul>
<b>NbrCnt</b>	Number of neighbors that have been seen on the interface.
<b>JoinCnt(sg)</b>	Number of (s,g) join messages that have been seen on the interface.
<b>JointCnt(*g)</b>	Number of (*g) join messages that have been seen on the interface.
<b>DR address</b>	Address of the designated router.

## Sample Output

```

show pim interfaces  user@host> show pim interfaces
Instance: PIM.master

Stat = Status, V = Version, NbrCnt = Neighbor Count,
S = Sparse, D = Dense, B = Bidirectional,
DR = Designated Router, P2P = Point-to-point link,
Active = Bidirectional is active, NotCap = Not Bidirectional Capable

Name                Stat Mode IP V State                NbrCnt DR address

```



```

ge-0/0/1.0      Up   SDB   4 2 NotDR,Active   1 10.10.1.2
lo0.0           Up   SDB   4 2 DR,Active    0 10.255.179.246
xe-4/1/0.0      Up   SDB   4 2 NotDR,Active   1 10.10.2.2
ge-0/0/1.0      Up   SDB   6 2 NotDR,Active   1 fe80::b2c6:9aff:fe95:86fa
lo0.0           Up   SDB   6 2 DR,Active    0 fe80::2a0:a50f:fc64:e661
xe-4/1/0.0      Up   SDB   6 2 DR,Active    1 fe80::226:88ff:fec5:3c37

```

```

show pim interfaces user@host> show pim interfaces inet
inet               Instance: PIM.master

```

Stat = Status, V = Version, NbrCnt = Neighbor Count,  
 S = Sparse, D = Dense, B = Bidirectional,  
 DR = Designated Router, P2P = Point-to-point link,  
 Active = Bidirectional is active, NotCap = Not Bidirectional Capable

```

Name           Stat Mode IP V State      NbrCnt DR address
ge-0/0/1.0     Up   SDB   4 2 NotDR,Active   1 10.10.1.2
lo0.0          Up   SDB   4 2 DR,Active    0 10.255.179.246
xe-4/1/0.0     Up   SDB   4 2 NotDR,Active   1 10.10.2.2

```

```

show pim interfaces user@host> show pim interfaces inet6
inet6            Instance: PIM.master

```

Stat = Status, V = Version, NbrCnt = Neighbor Count,  
 S = Sparse, D = Dense, B = Bidirectional,  
 DR = Designated Router, P2P = Point-to-point link,  
 Active = Bidirectional is active, NotCap = Not Bidirectional Capable

```

Name           Stat Mode IP V State      NbrCnt DR address
ge-0/0/1.0     Up   SDB   6 2 NotDR,Active   1 fe80::b2c6:9aff:fe95:86fa
lo0.0          Up   SDB   6 2 DR,Active    0 fe80::2a0:a50f:fc64:e661
xe-4/1/0.0     Up   SDB   6 2 DR,Active    1 fe80::226:88ff:fec5:3c37

```



## show pim join

---

<b>Syntax</b>	<pre>show pim join &lt;brief   detail   extensive   summary&gt; &lt;inet   inet6&gt; &lt;instance <i>instance-name</i>&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;range&gt;</pre>
<b>Syntax (EX Series Switch and the QFX Series)</b>	<pre>show pim join &lt;brief   detail   extensive   summary&gt; &lt;inet   inet6&gt; &lt;instance <i>instance-name</i>&gt; &lt;range&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>summary</b> option introduced in Junos OS Release 9.6.</p> <p><b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p>
<b>Description</b>	Display information about Protocol Independent Multicast (PIM) groups for all PIM modes..
<b>Options</b>	<p><b>none</b>—Display the standard information about PIM groups for all supported family addresses for all routing instances.</p> <p><b>brief   detail   extensive   summary</b>—(Optional) Display the specified level of output.</p> <p><b>inet   inet6</b>—(Optional) Display PIM group information for IPv4 or IPv6 family addresses, respectively.</p> <p><b>instance <i>instance-name</i></b>—(Optional) Display information about groups for the specified PIM-enabled routing instance only.</p> <p><b>logical-system (all   <i>logical-system-name</i>)</b>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><b>range</b>—(Optional) Address range of the group, specified as <i>prefix/prefix-length</i>.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">clear pim join on page 107</a></li></ul>
<b>List of Sample Output</b>	<p><a href="#">show pim join summary on page 215</a></p> <p><a href="#">show pim join (PIM Sparse Mode) on page 215</a></p> <p><a href="#">show pim join instance &lt;instance-name&gt; on page 215</a></p> <p><a href="#">show pim join detail on page 215</a></p> <p><a href="#">show pim join extensive (PIM Sparse Mode) on page 216</a></p>



[show pim join instance extensive on page 217](#)

**Output Fields** [Table 60 on page 213](#) describes the output fields for the **show pim join** command. Output fields are listed in the approximate order in which they appear.

Table 60: show pim join Output Fields

Field Name	Field Description	Level of Output
Instance	Name of the routing instance.	brief detail extensive summary none
Family	Name of the address family: <b>inet</b> (IPv4) or <b>inet6</b> (IPv6).	brief detail extensive summary none
Route type	Type of multicast route: (S,G) or (*,G).	summary
Route count	Number of (S,G) routes and number of (*,G) routes.	summary
R	Rendezvous Point Tree.	brief detail extensive none
S	Sparse.	brief detail extensive none
W	Wildcard.	brief detail extensive none
Group	Group address.	brief detail extensive none
Source	Multicast source: <ul style="list-style-type: none"> <li>• * (wildcard value)</li> <li>• <i>ipv4-address</i></li> <li>• <i>ipv6-address</i></li> </ul>	brief detail extensive none
RP	Rendezvous point for the PIM group.	brief detail extensive none
Flags	PIM flags: <ul style="list-style-type: none"> <li>• <b>dense</b>—Dense mode entry.</li> <li>• <b>rptree</b>—Entry is on the rendezvous point tree.</li> <li>• <b>sparse</b>—Sparse mode entry.</li> <li>• <b>spt</b>—Entry is on the shortest-path tree for the source.</li> <li>• <b>wildcard</b>—Entry is on the shared tree.</li> </ul>	brief detail extensive none
Upstream interface	RPF interface toward the source address for the source-specific state (S,G) or toward the rendezvous point (RP) address for the non-source-specific state (*,G).	brief detail extensive none
Upstream neighbor	Information about the upstream neighbor: <b>Direct</b> , <b>Local</b> , <b>Unknown</b> , or a specific IP address.	extensive



Table 60: show pim join Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Upstream state</b>	<p>Information about the upstream interface:</p> <ul style="list-style-type: none"> <li>• <b>Join to RP</b>—Sending a join to the rendezvous point.</li> <li>• <b>Join to Source</b>—Sending a join to the source.</li> <li>• <b>Local RP</b>—Sending neither joins nor prunes toward the RP, because this router is the rendezvous point.</li> <li>• <b>Local Source</b>—Sending neither joins nor prunes toward the source, because the source is locally attached to this routing device.</li> <li>• <b>Prune to RP</b>—Sending a prune to the rendezvous point.</li> <li>• <b>Prune to Source</b>—Sending a prune to the source.</li> </ul>	<b>extensive</b>
<b>Downstream neighbors</b>	<p>Information about downstream interfaces:</p> <ul style="list-style-type: none"> <li>• <b>Interface</b>—Interface name for the downstream neighbor.</li> </ul> <p><b>NOTE:</b> A pseudo PIM-SM interface appears for all IGMP-only interfaces.</p> <ul style="list-style-type: none"> <li>• <b>Interface address</b>—Address of the downstream neighbor.</li> <li>• <b>State</b>—Information about the downstream neighbor: <b>join</b> or <b>prune</b>.</li> <li>• <b>Flags</b>—PIM join flags: <b>R (RPtree)</b>, <b>S (Sparse)</b>, <b>W (Wildcard)</b>, or <b>zero</b>.</li> <li>• <b>Uptime</b>—Time since the downstream interface joined the group.</li> <li>• <b>Time since last Join</b>—Time since the last join message was received from the downstream interface.</li> <li>• <b>Time since last Prune</b>—Time since the last prune message was received from the downstream interface.</li> </ul>	<b>extensive</b>
<b>Assert Timeout</b>	Length of time between assert cycles on the downstream interface. Not displayed if the assert timer is null.	<b>extensive</b>
<b>Keepalive timeout</b>	Time remaining until the downstream join state is updated (in seconds). If the downstream join state is not updated before this keepalive timer reaches zero, the entry is deleted. If there is a directly connected host, <b>Keepalive timeout</b> is <b>Infinity</b> .	<b>extensive</b>
<b>Uptime</b>	Time since the creation of (S,G) or (*G) state. The uptime is not refreshed every time a PIM join message is received for an existing (S,G) or (*G) state.	<b>extensive</b>



## Sample Output

```

show pim join summary      user@host> show pim join summary
                             Instance: PIM.master Family: INET

                             Route type          Route count
                             (s,g)              2
                             (*,g)              1

                             Instance: PIM.master Family: INET6


show pim join (PIM Sparse Mode) user@host> show pim join
                             Instance: PIM.master Family: INET
                             R = Rendezvous Point Tree, S = Sparse, W = Wildcard

                             Group: 239.1.1.1
                             Source: *
                             RP: 10.255.14.144
                             Flags: sparse,rptree,wildcard
                             Upstream interface: Local

                             Group: 239.1.1.1
                             Source: 10.255.14.144
                             Flags: sparse,spt
                             Upstream interface: Local

                             Group: 239.1.1.1
                             Source: 10.255.70.15
                             Flags: sparse,spt
                             Upstream interface: so-1/0/0.0

                             Instance: PIM.master Family: INET6
                             R = Rendezvous Point Tree, S = Sparse, W = Wildcard


show pim join instance <instance-name> user@host> show pim join instance VPN-A
                             Instance: PIM.VPN-A Family: INET
                             R = Rendezvous Point Tree, S = Sparse, W = Wildcard

                             Group: 235.1.1.2
                             Source: *
                             RP: 10.10.47.100
                             Flags: sparse,rptree,wildcard
                             Upstream interface: Local

                             Group: 235.1.1.2
                             Source: 192.168.195.74
                             Flags: sparse,spt
                             Upstream interface: at-0/3/1.0

                             Group: 235.1.1.2
                             Source: 192.168.195.169
                             Flags: sparse
                             Upstream interface: so-1/0/1.0

                             Instance: PIM.VPN-A Family: INET6
                             R = Rendezvous Point Tree, S = Sparse, W = Wildcard


show pim join detail      user@host> show pim join detail

```



Instance: PIM.master Family: INET  
 R = Rendezvous Point Tree, S = Sparse, W = Wildcard

Group: 239.1.1.1  
 Source: \*  
 RP: 10.255.14.144  
 Flags: sparse,rptree,wildcard  
 Upstream interface: Local

Group: 239.1.1.1  
 Source: 10.255.14.144  
 Flags: sparse,spt  
 Upstream interface: Local

Group: 239.1.1.1  
 Source: 10.255.70.15  
 Flags: sparse,spt  
 Upstream interface: so-1/0/0.0

Instance: PIM.master Family: INET6  
 R = Rendezvous Point Tree, S = Sparse, W = Wildcard

**show pim join  
 extensive (PIM Sparse  
 Mode)**

user@host> show pim join extensive  
 Instance: PIM.master Family: INET  
 R = Rendezvous Point Tree, S = Sparse, W = Wildcard

Group: 239.1.1.1  
 Source: \*  
 RP: 10.255.14.144  
 Flags: sparse,rptree,wildcard  
 Upstream interface: Local  
 Upstream neighbor: Local  
 Upstream state: Local RP  
 Uptime: 00:03:49  
 Downstream neighbors:  
 Interface: so-1/0/0.0  
 10.111.10.2 State: Join Flags: SRW Timeout: 174  
 Uptime: 00:03:49 Time since last Join: 00:01:49  
 Interface: mt-1/1/0.32768  
 10.10.47.100 State: Join Flags: SRW Timeout: Infinity  
 Uptime: 00:03:49 Time since last Join: 00:01:49

Group: 239.1.1.1  
 Source: 10.255.14.144  
 Flags: sparse,spt  
 Upstream interface: Local  
 Upstream neighbor: Local  
 Upstream state: Local Source, Local RP  
 Keepalive timeout: 344  
 Uptime: 00:03:49  
 Downstream neighbors:  
 Interface: so-1/0/0.0  
 10.111.10.2 State: Join Flags: S Timeout: 174  
 Uptime: 00:03:49 Time since last Prune: 00:01:49  
 Interface: mt-1/1/0.32768  
 10.10.47.100 State: Join Flags: S Timeout: Infinity  
 Uptime: 00:03:49 Time since last Prune: 00:01:49

Group: 239.1.1.1  
 Source: 10.255.70.15  
 Flags: sparse,spt



```

Upstream interface: so-1/0/0.0
Upstream neighbor: 10.111.10.2
Upstream state: Local RP, Join to Source
Keepalive timeout: 344
Uptime: 00:03:49
Downstream neighbors:
  Interface: Pseudo-GMP
    fe-0/0/0.0 fe-0/0/1.0 fe-0/0/3.0
  Interface: so-1/0/0.0 (pruned)
    10.111.10.2 State: Prune Flags: SR Timeout: 174
    Uptime: 00:03:49 Time since last Prune: 00:01:49
  Interface: mt-1/1/0.32768
    10.10.47.100 State: Join Flags: S   Timeout: Infinity
    Uptime: 00:03:49 Time since last Prune: 00:01:49

```

```

Instance: PIM.master Family: INET6
R = Rendezvous Point Tree, S = Sparse, W = Wildcard

```

```

show pim join instance extensive user@host> show pim join instance VPN-A extensive
Instance: PIM.VPN-A Family: INET
R = Rendezvous Point Tree, S = Sparse, W = Wildcard

```

```

Group: 235.1.1.2
Source: *
RP: 10.10.47.100
Flags: sparse,rptree,wildcard
Upstream interface: Local
Upstream neighbor: Local
Upstream state: Local RP
Uptime: 00:03:49
Downstream neighbors:
  Interface: mt-1/1/0.32768
    10.10.47.101 State: Join Flags: SRW Timeout: 156
    Uptime: 00:03:49 Time since last Join: 00:01:49

```

```

Group: 235.1.1.2
Source: 192.168.195.74
Flags: sparse,spt
Upstream interface: at-0/3/1.0
Upstream neighbor: 10.111.30.2
Upstream state: Local RP, Join to Source
Keepalive timeout: 156
Uptime: 00:14:52

```

```

Group: 235.1.1.2
Source: 192.168.195.169
Flags: sparse
Upstream interface: so-1/0/1.0
Upstream neighbor: 10.111.20.2
Upstream state: Local RP, Join to Source
Keepalive timeout: 156
Uptime: 00:14:52

```



## show pim mdt

<b>Syntax</b>	show pim mdt instance <i>instance-name</i> <brief   detail   extensive> <incoming   outgoing> <logical-system (all   logical-system-name)> <range>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display information about Protocol Independent Multicast (PIM) default multicast distribution tree (MDT) and the data MDTs in a Layer 3 VPN environment for a routing instance.
<b>Options</b>	<p>instance <i>instance-name</i>—Display information about data-MDTs for a specific PIM-enabled routing instance.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p>incoming   outgoing—(Optional) Display incoming or outgoing multicast data tunnels, respectively.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>range—(Optional) Display information about an IP address with optional prefix length representing a particular multicast group.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show pim mdt instance on page 219</a> <a href="#">show pim mdt instance detail on page 220</a> <a href="#">show pim mdt instance extensive on page 220</a> <a href="#">show pim mdt instance incoming on page 220</a> <a href="#">show pim mdt instance outgoing on page 220</a> <a href="#">show pim mdt instance (SSM Mode) on page 220</a>
<b>Output Fields</b>	<a href="#">Table 61 on page 218</a> describes the output fields for the <b>show pim mdt</b> command. Output fields are listed in the approximate order in which they appear.

Table 61: show pim mdt Output Fields

Field Name	Field Description	Level of Output
Instance	Name of the routing instance.	All levels
Tunnel direction	Direction the tunnel faces, from the router's perspective: <b>Outgoing</b> or <b>Incoming</b> .	All levels
Tunnel mode	Mode the tunnel is operating in: <b>PIM-SSM</b> or <b>PIM-ASM</b> .	All levels



Table 61: show pim mdt Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Default group address</b>	Default multicast group address using this tunnel.	All levels
<b>Default source address</b>	Default multicast source address using this tunnel.	All levels
<b>Default tunnel interface</b>	Default multicast tunnel interface.	All levels
<b>Default tunnel source</b>	Address used as the source address for outgoing PIM control messages.	All levels
<b>C-Group</b>	Customer-facing multicast group address using this tunnel. If you enable dynamic reuse of data MDT group addresses, more than one group address can use the same data MDT.	<b>detail</b>
<b>C-Source</b>	IP address of the multicast source in the customer's address space. If you enable dynamic reuse of data MDT group addresses, more than one source address can use the same data MDT.	<b>detail</b>
<b>P-Group</b>	Service provider-facing multicast group address using this tunnel.	<b>detail</b>
<b>Data tunnel interface</b>	Multicast data tunnel interface that set up the data-MDT tunnel.	<b>detail</b>
<b>Last known forwarding rate</b>	Last known rate, in kilobits per second, at which the tunnel was forwarding traffic.	<b>detail</b>
<b>Configured threshold rate</b>	Rate, in kilobits per second, above which a data-MDT tunnel is created and below which it is deleted.	<b>detail</b>
<b>Tunnel uptime</b>	Time that this data-MDT tunnel has existed. The format is <i>hours:minutes:seconds</i> .	<b>detail</b>

## Sample Output

```

show pim mdt instance user@host> show pim mdt instance VPN-A
Instance: PIM.VPN-A
Tunnel direction: Outgoing
Default group address: 239.1.1.1
Default tunnel interface: mt-1/1/0.32768
Default tunnel source: 192.168.7.1

C-group address   C-source address   P-group address   Data tunnel interface
235.1.1.2         192.168.195.74     228.0.0.0         mt-1/1/0.32769

Instance: PIM.VPN-A
Tunnel direction: Incoming
Default group address: 239.1.1.1
Default tunnel interface: mt-1/1/0.49152

```



```

show pim mdt instance detail      user@host> show pim mdt instance VPN-A detail
Instance: PIM.VPN-A
Tunnel direction: Outgoing
Default group address: 239.1.1.1
Default tunnel interface: mt-1/1/0.32768
Default tunnel source: 192.168.7.1

C-Group: 235.1.1.2
  C-Source: 192.168.195.74
  P-Group : 228.0.0.0
  Data tunnel interface      : mt-1/1/0.32769
  Last known forwarding rate : 48 kbps (6 kbps)
  Configured threshold rate  : 10 kbps
  Tunnel uptime              : 00:00:34

Instance: PIM.VPN-A
Tunnel direction: Incoming
Default group address: 239.1.1.1
Default tunnel interface: mt-1/1/0.49152

show pim mdt instance extensive  user@host> show pim mdt instance VPN-A extensive
Instance: PIM.VPN-A
Tunnel direction: Outgoing
Default group address: 239.1.1.1
Default tunnel interface: mt-1/1/0.32768
Default tunnel source: 192.168.7.1

C-Group: 235.1.1.2
  C-Source: 192.168.195.74
  P-Group : 228.0.0.0
  Data tunnel interface      : mt-1/1/0.32769
  Last known forwarding rate : 48 kbps (6 kbps)
  Configured threshold rate  : 10 kbps
  Tunnel uptime              : 00:00:41

Instance: PIM.VPN-A
Tunnel direction: Incoming
Default group address: 239.1.1.1
Default tunnel interface: mt-1/1/0.49152

show pim mdt instance incoming   user@host> show pim mdt instance VPN-A incoming
Instance: PIM.VPN-A
Tunnel direction: Incoming
Default group address: 239.1.1.1
Default tunnel interface: mt-1/1/0.49152

show pim mdt instance outgoing   user@host> show pim mdt instance VPN-A outgoing
Instance: PIM.VPN-A
Tunnel direction: Outgoing
Default group address: 239.1.1.1
Default tunnel interface: mt-1/1/0.32768
Default tunnel source: 192.168.7.1

C-group address  C-source address  P-group address  Data tunnel interface
235.1.1.2        192.168.195.74    228.0.0.0        mt-1/1/0.32769

show pim mdt instance (SSM Mode) user@host> show pim mdt instance vpn-a
Instance: PIM.vpn-a
Tunnel direction: Outgoing
Tunnel mode: PIM-SSM

```



Default group address: 232.1.1.1  
Default source address: 10.255.14.216  
Default tunnel interface: mt-1/3/0.32769  
Default tunnel source: 192.168.7.1

Instance: PIM.vpn-a  
Tunnel direction: Incoming  
Tunnel mode: PIM-SSM  
Default group address: 232.1.1.1  
Default source address: 10.255.14.217  
Default tunnel interface: mt-1/3/0.49153

Instance: PIM.vpn-a  
Tunnel direction: Incoming  
Tunnel mode: PIM-SSM  
Default group address: 232.1.1.1  
Default source address: 10.255.14.218  
Default tunnel interface: mt-1/3/0.49153



## show pim mdt data-mdt-joins

**Syntax** `show pim mdt data-mdt-joins`  
`<logical-system (all | logical-system-name)> instance instance-name`

**Release Information** Command introduced in Junos OS Release 11.2.

**Description** In a draft-rosen Layer 3 multicast virtual private network (MVPN) configured with service provider tunnels, display the advertisements of new multicast distribution tree (MDT) group addresses cached by the provider edge (PE) routers in the specified VPN routing and forwarding (VRF) instance that is configured to use the Protocol Independent Multicast (PIM) protocol.

**Options** `instance instance-name`—Display data MDT join packets cached by PE routers in a specific PIM instance.

`logical-system (all | logical-system-name)`—(Optional) Perform this operation on all logical systems or on a particular logical system.



**NOTE:** Draft-rosen multicast VPNs are not supported in a logical system environment even though the configuration statements can be configured under the logical-systems hierarchy.

**Required Privilege Level** view

**Related Documentation**

- Understanding Data MDTs
- Example: Configuring Data MDTs and Provider Tunnels Operating in Source-Specific Multicast Mode
- Example: Configuring Data MDTs and Provider Tunnels Operating in Any-Source Multicast Mode

**List of Sample Output** [show pim mdt data-mdt-joins on page 223](#)

**Output Fields** [Table 62 on page 222](#) describes the output fields for the `show pim mdt data-mdt-joins` command. Output fields are listed in the approximate order in which they appear.

**Table 62: show pim mdt data-mdt-joins Output Fields**

Field Name	Field Description
<b>C-Group</b>	IPv4 group address in the address space of the customer's VPN-specific PIM-enabled routing instance of the multicast traffic destination. This 32-bit value is carried in the C-group field of the MDT join TLV packet.
<b>C-Source</b>	IPv4 address in the address space of the customer's VPN-specific PIM-enabled routing instance of the multicast traffic source. This 32-bit value is carried in the C-source field of the MDT join TLV packet.



Table 62: show pim mdt data-mdt-joins Output Fields (*continued*)

Field Name	Field Description
<b>P-Group</b>	IPv4 group address in the service provider's address space of the new data MDT that the PE router will use to encapsulate the VPN multicast traffic flow (C-Source, C-Group). This 32-bit value is carried in the P-group field of the MDT join TLV packet.
<b>P-Source</b>	IPv4 address of the PE router.
<b>Timeout</b>	Timeout, in seconds, remaining for this cache entry. When the cache entry is created, this field is set to 180 seconds. After an entry times out, the PE router deletes the entry from its cache and prunes itself off the data MDT.

### Sample Output

```

show pim mdt data-mdt-joins user@host show pim mdt data-mdt-joins instance VPN-A
C-Source          C-Group          P-Source          P-Group          Timeout
20.2.15.9         225.1.1.2        20.0.0.5          239.10.10.0      172
20.2.15.9         225.1.1.3        20.0.0.5          239.10.10.1      172

```



## show pim mvpn

<b>Syntax</b>	show pim mvpn <logical-system (all   logical-system-name) >
<b>Release Information</b>	Command introduced in Junos OS Release 9.4.
<b>Description</b>	Display information about multicast virtual private network (MVPN) instances.
<b>Options</b>	logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show pim mvpn on page 224</a>
<b>Output Fields</b>	<a href="#">Table 63 on page 224</a> describes the output fields for the <b>show pim mvpn</b> command. Output fields are listed in the approximate order in which they appear.

**Table 63: show pim mvpn Output Fields**

Field Name	Field Description	Level of Output
<b>Instance</b>	Name of the routing instance.	All levels
<b>VPN-Group</b>	Multicast group address configured for the default multicast distribution tree.	All levels
<b>Mode</b>	Mode the tunnel is operating in: <b>PIM-MVPN</b> , <b>NGEN-MVPN</b> , <b>NGEN-TRANSITION</b> or <b>None</b> .	All levels
<b>Tunnel</b>	Type of tunnel: <b>PIM-SSM</b> , <b>PIM-SM</b> , <b>NGEN PMSI</b> , or <b>None</b> (VRF-only).  If <b>NGEN-PMSI</b> is displayed, enter the <b>show mvpn instance</b> command for more information.	All levels

## Sample Output

```

show pim mvpn  user@host> show pim mvpn
                Instance      VPN-Group      Mode      Tunnel
                PIM.ce1       232.1.1.1     PIM-MVPN   PIM-SSM

```



## show pim neighbors

<b>Syntax</b>	show pim neighbors <brief   detail> <inet   inet6> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	show pim neighbors <brief   detail> <inet   inet6> <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display information about Protocol Independent Multicast (PIM) neighbors.
<b>Options</b>	<p>none—(Same as <b>brief</b>) Display standard information about PIM neighbors for all supported family addresses for all routing instances.</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>inet   inet6—(Optional) Display information about PIM neighbors for IPv4 or IPv6 family addresses, respectively.</p> <p>instance <i>instance-name</i>—(Optional) Display information about neighbors for the specified PIM-enabled routing instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show pim neighbors on page 227</a> <a href="#">show pim neighbors brief on page 227</a> <a href="#">show pim neighbors instance on page 227</a> <a href="#">show pim neighbors detail on page 227</a> <a href="#">show pim neighbors detail (With BFD) on page 228</a>
<b>Output Fields</b>	Table 64 on page 225 describes the output fields for the <b>show pim neighbors</b> command. Output fields are listed in the approximate order in which they appear.

**Table 64: show pim neighbors Output Fields**

Field Name	Field Description	Level of Output
Instance	Name of the routing instance.	All levels



Table 64: show pim neighbors Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Interface</b>	Interface through which the neighbor is reachable.	All levels
<b>Neighbor addr</b>	Address of the neighboring PIM routing device.	All levels
<b>IP</b>	IP version: 4 or 6.	All levels
<b>V</b>	PIM version running on the neighbor: 1 or 2.	All levels
<b>Mode</b>	PIM mode of the neighbor: <b>Sparse</b> , <b>Dense</b> , <b>SparseDense</b> , or <b>Unknown</b> . When the neighbor is running PIM version 2, this mode is always <b>Unknown</b> .	All levels
<b>Option</b>	Can be one or more of the following: <ul style="list-style-type: none"> <li>• <b>H</b>—Hello Option Holdtime.</li> <li>• <b>G</b>—Generation Identifier.</li> <li>• <b>P</b>—Hello Option DR Priority.</li> <li>• <b>L</b>—Hello Option LAN Prune Delay.</li> </ul>	<b>brief</b> none
<b>Uptime</b>	Time the neighbor has been operational since the PIM process was last initialized, in the format <b>dd:hh:mm:ss ago</b> for less than a week and <b>nwnd:hh:mm:ss ago</b> for more than a week.	All levels
<b>Address</b>	Address of the neighboring PIM router.	<b>detail</b>
<b>BFD</b>	Status and operational state of the Bidirectional Forwarding Detection (BFD) protocol on the interface: <b>Enabled</b> , <b>Operational state is up</b> , or <b>Disabled</b> .	<b>detail</b>
<b>Hello Option Holdtime</b>	Time for which the neighbor is available, in seconds. The range of values is 0 through 65,535.	<b>detail</b>
<b>Hello Default Holdtime</b>	Default holdtime and the time remaining if the <b>holdtime</b> option is not in the received hello message.	<b>detail</b>
<b>Hello Option DR Priority</b>	Designated router election priority. The range of values is 0 through 255.	<b>detail</b>
<b>Hello Option Generation ID</b>	9- or 10-digit number used to tag hello messages.	<b>detail</b>
<b>Hello Option LAN Prune Delay</b>	Time to wait before the neighbor receives prune messages, in the format <b>delay nnn ms override nnnn ms</b> .	<b>detail</b>
<b>Join Suppression supported</b>	Neighbor is capable of join suppression.	<b>detail</b>



Table 64: show pim neighbors Output Fields (*continued*)

Field Name	Field Description	Level of Output
Rx Join	Information about joins received from the neighbor. <ul style="list-style-type: none"> <li><b>Group</b>—Group addresses in the join message.</li> <li><b>Source</b>—Address of the source in the join message.</li> <li><b>Timeout</b>—Time for which the join is valid.</li> </ul>	detail

### Sample Output

```

show pim neighbors  user@host> show pim neighbors
                    Instance: PIM.master
                    B = Bidirectional Capable, G = Generation Identifier,
                    H = Hello Option Holdtime, L = Hello Option LAN Prune Delay,
                    P = Hello Option DR Priority

                    Interface      IP V Mode      Option      Uptime Neighbor addr
                    so-1/0/0.0      4 2           HPLG        00:07:10 10.111.10.2

show pim neighbors  The output for the show pim neighbors brief command is identical to that for the show
brief              pim neighbors command. For sample output, see show pim neighbors on page 227.

show pim neighbors  user@host> show pim neighbors instance VPN-A
instance           Instance: PIM.VPN-A
                   B = Bidirectional Capable, G = Generation Identifier,
                   H = Hello Option Holdtime, L = Hello Option LAN Prune Delay,
                   P = Hello Option DR Priority

                   Interface      IP V Mode      Option      Uptime Neighbor addr
                   at-0/3/1.0      4 2           HPLG        00:07:54 10.111.30.2
                   mt-1/1/0.32768  4 2           HPLG        00:07:22 10.10.47.101
                   so-1/0/1.0      4 2           HPLG        00:07:50 10.111.20.2

show pim neighbors  user@host> show pim neighbors detail
detail             Instance: PIM.master
                   Interface: fe-3/0/2.0
                   Address: 192.168.195.37, IPv4, PIM v2, Mode: Sparse
                   Hello Option Holdtime: 65535 seconds
                   Hello Option DR Priority: 1
                   Hello Option LAN Prune Delay: delay 500 ms override 2000 ms
                   Join Suppression supported

                   Rx Join: Group      Source      Timeout
                   225.1.1.1          192.168.195.78      0
                   225.1.1.1          0                   0

                   Interface: lo0.0
                   Address: 10.255.245.91, IPv4, PIM v2, Mode: Sparse
                   Hello Option Holdtime: 65535 seconds
                   Hello Option DR Priority: 1
                   Hello Option LAN Prune Delay: delay 500 ms override 2000 ms
                   Join Suppression supported

                   Interface: pd-6/0/0.32768
                   Address: 0.0.0.0, IPv4, PIM v2, Mode: Sparse
                   Hello Option Holdtime: 65535 seconds
                   Hello Option DR Priority: 0

```



Hello Option LAN Prune Delay: delay 500 ms override 2000 ms  
Join Suppression supported

**show pim neighbors  
detail (With BFD)**

```
user@host> show pim neighbors detail
Instance: PIM.master
Interface: fe-1/0/0.0
  Address: 192.168.11.1,      IPv4, PIM v2, Mode: Sparse
    Hello Option Holdtime: 65535 seconds
    Hello Option DR Priority: 1
    Hello Option Generation ID: 836607909
    Hello Option LAN Prune Delay: delay 500 ms override 2000 ms

  Address: 192.168.11.2,      IPv4, PIM v2
    BFD: Enabled, Operational state is up
    Hello Default Holdtime: 105 seconds 104 remaining
    Hello Option DR Priority: 1
    Hello Option Generation ID: 1907549685
    Hello Option LAN Prune Delay: delay 500 ms override 2000 ms

Interface: fe-1/0/1.0
  Address: 192.168.12.1,      IPv4, PIM v2
    BFD: Disabled
    Hello Default Holdtime: 105 seconds 80 remaining
    Hello Option DR Priority: 1
    Hello Option Generation ID: 1971554705
    Hello Option LAN Prune Delay: delay 500 ms override 2000 ms
```



## show pim rps

<b>Syntax</b>	<pre>show pim rps &lt;brief   detail   extensive&gt; &lt;group-address&gt; &lt;inet   inet6&gt; &lt;instance instance-name&gt; &lt;logical-system (all   logical-system-name)&gt;</pre>
<b>Syntax (EX Series Switch and the QFX Series)</b>	<pre>show pim rps &lt;brief   detail   extensive&gt; &lt;group-address&gt; &lt;inet   inet6&gt; &lt;instance instance-name&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p>
<b>Description</b>	Display information about Protocol Independent Multicast (PIM) rendezvous points (RPs).
<b>Options</b>	<p><b>none</b>—Display standard information about PIM RPs for all groups and family addresses for all routing instances.</p> <p><b>brief   detail   extensive</b>—(Optional) Display the specified level of output.</p> <p><b>group-address</b>—(Optional) Display the RPs for a particular group. If you specify a group address, the output lists the routing device that is the RP for that group.</p> <p><b>inet   inet6</b>—(Optional) Display information for IPv4 or IPv6 family addresses, respectively.</p> <p><b>instance instance-name</b>—(Optional) Display information about RPs for a specific PIM-enabled routing instance.</p> <p><b>logical-system (all   logical-system-name)</b>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<p><a href="#">show pim rps on page 231</a></p> <p><a href="#">show pim rps brief on page 232</a></p> <p><a href="#">show pim rps instance on page 232</a></p> <p><a href="#">show pim rps extensive (PIM Sparse Mode) on page 232</a></p> <p><a href="#">show pim rps extensive (PIM Bidirectional Mode) on page 232</a></p> <p><a href="#">show pim rps extensive (PIM Anycast RP in Use) on page 233</a></p>
<b>Output Fields</b>	Table 65 on page 230 describes the output fields for the <b>show pim rps</b> command. Output fields are listed in the approximate order in which they appear.



Table 65: show pim rps Output Fields

Field Name	Field Description	Level of Output
<b>Instance</b>	Name of the routing instance.	All levels
<b>Family or Address family</b>	Name of the address family: <b>inet</b> (IPv4) or <b>inet6</b> (IPv6).	All levels
<b>RP address</b>	Address of the rendezvous point.	All levels
<b>Type</b>	Type of RP: <ul style="list-style-type: none"> <li>• <b>auto-rp</b>—Address of the RP known through the Auto-RP protocol.</li> <li>• <b>bootstrap</b>—Address of the RP known through the bootstrap router protocol (BSR).</li> <li>• <b>embedded</b>—Address of the RP known through an embedded RP (IPv6).</li> <li>• <b>static</b>—Address of RP known through static configuration.</li> </ul>	<b>brief none</b>
<b>Holdtime</b>	How long to keep the RP active, with time remaining, in seconds.	All levels
<b>Timeout</b>	How long until the local routing device determines the RP to be unreachable, in seconds.	All levels
<b>Groups</b>	Number of groups currently using this RP.	All levels
<b>Group prefixes</b>	Addresses of groups that this RP can span.	<b>brief none</b>
<b>Learned via</b>	Address and method by which the RP was learned.	<b>detail extensive</b>
<b>Time Active</b>	How long the RP has been active, in the format <b>hh:mm:ss</b> .	<b>detail extensive</b>
<b>Device Index</b>	Index value of the order in which Junos OS finds and initializes the interface.	<b>detail extensive</b>
<b>Subunit</b>	Logical unit number of the interface.	<b>detail extensive</b>
<b>Interface</b>	Either the encapsulation or the de-encapsulation logical interface, depending on whether this routing device is a designated router (DR) facing an RP router, or is the local RP, respectively.	<b>detail extensive</b>
<b>Group Ranges</b>	Addresses of groups that this RP spans.	<b>detail extensive</b>
<b>Active groups using RP</b>	Number of groups currently using this RP.	<b>detail extensive</b>
<b>total</b>	Total number of active groups for this RP.	<b>detail extensive</b>



Table 65: show pim rps Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Register State for RP</b>	<p>Current register state for each group:</p> <ul style="list-style-type: none"> <li>• <b>Group</b>—Multicast group address.</li> <li>• <b>Source</b>—Multicast source address for which the PIM register is sent or received, depending on whether this router is a designated router facing an RP router, or is the local RP, respectively:</li> <li>• <b>First Hop</b>—PIM-designated routing device that sent the Register message (the source address in the IP header).</li> <li>• <b>RP Address</b>—RP to which the Register message was sent (the destination address in the IP header).</li> <li>• <b>State</b>: <ul style="list-style-type: none"> <li>On the designated router: <ul style="list-style-type: none"> <li>• <b>Send</b>—Sending Register messages.</li> <li>• <b>Probe</b>—Sent a null register. If a Register-Stop message does not arrive in 5 seconds, the designated router resumes sending Register messages.</li> <li>• <b>Suppress</b>—Received a Register-Stop message. The designated router is waiting for the timer to resume before changing to <b>Probe</b> state.</li> </ul> </li> <li>On the RP: <ul style="list-style-type: none"> <li>• <b>Receive</b>—Receiving Register messages.</li> </ul> </li> </ul> </li> </ul>	<b>extensive</b>
<b>Anycast-PIM rpset</b>	If anycast RP is configured, the addresses of the RPs in the set.	<b>extensive</b>
<b>Anycast-PIM local address used</b>	If anycast RP is configured, the local address used by the RP.	<b>extensive</b>
<b>Anycast-PIM Register State</b>	<p>If anycast RP is configured, the current register state for each group:</p> <ul style="list-style-type: none"> <li>• <b>Group</b>—Multicast group address.</li> <li>• <b>Source</b>—Multicast source address for which the PIM register is sent or received, depending on whether this routing device is a designated router facing an RP router, or is the local RP, respectively.</li> <li>• <b>Origin</b>—How the information was obtained: <ul style="list-style-type: none"> <li>• <b>DIRECT</b>—From a local attachment</li> <li>• <b>MSDP</b>—From the Multicast Source Discovery Protocol (MSDP)</li> <li>• <b>DR</b>—From the designated router</li> </ul> </li> </ul>	<b>extensive</b>

## Sample Output

```

show pim rps  user@host> show pim rps
Instance: PIM.master
Address family INET
RP address      Type      Mode   Holdtime Timeout Groups  Group prefixes
10.10.1.3       static    bidir   150      None     2  224.1.3.0/24
                225.1.3.0/24
10.10.13.2      static    bidir   150      None     2  224.1.1.0/24
                225.1.1.0/24

Address family INET6

```



**show pim rps brief** The output for the **show pim rps brief** command is identical to that for the **show pim rps** command. For sample output, see [show pim rps on page 231](#).

```
user@host> show pim rps instance VPN-A
Instance: PIM.VPN-A
Address family INET
RP address          Type          Holdtime Timeout Groups Group prefixes
10.10.47.100        static          0      None      1 224.0.0.0/4

Address family INET6
```

```
user@host> show pim rps extensive
Instance: PIM.master

Family: INET
RP: 10.255.245.91
Learned via: static configuration
Time Active: 00:05:48
Holdtime: 45 with 36 remaining
Device Index: 122
Subunit: 32768
Interface: pd-6/0/0.32768
Group Ranges:
    224.0.0.0/4, 36s remaining
Active groups using RP:
    225.1.1.1

    total 1 groups active

Register State for RP:
Group      Source      FirstHop      RP Address      State      Timeout
225.1.1.1  192.168.195.78  10.255.14.132  10.255.245.91  Receive    0
```

```
user@host> show pim rps extensive
Instance: PIM.master
Address family INET

RP: 10.10.1.3
Learned via: static configuration
Mode: Bidirectional
Time Active: 01:58:07
Holdtime: 150
Group Ranges:
    224.1.3.0/24
    225.1.3.0/24

RP: 10.10.13.2
Learned via: static configuration
Mode: Bidirectional
Time Active: 01:58:07
Holdtime: 150
Group Ranges:
    224.1.1.0/24
    225.1.1.0/24

Address family INET6
```



```

show pim rps extensive      user@host> show pim rps extensive
(PIM Anycast RP in Use)   Instance: PIM.master
                           Family: INET
                           RP: 10.10.10.2
                           Learned via: static configuration
                           Time Active: 00:54:52
                           Holdtime: 0
                           Device Index: 130
                           Subunit: 32769
                           Interface: pimd.32769
                           Group Ranges:
                             224.0.0.0/4
                           Active groups using RP:
                             224.10.10.10

                           total 1 groups active

                           Anycast-PIM rpset:
                             10.100.111.34
                             10.100.111.17
                             10.100.111.55

                           Anycast-PIM local address used: 10.100.111.1
                           Anycast-PIM Register State:
                           Group                Source                Origin
                           224.1.1.1             10.10.95.2             DIRECT
                           224.1.1.2             10.10.95.2             DIRECT
                           224.10.10.10          10.10.70.1             MSDP
                           224.10.10.11          10.10.70.1             MSDP
                           224.20.20.1          10.10.71.1             DR

                           Address family INET6

                           Anycast-PIM rpset:
                             ab::1
                             ab::2
                           Anycast-PIM local address used: cd::1

                           Anycast-PIM Register State:
                           Group                Source                Origin
                           ::224.1.1.1          ::10.10.95.2          DIRECT
                           ::224.1.1.2          ::10.10.95.2          DIRECT
                           ::224.20.20.1        ::10.10.71.1          DR

```



## show pim source

<b>Syntax</b>	<pre>show pim source &lt;brief   detail&gt; &lt;inet   inet6&gt; &lt;instance <i>instance-name</i>&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;source-prefix&gt;</pre>
<b>Syntax (EX Series Switch and the QFX Series)</b>	<pre>show pim source &lt;brief   detail&gt; &lt;inet   inet6&gt; &lt;instance <i>instance-name</i>&gt; &lt;source-prefix&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p>
<b>Description</b>	Display information about the Protocol Independent Multicast (PIM) source reverse path forwarding (RPF) state.
<b>Options</b>	<p><b>none</b>—Display standard information about the PIM RPF state for all supported family addresses for all routing instances.</p> <p><b>brief   detail</b>—(Optional) Display the specified level of output.</p> <p><b>inet   inet6</b>—(Optional) Display information for IPv4 or IPv6 family addresses, respectively.</p> <p><b>instance <i>instance-name</i></b>—(Optional) Display information about the RPF state for a specific PIM-enabled routing instance.</p> <p><b>logical-system (all   <i>logical-system-name</i>)</b>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><b>source-prefix</b>—(Optional) Display the state for source RPF states in the given range.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show pim source on page 235</a> <a href="#">show pim source brief on page 235</a> <a href="#">show pim source detail on page 235</a>
<b>Output Fields</b>	<p><a href="#">Table 66 on page 234</a> describes the output fields for the <b>show pim source</b> command. Output fields are listed in the approximate order in which they appear.</p>

**Table 66: show pim source Output Fields**

Field Name	Field Description
<b>Instance</b>	Name of the routing instance.



Table 66: show pim source Output Fields (*continued*)

Field Name	Field Description
Source	Address of the source or reverse path.
Prefix/length	Prefix and prefix length for the route used to reach the RPF address.
Upstream interface	RPF interface toward the source address.
Upstream Neighbor	Address of the RPF neighbor used to reach the source address.

## Sample Output

```

show pim source user@host> show pim source
Instance: PIM.master Family: INET

Source 10.255.14.144
  Prefix 10.255.14.144/32
  Upstream interface Local
  Upstream neighbor Local

Source 10.255.70.15
  Prefix 10.255.70.15/32
  Upstream interface so-1/0/0.0
  Upstream neighbor 10.111.10.2

Instance: PIM.master Family: INET6

```

**show pim source brief** The output for the **show pim source brief** command is identical to that for the **show pim source** command. For sample output, see [show pim source on page 235](#).

```

show pim source detail user@host> show pim source detail
Instance: PIM.master Family: INET

Source 10.255.14.144
  Prefix 10.255.14.144/32
  Upstream interface Local
  Upstream neighbor Local
  Active groups:228.0.0.0
    239.1.1.1
    239.1.1.1

Source 10.255.70.15
  Prefix 10.255.70.15/32
  Upstream interface so-1/0/0.0
  Upstream neighbor 10.111.10.2
  Active groups:239.1.1.1

Instance: PIM.master Family: INET6

```



## show pim statistics

---

<b>Syntax</b>	show pim statistics <inet   inet6> <instance <i>instance-name</i> > <interface <i>interface-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and the QFX Series)</b>	show pim statistics <inet   inet6> <instance <i>instance-name</i> > <interface <i>interface-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>inet6</b> and <b>instance</b> options introduced in Junos OS Release 10.0 for EX Series switches.
<b>Description</b>	Display Protocol Independent Multicast (PIM) statistics.
<b>Options</b>	none—Display PIM statistics.  inet   inet6—(Optional) Display IPv4 or IPv6 PIM statistics, respectively.  instance <i>instance-name</i> —(Optional) Display statistics for a specific routing instance enabled by Protocol Independent Multicast (PIM).  interface <i>interface-name</i> —(Optional) Display statistics about the specified interface.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">clear pim statistics on page 112</a></li></ul>
<b>List of Sample Output</b>	<a href="#">show pim statistics on page 242</a> <a href="#">show pim statistics inet interface &lt;interface-name&gt; on page 243</a> <a href="#">show pim statistics inet6 interface &lt;interface-name&gt; on page 243</a> <a href="#">show pim statistics interface &lt;interface-name&gt; on page 244</a>
<b>Output Fields</b>	<a href="#">Table 67 on page 237</a> describes the output fields for the <b>show pim statistics</b> command. Output fields are listed in the approximate order in which they appear.



Table 67: show pim statistics Output Fields

Field Name	Field Description
<b>Instance</b>	<p>Name of the routing instance.</p> <p>This field only appears if you specify an interface, for example:</p> <ul style="list-style-type: none"> <li>• <b>inet interface <i>interface-name</i></b></li> <li>• <b>inet6 interface <i>interface-name</i></b></li> <li>• <b>interface <i>interface-name</i></b></li> </ul>
<b>Family</b>	<p>Output is for IPv4 or IPv6 PIM statistics. <b>INET</b> indicates IPv4 statistics, and <b>INET6</b> indicates IPv6 statistics.</p> <p>This field only appears if you specify an interface, for example:</p> <ul style="list-style-type: none"> <li>• <b>inet interface <i>interface-name</i></b></li> <li>• <b>inet6 interface <i>interface-name</i></b></li> <li>• <b>interface <i>interface-name</i></b></li> </ul>
<b>PIM statistics</b>	PIM statistics for all interfaces or for the specified interface.
<b>PIM message type</b>	Message type for which statistics are displayed.
<b>Received</b>	Number of received statistics.
<b>Sent</b>	Number of messages sent of a certain type.
<b>Rx errors</b>	Number of received packets that contained errors.
<b>V2 Hello</b>	PIM version 2 hello packets.
<b>V2 Register</b>	PIM version 2 register packets.
<b>V2 Register Stop</b>	PIM version 2 register stop packets.
<b>V2 Join Prune</b>	PIM version 2 join and prune packets.
<b>V2 Bootstrap</b>	PIM version 2 bootstrap packets.
<b>V2 Assert</b>	PIM version 2 assert packets.
<b>V2 Graft</b>	PIM version 2 graft packets.
<b>V2 Graft Ack</b>	PIM version 2 graft acknowledgment packets.
<b>V2 Candidate RP</b>	PIM version 2 candidate RP packets.



Table 67: show pim statistics Output Fields (*continued*)

Field Name	Field Description
<b>V2 State Refresh</b>	PIM version 2 control messages related to PIM dense mode (PIM-DM) state refresh.  State refresh is an extension to PIM-DM. It not supported in Junos OS.
<b>V1 Query</b>	PIM version 1 query packets.
<b>V1 Register</b>	PIM version 1 register packets.
<b>V1 Register Stop</b>	PIM version 1 register stop packets.
<b>V1 Join Prune</b>	PIM version 1 join and prune packets.
<b>V1 RP Reachability</b>	PIM version 1 RP reachability packets.
<b>V1 Assert</b>	PIM version 1 assert packets.
<b>V1 Graft</b>	PIM version 1 graft packets.
<b>V1 Graft Ack</b>	PIM version 1 graft acknowledgment packets.
<b>AutoRP Announce</b>	Auto-RP announce packets.
<b>AutoRP Mapping</b>	Auto-RP mapping packets.
<b>AutoRP Unknown type</b>	Auto-RP packets with an unknown type.
<b>Anycast Register</b>	Auto-RP announce packets.
<b>Anycast Register Stop</b>	Auto-RP announce packets.
<b>Global Statistics</b>	Summary of PIM statistics for all interfaces.
<b>Hello dropped on neighbor policy</b>	Number of hello packets dropped because of a configured neighbor policy.
<b>Unknown type</b>	Number of PIM control packets received with an unknown type.
<b>V1 Unknown type</b>	Number of PIM version 1 control packets received with an unknown type.
<b>Unknown Version</b>	Number of PIM control packets received with an unknown version. The version is not version 1 or version 2.
<b>Neighbor unknown</b>	Number of PIM control packets received (excluding PIM hello) without first receiving the hello packet.



Table 67: show pim statistics Output Fields (*continued*)

Field Name	Field Description
<b>Bad Length</b>	Number of PIM control packets received for which the packet size does not match the PIM length field in the packet.
<b>Bad Checksum</b>	Number of PIM control packets received for which the calculated checksum does not match the checksum field in the packet.
<b>Bad Receive If</b>	Number of PIM control packets received on an interface that does not have PIM configured.
<b>Rx Bad Data</b>	Number of PIM control packets received that contain data for TCP Bad register packets.
<b>Rx Intf disabled</b>	Number of PIM control packets received on an interface that has PIM disabled.
<b>Rx V1 Require V2</b>	Number of PIM version 1 control packets received on an interface configured for PIM version 2.
<b>Rx V2 Require V1</b>	Number of PIM version 2 control packets received on an interface configured for PIM version 1.
<b>Rx Register not RP</b>	Number of PIM register packets received when the router is not the RP for the group.
<b>Rx Register no route</b>	Number of PIM register packets received when the RP does not have a unicast route back to the source.
<b>Rx Register no decap if</b>	Number of PIM register packets received when the RP does not have a de-encapsulation interface.
<b>Null Register Timeout</b>	Number of NULL register timeout packets.
<b>RP Filtered Source</b>	Number of PIM packets received when the router has a source address filter configured for the RP.
<b>Rx Unknown Reg Stop</b>	Number of register stop messages received with an unknown type.
<b>Rx Join/Prune no state</b>	Number of join and prune messages received for which the router has no state.
<b>Rx Join/Prune on upstream if</b>	Number of join and prune messages received on the interface used to reach the upstream router, toward the RP.
<b>Rx Join/Prune for invalid group</b>	Number of join or prune messages received for invalid multicast group addresses.
<b>Rx Join/Prune messages dropped</b>	Number of join and prune messages received and dropped.



Table 67: show pim statistics Output Fields (*continued*)

Field Name	Field Description
<b>Rx sparse join for dense group</b>	Number of PIM sparse mode join messages received for a group that is configured for dense mode.
<b>Rx Graft/Graft Ack no state</b>	Number of graft and graft acknowledgment messages received for which the router or switch has no state.
<b>Rx Graft on upstream if</b>	Number of graft messages received on the interface used to reach the upstream router, toward the RP.
<b>Rx CRP not BSR</b>	Number of BSR messages received in which the PIM message type is Candidate-RP-Advertisement, not Bootstrap.
<b>Rx BSR when BSR</b>	Number of BSR messages received in which the PIM message type is Bootstrap.
<b>Rx BSR not RPF if</b>	Number of BSR messages received on an interface that is not the RPF interface.
<b>Rx unknown hello opt</b>	Number of PIM hello packets received with options that Junos OS does not support.
<b>Rx data no state</b>	Number of PIM control packets received for which the router has no state for the data type.
<b>Rx RP no state</b>	Number of PIM control packets received for which the router has no state for the RP.
<b>Rx aggregate</b>	Number of PIM aggregate MDT packets received.
<b>Rx malformed packet</b>	Number of PIM control packets received with a malformed IP unicast or multicast address family.
<b>No RP</b>	Number of PIM control packets received with no RP address.
<b>No register encap if</b>	Number of PIM register packets received when the first-hop router does not have an encapsulation interface.
<b>No route upstream</b>	Number of PIM control packets received when the router does not have a unicast route to the the interface used to reach the upstream router, toward the RP.
<b>Nexthop Unusable</b>	Number of PIM control packets with an unusable nexthop. A path can be unusable if the route is hidden or the link is down.
<b>RP mismatch</b>	Number of PIM control packets received for which the router has an RP mismatch.
<b>RPF neighbor unknown</b>	Number of PIM control packets received for which the router has an unknown RPF neighbor for the source.



Table 67: show pim statistics Output Fields (*continued*)

Field Name	Field Description
<b>Rx Joins/Prunes filtered</b>	The number of join and prune messages filtered because of configured route filters and source address filters.
<b>Tx Joins/Prunes filtered</b>	The number of join and prune messages filtered because of configured route filters and source address filters.
<b>Embedded-RP invalid addr</b>	Number of packets received with an invalid embedded RP address in PIM join messages and other types of messages sent between routing domains.
<b>Embedded-RP limit exceed</b>	Number of times the limit configured with the <b>maximum-rps</b> statement is exceeded. The <b>maximum-rps</b> statement limits the number of embedded RPs created in a specific routing instance. The range is from 1 through 500. The default is 100.
<b>Embedded-RP added</b>	<p>Number of packets in which the embedded RP for IPv6 is added.</p> <p>The following receive events trigger extraction of an IPv6 embedded RP address on the router:</p> <ul style="list-style-type: none"> <li>• Multicast Listener Discovery (MLD) report for an embedded RP multicast group address</li> <li>• PIM join message with an embedded RP multicast group address</li> <li>• Static embedded RP multicast group address associated with an interface</li> <li>• Packets sent to an embedded RP multicast group address received on the DR</li> </ul> <p>An embedded RP node discovered through these receive events is added if it does not already exist on the routing platform.</p>
<b>Embedded-RP removed</b>	Number of packets in which the embedded RP for IPv6 is removed. The embedded RP is removed whenever all PIM join states using this RP are removed or the configuration changes to remove the embedded RP feature.
<b>Rx Register msgs filtering drop</b>	Number of received register messages dropped because of a filter configured for PIM register messages.
<b>Tx Register msgs filtering drop</b>	Number of register messages dropped because of a filter configured for PIM register messages.



## Sample Output

```

show pim statistics user@host> show pim statistics
PIM Message type      Received      Sent      Rx errors
V2 Hello               15           32         0
V2 Register            0           362        0
V2 Register Stop       483          0          0
V2 Join Prune          18           518        0
V2 Bootstrap           0            0          0
V2 Assert              0            0          0
V2 Graft               0            0          0
V2 Graft Ack           0            0          0
V2 Candidate RP        0            0          0
V2 State Refresh       0            0          0

V1 Query               0            0          0
V1 Register            0            0          0
V1 Register Stop       0            0          0
V1 Join Prune          0            0          0
V1 RP Reachability     0            0          0
V1 Assert              0            0          0
V1 Graft               0            0          0
V1 Graft Ack           0            0          0
AutoRP Announce        0            0          0
AutoRP Mapping          0            0          0
AutoRP Unknown type    0            0          0
Anycast Register       0            0          0
Anycast Register Stop  0            0          0

Global Statistics

Hello dropped on neighbor policy 0
Unknown type                      0
V1 Unknown type                   0
Unknown Version                   0
Neighbor unknown                  0
Bad Length                        0
Bad Checksum                      0
Bad Receive If                    0
Rx Bad Data                       0
Rx Intf disabled                  0
Rx V1 Require V2                  0
Rx V2 Require V1                  0
Rx Register not RP                0
Rx Register no route              0
Rx Register no decap if           0
Null Register Timeout             0
RP Filtered Source                0
Rx Unknown Reg Stop               0
Rx Join/Prune no state            0
Rx Join/Prune on upstream if      0
Rx Join/Prune for invalid group   5
Rx Join/Prune messages dropped    0
Rx sparse join for dense group    0
Rx Graft/Graft Ack no state       0
Rx Graft on upstream if           0
Rx CRP not BSR                    0
Rx BSR when BSR                   0
Rx BSR not RPF if                 0
Rx unknown hello opt              0

```



Rx data no state	0
Rx RP no state	0
Rx aggregate	0
Rx malformed packet	0
Rx illegal TTL	0
Rx illegal destination address	0
No RP	0
No register encap if	0
No route upstream	0
Nexthop Unusable	0
RP mismatch	0
RP mode mismatch	0
RPF neighbor unknown	0
Rx Joins/Prunes filtered	0
Tx Joins/Prunes filtered	0
Embedded-RP invalid addr	0
Embedded-RP limit exceed	0
Embedded-RP added	0
Embedded-RP removed	0
Rx Register msgs filtering drop	0
Tx Register msgs filtering drop	0

### Sample Output

```

show pim statistics user@host> show pim statistics inet interface ge-0/3/0.0
inet interface Instance: PIM.master Family: INET
<interface-name> PIM Interface statistics for ge-0/3/0.0

```

PIM Message type	Received	Sent	Rx errors
V2 Hello	0	4	0
V2 Register	0	0	0
V2 Register Stop	0	0	0
V2 Join Prune	0	0	0
V2 Bootstrap	0	0	0
V2 Assert	0	0	0
V2 Graft	0	0	0
V2 Graft Ack	0	0	0
V2 Candidate RP	0	0	0
V1 Query	0	0	0
V1 Register	0	0	0
V1 Register Stop	0	0	0
V1 Join Prune	0	0	0
V1 RP Reachability	0	0	0
V1 Assert	0	0	0
V1 Graft	0	0	0
V1 Graft Ack	0	0	0
AutoRP Announce	0	0	0
AutoRP Mapping	0	0	0
AutoRP Unknown type	0		
Anycast Register	0	0	0
Anycast Register Stop	0	0	0

### Sample Output

```

show pim statistics user@host> show pim statistics inet6 interface ge-0/3/0.0
inet6 interface Instance: PIM.master Family: INET6
<interface-name> PIM Interface statistics for ge-0/3/0.0

```



PIM Message type	Received	Sent	Rx errors
V2 Hello	0	4	0
V2 Register	0	0	0
V2 Register Stop	0	0	0
V2 Join Prune	0	0	0
V2 Bootstrap	0	0	0
V2 Assert	0	0	0
V2 Graft	0	0	0
V2 Graft Ack	0	0	0
V2 Candidate RP	0	0	0
Anycast Register	0	0	0
Anycast Register Stop	0	0	0

## Sample Output

```
show pim statistics user@host> show pim statistics interface ge-0/3/0.0
interface Instance: PIM.master Family: INET
<interface-name> PIM Interface statistics for ge-0/3/0.0
```

PIM Message type	Received	Sent	Rx errors
V2 Hello	0	3	0
V2 Register	0	0	0
V2 Register Stop	0	0	0
V2 Join Prune	0	0	0
V2 Bootstrap	0	0	0
V2 Assert	0	0	0
V2 Graft	0	0	0
V2 Graft Ack	0	0	0
V2 Candidate RP	0	0	0
V1 Query	0	0	0
V1 Register	0	0	0
V1 Register Stop	0	0	0
V1 Join Prune	0	0	0
V1 RP Reachability	0	0	0
V1 Assert	0	0	0
V1 Graft	0	0	0
V1 Graft Ack	0	0	0
AutoRP Announce	0	0	0
AutoRP Mapping	0	0	0
AutoRP Unknown type	0	0	0
Anycast Register	0	0	0
Anycast Register Stop	0	0	0

Instance: PIM.master Family: INET6

PIM Interface statistics for ge-0/3/0.0

PIM Message type	Received	Sent	Rx errors
V2 Hello	0	3	0
V2 Register	0	0	0
V2 Register Stop	0	0	0
V2 Join Prune	0	0	0
V2 Bootstrap	0	0	0
V2 Assert	0	0	0
V2 Graft	0	0	0
V2 Graft Ack	0	0	0
V2 Candidate RP	0	0	0
Anycast Register	0	0	0
Anycast Register Stop	0	0	0







## show sap listen

<b>Syntax</b>	show sap listen <brief   detail> <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display the addresses that the router is listening to in order to receive multicast Session Announcement Protocol (SAP) session announcements.
<b>Options</b>	<p>none—Display standard information about the addresses that the router is listening to in order to receive multicast SAP session announcements.</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show sap listen on page 246</a> <a href="#">show sap listen brief on page 246</a> <a href="#">show sap listen detail on page 246</a>
<b>Output Fields</b>	<a href="#">Table 68 on page 246</a> describes the output fields for the <b>show sap listen</b> command. Output fields are listed in the approximate order in which they appear.

**Table 68: show sap listen Output Fields**

Field Name	Field Description
Group address	Address of the group that the local router is listening to for SAP messages.
Port	UDP port number used for SAP.

## Sample Output

<b>show sap listen</b>	<pre>user@host&gt; show sap listen Group address  Port 224.2.127.254  9875 239.255.255.255 9875</pre>
<b>show sap listen brief</b>	The output for the <b>show sap listen brief</b> command is identical to that for the <b>show sap listen</b> command. For sample output, see <a href="#">show sap listen on page 246</a> .
<b>show sap listen detail</b>	The output for the <b>show sap listen detail</b> command is identical to that for the <b>show sap listen</b> command. For sample output, see <a href="#">show sap listen on page 246</a> .



## test msdp

---

<b>Syntax</b>	test msdp (dependent-peers <i>prefix</i>   rpf-peer <i>originator</i> ) <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Find Multicast Source Discovery Protocol (MSDP) peers.
<b>Options</b>	<p>dependent-peers <i>prefix</i>—Find downstream dependent MSDP peers.</p> <p>rpf-peer <i>originator</i>—Find the MSDP reverse-path-forwarding (RPF) peer for the originator.</p> <p>instance <i>instance-name</i>—(Optional) Find MDSP peers for the specified routing instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">test msdp dependent-peers on page 247</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

```
test msdp      user@host> test msdp dependent-peers 10.0.0.1/24
dependent-peers
```







## CHAPTER 6

# IPv6 Operational Mode Commands

Table 69 on page 249 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot Internet Protocol version 6 (IPv6). Commands are listed in alphabetical order.

**Table 69: IPv6 Operational Mode Commands**

Task	Command
Clear IPv6 neighbor cache information.	<code>clear ipv6 neighbors</code>
Clear IPv6 router advertisement counters.	<code>clear ipv6 router-advertisement</code>
Display neighbor discovery information.	<code>show ipv6 neighbors</code>
Display router advertisement information.	<code>show ipv6 router-advertisement</code>



**NOTE:** For information about how to configure IPv6 parameters, see the *Junos OS Routing Protocols Configuration Guide*.



## clear ipv6 neighbors

---

<b>Syntax</b>	clear ipv6 neighbors <all   host <i>hostname</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.3 for EX Series switches.
<b>Description</b>	Clear IPv6 neighbor cache information.
<b>Options</b>	none—Clear all IPv6 neighbor cache information.  all—(Optional) Clear all IPv6 neighbor cache information.  host <i>hostname</i> —(Optional) Clear the information for the specified IPv6 neighbors.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show ipv6 neighbors on page 252</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear ipv6 neighbors on page 250</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

clear ipv6 neighbors     user@host> clear ipv6 neighbors



## clear ipv6 router-advertisement

<b>Syntax</b>	clear ipv6 router-advertisement <interface <i>interface</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Clear IPv6 router advertisement counters.
<b>Options</b>	<p>none—Clear IPv6 router advertisement counters for all interfaces.</p> <p>interface <i>interface</i>—(Optional) Clear IPv6 router advertisement counters for the specified interface.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show ipv6 router-advertisement on page 254</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear ipv6 router-advertisement on page 251</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

```
clear ipv6 router-advertisement user@host> clear ipv6 router-advertisement
```



## show ipv6 neighbors

<b>Syntax</b>	show ipv6 neighbors
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.3 for EX Series switches.
<b>Description</b>	Display information about the IPv6 neighbor cache.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">clear ipv6 neighbors on page 250</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show ipv6 neighbors on page 252</a> <a href="#">show ipv6 neighbors on page 252</a>
<b>Output Fields</b>	Table 70 on page 252 describes the output fields for the <b>show ipv6 neighbors</b> command. Output fields are listed in the approximate order in which they appear.

**Table 70: show ipv6 neighbors Output Fields**

Field Name	Field Description
IPv6 Address	Name of the IPv6 interface.
Linklayer Address	Link-layer address.
State	State of the link: <b>up</b> , <b>down</b> , <b>incomplete</b> , <b>reachable</b> , <b>stale</b> , or <b>unreachable</b> .
Exp	Number of seconds until the entry expires.
Rtr	Whether the neighbor is a routing device: <b>yes</b> or <b>no</b> .
Secure	Whether this entry was created using the Secure Neighbor Discovery (SEND) protocol: <b>yes</b> or <b>no</b> .
Interface	Name of the interface.

## Sample Output

```

show ipv6 neighbors user@host> show ipv6 neighbors
IPv6 Address          Linklayer Address  State      Exp  Rtr  Interface
fe80::2a0:c9ff:fe5b:4c1e 00:a0:c9:5b:4c:1e reachable    15   yes  fxp0.0

show ipv6 neighbors user@host > show ipv6 neighbors

```



IPv6 Address	Linklayer Address	State	Exp Rtr	Secure
Interface				
fe80::14fb:5dcf:54bd:ff76	00:90:69:a0:a8:bc	stale	1113	yes yes
ge-3/2/0.0				



## show ipv6 router-advertisement

<b>Syntax</b>	<pre>show ipv6 router-advertisement &lt;conflicts&gt; &lt;interface <i>interface</i>&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;prefix <i>prefix/prefix length</i>&gt;</pre>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display information about IPv6 router advertisements, including statistics about messages sent and received on interfaces, and information received from advertisements from other routers.
<b>Options</b>	<p>none—Display all IPv6 router advertisement information for all interfaces.</p> <p>conflicts—(Optional) Display only the IPv6 router advertisement information that is conflicting.</p> <p>interface <i>interface</i>—(Optional) Display IPv6 router advertisement information for the specified interface.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>prefix <i>prefix/prefix length</i>—(Optional) Display IPv6 router advertisement information for the specified prefix.</p>
<b>Additional Information</b>	The display identifies conflicting information by enclosing the value the router is advertising in brackets.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">clear ipv6 router-advertisement on page 251</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show ipv6 router-advertisement on page 255</a> <a href="#">show ipv6 router-advertisement conflicts on page 256</a> <a href="#">show ipv6 router-advertisement prefix on page 256</a>
<b>Output Fields</b>	<a href="#">Table 71 on page 254</a> describes the output fields for the <b>show ipv6 router-advertisement</b> command. Output fields are listed in the approximate order in which they appear.

Table 71: show ipv6 router-advertisement Output Fields

Field Name	Field Description
Interface	Name of the interface.
Advertisements sent	Number of router advertisements sent and elapsed time since they were sent.



Table 71: show ipv6 router-advertisement Output Fields (*continued*)

Field Name	Field Description
Solicits received	Number of solicitation messages received.
Advertisements received	Number of router advertisements received.
Advertisements from	Names of interfaces from which router advertisements have been received and elapsed time since the last one was received.
Managed	Managed address configuration flag: 0 (stateless) or 1 (stateful).
Other configuration	Other stateful configuration flag: 0 (stateless) or 1 (stateful).
Reachable time	Time that a node identifies a neighbor as reachable after receiving a reachability confirmation, in milliseconds.
Default lifetime	Default lifetime, in seconds: from 0 seconds to 18.2 hours. A setting of 0 indicates that the router is not a default router.
Retransmit timer	Time between retransmitted Neighbor Solicitation messages, in milliseconds.
Current hop limit	Configured current hop limit.
Prefix	Name and length of the prefix.
Valid lifetime	How long the prefix remains valid for onlink determination.
Preferred lifetime	How long the prefix generated by stateless autoconfiguration remains preferred.
On link	Onlink flag: 0 (not onlink) or 1 (onlink).
Autonomous	Autonomous address configuration flag: 0 (not autonomous) or 1 (autonomous).

## Sample Output

```

show ipv6 router-advertisement user@host> show ipv6 router-advertisement
Interface: fe-0/1/1.0
  Advertisements sent: 0
  Solicits received: 0
  Advertisements received: 0
Interface: fxp0.0
  Advertisements sent: 0
  Solicits received: 0
  Advertisements received: 1
  Advertisement from fe80::2d0:b7ff:fe1e:7b0e, heard 00:00:13 ago
  Managed: 0
  Other configuration: 0 [1]
  Reachable time: 0 ms
  Default lifetime: 1800 sec

```



Retransmit timer: 0 ms  
Current hop limit: 64

```

show ipv6 router-advertisement conflicts
user@host> show ipv6 router-advertisement conflicts
Interface: fxp0.0
  Advertisement from fe80::2d0:b7ff:fe1e:7b0e, heard 00:01:08 ago
  Other configuration: 0 [1]

```

```

show ipv6 router-advertisement prefix
user@host> show ipv6 router-advertisement prefix 8040::/16
Interface: fe-0/1/3.0
  Advertisements sent: 3, last sent 00:04:11 ago
  Solicits received: 0
  Advertisements received: 3
  Advertisement from fe80::290:69ff:fe9a:5403, heard 00:00:05 ago
  Managed: 0
  Other configuration: 0
  Reachable time: 0 ms
  Default lifetime: 180 sec [1800 sec]
  Retransmit timer: 0 ms
  Current hop limit: 64
  Prefix: 8040:1::/64
    Valid lifetime: 2592000 sec
    Preferred lifetime: 604800 sec
    On link: 1
    Autonomous: 1

```



## CHAPTER 7

# IS-IS Operational Mode Commands

Table 72 on page 257 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot the Intermediate System-to-Intermediate System (IS-IS) protocol. Commands are listed in alphabetical order.

**Table 72: IS-IS Operational Mode Commands**

Task	Command
Remove adjacencies.	<code>clear isis adjacency</code>
Remove database entries.	<code>clear isis database</code>
Reset IS-IS dynamic overload bit.	<code>clear isis overload</code>
Set IS-IS traffic statistics to zero.	<code>clear isis statistics</code>
Display adjacent routers.	<code>show isis adjacency</code>
Display authentication statistics.	<code>show isis authentication</code>
Display information about the level of backup coverage available for protected routes.	<code>show isis backup coverage</code>
Display information about MPLS LSPs designated as backup paths.	<code>show isis backup label-switched-path</code>
Display SPF calculations for backup paths.	<code>show isis backup spf results</code>
Display database entries.	<code>show isis database</code>
Display hostname mapping.	<code>show isis hostname</code>
Display the status of interfaces on which IS-IS is running.	<code>show isis interface</code>
Display IS-IS overview information.	<code>show isis overview</code>
Display IS-IS routing table entries.	<code>show isis route</code>
Display SPF calculations.	<code>show isis spf</code>



Table 72: IS-IS Operational Mode Commands (*continued*)

Task	Command
Display IS-IS traffic statistics.	<code>show isis statistics</code>



**NOTE:** For more IS-IS-related commands, such as `show route protocol`, `show route instance`, and `show route table`, see Protocol-Independent Routing Operational Mode Commands. For information about monitoring Bidirectional Forwarding Detection (BFD) sessions for IS-IS clients, see BFD Operational Mode Commands. For information about how to configure IS-IS, see the *Junos Routing Protocols Configuration Guide*.



**NOTE:** In IS-IS command output, the CLI displays the system ID numerically by default. To display the hostname instead, include the `static-host-mapping` statement at the `[edit system]` hierarchy level of the configuration.



## clear isis adjacency

<b>Syntax</b>	clear isis adjacency <instance <i>instance-name</i> > <interface <i>interface-name</i> > <logical-system (all   <i>logical-system-name</i> )> <neighbor>
<b>Syntax (EX Series Switch)</b>	clear isis adjacency <instance <i>instance-name</i> > <interface <i>interface-name</i> > <neighbor>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Remove entries from the Intermediate System-to-Intermediate System (IS-IS) adjacency database.
<b>Options</b>	<p>none—Remove all entries from the adjacency database.</p> <p>instance <i>instance-name</i>—(Optional) Clear all adjacencies for the specified routing instance only.</p> <p>interface <i>interface-name</i>—(Optional) Clear all adjacencies for the specified interface only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>neighbor—(Optional) Clear adjacencies for the specified neighbor only.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show isis adjacency on page 267</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear isis adjacency on page 259</a>
<b>Output Fields</b>	See <a href="#">show isis adjacency</a> for an explanation of output fields.

## Sample Output

**clear isis adjacency** The following sample output displays IS-IS adjacency database information before and after the **clear isis adjacency** command is entered:

```
user@host> show isis adjacency
IS-IS adjacency database:
Interface      System           L State      Hold (secs) SNPA
so-1/0/0.0     karaku1          3 Up          26
so-1/1/3.0     1921.6800.5080  3 Up          23
```



```
so-5/0/0.0    1921.6800.5080 3 Up                19
```

```
user@host> clear isis adjacency karakul
```

```
user@host> show isis adjacency
```

```
IS-IS adjacency database:
```

Interface	System	L State	Hold (secs)	SNPA
so-1/0/0.0	karakul	3 Initializing	26	
so-1/1/3.0	1921.6800.5080	3 Up	24	
so-5/0/0.0	1921.6800.5080	3 Up	21	



## clear isis database

<b>Syntax</b>	clear isis database <entries> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )> <purge>
<b>Syntax (EX Series Switch)</b>	clear isis database <entries> <instance <i>instance-name</i> > <purge>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>purge</b> option introduced in Junos OS Release 9.0.
<b>Description</b>	Remove the entries from the Intermediate System-to-Intermediate System (IS-IS) link-state database, which contains prefixes and topology information. You can also use <b>purge</b> with any of the options to initiate a network-wide purge of link-state PDUs (LSPs) rather than the local deletion of entries from the IS-IS link-state database.
<div>  <p><b>CAUTION:</b> In a production network, the <b>purge</b> command option may cause short-term network-wide traffic disruptions. Use with caution!</p> </div>	
<b>Options</b>	<p>none—Remove all entries from the IS-IS link-state database for all routing instances.</p> <p><i>entries</i>—(Optional) Name of the database entry.</p> <p>instance <i>instance-name</i>—(Optional) Clear all entries for the specified routing instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><b>purge</b>—(Optional) Discard all entries in the IS-IS link-state database.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show isis database on page 280</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear isis database on page 262</a>
<b>Output Fields</b>	See <a href="#">show isis database</a> for an explanation of output fields.



## Sample Output

**clear isis database** The following sample output displays IS-IS link-state database information before and after the **clear isis database** command is entered:

```
user@host> show isis database
IS-IS level 1 link-state database:
LSP ID                Sequence Checksum Lifetime (secs)
crater.00-00          0x12   0x84dd             1139
  1 LSPs
IS-IS level 2 link-state database:
LSP ID                Sequence Checksum Lifetime (secs)
crater.00-00          0x19   0xe92c             1134
badlands.00-00        0x16   0x1454              985
carlsbad.00-00        0x33   0x220b             1015
ranier.00-00          0x2e   0xfc31             1007
1921.6800.5066.00-00  0x11   0x7313              566
1921.6800.5067.00-00  0x14   0xd9d4              939
  6 LSPs
```

```
user@host> clear isis database
```

```
user@host> show isis database
IS-IS level 1 link-state database:
LSP ID                Sequence Checksum Lifetime (secs)

IS-IS level 2 link-state database:
LSP ID                Sequence Checksum Lifetime (secs)
```



## clear isis overload

<b>Syntax</b>	clear isis overload <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	clear isis overload <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Reset the Intermediate System-to-Intermediate System (IS-IS) dynamic overload bit. This command can appear to not work, continuing to display <b>overload</b> after execution. The bit is reset only if the root cause is corrected by configuration remotely or locally.
<b>Options</b>	<p>none—Reset the IS-IS dynamic overload bit.</p> <p>instance <i>instance-name</i>—(Optional) Reset the IS-IS dynamic overload bit for the specified routing instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">show isis database on page 280</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear isis overload on page 263</a>
<b>Output Fields</b>	See <a href="#">show isis database</a> for an explanation of output fields.

## Sample Output

**clear isis overload** The following sample output displays IS-IS database information before and after the **clear isis overload** command is entered:

```

user@host> show isis database
IS-IS level 1 link-state database:
LSP ID                Sequence Checksum Lifetime Attributes
pro3-c.00-00          0x4    0x10db    1185 L1 L2 Overload

  1 LSPs
IS-IS level 2 link-state database:
LSP ID                Sequence Checksum Lifetime Attributes
pro3-c.00-00          0x5    0x429f    1185 L1 L2 Overload

pro2-a.00-00          0x91e   0x2589     874 L1 L2
pro2-a.02-00          0x1     0xcbc     874 L1 L2

```



3 LSPs

user@host> clear isis overload

user@host> show isis database

IS-IS level 1 link-state database:

LSP ID	Sequence	Checksum	Lifetime	Attributes
pro3-c.00-00	0xa	0x429e	1183	L1 L2

1 LSPs

IS-IS level 2 link-state database:

LSP ID	Sequence	Checksum	Lifetime	Attributes
pro3-c.00-00	0xc	0x9c39	1183	L1 L2
pro2-a.00-00	0x91e	0x2589	783	L1 L2
pro2-a.02-00	0x1	0xcbc	783	L1 L2

3 LSPs



## clear isis statistics

<b>Syntax</b>	clear isis statistics <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	clear isis statistics <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Set statistics about Intermediate System-to-Intermediate System (IS-IS) traffic to zero.
<b>Options</b>	none—Set IS-IS traffic statistics to zero for all routing instances.  instance <i>instance-name</i> —(Optional) Set IS-IS traffic statistics to zero for the specified routing instance only.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show isis statistics on page 303</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear isis statistics on page 265</a>
<b>Output Fields</b>	See <a href="#">show isis statistics</a> for an explanation of output fields.

## Sample Output

**clear isis statistics** The following sample output displays IS-IS statistics before and after the **clear isis statistics** command is entered:

```
user@host> show isis statistics
IS-IS statistics for merino:
```

PDU type	Received	Processed	Drops	Sent	Rexmit
LSP	12793	12793	0	8666	719
IIH	116751	116751	0	118834	0
CSNP	203956	203956	0	204080	0
PSNP	7356	7350	6	8635	0
Unknown	0	0	0	0	0
Totals	340856	340850	6	340215	719

```
Total packets received: 340856 Sent: 340934

SNP queue length:          0 Drops:          0
LSP queue length:          0 Drops:          0

SPF runs:                  1064
```



```
Fragments rebuilt:      1087
LSP regenerations:      436
Purges initiated:        0
```

```
user@host> clear isis statistics
```

```
user@host> show isis statistics
IS-IS statistics for merino:
```

PDU type	Received	Processed	Drops	Sent	Rexmit
LSP	0	0	0	0	0
IIH	3	3	0	3	0
CSNP	2	2	0	4	0
PSNP	0	0	0	0	0
Unknown	0	0	0	0	0
Totals	5	5	0	7	0

```
Total packets received: 5 Sent: 7
```

```
SNP queue length:      0 Drops:      0
LSP queue length:      0 Drops:      0
```

```
SPF runs:              0
Fragments rebuilt:      0
LSP regenerations:      0
Purges initiated:       0
```



## show isis adjacency

<b>Syntax</b>	show isis adjacency <brief   detail   extensive> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show isis adjacency <brief   detail   extensive> <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display information about Intermediate System-to-Intermediate System (IS-IS) neighbors.
<b>Options</b>	none—Display standard information about IS-IS neighbors for all routing instances.  brief   detail   extensive—(Optional) Display the specified level of output.  instance <i>instance-name</i> —(Optional) Display adjacencies for the specified routing instance.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">clear isis adjacency on page 259</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show isis adjacency on page 269</a> <a href="#">show isis adjacency brief on page 269</a> <a href="#">show isis adjacency detail on page 269</a> <a href="#">show isis adjacency extensive on page 270</a>
<b>Output Fields</b>	Table 73 on page 267 describes the output fields for the <b>show isis adjacency</b> command. Output fields are listed in the approximate order in which they appear.

**Table 73: show isis adjacency Output Fields**

Field Name	Field Description	Level of Output
<b>Interface</b>	Interface through which the neighbor is reachable.	All levels
<b>System</b>	System identifier ( <b>sysid</b> ), displayed as a name, if possible.	<b>brief</b>



Table 73: show isis adjacency Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>L or Level</b>	Level: <ul style="list-style-type: none"> <li>• 1—Level 1 only</li> <li>• 2—Level 2 only</li> <li>• 3—Level 1 and Level 2</li> </ul> An exclamation point (!) preceding the level number indicates that the adjacency is missing an IP address.	All levels
<b>State</b>	State of the adjacency: <b>Up</b> , <b>Down</b> , <b>New</b> , <b>One-way</b> , <b>Initializing</b> , or <b>Rejected</b> .	All levels
<b>Hold (secs)</b>	Remaining hold time of the adjacency.	<b>brief</b>
<b>SNPA</b>	Subnetwork point of attachment (MAC address of the next hop).	<b>brief</b>
<b>Expires in</b>	How long until the adjacency expires, in seconds.	<b>detail</b>
<b>Priority</b>	Priority to become the designated intermediate system.	<b>detail extensive</b>
<b>Up/Down transitions</b>	Count of adjacency status changes from <b>Up</b> to <b>Down</b> or from <b>Down</b> to <b>Up</b> .	<b>detail</b>
<b>Last transition</b>	Time of the last <b>Up/Down</b> transition.	<b>detail</b>
<b>Circuit type</b>	Bit mask of levels on this interface: <b>L1</b> =Level 1 router; <b>L2</b> =Level 2 router; <b>L1/L2</b> =both Level 1 and Level 2 router.	<b>detail</b>
<b>Speaks</b>	Protocols supported by this neighbor.	<b>detail extensive</b>
<b>MAC address</b>	MAC address of the interface.	<b>detail extensive</b>
<b>Topologies</b>	Supported topologies.	<b>detail extensive</b>
<b>Restart capable</b>	Whether a neighbor is capable of graceful restart: <b>Yes</b> or <b>No</b> .	<b>detail extensive</b>
<b>Adjacency advertisement: Advertise</b>	This router has signaled not to advertise this interface to its neighbors in their label-switched paths (LSPs).	<b>detail extensive</b>
<b>Adjacency advertisement: Suppress</b>	This neighbor has signaled not to advertise the interface in the router's outbound LSPs.	<b>detail extensive</b>
<b>IP addresses</b>	IP address of this neighbor.	<b>detail extensive</b>



Table 73: show isis adjacency Output Fields (*continued*)

Field Name	Field Description	Level of Output
Transition log	<p>List of recent transitions, including:</p> <ul style="list-style-type: none"> <li>• <b>When</b>—Time at which an IS-IS adjacency transition occurred.</li> <li>• <b>State</b>—Current state of the IS-IS adjacency (<b>up</b>, <b>down</b>, or <b>rejected</b>). <ul style="list-style-type: none"> <li>• <b>Up</b>—Adjacency is up and operational.</li> <li>• <b>Down</b>—Adjacency is down and not available.</li> <li>• <b>Rejected</b>—Adjacency has been rejected.</li> </ul> </li> <li>• <b>Event</b>—Type of transition that occurred. <ul style="list-style-type: none"> <li>• <b>Seenself</b>—Possible routing loop has been detected.</li> <li>• <b>Interface down</b>—IS-IS interface has gone down and is no longer available.</li> <li>• <b>Error</b>—Adjacency error.</li> </ul> </li> <li>• <b>Down reason</b>—Reason that an IS-IS adjacency is down: <ul style="list-style-type: none"> <li>• <b>3-Way Handshake Failed</b>—Connection establishment failed.</li> <li>• <b>Address Mismatch</b>—Address mismatch caused link failure.</li> <li>• <b>Aged Out</b>—Link expired.</li> <li>• <b>ISO Area Mismatch</b>—IS-IS area mismatch caused link failure.</li> <li>• <b>Bad Hello</b>—Unacceptable hello message caused link failure.</li> <li>• <b>BFD Session Down</b>—Bidirectional failure detection caused link failure.</li> <li>• <b>Interface Disabled</b>—IS-IS interface is disabled.</li> <li>• <b>Interface Down</b>—IS-IS interface is unavailable.</li> <li>• <b>Interface Level Disabled</b>—IS-IS level is disabled.</li> <li>• <b>Level Changed</b>—IS-IS level has changed on the adjacency.</li> <li>• <b>Level Mismatch</b>—Levels on adjacency are not compatible.</li> <li>• <b>MPLS LSP Down</b>—Label-switched path (LSP) is unavailable.</li> <li>• <b>MT Topology Changed</b>—IS-IS topology has changed.</li> <li>• <b>MT Topology Mismatch</b>—IS-IS topology is mismatched.</li> <li>• <b>Remote System ID Changed</b>—Adjacency peer system ID changed.</li> <li>• <b>Protocol Shutdown</b>—IS-IS protocol is disabled.</li> <li>• <b>CLI Command</b>—Adjacency brought down by user.</li> <li>• <b>Unknown</b>—Unknown.</li> </ul> </li> </ul>	extensive

## Sample Output

```

show isis adjacency user@host> show isis adjacency
Interface          System      L State      Hold (secs) SNPA
at-2/3/0.0         ranier      3 Up          23

show isis adjacency The output for the show isis adjacency brief command is identical to that for the show
brief               isis adjacency command. For sample output, see show isis adjacency on page 269.

show isis adjacency user@host> show isis adjacency detail
detail              ranier
                    Interface: at-2/3/0.0, Level: 3, State: Up, Expires in 21 secs
                    Priority: 0, Up/Down transitions: 1, Last transition: 00:01:09 ago
                    Circuit type: 3, Speaks: IP, IPv6

```



Topologies: Unicast  
Restart capable: Yes  
IP addresses: 11.1.1.2

**show isis adjacency extensive**    user@host> show isis adjacency extensive  
ranier

Interface: at-2/3/0.0, Level: 3, State: Up, Expires in 22 secs  
Priority: 0, Up/Down transitions: 1, Last transition: 00:01:16 ago  
Circuit type: 3, Speaks: IP, IPv6

Topologies: Unicast  
Restart capable: Yes  
IP addresses: 11.1.1.2

Transition log:

When	State	Event	Down reason
Wed Nov 8 21:24:25	Up	SeenseIf	



## show isis authentication

<b>Syntax</b>	show isis authentication <brief   detail   extensive> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show isis authentication <brief   detail   extensive> <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 7.5. Command introduced in Junos OS Release 9.0 for EX Series switches. Support for hitless authentication key rollover introduced in Junos OS Release 11.2.
<b>Description</b>	Display information about Intermediate System-to-Intermediate System (IS-IS) authentication.
<b>Options</b>	none—Display information about IS-IS authentication.  brief   detail   extensive—(Optional) Display the specified level of output.  instance <i>instance-name</i> —(Optional) Display IS-IS authentication for the specified routing instance.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show isis authentication on page 272</a> <a href="#">show isis authentication (with hitless authentication key rollover configured) on page 272</a>
<b>Output Fields</b>	<a href="#">Table 74 on page 271</a> describes the output fields for the <b>show isis authentication</b> command. Output fields are listed in the approximate order in which they appear.

**Table 74: show isis authentication Output Fields**

Field Name	Field Description
<b>Interface</b>	Interface name.
<b>Level</b>	IS-IS level.
<b>IIH Auth</b>	IS-IS Hello (IIH) packet authentication type.  Displays the name of the active keychain if hitless authentication key rollover is configured.
<b>CSN Auth</b>	Complete sequence number authentication type.



Table 74: show isis authentication Output Fields (*continued*)

Field Name	Field Description
PSN Auth	Partial sequence number authentication type.
L1 LSP Authentication	Layer 1 link-state PDU authentication type.
L2 LSP Authentication	Layer 2 link-state PDU authentication type.

### Sample Output

```

show isis authentication user@host> show isis authentication
Interface               Level IIH Auth CSN Auth PSN Auth
at-2/3/0.0              1    Simple   Simple   Simple
                        2    MD5       MD5      MD5

L1 LSP Authentication: Simple
L2 LSP Authentication: MD5

show isis authentication user@host> show isis authentication
authentication (with    Interface               Level IIH Auth CSN Auth PSN Auth
hitless authentication  so-0/1/3.0            2    hakrhello MD5      MD5
key rollover
configured)            L2 LSP Authentication: MD5

```



## show isis backup coverage

<b>Syntax</b>	<code>show isis backup coverage</code> <code>&lt;instance <i>instance-name</i>&gt;</code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code>
<b>Syntax (EX Series Switch)</b>	<code>show isis backup coverage</code> <code>&lt;instance <i>instance-name</i>&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 9.5. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display information about the level of backup coverage available.
<b>Options</b>	<p><code>none</code>—Display information about the level of backup coverage available for all the nodes and prefixes in the network.</p> <p><code>instance <i>instance-name</i></code>—(Optional) Display information about the level of backup coverage for a specific IS-IS routing instance.</p> <p><code>logical-system (all   <i>logical-system-name</i>)</code>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">show isis backup label-switched-path on page 275</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show isis backup coverage on page 274</a>
<b>Output Fields</b>	<a href="#">Table 75 on page 273</a> lists the output fields for the <b>show isis backup coverage</b> command. Output fields are listed in the approximate order in which they appear.

**Table 75: show isis backup coverage Output Fields**

Field Name	Field Description
<b>Topology</b>	Type of topology or address family: <b>IPv4 Unicast</b> or <b>IPv6 Unicast</b> .
<b>Level</b>	IS-IS level: <ul style="list-style-type: none"> <li>1—Level 1</li> <li>2—Level 2</li> </ul>
<b>Node</b>	By topology, the percentage of all routes configured on the node that are protected through backup coverage.
<b>IPv4 Unicast</b>	Percentage of IPv4 unicast routes that are protected through backup coverage.
<b>IPv6 Unicast</b>	Percentage of IPv6 unicast routes that are protected through backup coverage.



Table 75: show isis backup coverage Output Fields (*continued*)

Field Name	Field Description
CLNS	Percentage of Connectionless Network Service (CLNS) routes that are protected through backup coverage.

### Sample Output

```
show isis backup coverage user@host> show isis backup coverage
Backup Coverage:
  Topology  Level  Node   IPv4   IPv6   CLNS
  IPV4 Unicast  2  28.57% 22.22% 0.00% 0.00%
  IPV6 Unicast  2   0.00% 0.00% 0.00% 0.00%
```



## show isis backup label-switched-path

<b>Syntax</b>	<code>show isis backup label-switched-path</code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code>
<b>Syntax (EX Series Switch)</b>	<code>show isis backup label-switched-path</code>
<b>Release Information</b>	Command introduced in Junos OS Release 9.5. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display information about MPLS label-switched-paths (LSPs) designated as backup routes for IS-IS routes.
<b>Options</b>	<p><code>none</code>—Display information about MPLS LSPs designated as backup routes for IS-IS routes.</p> <p><code>logical-system (all   <i>logical-system-name</i>)</code>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show isis backup coverage on page 273</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show isis backup label-switched-path on page 276</a>
<b>Output Fields</b>	<a href="#">Table 76 on page 275</a> lists the output fields for the <code>show isis backup label-switched-path</code> command. Output fields are listed in the approximate order in which they appear.

**Table 76: show isis backup label-switched-path Output Fields**

Field Name	Field Description
<b>Backup MPLS LSPs</b>	List of MPLS LSPs designated as backup paths for IS-IS routes.
<b>Egress</b>	IP address of the egress routing device for the LSP.
<b>Status</b>	<p>State of the LSP:</p> <ul style="list-style-type: none"> <li>• <b>Up</b>—The router can detect RSVP hello messages from the neighbor.</li> <li>• <b>Down</b>—The router has received one of the following indications: <ul style="list-style-type: none"> <li>• Communication failure from the neighbor.</li> <li>• Communication from IGP that the neighbor is unavailable.</li> <li>• Change in the sequence numbers in the RSVP hello messages sent by the neighbor.</li> </ul> </li> <li>• <b>Deleted</b>—LSP is no longer available as a backup path.</li> </ul>
<b>Last change</b>	Time elapsed since the neighbor state changed either from up or down or from down to up. The format is <code>hh:mm:ss</code> .
<b>TE-metric</b>	Configured traffic engineering metric.



Table 76: show isis backup label-switched-path Output Fields (*continued*)

Field Name	Field Description
Metric	Configured metric.

### Sample Output

```
show isis backup    user@host> show isis backup label-switched-path
label-switched-path Backup MPLS LSPs:
                    f-to-g, Egress: 192.168.1.4, Status: up, Last change: 06:12:03
                    TE-metric: 9, Metric: 0
```



## show isis backup spf results

<b>Syntax</b>	<pre>show isis backup spf results &lt;instance <i>instance-name</i>&gt; &lt;level (1   2)&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;no-coverage&gt; &lt;topology (ipv4-unicast   ipv6-multicast   ipv6-unicast   unicast)&gt;</pre>
<b>Syntax (EX Series Switch)</b>	<pre>show isis backup spf results &lt;instance <i>instance-name</i>&gt; &lt;level (1   2)&gt; &lt;no-coverage&gt; &lt;topology (ipv4-unicast   unicast)&gt;</pre>
<b>Release Information</b>	<p>Command introduced in Junos OS Release 9.5.</p> <p>Command introduced in Junos OS Release 9.5 for EX Series switches.</p>
<b>Description</b>	Display information about IS-IS shortest-path-first (SPF) calculations for backup paths.
<b>Options</b>	<p>none—Display information about IS-IS shortest-path-first (SPF) calculations for all backup paths for all destination nodes.</p> <p>instance <i>instance-name</i>—(Optional) Display SPF calculations for backup paths for the specified routing instance.</p> <p>level (1   2)—(Optional) Display SPF calculations for the backup paths for the specified IS-IS level.</p> <p>logical-system <i>logical-system-name</i>—(Optional) Display SPF calculations for the backup paths for all logical systems or on a particular logical system.</p> <p>no-coverage—(Optional) Display SPF calculations only for destinations that do not have backup coverage.</p> <p>topology (ipv4-multicast   ipv6-multicast   ipv6-unicast   unicast)—(Optional) Display SPF calculations for backup paths for the specified topology only.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">show isis backup coverage on page 273</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show isis backup spf results on page 278</a>
<b>Output Fields</b>	<p><a href="#">Table 77 on page 278</a> lists the output fields for the <b>show isis backup spf results</b> command. Output fields are listed in the approximate order in which they appear.</p>



Table 77: show isis backup spf results Output Fields

Field Name	Field Description
<i>node-name</i>	Name of the destination node.
<b>Address</b>	Address of the destination node.
<b>Primary next-hop</b>	Interface and name of the node of the primary next hop to reach the destination.
<b>Root</b>	Name of the next-hop neighbor.
<b>Metric</b>	Metric to the node.
<b>Eligible</b>	Indicates that the next-hop neighbor has been designated as a backup path to the destination node.
<b>Backup next-hop</b>	Name of the interface of the backup next hop.
<b>SNPA</b>	Subnetwork point of attachment (MAC address of the next hop).
<b>LSP</b>	Name of the MPLS LSP designated as a backup path.
<b>Not eligible</b>	Indicates that the next-hop neighbor cannot function as a backup path to the destination.
<b>Reason</b>	Describes why the next-hop neighbor is designated as <b>Not eligible</b> as a backup path.

## Sample Output

```

show isis backup spf results
user@host> show isis backup spf results
IS-IS level 1 SPF results:
  0 nodes

IS-IS level 2 SPF results:
kobuk.00, Address 0x8d85600
  Primary next-hop: ge-0/2/0.0, camaro, SNPA: 0:90:69:f:62:fa
  Primary next-hop: so-0/1/2.0, crater
  Primary next-hop: ge-0/2/0.0, camaro, SNPA: 0:90:69:f:62:fa
  Primary next-hop: so-0/1/2.0, crater
    Root: crater, Metric: 10
    Not eligible, Reason: Primary next-hop multipath
    Root: camaro, Metric: 10
    Not eligible, Reason: Primary next-hop multipath
    Root: olympic, Metric: 25
    Not eligible, Reason: Primary next-hop multipath
glacier.00, Address 0x8d85200
  Primary next-hop: so-0/1/2.0, crater
  Primary next-hop: so-0/1/2.0, crater
    Root: crater, Metric: 10
    Not eligible, Reason: Primary next-hop link fate sharing
    Root: olympic, Metric: 15
    Eligible, Backup next-hop: ge-0/2/0.0, camaro, SNPA: 0:90:69:f:62:fa

```



```

    Eligible, Backup next-hop: so-1/0/2.0, olympic
    Eligible, Backup next-hop: ge-0/2/0.0, camaro, SNPA: 0:90:69:f:62:fa
    Eligible, Backup next-hop: so-1/0/2.0, olympic
  Root: camaro, Metric: 20
    Eligible, Backup next-hop: ge-0/2/0.0, camaro, SNPA: 0:90:69:f:62:fa
    Eligible, Backup next-hop: so-1/0/2.0, olympic
    Eligible, Backup next-hop: ge-0/2/0.0, camaro, SNPA: 0:90:69:f:62:fa
    Eligible, Backup next-hop: so-1/0/2.0, olympic
olympic.00, Address 0x8d00c00
  Primary next-hop: so-1/0/2.0, olympic
  Primary next-hop: so-1/0/2.0, olympic
  Root: olympic, Metric: 0
    Not eligible, Reason: Primary next-hop link fate sharing
  Root: crater, Metric: 20
    track-item: olympic.00-00
    track-item: banff.00-00
    Not eligible, Reason: Path loops
  Root: camaro, Metric: 20
    track-item: olympic.00-00
    track-item: banff.00-00
    Not eligible, Reason: Path loops
camaro.00, Address 0x8d85a00
  Primary next-hop: ge-0/2/0.0, camaro, SNPA: 0:90:69:f:62:fa
  Primary next-hop: ge-0/2/0.0, camaro, SNPA: 0:90:69:f:62:fa
  Root: camaro, Metric: 0
    Not eligible, Reason: Primary next-hop link fate sharing
  Root: crater, Metric: 20
    track-item: camaro.00-00
    track-item: banff.00-00
    Not eligible, Reason: Path loops
  Root: olympic, Metric: 20
    track-item: camaro.00-00
    track-item: banff.00-00
    Not eligible, Reason: Path loops
crater.00, Address 0x8d85000
  Primary next-hop: so-0/1/2.0, crater
  Primary next-hop: so-0/1/2.0, crater
  Root: crater, Metric: 0
    Not eligible, Reason: Primary next-hop link fate sharing
  Root: camaro, Metric: 20
    track-item: crater.00-00
    track-item: banff.00-00
    Not eligible, Reason: Path loops
  Root: olympic, Metric: 20
    track-item: crater.00-00
    track-item: banff.00-00
    Not eligible, Reason: Path loops
5 nodes

```



## show isis database

---

<b>Syntax</b>	<code>show isis database</code> <code>&lt;brief   detail   extensive&gt;</code> <code>&lt;instance <i>instance-name</i>&gt;</code> <code>&lt;level (1   2)&gt;</code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code>
<b>Syntax (EX Series Switch)</b>	<code>show isis database</code> <code>&lt;brief   detail   extensive&gt;</code> <code>&lt;level (1   2)&gt;</code> <code>&lt;instance <i>instance-name</i>&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display the entries in the Intermediate System-to-Intermediate System (IS-IS) link-state database, which contains data about PDU packets.
<b>Options</b>	<code>none</code> —Display standard information about IS-IS link-state database entries for all routing instances.  <code>brief   detail   extensive</code> —(Optional) Display the specified level of output.  <code>instance <i>instance-name</i></code> —(Optional) Display entries for the specified routing instance.  <code>level (1   2)</code> —(Optional) Display entries for the specified IS-IS level.  <code>logical-system (all   <i>logical-system-name</i>)</code> —(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">clear isis database on page 261</a></li></ul>
<b>List of Sample Output</b>	<a href="#">show isis database on page 282</a> <a href="#">show isis database brief on page 282</a> <a href="#">show isis database detail on page 283</a> <a href="#">show isis database extensive on page 284</a> <a href="#">show isis database extensive (CLNS) on page 285</a>
<b>Output Fields</b>	<a href="#">Table 78 on page 281</a> describes the output fields for the <b>show isis database</b> command. Output fields are listed in the approximate order in which they appear. Fields that contain internal IS-IS information useful only in troubleshooting obscure problems are not described in the table. For more details about these fields, contact your customer support representative.



Table 78: show isis database Output Fields

Field Name	Field Description	Level of Output
<b>Interface name</b>	Name of the interface on which the LSP has been received; always <b>IS-IS</b> for this command.	All levels
<b>level</b>	Level of intermediate system: <ul style="list-style-type: none"> <li>• <b>1</b>—Intermediate system routes within an area; when the destination is outside an area, it routes toward a Level 2 system.</li> <li>• <b>2</b>—Intermediate system routes between areas and toward other ASs.</li> </ul>	All levels
<b>LSP ID</b>	Link-state PDU identifier.	All levels
<b>Sequence</b>	Sequence number of the link-state PDU.	All levels
<b>Checksum</b>	Checksum value of the link-state PDU.	All levels
<b>Lifetime (secs)</b>	Remaining lifetime of the link-state PDU, in seconds.	All levels
<b>Attributes</b>	Attributes of the specified database: <b>L1</b> , <b>L2</b> , <b>Overload</b> , or <b>Attached</b> (L1 only).	none <b>brief</b>
<b># LSPs</b>	Total number of LSPs in the specified link-state database.	none <b>brief</b>
<b>IP prefix</b>	Prefix advertised by this link-state PDU.	<b>detail extensive</b>
<b>IS neighbor</b>	IS-IS neighbor of the advertising system.	<b>detail extensive</b>
<b>ES neighbor</b>	(J Series routers only) An ES-IS neighbor of the advertising system.	<b>detail extensive</b>
<b>IP prefix</b>	IPv4 prefix advertised by this link-state PDU.	<b>detail extensive</b>
<b>V6 prefix</b>	IPv6 prefix advertised by this link-state PDU.	<b>detail extensive</b>
<b>Metric</b>	Metric of the prefix or neighbor.	<b>detail extensive</b>
<b>Header</b>	<ul style="list-style-type: none"> <li>• <b>LSP ID</b>—Link state PDU identifier of the header.</li> <li>• <b>Length</b>—Header length.</li> <li>• <b>Allocated Length</b>—Amount of length available for the header.</li> <li>• <b>Router ID</b>—Address of the local routing device.</li> <li>• <b>Remaining Lifetime</b>—Remaining lifetime of the link-state PDU, in seconds.</li> </ul>	<b>extensive</b>



Table 78: show isis database Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Packet</b>	<ul style="list-style-type: none"> <li>• <b>LSP ID</b>—The identifier for the link-state packet.</li> <li>• <b>Length</b>—Packet length.</li> <li>• <b>Lifetime</b>—Remaining lifetime, in seconds.</li> <li>• <b>Checksum</b>—The checksum of the LSP.</li> <li>• <b>Sequence</b>—The sequence number of the LSP. Every time the LSP is updated, this number increments.</li> <li>• <b>Attributes</b>—Packet attributes.</li> <li>• <b>NLPID</b>—Network layer protocol identifier.</li> <li>• <b>Fixed length</b>—Specifies the set length for the packet.</li> </ul>	<b>extensive</b>
<b>TLVs</b>	<ul style="list-style-type: none"> <li>• <b>Area Address</b>—Area addresses that the routing device can reach.</li> <li>• <b>Speaks</b>—Supported routing protocols.</li> <li>• <b>IP router id</b>—ID of the routing device (usually the IP address).</li> <li>• <b>IP address</b>—IPv4 address.</li> <li>• <b>Hostname</b>—Assigned name of the routing device.</li> <li>• <b>IP prefix</b>—IP prefix of the routing device.</li> <li>• <b>Metric</b>—IS-IS metric that measures the cost of the adjacency between the originating routing device and the advertised routing device.</li> <li>• <b>IP extended prefix</b>—Extended IP prefix of the routing device.</li> <li>• <b>IS neighbor</b>—Directly attached neighbor's name and metric.</li> <li>• <b>IS extended neighbor</b>—Directly attached neighbor's name, metric, and IP address.</li> </ul>	<b>extensive</b>

## Sample Output

```

show isis database user@host> show isis database
IS-IS level 1 link-state database:
LSP ID                Sequence Checksum Lifetime Attributes
kobuk.00-00           0x3    0x3167    1057 L1 L2
camaro.00-00          0x5    0x770e    1091 L1 L2
ranier.00-00          0x4    0xaa95    1091 L1 L2
glacier.00-00         0x4    0x206f    1089 L1 L2
glacier.02-00         0x1    0xd141    1089 L1 L2
badlands.00-00        0x3    0x87a2    1093 L1 L2
    6 LSPs

```

```

IS-IS level 2 link-state database:
LSP ID                Sequence Checksum Lifetime Attributes
kobuk.00-00           0x6    0x8d6b    1096 L1 L2
camaro.00-00          0x9    0x877b    1101 L1 L2
ranier.00-00          0x8    0x855d    1103 L1 L2
glacier.00-00         0x7    0xf892    1098 L1 L2
glacier.02-00         0x1    0xd141    1089 L1 L2
badlands.00-00        0x6    0x562    1105 L1 L2
    6 LSPs

```

**show isis database brief** The output for the **show isis database brief** command is identical to that for the **show isis database** command. For sample output, see [show isis database on page 282](#).



```

show isis database user@host> show isis database detail
detail IS-IS level 1 link-state database:

kobuk.00-00 Sequence: 0x3, Checksum: 0x3167, Lifetime: 1048 secs
  IS neighbor: glacier.00 Metric: 10
  IP prefix: 10.255.70.103/32 Metric: 0 Internal Up
  IP prefix: 43.1.1.0/24 Metric: 10 Internal Up
  V6 prefix: abcd::10:255:70:103/128 Metric: 0 Internal Up

camaro.00-00 Sequence: 0x5, Checksum: 0x770e, Lifetime: 1082 secs
  IS neighbor: ranier.00 Metric: 10
  IS neighbor: glacier.02 Metric: 10
  IP prefix: 10.255.71.52/32 Metric: 0 Internal Up
  IP prefix: 23.1.1.0/24 Metric: 10 Internal Up
  IP prefix: 34.1.1.0/24 Metric: 10 Internal Up
  V6 prefix: abcd::10:255:71:52/128 Metric: 0 Internal Up

ranier.00-00 Sequence: 0x4, Checksum: 0xaa95, Lifetime: 1082 secs
  IS neighbor: camaro.00 Metric: 10
  IS neighbor: badlands.00 Metric: 10
  IP prefix: 10.255.71.241/32 Metric: 0 Internal Up
  IP prefix: 11.1.1.0/24 Metric: 10 Internal Up
  IP prefix: 23.1.1.0/24 Metric: 10 Internal Up
  V6 prefix: abcd::10:255:71:241/128 Metric: 0 Internal Up

glacier.00-00 Sequence: 0x4, Checksum: 0x206f, Lifetime: 1080 secs
  IS neighbor: kobuk.00 Metric: 10
  IS neighbor: glacier.02 Metric: 10
  IP prefix: 10.255.71.242/32 Metric: 0 Internal Up
  IP prefix: 34.1.1.0/24 Metric: 10 Internal Up
  IP prefix: 43.1.1.0/24 Metric: 10 Internal Up
  V6 prefix: abcd::10:255:71:242/128 Metric: 0 Internal Up

glacier.02-00 Sequence: 0x1, Checksum: 0xd141, Lifetime: 1080 secs
  IS neighbor: camaro.00 Metric: 0
  IS neighbor: glacier.00 Metric: 0

badlands.00-00 Sequence: 0x3, Checksum: 0x87a2, Lifetime: 1084 secs
  IS neighbor: ranier.00 Metric: 10
  IP prefix: 10.255.71.244/32 Metric: 0 Internal Up
  IP prefix: 11.1.1.0/24 Metric: 10 Internal Up
  V6 prefix: abcd::10:255:71:244/128 Metric: 0 Internal Up

IS-IS level 2 link-state database:

kobuk.00-00 Sequence: 0x6, Checksum: 0x8d6b, Lifetime: 1088 secs
  IS neighbor: glacier.00 Metric: 10
  IP prefix: 10.255.70.103/32 Metric: 0 Internal Up
  IP prefix: 10.255.71.52/32 Metric: 20 Internal Up
  IP prefix: 10.255.71.241/32 Metric: 30 Internal Up
  IP prefix: 10.255.71.242/32 Metric: 10 Internal Up
  IP prefix: 10.255.71.244/32 Metric: 40 Internal Up
  IP prefix: 11.1.1.0/24 Metric: 40 Internal Up
  IP prefix: 23.1.1.0/24 Metric: 30 Internal Up
  IP prefix: 34.1.1.0/24 Metric: 20 Internal Up
  IP prefix: 43.1.1.0/24 Metric: 10 Internal Up
  V6 prefix: abcd::10:255:70:103/128 Metric: 0 Internal Up

camaro.00-00 Sequence: 0x9, Checksum: 0x877b, Lifetime: 1092 secs
  IS neighbor: ranier.00 Metric: 10
  IS neighbor: glacier.02 Metric: 10

```



```

IP prefix: 10.255.70.103/32      Metric:      20 Internal Up
IP prefix: 10.255.71.52/32       Metric:       0 Internal Up
IP prefix: 10.255.71.241/32      Metric:      10 Internal Up
IP prefix: 10.255.71.242/32      Metric:      10 Internal Up
IP prefix: 10.255.71.244/32      Metric:      20 Internal Up
IP prefix: 11.1.1.0/24           Metric:      20 Internal Up
IP prefix: 23.1.1.0/24           Metric:      10 Internal Up
IP prefix: 34.1.1.0/24           Metric:      10 Internal Up
IP prefix: 43.1.1.0/24           Metric:      20 Internal Up
V6 prefix: abcd::10:255:71:52/128 Metric:       0 Internal Up

```

ranier.00-00 Sequence: 0x8, Checksum: 0x855d, Lifetime: 1094 secs

```

IS neighbor: camaro.00           Metric:      10
IS neighbor: badlands.00         Metric:      10
IP prefix: 10.255.70.103/32      Metric:      30 Internal Up
IP prefix: 10.255.71.52/32       Metric:      10 Internal Up
IP prefix: 10.255.71.241/32      Metric:       0 Internal Up
IP prefix: 10.255.71.242/32      Metric:      20 Internal Up
IP prefix: 10.255.71.244/32      Metric:      10 Internal Up
IP prefix: 11.1.1.0/24           Metric:      10 Internal Up
IP prefix: 23.1.1.0/24           Metric:      10 Internal Up
IP prefix: 34.1.1.0/24           Metric:      20 Internal Up
IP prefix: 43.1.1.0/24           Metric:      30 Internal Up
V6 prefix: abcd::10:255:71:241/128 Metric:       0 Internal Up

```

glacier.00-00 Sequence: 0x7, Checksum: 0xf892, Lifetime: 1089 secs

```

IS neighbor: kobuk.00            Metric:      10
IS neighbor: glacier.02          Metric:      10
IP prefix: 10.255.70.103/32      Metric:      10 Internal Up
IP prefix: 10.255.71.52/32       Metric:      10 Internal Up
IP prefix: 10.255.71.241/32      Metric:      20 Internal Up
IP prefix: 10.255.71.242/32      Metric:       0 Internal Up
IP prefix: 10.255.71.244/32      Metric:      30 Internal Up
IP prefix: 11.1.1.0/24           Metric:      30 Internal Up
IP prefix: 23.1.1.0/24           Metric:      20 Internal Up
IP prefix: 34.1.1.0/24           Metric:      10 Internal Up
IP prefix: 43.1.1.0/24           Metric:      10 Internal Up
V6 prefix: abcd::10:255:71:242/128 Metric:       0 Internal Up

```

glacier.02-00 Sequence: 0x1, Checksum: 0xd141, Lifetime: 1080 secs

```

IS neighbor: camaro.00           Metric:       0
IS neighbor: glacier.00          Metric:       0

```

badlands.00-00 Sequence: 0x6, Checksum: 0x562, Lifetime: 1096 secs

```

IS neighbor: ranier.00           Metric:      10
IP prefix: 10.255.70.103/32      Metric:      40 Internal Up
IP prefix: 10.255.71.52/32       Metric:      20 Internal Up
IP prefix: 10.255.71.241/32      Metric:      10 Internal Up
IP prefix: 10.255.71.242/32      Metric:      30 Internal Up
IP prefix: 10.255.71.244/32      Metric:       0 Internal Up
IP prefix: 11.1.1.0/24           Metric:      10 Internal Up
IP prefix: 23.1.1.0/24           Metric:      20 Internal Up
IP prefix: 34.1.1.0/24           Metric:      30 Internal Up
IP prefix: 43.1.1.0/24           Metric:      40 Internal Up
V6 prefix: abcd::10:255:71:244/128 Metric:       0 Internal Up

```

**show isis database extensive** user@host> **show isis database extensive isis2**  
IS-IS level 1 link-state database:

IS-IS level 2 link-state database:



```

isis2.00-00 Sequence: 0x82, Checksum: 0x6cc3, Lifetime: 1126 secs
  IS neighbor:                isis1.00 Metric:      10
  IS neighbor:                isis3.00 Metric:      10
  IP prefix:                   10.255.245.202/32 Metric: 0 Internal
  IP prefix:                   192.168.36.0/29 Metric:  10 Internal
  IP prefix:                   192.168.36.16/30 Metric:  10 Internal
  IP prefix:                   192.168.36.24/30 Metric:  10 Internal

Header: LSP ID: isis2.00-00, Length: 234 bytes
  Allocated length: 234 bytes, Router ID: 10.255.245.202
  Remaining lifetime: 1126 secs, Level: 2, Interface: 4
  Estimated free bytes: 0, Actual free bytes: 0
  Aging timer expires in: 1126 secs
  Protocols: IP, IPv6

Packet: LSP ID: isis2.00-00, Length: 234 bytes, Lifetime : 1198 secs
  Checksum: 0x6cc3, Sequence: 0x82, Attributes: 0x3 <L1 L2>
  NLPID: 0x83, Fixed length: 27 bytes, Version: 1, Sysid length: 0 bytes
  Packet type: 20, Packet version: 1, Max area: 0

TLVs:
  Area address: 47.0005.80ff.f800.0000.0108.0001 (13)
  Speaks: IP
  Speaks: IPv6
  IP router id: 10.255.245.202
  IP address: 10.255.245.202
  Hostname: isis2
  IS neighbor: isis3.00, Internal, Metric: default 10
  IS neighbor: isis1.00, Internal, Metric: default 10
  IS neighbor: isis3.00, Metric: default 10
    IP address: 192.168.36.25
    Neighbor's IP address: 192.168.36.26
  IS neighbor: isis1.00, Metric: default 10
    IP address: 192.168.36.18
    Neighbor's IP address: 192.168.36.17
  IP prefix: 10.255.245.202/32, Internal, Metric: default 0
  IP prefix: 192.168.36.0/29, Internal, Metric: default 10
  IP prefix: 192.168.36.24/30, Internal, Metric: default 10
  IP prefix: 192.168.36.16/30, Internal, Metric: default 10
  IP prefix: 10.255.245.202/32 metric 0 up
    6 bytes of subtlvs
    Administrative tag 1: 1000
  IP prefix: 192.168.36.0/29 metric 10 up
  IP prefix: 192.168.36.24/30 metric 10 up
  IP prefix: 192.168.36.16/30 metric 10 up
  No queued transmissions

```

```

show isis database extensive user@host> show isis database extensive
extensive (CLNS)             IS-IS level 1 link-state database:
isis2.00-00 Sequence: 0x1256, Checksum: 0x53da, Lifetime: 582 secs
  IS neighbor: pro1-a.02      Metric:      10
  ES neighbor: toothache      Metric:      0
  ES neighbor: 1921.6800.4002 Metric:      10
  IP prefix: 192.168.37.64/29 Metric:      10 Internal Up

Header: LSP ID: toothache.00-00, Length: 140 bytes
  Allocated length: 284 bytes, Router ID: 0.0.0.0
  Remaining lifetime: 582 secs, Level: 1, Interface: 66
  Estimated free bytes: 144, Actual free bytes: 144
  Aging timer expires in: 582 secs
  Protocols: IP, CLNS

```



Packet: LSP ID: toothache.00-00, Length: 140 bytes, Lifetime : 1199 secs  
Checksum: 0x53da, Sequence: 0x1256, Attributes: 0xb <L1 L2 Attached>  
NLPID: 0x83, Fixed length: 27 bytes, Version: 1, Sysid length: 0 bytes  
Packet type: 18, Packet version: 1, Max area: 0

TLVs:

Area address: 47.0005.80ff.f800.0000.0108.0001 (13)  
Speaks: CLNP  
Speaks: IP  
Hostname: toothache  
IP address: 192.168.37.69  
IP extended prefix: 192.168.37.64/29 metric 10 up  
IP prefix: 192.168.37.64/29, Internal, Metric: default 10, Up  
IS neighbor: pro1-a.02, Internal, Metric: default 10  
IS extended neighbor: pro1-a.02, Metric: default 10  
ES neighbor TLV: Internal, Metric: default 0  
ES: toothache  
ES neighbor TLV: Internal, Metric: default 10  
ES: 1921.6800.4002  
No queued transmissions



## show isis hostname

<b>Syntax</b>	show isis hostname <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show isis hostname
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display Intermediate System-to-Intermediate System (IS-IS) hostname database information.
<b>Options</b>	none—Display IS-IS hostname database information.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show isis hostname on page 287</a>
<b>Output Fields</b>	<a href="#">Table 79 on page 287</a> describes the output fields for the <b>show isis hostname</b> command. Output fields are listed in the approximate order in which they appear.

**Table 79: show isis hostname Output Fields**

Field Name	Field Description
<b>System Id</b>	System identifier mapped to the hostname.
<b>Hostname</b>	Hostname mapped to the system identifier.
<b>Type</b>	Type of mapping between system identifier and hostname. <ul style="list-style-type: none"> <li><b>Dynamic</b>—Hostname mapping determined as described in RFC 2763, <i>Dynamic Hostname Exchange Mechanism for IS-IS</i>.</li> <li><b>Static</b>—Hostname mapping configured by user.</li> </ul>

## Sample Output

```

user@host> show isis hostname
IS-IS hostname database:
System Id      Hostname      Type
1921.6800.4201 isis1         Dynamic
1921.6800.4202 isis2         Static
1921.6800.4203 isis3         Dynamic

```



## show isis interface


<b>Syntax</b>	show isis interface <brief   detail   extensive> <interface-name> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show isis interface <brief   detail   extensive> <interface-name>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display status information about Intermediate System-to-Intermediate System (IS-IS)-enabled interfaces.
<div>  <p><b>NOTE:</b> If the configured metric for an IS-IS level is higher than 63, and <b>wide-metrics-only</b> is not configured, the <b>show isis interface detail</b> command and the <b>show isis interface extensive</b> command display 63 as the metric value for that level. Configure the <b>wide-metrics-only</b> to generate metric values greater than 63 on a per IS-IS level basis.</p> <p>The <b>show isis interface</b> command displays the configured metric value for an IS-IS level irrespective of whether is configured or not.</p> <p>For information about how to configure <b>wide-metrics-only</b>, see the <i>Junos Routing Protocols Configuration Guide</i>.</p> </div>	
<b>Options</b>	<p>none—Display standard information about all IS-IS-enabled interfaces.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p>interface-name—(Optional) Display information about the specified interface only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show isis interface on page 290</a> <a href="#">show isis interface brief on page 290</a> <a href="#">show isis interface detail on page 290</a> <a href="#">show isis interface extensive on page 291</a> <a href="#">show isis interface extensive (with LDP) on page 291</a>
<b>Output Fields</b>	Table 80 on page 289 describes the output fields for the <b>show isis interface</b> command. Output fields are listed in the approximate order in which they appear.



Table 80: show isis interface Output Fields

Field Name	Field Description	Level of Output
<i>interface-name</i>	Name of the interface.	<b>detail</b>
<b>Designated router</b>	Routing device selected by other routers that is responsible for sending link-state advertisements that describe the network. Used only on broadcast networks.	<b>detail</b>
<b>Index</b>	Interface index assigned by the Junos kernel.	<b>detail</b>
<b>State</b>	Internal implementation information.	<b>detail</b>
<b>Circuit id</b>	Circuit identifier.	<b>detail</b>
<b>Circuit type</b>	Circuit type: <ul style="list-style-type: none"> <li>• 1—Level 1 only</li> <li>• 2—Level 2 only</li> <li>• 3—Level 1 and Level 2</li> </ul>	<b>detail</b>
<b>LSP interval</b>	Interval between link-state PDUs sent from the interface.	<b>detail</b>
<b>CSNP interval</b>	Interval between complete sequence number PDUs sent from the interface.	<b>detail extensive</b>
<b>Sysid</b>	System identifier.	<b>detail</b>
<b>Interface</b>	Interface through which the adjacency is made.	<b>none brief</b>
<b>L or Level</b>	Level: <ul style="list-style-type: none"> <li>• 1—Level 1 only</li> <li>• 2—Level 2 only</li> <li>• 3—Level 1 and Level 2</li> </ul>	All levels
<b>CirID</b>	Circuit identifier.	<b>none brief</b>
<b>Level 1 DR</b>	Level 1 designated intermediate system.	<b>none brief</b>
<b>Level 2 DR</b>	Level 2 designated intermediate system.	<b>none brief</b>
<b>L1/L2 Metric</b>	Interface's metric for Level 1 and Level 2. If there is no information, the metric is 0.	<b>none brief</b>
<b>Adjacency advertisement: Advertise</b>	This routing device has signaled not to advertise this interface to its neighbors in their label-switched paths (LSPs).	<b>detail extensive</b>
<b>Adjacency advertisement: Suppress</b>	This neighbor has signaled not to advertise this interface in the routing device's outbound LSPs.	<b>detail extensive</b>
<b>Adjacencies</b>	Number of adjacencies established on this interface.	<b>detail</b>



Table 80: show isis interface Output Fields (*continued*)

Field Name	Field Description	Level of Output
Priority	Priority value for this interface.	detail
Metric	Metric value for this interface.	detail
Hello(s) / Hello Interval	Interface's hello interval.	detail extensive
Hold(s) / Hold Time	Interface's hold time.	detail extensive
Designated Router	Router responsible for sending network link-state advertisements, which describe all the routers attached to the network.	detail
Hello padding	Type of hello padding: <ul style="list-style-type: none"> <li><b>Adaptive</b>—On point-to-point connections, the hello packets are padded from the initial detection of a new neighbor until the neighbor verifies the adjacency as Up in the adjacency state TLV. If the neighbor does not support the adjacency state TLV, then padding continues. On LAN connections, padding starts from the initial detection of a new neighbor until there is at least one active adjacency on the interface.</li> <li><b>Loose</b>—(Default) The hello packet is padded from the initial detection of a new neighbor until the adjacency transitions to the Up state.</li> <li><b>Strict</b>—Padding is performed on all interface types and for all adjacency states, and is continuous.</li> </ul>	extensive
LDP sync state	Current LDP synchronization state: <b>in sync</b> , <b>in holddown</b> , or <b>not supported</b> .	extensive
reason	Reason for being in the LDP sync state.	extensive
config holdtime	Configured value of the hold timer.	extensive
remaining	If the state is not in sync and the hold time is not infinity, then this field displays the number of seconds remaining.	extensive

## Sample Output

```

show isis interface user@host> show isis interface
IS-IS interface database:
Interface          L CirID Level 1 DR      Level 2 DR      L1/L2 Metric
at-2/3/0.0         3   0x1 Point to Point    Point to Point    10/10
lo0.0              0   0x1 Passive          Passive          0/0

```

The output for the **show isis interface brief** command is identical to that for the **show isis interface** command. For sample output, see [show isis interface on page 290](#).

```

show isis interface user@host> show isis interface detail
detail
IS-IS interface database:
at-2/3/0.0
  Index: 66, State: 0x6, Circuit id: 0x1, Circuit type: 3

```



```

LSP interval: 100 ms, CSNP interval: 5 s
Level Adjacencies Priority Metric Hello (s) Hold (s) Designated Router
  1          1      64     10    9.000     27
  2          1      64     10    9.000     27
lo0.0
Index: 64, State: 0x6, Circuit id: 0x1, Circuit type: 0
LSP interval: 100 ms, CSNP interval: disabled
Level Adjacencies Priority Metric Hello (s) Hold (s) Designated Router
  1          0      64      0 Passive
  2          0      64      0 Passive

```

**show isis interface** user@host> show isis interface extensive

**extensive** IS-IS interface database:

```

at-2/3/0.0
Index: 66, State: 0x6, Circuit id: 0x1, Circuit type: 3
LSP interval: 100 ms, CSNP interval: 5 s, Loose Hello padding
Level 1
  Adjacencies: 1, Priority: 64, Metric: 10
  Hello Interval: 9.000 s, Hold Time: 27 s
Level 2
  Adjacencies: 1, Priority: 64, Metric: 10
  Hello Interval: 9.000 s, Hold Time: 27 s
lo0.0
Index: 64, State: 0x6, Circuit id: 0x1, Circuit type: 0
LSP interval: 100 ms, CSNP interval: disabled, Loose Hello padding
Level 1
  Adjacencies: 0, Priority: 64, Metric: 0
  Passive
Level 2
  Adjacencies: 0, Priority: 64, Metric: 0
  Passive

```

**show isis interface** user@host> show isis interface extensive  
**extensive (with LDP)** IS-IS interface database:

```

so-1/1/2.0
Index: 114, State: 0x6, Circuit id: 0x1, Circuit type: 2
LSP interval: 100 ms, CSNP interval: 20 s, Loose Hello padding
Adjacency advertisement: Advertise
LDP sync state: in sync, for: 00:01:28, reason: LDP up during config
config holdtime: 20 seconds
Level 2
  Adjacencies: 1, Priority: 64, Metric: 11
  Hello Interval: 9.000 s, Hold Time: 27 s
  IPV4 MulticastMetric: 10
  IPV6 UnicastMetric: 10

```



## show isis overview

<b>Syntax</b>	<b>show isis overview</b> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	<b>show isis overview</b> <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 8.5. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display Intermediate System-to-Intermediate System (IS-IS) overview information.
<b>Options</b>	none—Display standard overview information about IS-IS for all routing instances.  instance <i>instance-name</i> —(Optional) Display overview information for the specified routing instance.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show isis overview on page 293</a>
<b>Output Fields</b>	<a href="#">Table 81 on page 292</a> lists the output fields for the <b>show isis overview</b> command. Output fields are listed in the approximate order in which they appear.

**Table 81: show isis overview Output Fields**

Field Name	Field Description
instance	The IS-IS routing instance.
Router ID	Router ID of the routing device.
Adjacency holddown	Adjacency holddown capability: <b>enabled</b> or <b>disabled</b> .
Maximum Areas	Maximum number of IS-IS areas advertised by the routing device.
LSP life time	Lifetime of the link-state PDU, in seconds.
Attached bit evaluation	Attached bit capability: <b>enabled</b> or <b>disabled</b> .
SPF delay	Delay before performing consecutive Shortest Path First calculations.
SPF holddown	Delay before performing additional Shortest Path First (SPF) calculations after the maximum number of consecutive SPF calculations is reached.



Table 81: show isis overview Output Fields (*continued*)

Field Name	Field Description
SPF rapid runs	Maximum number of Shortest Path First calculations that can be performed in succession before the holddown timer begins.
Overload bit at startup is set	Overload bit capability is enabled.
Overload high metrics	Overload high metrics capability: <b>enabled</b> or <b>disabled</b> .
Overload timeout	Time period after which overload is reset and the time that remains before the timer is set to expire.
Traffic engineering	Traffic engineering capability: <b>enabled</b> or <b>disabled</b> .
Restart	Graceful restart capability: <b>enabled</b> or <b>disabled</b> .
Restart duration	Time period for complete reacquisition of IS-IS neighbors.
Helper mode	Graceful restart helper capability: <b>enabled</b> or <b>disabled</b> .
Level	IS-IS level: <ul style="list-style-type: none"> <li>• 1—Level 1 information</li> <li>• 2—Level 2 information</li> </ul>
IPv4 is enabled	IP Protocol version 4 capability is enabled.
IPv6 is enabled	IP Protocol version 6 capability is enabled.
CLNS is enabled	OSI CLNP Protocol capability is enabled. (J Series routers only)
Internal route preference	Preference value of internal routes.
External route preference	Preference value of external routes.
Wide area metrics are enabled	Wide area metrics capability is enabled.
Narrow metrics is enabled	Narrow metrics capability is enabled.

## Sample Output

```
show isis overview user@host> show isis overview
```

## Sample Output

```
Instance: master
Router ID: 192.168.1.220
```



```
Adjacency holddown: enabled
Maximum Areas: 3
LSP life time: 65535
Attached bit evaluation: enabled
SPF delay: 200 msec, SPF holddown: 5000 msec, SPF rapid runs: 3
Overload bit at startup is set
  Overload high metrics: disabled
  Overload timeout: 300 sec, expires in 295 seconds
IPv4 is enabled, IPv6 is enabled
Traffic engineering: enabled
Restart: Enabled
  Restart duration: 210 sec
  Helper mode: Enabled
Level 1
  Internal route preference: 15
  External route preference: 160
  Wide metrics are enabled, Narrow metrics are enabled
Level 2
  Internal route preference: 18
  External route preference: 165
  Wide metrics are enabled
```



## show isis route

<b>Syntax</b>	<pre>show isis route &lt;destination&gt; &lt;inet   inet6&gt; &lt;instance instance-name&gt; &lt;logical-system (all   logical-system-name)&gt; &lt;topology (ipv4-multicast   ipv6-multicast   ipv6-unicast   unicast)&gt;</pre>
<b>Syntax (EX Series Switch)</b>	<pre>show isis route &lt;destination&gt; &lt;inet   inet6&gt; &lt;instance instance-name&gt; &lt;topology (ipv4-multicast   ipv6-multicast   ipv6-unicast   unicast)&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p>
<b>Description</b>	Display the routes in the Intermediate System-to-Intermediate System (IS-IS) routing table.
<b>Options</b>	<p>none—Display all routes in the IS-IS routing table for all supported address families for all routing instances.</p> <p><i>destination</i>—(Optional) Destination address for the route.</p> <p>inet   inet6—(Optional) Display inet (IPv4) or inet6 (IPv6) routes, respectively.</p> <p>instance <i>instance-name</i>—(Optional) Display routes for the specified routing instance only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>topology (ipv4-multicast   ipv6-multicast   ipv6-unicast   unicast)—(Optional) Display routes for the specified topology only, or use unicast to display information, if available, for both IPv4 and IPv6 unicast topologies.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<p><a href="#">show isis route logical-system on page 296</a></p> <p><a href="#">show isis route (CLNS) on page 296</a></p>
<b>Output Fields</b>	<p><a href="#">Table 82 on page 296</a> describes the output fields for the <b>show isis route</b> command. Output fields are listed in the approximate order in which they appear.</p>



Table 82: show isis route Output Fields

Field Name	Field Description
<b>Current version</b>	Number of the current version of the IS-IS routing table.
<b>L1</b>	Version of Level 1 SPF that was run.
<b>L2</b>	Version of Level 2 SPF that was run.
<b>Prefix</b>	Destination of the route.
<b>L</b>	IS-IS level: <ul style="list-style-type: none"> <li>• 1—Level 1 only</li> <li>• 2—Level 2 only</li> <li>• 3—Level 1 and Level 2</li> </ul>
<b>Version</b>	Version of SPF that generated the route.
<b>Metric</b>	Metric value associated with the route.
<b>Type</b>	Metric type: <b>int</b> (internal) or <b>ext</b> (external).
<b>Interface</b>	Interface to the next hop.
<b>Via</b>	System identifier of the next hop, displayed as a name if possible.
<b>ISO Routes</b>	ISO routing table entries.
<b>snpa</b>	MAC address.

## Sample Output

```

user@host> show isis route logical-system ls1
show isis route logical-system
IS-IS routing table
Current version: L1: 8 L2: 11
Prefix      L Version Metric Type Interface  Via
10.9.7.0/30  2      11    20 int  gr-0/2/0.0  h
10.9.201.1/32  2      11    60 int  gr-0/2/0.0  h
IPV6 Unicast IS-IS routing table
Current version: L1: 9 L2: 11
Prefix      L Version Metric Type Interface  Via
8009:3::a09:3200/126 2      11    20 int  gr-0/2/0.0  h

user@host> show isis route
show isis route (CLNS)
IS-IS routing table
Current version: L1: 10 L2: 8
IPv4/IPv6 Routes
Prefix      L Version Metric Type Interface  Via
0.0.0.0/0    1      10    10 int  fe-0/0/1.0  ISIS.0
ISO Routes
Prefix L Version Metric Type Interface  Via snpa
0/0
1      10    10 int  fe-0/0/1.0  isis.0 0:12:0:34:0:56
47.0005.80ff.f800.0000.0108.0001/104
1      10    0 int

```



```
47.0005.80ff.f800.0000.0108.0001.1921.6800.4001/152
    1      10      10 int fe-0/0/1.0 isis.0 0:12:0:34:0:56
47.0005.80ff.f800.0000.0108.0001.1921.6800.4002/152
    1      10      20 int fe-0/0/1.0 isis.0 0:12:0:34:0:56
47.0005.80ff.f800.0000.0108.0002/104
    1      10      0 int
47.0005.80ff.f800.0000.0108.0002.1921.6800.4001/152
    1      10      10 int fe-0/0/1.0 isis.0 0:12:0:34:0:56
```



## show isis spf

<b>Syntax</b>	show isis spf (brief   log   results) <instance <i>instance-name</i> > <level (1   2)> <logical-system (all   <i>logical-system-name</i> )> <topology (ipv4-multicast   ipv6-multicast   ipv6-unicast   unicast)>
<b>Syntax (EX Series Switch)</b>	show isis spf (brief   log   results) <instance <i>instance-name</i> > <level (1   2)> <topology (ipv4-multicast   ipv6-multicast   ipv6-unicast   unicast)>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display information about Intermediate System-to-Intermediate System (IS-IS) shortest-path-first (SPF) calculations.
<b>Options</b>	<p>brief—Display an overview of SPF calculations.</p> <p>log—Display the log of SPF calculations.</p> <p>results—Display the results of SPF calculations.</p> <p>instance <i>instance instance-name</i>—(Optional) Display SPF calculations for the specified routing instance.</p> <p>level (1   2)—(Optional) Display SPF calculations for the specified IS-IS level.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>topology (ipv4-multicast   ipv6-multicast   ipv6-unicast   unicast)—(Optional) Display SPF calculations for the specified topology only.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show isis spf brief on page 299</a> <a href="#">show isis spf log on page 300</a> <a href="#">show isis spf results on page 301</a> <a href="#">show isis spf results (CLNS) on page 302</a>
<b>Output Fields</b>	Table 83 on page 298 describes the output fields for the <b>show isis spf</b> command. Output fields are listed in the approximate order in which they appear.

**Table 83: show isis spf Output Fields**

Field Name	Field Description
Node	System ID of a node.



Table 83: show isis spf Output Fields (*continued*)

Field Name	Field Description
<b>Metric</b>	Metric to the node.
<b>Interface</b>	Interface of the next hop.
<b>Via</b>	System ID of the next hop.
<b>SNPA</b>	Subnetwork point of attachment (MAC address of the next hop).
<b>Start time</b>	(log option only) Time that the SPF computation started.
<b>Elapsed (secs)</b>	(log option only) Length of time, in seconds, required to complete the SPF computation.
<b>Count</b>	(log option only) Number of times the SPF was triggered.
<b>Reason</b>	(log option only) Reason that the SPF computation was completed.

## Sample Output

```

show isis spf brief user@host> show isis spf brief logical-system ls1
IS-IS level 1 SPF results:
Node      Metric  Interface  Via      SNPA
scat.00   10      ge-1/1/0.0  scat     0:90:69:a6:48:9d
fix.02    10
fix.00    0
3 nodes

IS-IS level 2 SPF results:
Node      Metric  Interface  Via      SNPA
skag.00   20      gr-0/2/0.0  h
skag.02   20      gr-0/2/0.0  h
h.00      10      gr-0/2/0.0  h
fix.00    0
4 nodes

IPv6 Unicast IS-IS level 1 SPF results:
Node      Metric  Interface  Via      SNPA
scat.00   10      ge-1/1/0.0  scat     0:90:69:a6:48:9d
          10      ge-1/1/0.0  scat     0:90:69:a6:48:9d
fix.02    10
fix.00    0
3 nodes

IPv6 Unicast IS-IS level 2 SPF results:
Node      Metric  Interface  Via      SNPA
skag.00   20      gr-0/2/0.0  h
          20      gr-0/2/0.0  h
skag.02   20      gr-0/2/0.0  h
          20      gr-0/2/0.0  h
h.00      10      gr-0/2/0.0  h
          10      gr-0/2/0.0  h
fix.00    0

```



4 nodes

Multicast IS-IS level 1 SPF results:

Node	Metric	Interface	Via	SNPA
scat.00	10	ge-1/1/0.0	scat	0:90:69:a6:48:9d
fix.02	10			
fix.00	0			

3 nodes

Multicast IS-IS level 2 SPF results:

Node	Metric	Interface	Via	SNPA
skag.00	20	gr-0/2/0.0	h	
skag.02	20	gr-0/2/0.0	h	
h.00	10	gr-0/2/0.0	h	
fix.00	0			

4 nodes

**show isis spf log** user@host> show isis spf log logical-system lsl

IS-IS level 1 SPF log:

Start time	Elapsed (secs)	Count	Reason
Fri Oct 31 12:41:18	0.000069	1	Reconfig
Fri Oct 31 12:41:18	0.000107	3	Updated LSP fix.00-00
Fri Oct 31 12:41:18	0.000050	3	Address change on so-1/2/2.0
Fri Oct 31 12:41:23	0.000033	1	Updated LSP fix.00-00
Fri Oct 31 12:41:28	0.000178	5	New adjacency scat on ge-1/1/0.0
Fri Oct 31 12:41:59	0.000060	1	Updated LSP fix.00-00
Fri Oct 31 12:42:30	0.000161	2	Multi area attachment change
Fri Oct 31 12:56:58	0.000198	1	Periodic SPF
Fri Oct 31 13:10:29	0.000209	1	Periodic SPF

IS-IS level 2 SPF log:

Start time	Elapsed (secs)	Count	Reason
Fri Oct 31 12:41:18	0.000035	1	Reconfig
Fri Oct 31 12:41:18	0.000047	2	Updated LSP fix.00-00
Fri Oct 31 12:41:18	0.000043	5	Address change on gr-0/2/0.0
Fri Oct 31 12:41:23	0.000022	1	Updated LSP fix.00-00
Fri Oct 31 12:41:59	0.000144	3	New adjacency h on gr-0/2/0.0
Fri Oct 31 12:42:30	0.000257	3	New LSP skag.00-00
Fri Oct 31 12:54:37	0.000195	1	Periodic SPF
Fri Oct 31 12:55:50	0.000178	1	Updated LSP fix.00-00
Fri Oct 31 12:55:55	0.000174	1	Updated LSP h.00-00
Fri Oct 31 12:55:58	0.000176	1	Updated LSP skag.00-00
Fri Oct 31 13:08:14	0.000198	1	Periodic SPF

IPv6 Unicast IS-IS level 1 SPF log:

Start time	Elapsed (secs)	Count	Reason
Fri Oct 31 12:41:18	0.000028	1	Reconfig
Fri Oct 31 12:41:18	0.000043	3	Updated LSP fix.00-00
Fri Oct 31 12:41:18	0.000112	4	Updated LSP fix.00-00
Fri Oct 31 12:41:23	0.000059	1	Updated LSP fix.00-00
Fri Oct 31 12:41:25	0.000041	1	Updated LSP fix.00-00
Fri Oct 31 12:41:28	0.000103	5	New adjacency scat on ge-1/1/0.0
Fri Oct 31 12:41:59	0.000040	1	Updated LSP fix.00-00
Fri Oct 31 12:42:30	0.000118	2	Multi area attachment change
Fri Oct 31 12:56:08	0.000289	1	Periodic SPF
Fri Oct 31 13:11:07	0.000214	1	Periodic SPF

IPv6 Unicast IS-IS level 2 SPF log:

Start time	Elapsed (secs)	Count	Reason
Fri Oct 31 12:41:18	0.000027	1	Reconfig
Fri Oct 31 12:41:18	0.000039	2	Updated LSP fix.00-00



```

Fri Oct 31 12:41:18      0.000049      6 Updated LSP fix.00-00
Fri Oct 31 12:41:23      0.000025      1 Updated LSP fix.00-00
Fri Oct 31 12:41:25      0.000023      1 Updated LSP fix.00-00
Fri Oct 31 12:41:59      0.000087      3 New adjacency h on gr-0/2/0.0
Fri Oct 31 12:42:30      0.000123      3 New LSP skag.00-00
Fri Oct 31 12:55:50      0.000121      1 Updated LSP fix.00-00
Fri Oct 31 12:55:55      0.000121      1 Updated LSP h.00-00
Fri Oct 31 12:55:58      0.000121      1 Updated LSP skag.00-00
Fri Oct 31 13:09:46      0.000201      1 Periodic SPF
...

```

**show isis spf results**

```
user@host> show isis spf results logical-system ls1
```

```
IS-IS level 1 SPF results:
```

Node	Metric	Interface	Via	SNPA
scat.00	10	ge-1/1/0.0	scat	0:90:69:a6:48:9d
	20	10.9.1.0/30		
fix.02	10			
fix.00	0			
	10	10.9.1.0/30		
	10	10.9.5.0/30		
	10	10.9.6.0/30		
	20	10.9.7.0/30		
	60	10.9.201.1/32		
3 nodes				

```
IS-IS level 2 SPF results:
```

Node	Metric	Interface	Via	SNPA
skag.00	20	gr-0/2/0.0	h	
	30	10.9.7.0/30		
skag.02	20	gr-0/2/0.0	h	
h.00	10	gr-0/2/0.0	h	
	20	10.9.6.0/30		
	20	10.9.7.0/30		
	60	10.9.201.1/32		
fix.00	0			
	10	10.9.1.0/30		
	10	10.9.5.0/30		
	10	10.9.6.0/30		
4 nodes				

```
IPv6 Unicast IS-IS level 1 SPF results:
```

Node	Metric	Interface	Via	SNPA
scat.00	10	ge-1/1/0.0	scat	0:90:69:a6:48:9d
		ge-1/1/0.0	scat	0:90:69:a6:48:9d
	20	8009:1::a09:1400/126		
fix.02	10			
fix.00	0			
	10	8009:1::a09:1400/126		
	10	8009:2::a09:1e00/126		
	20	8009:3::a09:3200/126		
	10	8009:4::a09:2800/126		
3 nodes				

```
IPv6 Unicast IS-IS level 2 SPF results:
```

Node	Metric	Interface	Via	SNPA
skag.00	20	gr-0/2/0.0	h	
		gr-0/2/0.0	h	
	30	8009:3::a09:3200/126		
skag.02	20	gr-0/2/0.0	h	
		gr-0/2/0.0	h	
h.00	10	gr-0/2/0.0	h	



```

                                gr-0/2/0.0      h
                                20      8009:3::a09:3200/126
                                20      8009:4::a09:2800/126
fix.00      0
                                10      8009:1::a09:1400/126
                                10      8009:2::a09:1e00/126
                                10      8009:4::a09:2800/126
4 nodes

Multicast IS-IS level 1 SPF results:
Node      Metric      Interface      Via      SNPA
scat.00    10      ge-1/1/0.0    scat      0:90:69:a6:48:9d
fix.02     10
fix.00     0
3 nodes

Multicast IS-IS level 2 SPF results:
Node      Metric      Interface      Via      SNPA
skag.00    20      gr-0/2/0.0    h
skag.02    20      gr-0/2/0.0    h
h.00      10      gr-0/2/0.0    h
fix.00     0
4 nodes
...

```

# **show isis spf results (CLNS)**

```

user@host> show isis spf results
IS-IS level 1 SPF results:
Node      Metric      Interface      Via      SNPA
skag.00 10      fe-0/0/1.0      toothache 0:12:0:34:0:56
                                fe-0/0/1.0      toothache 0:12:0:34:0:56
                                20      192.168.37.64/29
                                10      1921.6800.4001
                                20      1921.6800.4002
pro1-a.02 10
pro1-a.00 0
                                0      10.255.245.1/32
                                10      192.168.37.64/29
                                0      1921.6800.4211
3 nodes

IS-IS level 2 SPF results:
Node      Metric      Interface      Via      SNPA
skag.00 10      fe-0/0/1.0      toothache 0:12:0:34:0:56
                                fe-0/0/1.0      toothache 0:12:0:34:0:56
                                20      10.255.245.1/32
                                20      192.168.37.64/29
                                20      47.0005.80ff.f800.0000.0109.0010/104
pro1-a.02 10
pro1-a.00 0
                                0      10.255.245.1/32
                                10      192.168.37.64/29
3 nodes

```



## show isis statistics

<b>Syntax</b>	show isis statistics <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show isis statistics <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display statistics about Intermediate System-to-Intermediate System (IS-IS) traffic.
<b>Options</b>	none—Display IS-IS traffic statistics for all routing instances.  instance <i>instance-name</i> —(Optional) Display statistics for the specified routing instance.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear isis statistics on page 265</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show isis statistics on page 304</a>
<b>Output Fields</b>	<a href="#">Table 84 on page 303</a> describes the output fields for the <b>show isis statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 84: show isis statistics Output Fields**

Field Name	Field Description
PDU type	<p>Protocol data unit type:</p> <ul style="list-style-type: none"> <li>• <b>CSNP</b>—Complete sequence number PDUs contain a complete list of all link-state PDUs in the IS-IS database. CSNPs are sent periodically on all links, and the receiving systems use the information in the CSNP to update and synchronize their link-state PDU databases. The designated router multicasts CSNPs on broadcast links in place of sending explicit acknowledgments for each link-state PDU.</li> <li>• <b>IIH</b>—IS-IS hello packets are broadcast to discover the identity of neighboring IS-IS systems and to determine whether the neighbors are Level 1 or Level 2 intermediate systems.</li> <li>• <b>LSP</b>—Link-state PDUs contain information about the state of adjacencies to neighboring IS-IS systems. Link-state PDUs are flooded periodically throughout an area.</li> <li>• <b>PSNP</b>—Partial sequence number PDUs are sent multicast by a receiver when it detects that it is missing a link-state PDU; that is, when its link-state PDU database is out of date. The receiver sends a PSNP to the system that transmitted the CSNP, effectively requesting that the missing link-state PDU be transmitted. That routing device, in turn, forwards the missing link-state PDU to the requesting routing device.</li> <li>• <b>Unknown</b>—The PDU type is unknown.</li> </ul>



Table 84: show isis statistics Output Fields (*continued*)

Field Name	Field Description
<b>Received</b>	Number of PDUs received since IS-IS started or since the statistics were set to zero.
<b>Processed</b>	Number of PDUs received less the number dropped.
<b>Drops</b>	Number of PDUs dropped.
<b>Sent</b>	Number of PDUs transmitted since IS-IS started or since the statistics were set to zero.
<b>Rexmit</b>	Number of PDUs retransmitted since IS-IS started or since the statistics were set to zero.
<b>Total packets received/sent</b>	Total number of PDUs received and transmitted since IS-IS started or since the statistics were set to zero.
<b>SNP queue length</b>	Number of CSPN and PSNP packets currently waiting in the queue for processing. This value is almost always 0.
<b>LSP queue length</b>	Number of link-state PDUs waiting in the queue for processing. This value is almost always 0.
<b>SPF runs</b>	Number of shortest-path-first (SPF) calculations that have been performed. If this number is incrementing rapidly, it indicates that the network is unstable.
<b>Fragments rebuilt</b>	Number of link-state link-state PDU fragments that the local system has computed.
<b>LSP regenerations</b>	Number of link-state PDUs that have been regenerated. A link state PDU is regenerated when it is nearing the end of its lifetime and it has not changed.
<b>Purges initiated</b>	Number of purges that the system initiated. A purge is initiated if the software decides that a link-state PDU must be removed from the network.

## Sample Output

```

show isis statistics  user@host> show isis statistics
IS-IS statistics for merino:

PDU type    Received    Processed    Drops      Sent      Rexmit
LSP          12227       12227        0          8184      683
IIH          113808      113808        0         115817      0
CSNP         198868      198868        0         198934      0
PSNP          6985        6979         6          8274      0
Unknown        0           0            0           0         0
Totals       331888      331882        6         331209      683

Total packets received: 331888 Sent: 331892

SNP queue length:          0 Drops:          0
LSP queue length:          0 Drops:          0

SPF runs:                  1014
Fragments rebuilt:         1038

```



LSP regenerations:	425
Purges initiated:	0







## CHAPTER 8

# LLDP Operational Mode Commands

[Table 85 on page 307](#) summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot the Link Layer Discovery Protocol (LLDP) protocol. Commands are listed in alphabetical order.

**Table 85: LLDP Operational Mode Commands**

Task	Command
Clear LLDP neighbor information.	<code>clear lldp neighbor</code>
Clear LLDP statistics.	<code>clear lldp statistics</code>
Display basic LLDP information.	<code>show lldp</code>
Display LLDP local information.	<code>show lldp local-information</code>
Display LLDP neighbor information.	<code>show lldp neighbors</code>
Display LLDP remote global statistics.	<code>show lldp remote-global-statistics</code>
Display LLDP statistics.	<code>show lldp statistics</code>



## clear lldp neighbor

---

<b>Syntax</b>	<b>clear lldp neighbor</b> <b>&lt;interface <i>interface-name</i>&gt;</b>
<b>Release Information</b>	Command introduced in Junos OS Release 9.6.
<b>Description</b>	<p>On MX Series and T Series routers, clear information regarding all Link Layer Discovery Protocol (LLDP) neighbors or LLDP neighbors of the specified interface.</p> <p>For information about interface names, see Interface Naming Overview. For information about interface names for TX Matrix routers, see TX Matrix Router Chassis and Interface Names. For information about FPC numbering on TX Matrix routers, see Routing Matrix with a TX Matrix Router FPC Numbering.</p>
<b>Options</b>	<b>interface <i>interface-name</i></b> —(Optional) Clear the LLDP neighbors on the specified interface.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">clear lldp statistics on page 309</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear lldp statistics on page 308</a>
<b>Output Fields</b>	When you enter this command, you are provided no feedback on the status of your request. You can enter the <b>show lldp neighbors</b> command before and after clearing the LLDP neighbors to verify the clear operation.

## Sample Output

```
clear lldp statistics  user@host> clear lldp statistics
                        user@host> clear lldp statistics interface ge-0/2/0
```



## clear lldp statistics

---

<b>Syntax</b>	<code>clear lldpp neighbor</code> <code>&lt;interface <i>interface-name</i>&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 9.6.
<b>Description</b>	<p>On MX Series and T Series routers, clear all Link Layer Discovery Protocols (LLDP) statistics or LLDP statistics associated with the specified interface.</p> <p>For information about interface names, see Interface Naming Overview. For information about interface names for TX Matrix routers, see TX Matrix Router Chassis and Interface Names. For information about FPC numbering on TX Matrix routers, see Routing Matrix with a TX Matrix Router FPC Numbering.</p>
<b>Options</b>	<code>interface <i>interface-name</i></code> —(Optional) Clear LLDP statistics on the specified interface.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear lldp neighbor on page 308</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear lldp neighbor on page 309</a>
<b>Output Fields</b>	When you enter this command, you are provided no feedback on the status of your request. You can enter the <b>show lldp statistics</b> command before and after clearing the LLDP statistics to verify the clear operation.

## Sample Output

```
clear lldp neighbor  user@host> clear lldp neighbors
                    user@host> clear lldp neighbors interface ge-0/2/2
```



## show lldp

<b>Syntax</b>	<code>show lldp</code> <code>&lt;detail&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 9.6.
<b>Description</b>	On MX Series and T Series routers, display information about the Link Layer Discovery Protocol (LLDP).
<b>Options</b>	<code>detail</code> —(Optional) Display the detailed output level.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show lldp on page 312</a> <a href="#">show lldp detail on page 312</a>
<b>Output Fields</b>	<a href="#">Table 86 on page 310</a> describes the output fields for the <b>show lldp</b> command. Output fields are listed in the approximate order in which they appear.

**Table 86: show lldp Output Fields**

Field Name	Field Description
LLDP	Status of LLDP: <b>Enabled</b> or <b>Disabled</b> .
Advertisement interval	Value of the advertisement interval parameter.
Transmit delay	Value of the transmit delay parameter.
Hold timer	Value of the hold timer parameter.
Notification interval	Value of the notification interval parameter.
Config Trap Interval	Value of the configuration trap parameter.
Connection Hold timer	Value of the connection hold timer parameter.
Interface	<p>List of LLDP interfaces, showing status (<b>Enabled</b> or <b>Disabled</b>) and <b>Neighbor count</b> (<b>detail</b> only).</p> <p>For information about interface names, see Interface Naming Overview. For information about interface names for TX Matrix routers, see TX Matrix Router Chassis and Interface Names. For information about FPC numbering on TX Matrix routers, see Routing Matrix with a TX Matrix Router FPC Numbering.</p>
LLDP basic TLVs supported	List of basic LLDP TLVs supported by this device ( <b>detail</b> only).



Table 86: show lldp Output Fields (*continued*)

Field Name	Field Description
LLDP 802 TLVs supported	List of IEEE 802.1 LLDP TLVs supported by this device ( <b>detail</b> only).



## Sample Output

```
show lldp      user@host> show lldp
LLDP           : Enabled
Advertisement interval : 30 Second(s)
Transmit delay   : 2 Second(s)
Hold timer      : 4 Second(s)
Notification interval : 30 Second(s)
Config Trap Interval : 300 Second(s)
Connection Hold timer : 60 Second(s)

Interface      LLDP
ge-0/0/0       Enabled
ge-0/0/1       Enabled
ge-0/0/4       Enabled
```

## Sample Output

```
show lldp detail user@host> show lldp detail
LLDP           : Enabled
Advertisement interval : 30 Second(s)
Transmit delay   : 2 Second(s)
Hold timer      : 4 Second(s)
Notification interval : 30 Second(s)
Config Trap Interval : 300 Second(s)
Connection Hold timer : 60 Second(s)

Interface      LLDP      Neighbor count
ge-0/0/0       Enabled    0
ge-0/0/1       Enabled    0
ge-0/0/4       Enabled    0

LLDP basic TLVs supported:
Chassis identifier, Port identifier, Port description, System name, System
description, System capabilities, Management address.

LLDP 802 TLVs supported:
Link aggregation, Maximum frame size, MAC/PHY Configuration/Status, Port VLAN ID,
Port VLAN name.
```



## show lldp local-information

<b>Syntax</b>	show lldp local-information
<b>Release Information</b>	Command introduced in Junos OS Release 9.6.
<b>Description</b>	On MX Series and T Series routers, display local Link Layer Discovery Protocol (LLDP) information.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show lldp local-information on page 314</a>
<b>Output Fields</b>	<a href="#">Table 87 on page 313</a> describes the output fields for the <b>show lldp local-information</b> command. Output fields are listed in the approximate order in which they appear.

**Table 87: show lldp local-information Output Fields**

Field Name	Field Description
<b>LLDP Local Information details</b>	Information that follows pertains to the local system.
<b>Chassis ID</b>	List of chassis identifiers for local information.
<b>System name</b>	Local system name reported by LLDP.
<b>System descr</b>	Local system description reported by LLDP.
<b>System Capabilities</b>	Capabilities (such as <b>Bridge</b> or <b>Router</b> ) that are <b>Supported</b> or <b>Enabled</b> by system on the interface.
<b>Management Information</b>	Listed by <b>Interface Name</b> , <b>Address Subtype</b> (such as <b>ipv4</b> ), <b>Address</b> (such as <b>192.168.168.229</b> ), <b>Interface Number</b> , and <b>Interface Numbering Subtype</b> .
<b>Interface Name</b>	List of local interfaces.  For information about interface names, see Interface Naming Overview. For information about interface names for TX Matrix routers, see TX Matrix Router Chassis and Interface Names. For information about FPC numbering on TX Matrix routers, see Routing Matrix with a TX Matrix Router FPC Numbering.
<b>Interface ID</b>	List of local interface identifiers.
<b>Interface Description</b>	List of local interface descriptions.
<b>Status</b>	List of interface conditions: <b>UP</b> or <b>DOWN</b> .



## Sample Output

```
show lldp local-information user@host> show lldp local-information
LLDP Local Information details

Chassis ID   : 00:90:69:0a:77:c0
System name  : sw-mx-u
System descr : Juniper Networks, Inc. MX 960, Version 9.4I0.1, Build date
                2008-09-04 14:51:50 UTC

System Capabilities
Supported    : Bridge Router
Enabled      : Bridge Router

Management Information
Interface Name : fxp0
Address Subtype : IPv4(1)
Address       : 192.168.168.229
Interface Number : 1
Interface Numbering Subtype : ifIndex(2)

Interface Name      Interface ID      Interface Description      Status
ge-0/1/0           18             Avaya Port                UP
ge-0/1/1           27             -                         DOWN
ge-0/1/2           13             Port for Hub              UP
```



## show lldp neighbors

<b>Syntax</b>	show lldp neighbors <interface <i>interface-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 9.6.
<b>Description</b>	On MX Series and T Series routers, display information about LLDP neighbors.  For information about interface names, see Interface Naming Overview. For information about interface names for TX Matrix routers, see TX Matrix Router Chassis and Interface Names. For information about FPC numbering on TX Matrix routers, see Routing Matrix with a TX Matrix Router FPC Numbering.
<b>Options</b>	interface <i>interface-name</i> —(Optional) Display the neighbor information about a particular physical interface.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear lldp neighbor on page 308</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show lldp neighbors on page 317</a> <a href="#">show lldp neighbors interface ge-0/0/4 on page 317</a>
<b>Output Fields</b>	<a href="#">Table 88 on page 315</a> describes the output fields for the <b>show lldp neighbors</b> command. Output fields are listed in the approximate order in which they appear.

**Table 88: show lldp neighbors Output Fields**

Field Name	Field Description
LLDP Remote Devices Information	Information about remote devices.
LocalInterface	List of local interfaces for which neighbor information is available.
ChassisId	List of chassis identifiers for neighbors.
PortInfo	List of port information gathered from neighbors. This could be the port identifier or port description.
SysName	List of system names gathered from neighbors.
LLDP Neighbor Information	Information about both local and neighbor systems on the interface (appears when the <b>interface</b> option is used).
Local Information	Information about local systems on the interface (appears when the <b>interface</b> option is used).



Table 88: show lldp neighbors Output Fields (*continued*)

Field Name	Field Description
<b>Neighbor Information</b>	Information about both local and neighbor system on the interface (appears when the <b>interface</b> option is used).
<b>Index</b>	Local interface index (appears when the <b>interface</b> option is used).
<b>Time Mark</b>	Date and timestamp of information (appears when the <b>interface</b> option is used).
<b>Time To Live</b>	Number of seconds for which this information is valid (appears when the <b>interface</b> option is used).
<b>Local Interface</b>	Name of the local physical interface (appears when the <b>interface</b> option is used).
<b>Local Port ID</b>	Local port identifier (appears when the interface option is used).
<b>Neighbor Information</b>	Information about neighbor systems on the interface (appears when the <b>interface</b> option is used).
<b>Chassis type</b>	Type of chassis identifier supplied, such as <b>MAC address</b> (appears when the <b>interface</b> option is used).
<b>Chassis ID</b>	Chassis identifier of type listed (appears when the <b>interface</b> option is used).
<b>Port type</b>	Type of port identifier supplied, such as <b>local</b> (appears when the <b>interface</b> option is used).
<b>Port ID</b>	Port identifier of type listed (appears when the <b>interface</b> option is used).
<b>Port description</b>	Port description (appears when the <b>interface</b> option is used).
<b>System name</b>	Name supplied by the system on the interface (appears when the <b>interface</b> option is used).
<b>System Description</b>	Description supplied by the system on the interface (appears when the <b>interface</b> option is used).
<b>System Capabilities</b>	Capabilities (such as <b>bridge</b> or <b>router</b> ) that are <b>Supported</b> or <b>Enabled</b> by the system on the interface (appears when the <b>interface</b> option is used).
<b>Management address</b>	Details of the management address: <b>Address Type</b> (such as <b>ipv4</b> ), <b>Address</b> (such as <b>10.204.34.35</b> ), <b>Interface Number</b> , <b>Interface Subtype</b> , and Organization Identifier ( <b>OID</b> ) (appears when the <b>interface</b> option is used).
<b>Organization Info</b>	One or more entries listing remote information by Organizationally Unique Identifier ( <b>OUI</b> ), <b>Subtype</b> , <b>Index</b> , and <b>Info</b> (appears when the <b>interface</b> option is used).



## Sample Output

```

show lldp neighbors user@host> show lldp neighbors
LLDP Remote Devices Information

LocalInterface  ChassisId          PortInfo          SysName
ge-0/0/0        10.209.192.12      00 19 bb 20 de 80 AVA4C357D
ge-0/0/1        10.209.192.12      00 19 bb 20 de 80 AVA4C357D
ge-0/0/1        10.209.192.13      00 19 bb 20 de 81 AVA4C357E
ge-0/0/3        00 19 bb 20 de 79 5      apg-hp1
ge-0/0/3        00 19 bb 20 de 80 3      apg-hp1
ge-0/0/4        00 19 bb 20 de 79 5      apg-hp1
ge-0/0/4        00 19 bb 20 de 80 3      apg-hp1
ge-0/0/5        00 19 bb 20 de 81 ge-0/0/3      MX480-1
ge-0/0/6        00 19 bb 20 de 82 ge-0/0/4      MX960-2

```

## Sample Output

```

show lldp neighbors user@host> show lldp neighbors interface ge-0/0/4
interface ge-0/0/4 LLDP Neighbor Information:
Local Information:
  Index 6 Time Mark Wed Jun 20 07:34:11 2007 Time To Live 120 seconds
  Local Interface : ge-0/0/4
  Local Port ID   : 4

Neighbor Information:
  Chassis type      : Mac address
  Chassis ID        : 00 19 bb 20 de 80
  Port type         : local
  Port ID           : 3
  Port description  : 3
  System name       : apg-hp1

System Description : ProCurve J9049A Switch 2900-24G, revision
                    T.11.X1, ROM K....

System Capabilities
  Supported : bridge, router
  Enabled   : bridge

Management address
  Address Type : ipv4
  Address      : 10.204.34.35
  Interface Number : 1
  Interface Subtype : ifIndex(2)
  OID          : 1.3.6.1.2.1.31.1.1.1.1.1

Organization Info
  OUI : 0.18.15
  Subtype : 1
  Index : 1
  Info : 00A0000000

Organization Info
  OUI : 0.18.15
  Subtype : 3
  Index : 2
  Info : 0100000000

```



Organization Info

OUI : 0.18.15  
Subtype : 4  
Index : 3  
Info : 05EA



## show lldp remote-global-statistics

<b>Syntax</b>	show lldp remote-global-statistics
<b>Release Information</b>	Command introduced in Junos OS Release 9.6.
<b>Description</b>	On MX Series and T Series routers, display remote Link Layer Discovery Protocol (LLDP) global statistics.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show lldp remote-global-statistics on page 320</a>
<b>Output Fields</b>	<a href="#">Table 89 on page 319</a> describes the output fields for the <b>show lldp remote-global-statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 89: show lldp remote-global-statistics Output Fields**

Field Name	Field Description
LLDP Remote Database Table Counters	Information about remote database table counters.
LastchangeTime	Time elapsed between LLDP agent startup and the last change to the remote database table information.
Inserts	Number of insertions made in the remote database table.
Deletes	Number of deletions made in the remote database table.
Drops	Number of LLDP frames dropped from the remote database table because of errors.
Ageouts	Number of remote database table entries that have aged out of the table.



## Sample Output

```
show lldp remote-global-statistics user@host> show lldp remote-global-statistics
remote-global-statistics user@host> show lldp remote-global-statistics
                             LLDP Remote Database Table Counters
                             LastchangeTime      Inserts      Deletes      Drops      Ageouts
                             00:00:76 (76 sec)    192             0             0           0
```



## show lldp statistics

<b>Syntax</b>	show lldp statistics <interface <i>interface-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 9.6.
<b>Description</b>	On MX Series and T Series routers, display information about Link Layer Discovery Protocol (LLDP) statistics.
<b>Options</b>	interface <i>interface-name</i> —(Optional) Display the statistics about a particular physical interface.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear lldp statistics on page 309</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show lldp statistics on page 322</a> <a href="#">show lldp statistics interface ge-0/1/1 on page 322</a>
<b>Output Fields</b>	<a href="#">Table 90 on page 321</a> describes the output fields for the <b>show lldp statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 90: show lldp statistics Output Fields**

Field Name	Field Description
<b>Interface</b>	Interface name.  For information about interface names, see Interface Naming Overview. For information about interface names for TX Matrix routers, see TX Matrix Router Chassis and Interface Names. For information about FPC numbering on TX Matrix routers, see Routing Matrix with a TX Matrix Router FPC Numbering.
<b>Received</b>	Number of LLDP frames received on this interface.
<b>Transmitted</b>	Number of LLDP frames sent on this interface.
<b>Unknown-TLVs</b>	Number of LLDP frames with unsupported content received on this interface.
<b>With-Errors</b>	Number of LLDP frames with errors received on this interface.
<b>Discarded</b>	Number of LLDP frames received on this interface that were discarded because of problems.



## Sample Output

```
show lldp statistics user@host> show lldp statistics
Interface Received Transmitted Unknown-TLVs With-Errors Discarded
-----
ge-0/1/1 544 540 0 0 0
ge-0/1/2 540 500 0 0 0
ge-0/1/3 544 540 0 0 0
ge-0/1/4 544 540 0 0 0
ge-0/1/5 544 540 0 0 0
ge-0/1/6 544 540 0 0 0
ge-0/1/7 0 0 0 0 0
```

## Sample Output

```
show lldp statistics user@host> show lldp statistics interface ge-0/1/1
interface ge-0/1/1 Interface Received Transmitted Unknown-TLVs With-Errors Discarded
-----
ge-0/1/1 544 540 0 0 0
```



## CHAPTER 9

# MVRP Operational Mode Commands

Table 91 on page 323 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot the Multiple VLAN Registration Protocol (MVRP). Commands are listed in alphabetical order.

**Table 91: MVRP Operational Mode Commands**

Task	Command
Display Multiple VLAN Registration Protocol (MVRP) configuration information.	<code>show mvrp</code>
Display Multiple VLAN Registration Protocol (MVRP) applicant state information.	<code>show mvrp applicant-state</code>
Display all Virtual LANs (VLANs) that have been created dynamically using Multiple VLAN Registration Protocol (MVRP) on the router.	<code>show mvrp dynamic-vlan-memberships</code>
Display Multiple VLAN Registration Protocol (MVRP) interface-specific information.	<code>show mvrp interface</code>
Display Multiple VLAN Registration Protocol (MVRP) registration state information.	<code>show mvrp registration-state</code>
Display Multiple VLAN Registration Protocol (MVRP) statistics in the form of Multiple Registration Protocol data unit (MRPDU) messages.	<code>show mvrp statistics</code>



## show mvrp

<b>Syntax</b>	show mvrp
<b>Release Information</b>	Command introduced in Junos OS Release 10.1.
<b>Description</b>	For MX Series routers, display Multiple VLAN Registration Protocol (MVRP) configuration information.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show mvrp applicant-state on page 326</a></li> <li>• <a href="#">show mvrp dynamic-vlan-memberships on page 328</a></li> <li>• <a href="#">show mvrp interface on page 329</a></li> <li>• <a href="#">show mvrp registration-state on page 330</a></li> <li>• <a href="#">show mvrp statistics on page 332</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show mvrp on page 324</a>
<b>Output Fields</b>	Table 92 on page 324 lists the output fields for the <b>show mvrp</b> command. Output fields are listed in the approximate order in which they appear.

**Table 92: show mvrp Output Fields**

Field Name	Field Description
MVRP dynamic VLAN creation	Displays whether global MVRP dynamic Virtual LAN (VLAN) creation is <b>Enabled</b> or <b>Disabled</b> .
MVRP BPDU MAC address	Displays the multicast media access control (MAC) address for MVRP. If configured, the provider MVRP multicast MAC address is used; otherwise, the customer MVRP multicast MAC address is used.
MVRP timers (ms)	Displays MVRP timer information: <ul style="list-style-type: none"> <li>• <b>Interface</b>—The interface on which MVRP is configured.</li> <li>• <b>Join</b>—The maximum number of milliseconds the interfaces must wait before sending VLAN advertisements.</li> <li>• <b>Leave</b>—The number of milliseconds an interface must wait after receiving a Leave message to remove the interface from the VLAN specified in the message.</li> <li>• <b>LeaveAll</b>—The interval at which LeaveAll messages are sent on interfaces. LeaveAll messages maintain current MVRP VLAN membership information in the network.</li> </ul>

## Sample Output

```

show mvrp  user@host> show mvrp
             MVRP configuration for routing instance 'default-switch'
             MVRP dynamic VLAN creation : Enabled
             MVRP BPDU MAC address      : Customer bridge group (01-80-C2-00-00-21)

```



MVRP timers (ms)			
Interface	Join	Leave	LeaveAll
ge-11/2/8	200	800	10000
ge-11/0/9	200	800	10000
ge-11/3/0	200	800	10000



## show mvrp applicant-state

<b>Syntax</b>	show mvrp applicant-state
<b>Release Information</b>	Command introduced in Junos OS Release 10.1.
<b>Description</b>	For MX Series routers, display Multiple VLAN Registration Protocol (MVRP) applicant state information.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show mvrp on page 324</a></li> <li>• <a href="#">show mvrp interface on page 329</a></li> <li>• <a href="#">show mvrp registration-state on page 330</a></li> <li>• <a href="#">show mvrp statistics on page 332</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show mvrp applicant-state on page 327</a>
<b>Output Fields</b>	Table 93 on page 326 lists the output fields for the <b>show mvrp applicant-state</b> command. Output fields are listed in the approximate order in which they appear.

**Table 93: show mvrp applicant-state Output Fields**

Field Name	Field Description
<b>VLAN Id</b>	Displays the Virtual LAN (VLAN) ID number.
<b>Interface</b>	Displays the interface number associated with the VLAN ID.
<b>State</b>	Displays one of the following MVRP registrar states: <ul style="list-style-type: none"> <li>• <b>VO</b>—Very anxious observer.</li> <li>• <b>VP</b>—Very anxious passive.</li> <li>• <b>VA</b>—Very anxious new.</li> <li>• <b>AN</b>—Anxious new.</li> <li>• <b>AA</b>—Anxious active.</li> <li>• <b>QA</b>—Quiet active.</li> <li>• <b>LA</b>—Leaving active.</li> <li>• <b>AO</b>—Anxious observer.</li> <li>• <b>QO</b>—Quiet observer.</li> <li>• <b>LO</b>—Leaving observer.</li> <li>• <b>AP</b>—Anxious passive.</li> <li>• <b>QA</b>—Quiet passive.</li> </ul>



## Sample Output

```
show mvrp      user@host> show mvrp applicant-state
applicant-state MVRP applicant state for routing instance 'default-switch'
                (V0) Very anxious observer, (VP) Very anxious passive, (VA) Very anxious new,
                (AN) Anxious new, (AA) Anxious active, (QA) Quiet active, (LA) Leaving active,
                (AO) Anxious observer, (QO) Quiet observer, (LO) Leaving observer,
                (AP) Anxious passive, (QP) Quiet passive

                VLAN Id      Interface      State
                100         ge-11/3/0    Declaring (QA)
                200         ge-11/3/0    Declaring (QA)
                300         ge-11/3/0    Declaring (QA)
```



## show mvrp dynamic-vlan-memberships

<b>Syntax</b>	show mvrp dynamic-vlan-memberships
<b>Release Information</b>	Command introduced in Junos OS Release 10.1.
<b>Description</b>	For MX Series routers, display all Virtual LANs (VLANs) that have been created dynamically using Multiple VLAN Registration Protocol (MVRP) on the router.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show mvrp on page 324</a></li> <li>• <a href="#">show mvrp applicant-state on page 326</a></li> <li>• <a href="#">show mvrp interface on page 329</a></li> <li>• <a href="#">show mvrp registration-state on page 330</a></li> <li>• <a href="#">show mvrp statistics on page 332</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show mvrp dynamic-vlan-memberships on page 328</a>
<b>Output Fields</b>	<a href="#">Table 94 on page 328</a> lists the output fields for the <b>show mvrp dynamic-vlan-memberships</b> command. Output fields are listed in the approximate order in which they appear.

**Table 94: show mvrp dynamic-vlan-memberships Output Fields**

Field Name	Field Description
VLAN Id	The VLAN ID of the dynamically created VLAN.
Interfaces	The interface or interfaces that are bound to the dynamically created VLAN.

### Sample Output

```

show mvrp dynamic-vlan-memberships user@host> show mvrp dynamic-vlan-memberships
MVRP dynamic vlans for routing instance 'default-switch'
(s) static vlan, (f) fixed registration

VLAN Id      Interfaces
  100 (s)    ge-11/3/0
  200 (s)    ge-11/3/0
  300 (s)

```



## show mvrp interface

<b>Syntax</b>	show mvrp interface
<b>Release Information</b>	Command introduced in Junos OS Release 10.1.
<b>Description</b>	For MX Series routers, display Multiple VLAN Registration Protocol (MVRP) interface-specific information.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show mvrp on page 324</a></li> <li>• <a href="#">show mvrp applicant-state on page 326</a></li> <li>• <a href="#">show mvrp dynamic-vlan-memberships on page 328</a></li> <li>• <a href="#">show mvrp registration-state on page 330</a></li> <li>• <a href="#">show mvrp statistics on page 332</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show mvrp interface on page 329</a>
<b>Output Fields</b>	<a href="#">Table 95 on page 329</a> lists the output fields for the <b>show mvrp interface</b> command. Output fields are listed in the approximate order in which they appear.

**Table 95: show mvrp interface Output Fields**

Field Name	Field Description
Interface	Interface on which MVRP is configured.
Status	Status of the MVRP: <b>Enabled</b> or <b>Disabled</b> .
Registration Mode	Registration for the interface: <b>Fixed</b> , <b>Forbidden</b> , or <b>Normal</b> .
Applicant Mode	Applicant mode.

## Sample Output

```

show mvrp interface  user@host> show mvrp interface
MVRP interface information for routing instance 'default-switch'

Interface      Status      Registration Mode      Applicant
Mode
ge-11/2/8      Enabled     Normal               Normal
ge-11/0/9      Enabled     Normal               Normal
ge-11/3/0      Enabled     Normal               Normal

```



## show mvrp registration-state

<b>Syntax</b>	show mvrp registration-state
<b>Release Information</b>	Command introduced in Junos OS Release 10.1.
<b>Description</b>	For MX Series routers, display Multiple VLAN Registration Protocol (MVRP) registration state information.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show mvrp on page 324</a></li> <li>• <a href="#">show mvrp dynamic-vlan-memberships on page 328</a></li> <li>• <a href="#">show mvrp interface on page 329</a></li> <li>• <a href="#">show mvrp statistics on page 332</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show mvrp registration-state on page 330</a>
<b>Output Fields</b>	<a href="#">Table 96 on page 330</a> lists the output fields for the <b>show mvrp registration-state</b> command. Output fields are listed in the approximate order in which they appear.

**Table 96: show mvrp registration-state Output Fields**

Field Name	Field Description
<b>VLAN Id</b>	Displays the Virtual LAN (VLAN) ID number.
<b>Interface</b>	Displays the interface number associated with the VLAN ID.
<b>Registrar State</b>	Displays whether the registrar state is <b>Registered</b> or <b>Empty</b> .
<b>Forced State</b>	Displays whether the forced state is <b>Registered</b> or <b>Empty</b> .
<b>Managed State</b>	Displays one of the following states: <ul style="list-style-type: none"> <li>• <b>Fixed</b>—VLANs always stay in a registered state and are declared as such on all other forwarding ports.</li> <li>• <b>Normal</b>—VLANs participate in the MVRP protocol and honor incoming join requests normally.</li> <li>• <b>Forbidden</b>—VLANs ignore the incoming join requests and always stay in an unregistered state.</li> </ul>
<b>STP State</b>	Displays whether the Spanning Tree Protocol (STP) is <b>Blocking</b> or <b>Forwarding</b> .

## Sample Output

```

show mvrp registration-state  user@host> show mvrp registration-state
                               MVRP registartion state for routing instance 'default-switch'

                               VLAN Id   Interface   Registrar   Forced   Managed   STP
                               State      State      State       State    State     State

```



100	ge-11/2/8	Empty	Registered	Fixed	Forwarding
	ge-11/0/9	Empty	Empty	Normal	Forwarding
	ge-11/3/0	Registered	Registered	Normal	Forwarding
101	ge-11/2/8	Empty	Registered	Fixed	Forwarding
	ge-11/0/9	Empty	Empty	Normal	Forwarding
	ge-11/3/0	Registered	Registered	Normal	Forwarding



## show mvrp statistics

<b>Syntax</b>	show mvrp statistics
<b>Release Information</b>	Command introduced in Junos OS Release 10.1.
<b>Description</b>	For MX Series routers, display Multiple VLAN Registration Protocol (MVRP) statistics in the form of Multiple Registration Protocol data unit (MRPDU) messages.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show mvrp on page 324</a></li> <li>• <a href="#">show mvrp applicant-state on page 326</a></li> <li>• <a href="#">show mvrp dynamic-vlan-memberships on page 328</a></li> <li>• <a href="#">show mvrp interface on page 329</a></li> <li>• <a href="#">show mvrp registration-state on page 330</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show mvrp statistics on page 332</a>
<b>Output Fields</b>	<a href="#">Table 97 on page 332</a> lists the output fields for the <b>show mvrp statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 97: show mvrp statistics Output Fields**

Field Name	Field Description
interface name	Interface for which MVRP statistics are displayed.
VLAN IDs registered	Number of Virtual LAN (VLAN) IDs registered.
Sent MVRP PDUs	Number of MRPDU messages transmitted from the router.
Received MVRP PDUs without error	Number of MRPDU messages received on the router.
Received MVRP PDUs with error	Number of invalid MRPDU messages received on the router.

## Sample Output

```

show mvrp statistics  user@host> show mvrp statistics
                      MVRP statistics for routing instance 'default-switch'

                      Interface name           : ge-11/2/8
                      VLAN IDs registered       : 0
                      Sent MVRP PDUs           : 1467
                      Received MVRP PDUs without error: 0
                      Received MVRP PDUs with error  : 0

```



```
Interface name           : ge-11/0/9
VLAN IDs registered      : 0
Sent MVRP PDUs           : 1418
Received MVRP PDUs without error: 702
Received MVRP PDUs with error  : 0
```

```
Interface name           : ge-11/3/0
VLAN IDs registered      : 2
Sent MVRP PDUs           : 1524
Received MVRP PDUs without error: 1366
Received MVRP PDUs with error  : 0
```







## CHAPTER 10

# OSPF Operational Mode Commands

Table 98 on page 335 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot the Open Shortest Path First (OSPF) protocol. Commands are listed in alphabetical order.

**Table 98: OSPF Operational Mode Commands**

Task	Command
Clear link-state database entries.	<code>clear (ospf   ospf3) database</code>
Clear OSPF input and output statistics.	<code>clear (ospf   ospf3) io-statistics</code>
Tear down neighbor connections.	<code>clear (ospf   ospf3) neighbor</code>
Clear the OSPF overload bit.	<code>clear ospf overload</code>
Clear OSPF statistics.	<code>clear (ospf   ospf3) statistics</code>
Display information about the level of backup coverage available for OSPF nodes and prefixes.	<code>show (ospf   ospf3) backup coverage</code>
Display information about MPLS label-switched-paths (LSPs) designated as backup routes for OSPF routes.	<code>show (ospf   ospf3) backup lsp</code>
Display information about OSPF shortest-path-first calculations for backup paths.	<code>show (ospf   ospf3) backup spf</code>
Display link-state database entries for OSPFv2.	<code>show ospf database</code>
Display link-state database entries for OSPFv3.	<code>show ospf3 database</code>
Display OSPF interface status.	<code>show (ospf   ospf3) interface</code>
Display OSPF input and output statistics.	<code>show (ospf   ospf3) io-statistics</code>
Display the SPF log.	<code>show (ospf   ospf3) log</code>
Display adjacent routers.	<code>show (ospf   ospf3) neighbor</code>



Table 98: OSPF Operational Mode Commands (*continued*)

Task	Command
Display overview statistics.	<code>show (ospf   ospf3) overview</code>
Display OSPF routing table entries.	<code>show (ospf   ospf3) route</code>
Display OSPF statistics.	<code>show (ospf   ospf3) statistics</code>



**NOTE:** For more OSPF-related commands, such as `show route protocol`, `show route instance`, and `show route table`, see Protocol-Independent Routing Operational Mode Commands. For information about monitoring Bidirectional Forwarding Detection (BFD) sessions for OSPF clients, see BFD Operational Mode Commands. For information about how to configure OSPF, see the *Junos Routing Protocols Configuration Guide*.



## clear (ospf | ospf3) database

<b>Syntax</b>	<pre>clear (ospf   ospf3) database &lt;advertising-router (<i>router-id</i>   self)&gt; &lt;area <i>area-id</i>&gt; &lt;asbrsummary&gt; &lt;external&gt; &lt;instance <i>instance-name</i>&gt; &lt;inter-area-prefix&gt; &lt;inter-area-router&gt; &lt;intra-area-prefix&gt; &lt;link-local&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;lsa-id <i>lsa-id</i>&gt; &lt;netsummary&gt; &lt;network&gt; &lt;nssa&gt; &lt;opaque-area&gt; &lt;purge&gt; &lt;realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)&gt; &lt;router&gt;</pre>
<b>Syntax (EX Series Switch)</b>	<pre>clear (ospf   ospf3) database &lt;advertising-router (<i>router-id</i>   self)&gt; &lt;area <i>area-id</i>&gt; &lt;asbrsummary&gt; &lt;external&gt; &lt;instance <i>instance-name</i>&gt; &lt;inter-area-prefix&gt; &lt;inter-area-router&gt; &lt;intra-area-prefix&gt; &lt;link-local&gt; &lt;lsa-id <i>lsa-id</i>&gt; &lt;netsummary&gt; &lt;network&gt; &lt;nssa&gt; &lt;opaque-area&gt; &lt;purge&gt; &lt;router&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p><b>advertising-router</b> <i>router-id</i>, <b>area</b> <i>area-id</i>, <b>asbrsummary</b>, <b>external</b>, <b>inter-area-prefix</b>, <b>inter-area-router</b>, <b>intra-area-prefix</b>, <b>link-local</b>, <b>lsa-id</b> <i>lsa-id</i>, <b>netsummary</b>, <b>network</b>, <b>nssa</b>, <b>opaque-area</b>, and <b>router</b> options added in Junos OS Release 8.3. You must use the <b>purge</b> command with these options.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>realm</b> option added in Junos OS Release 9.2.</p> <p><b>advertising-router</b> (<i>router-id</i>   <b>self</b>) option added in Junos OS Release 9.5.</p> <p><b>advertising-router</b> (<i>router-id</i>   <b>self</b>) option introduced in Junos OS Release 9.5 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p>



**Description** With the master Routing Engine, delete entries in the Open Shortest Path First (OSPF) link-state advertisement (LSA) database. With the backup Routing Engine, delete the OSPF LSA database and sync the new database with the master Routing Engine. You can also use the **purge** command with any of the options to discard rather than delete the specified LSA entries.



**CAUTION:** This command is useful only for testing. Use it with care, because it causes significant network disruption.

**Options** none—Delete all LSAs other than the system's own LSAs, which are regenerated. To resynchronize the database, the system destroys all adjacent neighbors that are in the state **EXSTART** or higher. The neighbors are then reacquired and the databases are synchronized.

advertising-router (*router-id* | self)—(Optional) Discard entries for the LSA entries advertised by the specified routing device or by this routing device.

area *area-id*—(Optional) Discard entries for the LSAs in the specified area.

asbrsummary—(Optional) Discard summary AS boundary router LSA entries.

external—(Optional) Discard external LSAs.

instance *instance-name*—(Optional) Delete or discard entries for the specified routing instance only.

inter-area-prefix—(OSPFv3 only) (Optional) Discard interarea prefix LSAs.

inter-area-router—(OSPFv3 only) (Optional) Discard interarea router LSAs.

intra-area-prefix—(OSPFv3 only) (Optional) Discard intra-area prefix LSAs.

logical-system (all | *logical-system-name*)—(Optional) Perform this operation on all logical systems or on a particular logical system.

link-local—(Optional) Delete link-local LSAs.

lsa-id *lsa-id*—(Optional) Discard the LSA entries with the specified LSA identifier.

netsummary—(Optional) Discard summary network LSAs.

network—(Optional) Discard network LSAs.

nssa—(Optional) Discard not-so-stubby area (NSSA) LSAs.

opaque-area—(Optional) Discard opaque area-scope LSAs.

realm (ipv4-multicast | ipv4-unicast | ipv6-multicast)—(OSPFv3 only) (Optional) Delete the entries for the specified OSPFv3 realm, or address family. Use the **realm** option to specify an address family for OSPFv3 other than IPv6 unicast, which is the default.



router—(Optional) Discard router LSAs.

purge—(Optional) Discard all entries in the link-state advertisement database. All link-state advertisements are set to **MAXAGE** and are flooded. The database is repopulated when the originators of the link-state advertisements receive the **MAXAGE** link-state advertisements and reissue them.

**Required Privilege Level**

clear

**Related Documentation**

- [show ospf database on page 359](#)
- [show ospf3 database on page 367](#)

**List of Sample Output**    [clear ospf database on page 339](#)

**Output Fields**    When you enter this command, you are provided feedback on the status of your request.

## Sample Output

**clear ospf database**    user@host> clear ospf database



## clear (ospf | ospf3) database-protection

---

<b>Syntax</b>	clear (ospf   ospf3) database-protection <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 10.2. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Clear the Open Shortest Path First (OSPF) link-state database from its isolated state. Reset the ignore count, ignore timer, and reset timer, and resume normal operations.
<b>Options</b>	instance <i>instance-name</i> —(Optional) Clear the OSPF link-state database for the specified routing instance only.
<b>Required Privilege Level</b>	clear
<b>Output Fields</b>	This command produces no output.

### Sample Output

```
clear ospf      user@host> clear ospf database-protection
database-protection
```



## clear (ospf | ospf3) io-statistics

---

<b>Syntax</b>	clear (ospf   ospf3) io-statistics <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and QFX Series)</b>	clear (ospf   ospf3) io-statistics
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Clear Open Shortest Path First (OSPF) input and output statistics.
<b>Options</b>	none—Clear OSPF input and output statistics.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	clear
<b>List of Sample Output</b>	<a href="#">clear ospf io-statistics on page 341</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

### Sample Output

**clear ospf io-statistics**    user@host> clear ospf io-statistics



## clear (ospf | ospf3) neighbor

<b>Syntax</b>	clear (ospf   ospf3) neighbor <area <i>area-id</i> > <instance <i>instance-name</i> > <interface <i>interface-name</i> > <logical-system (all   <i>logical-system-name</i> )> <neighbor> <realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)>
<b>Syntax (EX Series Switch and QFX Series)</b>	clear (ospf   ospf3) neighbor <area <i>area-id</i> > <instance <i>instance-name</i> > <interface <i>interface-name</i> > <neighbor>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>realm</b> option introduced in Junos OS Release 9.2. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Tear down Open Shortest Path First (OSPF) neighbor connections.
<b>Options</b>	<p>none—Tear down OSPF connections with all neighbors for all routing instances.</p> <p>area <i>area-id</i>—(Optional) Tear down neighbor connections for the specified area only.</p> <p>instance <i>instance-name</i>—(Optional) Tear down neighbor connections for the specified routing instance only.</p> <p>interface <i>interface-name</i>—(Optional) Tear down neighbor connections for the specified interface only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>neighbor</i>—(Optional) Clear the state of the specified neighbor only.</p> <p>realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)—(Optional) (OSPFv3 only) Clear the state of the specified OSPFv3 realm, or address family. Use the <b>realm</b> option to specify an address family for OSPFv3 other than IPv6 unicast, which is the default.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show (ospf   ospf3) neighbor on page 388</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear ospf neighbor on page 343</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.



## Sample Output

```
clear ospf neighbor  user@host> clear ospf neighbor
```



## clear (ospf | ospf3) overload

---

<b>Syntax</b>	clear (ospf   ospf3) overload <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	clear (ospf   ospf3) overload <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Clear the Open Shortest Path First (OSPF) overload bit and rebuild link-state advertisements (LSAs).
<b>Options</b>	none—Clear the overload bit and rebuild LSAs for all routing instances.  instance <i>instance-name</i> —(Optional) Clear the overload bit and rebuild LSAs for the specified routing instance only.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	clear
<b>List of Sample Output</b>	<a href="#">clear ospf overload on page 344</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

### Sample Output

clear ospf overload    user@host> clear ospf overload



## clear (ospf | ospf3) statistics

<b>Syntax</b>	clear (ospf   ospf3) statistics <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )> <realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)>
<b>Syntax (EX Series Switch and QFX Series)</b>	clear (ospf   ospf3) statistics <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>realm</b> option introduced in Junos OS Release 9.2. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Clear Open Shortest Path First (OSPF) statistics.
<b>Options</b>	<p>none—Clear OSPF statistics.</p> <p>instance <i>instance-name</i>—(Optional) Clear statistics for the specified routing instance only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)—(Optional) (OSPFv3 only) Clear statistics for the specified OSPFv3 realm, or address family. Use the <b>realm</b> option to specify an address family for OSPFv3 other than IPv6 unicast, which is the default.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show (ospf   ospf3) statistics on page 404</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear ospf statistics on page 345</a>
<b>Output Fields</b>	See <a href="#">show (ospf   ospf3) statistics</a> for an explanation of output fields.

## Sample Output

**clear ospf statistics** The following sample output displays OSPF statistics before and after the **clear ospf statistics** command is entered:

```
user@host> show ospf statistics
```

Packet type	Total		Last 5 seconds	
	Sent	Received	Sent	Received
Hello	3254	2268	3	1
DbD	41	46	0	0
LSReq	8	7	0	0
LSUpdate	212	154	0	0



```
LSAck          65          98          0          0
```

```
LSAs retransmitted: 3, last 5 seconds: 0
```

```
Flood queue depth: 0
```

```
Total rexmit entries: 0, db summaries: 0, lsreq entries: 0
```

```
Receive errors:
```

```
626 subnet mismatches
```

```
user@host> clear ospf statistics
```

```
user@host> show ospf statistics
```

Packet type	Total		Last 5 seconds	
	Sent	Received	Sent	Received
Hello	3	1	3	1
DbD	0	0	0	0
LSReq	0	0	0	0
LSUpdate	0	0	0	0
LSAck	0	0	0	0

```
LSAs retransmitted: 0, last 5 seconds: 0
```

```
Flood queue depth: 0
```

```
Total rexmit entries: 0, db summaries: 0, lsreq entries: 0
```

```
Receive errors:
```

```
None
```



## show (ospf | ospf3) backup coverage

<b>Syntax</b>	<pre>show (ospf   ospf3) backup coverage &lt;instance <i>instance-name</i>&gt; &lt; logical-system (all   <i>logical-system-name</i>)&gt; &lt;realm (ipv4-unicast   ipv46-unicast)&gt; &lt;topology <i>topology-name</i>&gt;</pre>
<b>Syntax (QFX Series)</b>	<pre>show (ospf   ospf3) backup coverage &lt;instance <i>instance-name</i>&gt; &lt;topology <i>topology-name</i>&gt;</pre>
<b>Release Information</b>	<p>Command introduced in Junos OS Release 10.0.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p>
<b>Description</b>	Display information about the level of backup coverage available for all the nodes and prefixes in the network.
<b>Options</b>	<p>none—Display information about the level backup coverage for all OSPF routing instances in all logical systems.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Display information about the level of backup coverage for all logical systems or for a specific logical system.</p> <p>instance <i>instance-name</i>—(Optional) Display information about the level of backup coverage for a specific OSPF routing instance.</p> <p>realm (ipv4-unicast   ipv6-unicast)—(Optional) (OSPFv3 only) Display information about the level of backup coverage for the specific OSPFv3 realm, or address family.</p> <p>topology (default   <i>topology-name</i>)—(Optional) (OSPFv2 only) Display information about the level of backup coverage for the specific OSPF topology.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">show (ospf   ospf3) backup lsp on page 350</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show ospf backup coverage on page 348</a> <a href="#">show ospf3 backup coverage on page 348</a>
<b>Output Fields</b>	<p><a href="#">Table 99 on page 347</a> lists the output fields for the <b>show (ospf   ospf3) backup coverage</b> command. Output fields are listed in the approximate order in which they appear.</p>

**Table 99: show (ospf | ospf3) backup coverage Output Fields**

Field Name	Field Description
Node Coverage	Information about backup coverage for each OSPF node.
Area	Area number. Area 0.0.0.0 is the backbone.



Table 99: show (ospf | ospf3) backup coverage Output Fields (*continued*)

Field Name	Field Description
<b>Covered Nodes</b>	Number of nodes for which backup coverage is available.
<b>Total Nodes</b>	Total number of OSPF nodes.
<b>Route Coverage</b>	Information about backup coverage for each type of OSPF route.
<b>Path Type</b>	Type of OSPF path: <b>Intra</b> , <b>Inter</b> , <b>Ext1</b> , <b>Ext2</b> , and <b>All</b> .
<b>Covered Routes</b>	For each path type, the number of routes for which backup coverage is available.
<b>Total Routes</b>	For each path type, the total number of configured routes.
<b>Percent Covered</b>	For all nodes and for each path type, the percentage for which backup coverage is available.

## Sample Output

**show ospf backup coverage**      user@host> show ospf backup coverage  
Topology default coverage:

Node Coverage:

Area	Covered Nodes	Total Nodes	Percent Covered
0.0.0.0	4	5	80.00%

Route Coverage:

Path Type	Covered Routes	Total Routes	Percent Covered
Intra	8	14	57.14%
Inter	0	0	100.00%
Ext1	0	0	100.00%
Ext2	1	1	100.00%
All	9	15	60.00%

**show ospf3 backup coverage**      user @host > show ospf3 backup coverage  
show ospf3 backup coverage  
Node Coverage:

Area	Covered Nodes	Total Nodes	Percent Covered
0.0.0.0	4	5	80.00%

Route Coverage:

Path Type	Covered Routes	Total Routes	Percent Covered
Intra	4	6	66.67%
Inter	0	0	100.00%
Ext1	0	0	100.00%



Ext2	1	1	100.00%
All	5	7	71.43%



## show (ospf | ospf3) backup lsp

**Syntax** `show (ospf | ospf3) backup lsp`  
`<logical-system (all | logical-system-name)>`  
`<realm (ipv4-unicast | ipv6-unicast)>`

**Release Information** Command introduced in Junos OS Release 10.0.

**Description** Display information about MPLS label-switched-paths (LSPs) designated as backup routes for OSPF routes.



**NOTE:** MPLS LSPs can be used as backup routes only for routes in the default OSPFv2 topology and not for any configured topology. Additionally, MPLS LSPs cannot be used as backup routes for nondefault instances either for OSPFv2 or OSPFv3.

**Options** none—Display information all MPLS LSPs designated as backup routes.

`logical-system (all | logical-system-name)`—(Optional) Display information about MPLS LSPs designated as backup routes for all logical systems or a specific logical system.

`realm (ipv4-unicast | ipv6-unicast)`—(Optional) (OSPFv3 only) Display information about MPLS LSPs designated as backup routes for a specific realm, or address family.

**Required Privilege Level** view

**Related Documentation**

- [show \(ospf | ospf3\) backup coverage on page 347](#)

**List of Sample Output** [show ospf backup lsp on page 351](#)  
[show ospf3 backup lsp on page 351](#)

**Output Fields** [Table 100 on page 350](#) lists the output fields for the `show (ospf | ospf3) backup lsp` command. Output fields are listed in the approximate order in which they appear.

**Table 100: show (ospf | ospf3) backup lsp Output Fields**

Field Name	Field Description
<i>MPLS LSP name</i>	Name of each MPLS LSP designated as a backup path.
Egress	IP address of the egress router for the LSP.



Table 100: show (ospf | ospf3) backup lsp Output Fields (*continued*)

Field Name	Field Description
Status	<p>State of the LSP:</p> <ul style="list-style-type: none"> <li>• <b>Up</b>—The router can detect RSVP hello messages from the neighbor.</li> <li>• <b>Down</b>—The router has received one of the following indications: <ul style="list-style-type: none"> <li>• Communication failure from the neighbor.</li> <li>• Communication from IGP that the neighbor is unavailable.</li> <li>• Change in the sequence numbers in the RSVP hello messages sent by the neighbor.</li> </ul> </li> <li>• <b>Deleted</b>—The LSP is no longer available as a backup path.</li> </ul>
Last change	Time elapsed since the neighbor state changed either from <b>up</b> or <b>down</b> or from <b>down</b> to <b>up</b> . The format is <i>hh:mm:ss</i> .
TE-metric	Configured traffic engineering metric.
Metric	Configured metric.

### Sample Output

```
show ospf backup lsp  user@host> show ospf backup lsp
tobanff
Egress: 10.255.71.239, Status: up, Last change: 00:00:23
TE-metric: 0, Metric: 0
```

### Sample Output

```
show ospf3 backup lsp user@host> show ospf3 backup lsp
tobanff
Egress: 10.255.71.239, Status: up, Last change: 00:00:45
TE-metric: 0, Metric: 0
```



## show (ospf | ospf3) backup spf

<b>Syntax</b>	<pre>show (ospf   ospf3) backup spf &lt;brief   detail&gt; &lt;area <i>area-id</i>&gt; &lt;instance <i>instance-name</i>&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;no-coverage&gt; &lt;node-id&gt; &lt;realm (ipv4-unicast   ipv6-unicast)&gt; &lt;topology (default   ipv4-multicast   <i>topology-name</i>)&gt;</pre>
<b>Syntax (QFX Series)</b>	<pre>show (ospf   ospf3) backup spf &lt;brief   detail&gt; &lt;area <i>area-id</i>&gt; &lt;instance <i>instance-name</i>&gt; &lt;no-coverage&gt; &lt;node-id&gt; &lt;topology (default   ipv4-multicast   <i>topology-name</i>)&gt;</pre>
<b>Release Information</b>	<p>Command introduced in JUNOS Release 10.0.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p>
<b>Description</b>	Display information about OSPF shortest-path-first calculations for backup paths.
<b>Options</b>	<p>none—Display information about OSPF shortest-path-first (SPF) calculations for all backup paths for all destination nodes.</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>area <i>area-id</i>—(Optional) Display the area information.</p> <p>instance <i>instance-name</i>—(Optional) Display information about the routing instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Display information about all logical systems or a specific logical system.</p> <p>no-coverage—(Optional) Display information if there is no backup coverage.</p> <p>node-id—(Optional) Display information about the node specified.</p> <p>realm (ipv4-unicast   ipv6-unicast)—(Optional) Display information about the <b>ipv4</b> or <b>ipv6</b> realm.</p> <p>topology (default   ipv4-multicast   <i>topology-name</i>)—(Optional) (OSPFv2 only) Display information about the default topology, IPv4 multicast topology, or a specific topology.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<p><a href="#">show ospf backup spf on page 353</a></p> <p><a href="#">show ospf backup spf detail on page 353</a></p> <p><a href="#">show ospf3 backup spf on page 356</a></p>



**Output Fields** Table 101 on page 353 lists the output fields for the **show (ospf |ospf3) backup spf** command. Output fields are listed in the approximate order in which they appear.

**Table 101: show (ospf |ospf3) backup spf Output Fields**

Field Name	Field Description	Level of Output
<b>Area <i>area-id</i> results</b>	Area for which the results are displayed. Area 0.0.0.0 is the backbone area.	All levels
<i>address</i>	Address of the node for which the results are displayed.	All levels
<b>Self to Destination Metric</b>	Metric from the node to the destination.	All levels
<b>Parent Node</b>	Address of the parent node.	All levels
<b>Primary next-hop</b>	Address of the next hop.	All levels
<b>Backup Neighbor</b>	Address of the backup neighbor or LSP endpoint and the following information: <ul style="list-style-type: none"> <li>Neighbor to Destination Metric</li> <li>Neighbor to Self Metric</li> <li>Self to Neighbor Metric</li> <li>Status (Eligible, Not Eligible, Not Evaluated) and the reason for the status.</li> </ul> <p><b>NOTE:</b> If the backup neighbor is an LSP endpoint, it is indicated as such after the neighbor address.</p>	All levels

## Sample Output

```
show ospf backup spf  user@host> show ospf backup spf
Topology default results:

Area 0.0.0.0 results:

pro16-d-1o0.xxx.yyyy.net
Self to Destination Metric: 1
Parent Node: pro16-b-1o0.xxx.yyyy.net
Primary next-hop: at-1/0/1.0
Backup Neighbor: pro16-c-1o0.xxx.yyyy.net (LSP endpoint)
Neighbor to Destination Metric: 4, Neighbor to Self Metric: 3
Self to Neighbor Metric: 3
Not eligible, Reason: Path loops
Backup Neighbor: pro16-d-1o0.xxx.yyyy.net
Neighbor to Destination Metric: 0, Neighbor to Self Metric: 1
Self to Neighbor Metric: 1
Not eligible, Reason: Primary next-hop link fate sharing
...
```

```
show ospf backup spf detail  user@host> show ospf backup spf detail
Topology default results:

Area 0.0.0.0 results:
```



## 11.14.10.2

Self to Destination Metric: 1  
Parent Node: 10.255.70.103  
Primary next-hop: ae0.0  
Backup Neighbor: 10.255.71.243  
  Neighbor to Destination Metric: 2, Neighbor to Self Metric: 1  
  Self to Neighbor Metric: 1  
  Not eligible, Reason: Path loops  
Backup Neighbor: 10.255.71.52  
  Neighbor to Destination Metric: 15, Neighbor to Self Metric: 15  
  Self to Neighbor Metric: 1  
  Not eligible, Reason: Primary next-hop link fate sharing  
Backup Neighbor: 10.255.71.242  
  Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15  
  Self to Neighbor Metric: 1  
  Not eligible, Reason: Path loops

## 10.255.71.52

Self to Destination Metric: 1  
Parent Node: 11.14.10.2  
Primary next-hop: ae0.0 via 11.14.10.2  
Backup Neighbor: 10.255.71.52  
  Neighbor to Destination Metric: 0, Neighbor to Self Metric: 15  
  Self to Neighbor Metric: 1  
  Not eligible, Reason: Primary next-hop link fate sharing  
Backup Neighbor: 10.255.71.243  
  Neighbor to Destination Metric: 2, Neighbor to Self Metric: 1  
  Self to Neighbor Metric: 1  
  Not eligible, Reason: Path loops  
Backup Neighbor: 10.255.71.242  
  Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15  
  Self to Neighbor Metric: 1  
  Not eligible, Reason: Path loops

## 10.255.71.242

Self to Destination Metric: 1  
Parent Node: 10.255.70.103  
Primary next-hop: as0.0  
Backup Neighbor: 10.255.71.242  
  Neighbor to Destination Metric: 0, Neighbor to Self Metric: 15  
  Self to Neighbor Metric: 1  
  Not eligible, Reason: Primary next-hop link fate sharing  
Backup Neighbor: 10.255.71.243  
  Neighbor to Destination Metric: 2, Neighbor to Self Metric: 1  
  Self to Neighbor Metric: 1  
  Not eligible, Reason: Path loops  
Backup Neighbor: 10.255.71.52  
  Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15  
  Self to Neighbor Metric: 1  
  Not eligible, Reason: Path loops

## 10.255.71.243

Self to Destination Metric: 1  
Parent Node: 10.255.70.103  
Primary next-hop: so-6/0/0.0  
Backup Neighbor: 10.255.71.243  
  Neighbor to Destination Metric: 0, Neighbor to Self Metric: 1  
  Self to Neighbor Metric: 1  
  Not eligible, Reason: Primary next-hop link fate sharing  
Backup Neighbor: 10.255.71.52  
  Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15



Self to Neighbor Metric: 1  
Not eligible, Reason: Path loops  
Backup Neighbor: 10.255.71.242  
Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15  
Self to Neighbor Metric: 1  
Not eligible, Reason: Path loops

#### 12.15.0.1

Self to Destination Metric: 2  
Parent Node: 10.255.71.243  
Primary next-hop: so-6/0/0.0  
Backup next-hop: ae0.0 via 11.14.10.2  
Backup Neighbor: 10.255.71.243  
Neighbor to Destination Metric: 1, Neighbor to Self Metric: 1  
Self to Neighbor Metric: 1  
Not eligible, Reason: Primary next-hop link fate sharing  
Backup Neighbor: 10.255.71.52  
Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15  
Self to Neighbor Metric: 1  
Eligible, Reason: Contributes backup next-hop  
Backup Neighbor: 10.255.71.242  
Neighbor to Destination Metric: 17, Neighbor to Self Metric: 15  
Self to Neighbor Metric: 1  
Not evaluated, Reason: Interface is already covered

#### 10.255.71.238

Self to Destination Metric: 2  
Parent Node: 10.255.71.243  
Primary next-hop: so-6/0/0.0  
Backup next-hop: as0.0  
Backup Neighbor: 10.255.71.243  
Neighbor to Destination Metric: 1, Neighbor to Self Metric: 1  
Self to Neighbor Metric: 1  
Not eligible, Reason: Primary next-hop link fate sharing  
Backup Neighbor: 10.255.71.242  
Neighbor to Destination Metric: 15, Neighbor to Self Metric: 15  
Self to Neighbor Metric: 1  
Eligible, Reason: Contributes backup next-hop  
Backup Neighbor: 10.255.71.52  
Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15  
Self to Neighbor Metric: 1  
Not evaluated, Reason: Interface is already covered

#### 10.255.71.239

Self to Destination Metric: 2  
Parent Node: 12.15.0.1  
Primary next-hop: so-6/0/0.0  
Backup next-hop: ae0.0 via 11.14.10.2  
Backup Neighbor: 10.255.71.243  
Neighbor to Destination Metric: 1, Neighbor to Self Metric: 1  
Self to Neighbor Metric: 1  
Not eligible, Reason: Primary next-hop link fate sharing  
Backup Neighbor: 10.255.71.52  
Neighbor to Destination Metric: 15, Neighbor to Self Metric: 15  
Self to Neighbor Metric: 1  
Eligible, Reason: Contributes backup next-hop  
Backup Neighbor: 10.255.71.242  
Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15  
Self to Neighbor Metric: 1  
Not evaluated, Reason: Interface is already covered



```

14.15.0.2
  Self to Destination Metric: 3
  Parent Node: 10.255.71.239
  Primary next-hop: so-6/0/0.0
  Backup next-hop: ae0.0 via 11.14.10.2
  Backup Neighbor: 10.255.71.243
    Neighbor to Destination Metric: 2, Neighbor to Self Metric: 1
    Self to Neighbor Metric: 1
    Not eligible, Reason: Primary next-hop link fate sharing
  Backup Neighbor: 10.255.71.52
    Neighbor to Destination Metric: 15, Neighbor to Self Metric: 15
    Self to Neighbor Metric: 1
    Eligible, Reason: Contributes backup next-hop
  Backup Neighbor: 10.255.71.242
    Neighbor to Destination Metric: 17, Neighbor to Self Metric: 15
    Self to Neighbor Metric: 1
    Not evaluated, Reason: Interface is already covered

```

```

show ospf3 backup spf  user@host> show ospf3 backup spf
Area 0.0.0.0 results:

```

```

10.255.71.52;0.0.0.5
  Self to Destination Metric: 1
  Parent Node: 10.255.70.103
  Primary next-hop: ae0.0
  Backup Neighbor: 10.255.71.243
    Neighbor to Destination Metric: 2, Neighbor to Self Metric: 1
    Self to Neighbor Metric: 1
    Not eligible, Reason: Path loops
  Backup Neighbor: 10.255.71.52
    Neighbor to Destination Metric: 15, Neighbor to Self Metric: 15
    Self to Neighbor Metric: 1
    Not eligible, Reason: Primary next-hop link fate sharing
  Backup Neighbor: 10.255.71.242
    Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15
    Self to Neighbor Metric: 1
    Not eligible, Reason: Path loops

10.255.71.52
  Self to Destination Metric: 1
  Parent Node: 10.255.71.52;0.0.0.5
  Primary next-hop: ae0.0 via fe80::290:69ff:fe0f:67f0
  Backup Neighbor: 10.255.71.52
    Neighbor to Destination Metric: 0, Neighbor to Self Metric: 15
    Self to Neighbor Metric: 1
    Not eligible, Reason: Primary next-hop link fate sharing
  Backup Neighbor: 10.255.71.243
    Neighbor to Destination Metric: 2, Neighbor to Self Metric: 1
    Self to Neighbor Metric: 1
    Not eligible, Reason: Path loops
  Backup Neighbor: 10.255.71.242
    Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15
    Self to Neighbor Metric: 1
    Not eligible, Reason: Path loops

10.255.71.242
  Self to Destination Metric: 1
  Parent Node: 10.255.70.103
  Primary next-hop: as0.0
  Backup Neighbor: 10.255.71.242
    Neighbor to Destination Metric: 0, Neighbor to Self Metric: 15

```



```

    Self to Neighbor Metric: 1
    Not eligible, Reason: Primary next-hop link fate sharing
Backup Neighbor: 10.255.71.243
    Neighbor to Destination Metric: 2, Neighbor to Self Metric: 1
    Self to Neighbor Metric: 1
    Not eligible, Reason: Path loops
Backup Neighbor: 10.255.71.52
    Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15
    Self to Neighbor Metric: 1
    Not eligible, Reason: Path loops

10.255.71.243
    Self to Destination Metric: 1
    Parent Node: 10.255.70.103
    Primary next-hop: so-6/0/0.0
Backup Neighbor: 10.255.71.243
    Neighbor to Destination Metric: 0, Neighbor to Self Metric: 1
    Self to Neighbor Metric: 1
    Not eligible, Reason: Primary next-hop link fate sharing
Backup Neighbor: 10.255.71.52
    Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15
    Self to Neighbor Metric: 1
    Not eligible, Reason: Path loops
Backup Neighbor: 10.255.71.242
    Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15
    Self to Neighbor Metric: 1
    Not eligible, Reason: Path loops

10.255.71.243;0.0.0.2
    Self to Destination Metric: 2
    Parent Node: 10.255.71.243
    Primary next-hop: so-6/0/0.0
Backup next-hop: ae0.0 via fe80::290:69ff:fe0f:67f0
Backup Neighbor: 10.255.71.243
    Neighbor to Destination Metric: 1, Neighbor to Self Metric: 1
    Self to Neighbor Metric: 1
    Not eligible, Reason: Primary next-hop link fate sharing
Backup Neighbor: 10.255.71.52
    Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15
    Self to Neighbor Metric: 1
    Eligible, Reason: Contributes backup next-hop
Backup Neighbor: 10.255.71.242
    Neighbor to Destination Metric: 17, Neighbor to Self Metric: 15
    Self to Neighbor Metric: 1
    Not evaluated, Reason: Interface is already covered

10.255.71.238
    Self to Destination Metric: 2
    Parent Node: 10.255.71.243
    Primary next-hop: so-6/0/0.0
Backup next-hop: as0.0
Backup Neighbor: 10.255.71.243
    Neighbor to Destination Metric: 1, Neighbor to Self Metric: 1
    Self to Neighbor Metric: 1
    Not eligible, Reason: Primary next-hop link fate sharing
Backup Neighbor: 10.255.71.242
    Neighbor to Destination Metric: 15, Neighbor to Self Metric: 15
    Self to Neighbor Metric: 1
    Eligible, Reason: Contributes backup next-hop
Backup Neighbor: 10.255.71.52
    Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15

```



Self to Neighbor Metric: 1  
Not evaluated, Reason: Interface is already covered

10.255.71.239

Self to Destination Metric: 2  
Parent Node: 10.255.71.243;0.0.0.2  
Primary next-hop: so-6/0/0.0  
Backup next-hop: ae0.0 via fe80::290:69ff:fe0f:67f0  
Backup Neighbor: 10.255.71.243  
Neighbor to Destination Metric: 1, Neighbor to Self Metric: 1  
Self to Neighbor Metric: 1  
Not eligible, Reason: Primary next-hop link fate sharing  
Backup Neighbor: 10.255.71.52  
Neighbor to Destination Metric: 15, Neighbor to Self Metric: 15  
Self to Neighbor Metric: 1  
Eligible, Reason: Contributes backup next-hop  
Backup Neighbor: 10.255.71.242  
Neighbor to Destination Metric: 16, Neighbor to Self Metric: 15  
Self to Neighbor Metric: 1  
Not evaluated, Reason: Interface is already covered

10.255.71.239;0.0.0.4

Self to Destination Metric: 3  
Parent Node: 10.255.71.239  
Primary next-hop: so-6/0/0.0  
Backup next-hop: ae0.0 via fe80::290:69ff:fe0f:67f0  
Backup Neighbor: 10.255.71.243  
Neighbor to Destination Metric: 2, Neighbor to Self Metric: 1  
Self to Neighbor Metric: 1  
Not eligible, Reason: Primary next-hop link fate sharing  
Backup Neighbor: 10.255.71.52  
Neighbor to Destination Metric: 15, Neighbor to Self Metric: 15  
Self to Neighbor Metric: 1  
Eligible, Reason: Contributes backup next-hop  
Backup Neighbor: 10.255.71.242  
Neighbor to Destination Metric: 17, Neighbor to Self Metric: 15  
Self to Neighbor Metric: 1  
Not evaluated, Reason: Interface is already covered



## show ospf database

<b>Syntax</b>	<pre>show ospf database &lt;brief   detail   extensive   summary&gt; &lt;advertising-router (address   self)&gt; &lt;area area-id&gt; &lt;asbrsummary&gt; &lt;external&gt; &lt;instance instance-name&gt; &lt;link-local&gt; &lt;logical-system (all   logical-system-name)&gt; &lt;lsa-id lsa-id&gt; &lt;netsummary&gt; &lt;network&gt; &lt;nssa&gt; &lt;opaque-area&gt; &lt;router&gt;</pre>
<b>Syntax (EX Series Switch and QFX Series)</b>	<pre>show ospf database &lt;brief   detail   extensive   summary&gt; &lt;advertising-router (address   self)&gt; &lt;area area-id&gt; &lt;asbrsummary&gt; &lt;external&gt; &lt;instance instance-name&gt; &lt;link-local&gt; &lt;lsa-id lsa-id&gt; &lt;netsummary&gt; &lt;network&gt; &lt;nssa&gt; &lt;opaque-area&gt; &lt;router&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>advertising-router self (address   self)</b> option introduced in Junos OS Release 9.5.</p> <p><b>advertising-router self (address   self)</b> option introduced in Junos OS Release 9.5 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p>
<b>Description</b>	Display the entries in the Open Shortest Path First version 2 (OSPFv2) link-state database, which contains data about link-state advertisement (LSA) packets.
<b>Options</b>	<p>none—Display standard information about entries in the OSPFv2 link-state database for all routing instances.</p> <p>brief   detail   extensive   summary—(Optional) Display the specified level of output.</p> <p>advertising-router (address   self)—(Optional) Display the LSAs advertised either by a particular routing device or by this routing device.</p> <p>area area-id—(Optional) Display the LSAs in a particular area.</p>



asbrsummary—(Optional) Display summary AS boundary router LSA entries.

external—(Optional) Display external LSAs.

instance *instance-name*—(Optional) Display all OSPF database information under the named routing instance.

link-local—(Optional) Display information about link-local LSAs.

logical-system (all | *logical-system-name*)—(Optional) Perform this operation on all logical systems or on a particular logical system.

lsa-id *lsa-id*—(Optional) Display the LSA with the specified LSA identifier.

netsummary—(Optional) Display summary network LSAs.

network—(Optional) Display information about network LSAs.

nssa—(Optional) Display information about not-so-stubby area (NSSA) LSAs.

opaque-area—(Optional) Display opaque area-scope LSAs.

router—(Optional) Display information about router LSAs.

**Required Privilege Level**

view

**Related Documentation**

- [clear \(ospf | ospf3\) database on page 337](#)

**List of Sample Output**

[show ospf database on page 362](#)  
[show ospf database brief on page 362](#)  
[show ospf database detail on page 362](#)  
[show ospf database extensive on page 364](#)  
[show ospf database summary on page 366](#)

**Output Fields**

[Table 102 on page 360](#) describes the output fields for the **show ospf database** command. Output fields are listed in the approximate order in which they appear.

**Table 102: show ospf database Output Fields**

Field Name	Field Description	Level of Output
area	Area number. Area 0.0.0.0 is the backbone area.	All levels
Type	Type of link advertisement: ASBRSum, Extern, Network, NSSA, OpaqArea, Router, or Summary.	All levels
ID	LSA identifier included in the advertisement. An asterisk preceding the identifier marks database entries that originated from the local routing device.	All levels
Adv Rtr	Address of the routing device that sent the advertisement.	All levels
Seq	Link sequence number of the advertisement.	All levels



Table 102: show ospf database Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Age</b>	Time elapsed since the LSA was originated, in seconds.	All levels
<b>Opt</b>	Optional OSPF capabilities associated with the LSA.	All levels
<b>Cksum</b>	Checksum value of the LSA.	All levels
<b>Len</b>	Length of the advertisement, in bytes.	All levels
<b>Router</b>	Router link-state advertisement information: <ul style="list-style-type: none"> <li>• <b>bits</b>—Flags describing the routing device that generated the LSP.</li> <li>• <b>link count</b>—Number of links in the advertisement.</li> <li>• <b>id</b>—ID of a routing device or subnet on the link.</li> <li>• <b>data</b>—For stub networks, the subnet mask; otherwise, the IP address of the routing device that generated the LSP.</li> <li>• <b>type</b>—Type of link. It can be <b>PointToPoint</b>, <b>Transit</b>, <b>Stub</b>, or <b>Virtual</b>.</li> <li>• <b>TOS count</b>—Number of type-of-service (ToS) entries in the advertisement.</li> <li>• <b>TOS 0 metric</b>—Metric for ToS 0.</li> <li>• <b>TOS</b>—Type-of-service (ToS) value.</li> <li>• <b>metric</b>—Metric for the ToS.</li> </ul>	<b>detail extensive</b>
<b>Network</b>	Network link-state advertisement information: <ul style="list-style-type: none"> <li>• <b>mask</b>—Network mask.</li> <li>• <b>attached router</b>—ID of the attached neighbor.</li> </ul>	<b>detail extensive</b>
<b>Summary</b>	Summary link-state advertisement information: <ul style="list-style-type: none"> <li>• <b>mask</b>—Network mask.</li> <li>• <b>TOS</b>—Type-of-service (ToS) value.</li> <li>• <b>metric</b>—Metric for the ToS.</li> </ul>	<b>detail extensive</b>
<b>Gen timer</b>	How long until the LSA is regenerated.	<b>extensive</b>
<b>Aging timer</b>	How long until the LSA expires.	<b>extensive</b>
<b>Installed <i>hh:mm:ss</i> ago</b>	How long ago the route was installed.	<b>extensive</b>
<b>expires in <i>hh:mm:ss</i></b>	How long until the route expires.	<b>extensive</b>
<b>sent <i>hh:mm:ss</i> ago</b>	How long ago the LSA was sent.	<b>extensive</b>
<b>Last changed <i>hh:mm:ss</i> ago</b>	How long ago the route was changed.	<b>extensive</b>
<b>Change count</b>	Number of times the route has changed.	<b>extensive</b>



Table 102: show ospf database Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Ours</b>	Indicates that this is a local advertisement.	<b>extensive</b>
<b>Router LSAs</b>	Number of router link-state advertisements in the link-state database.	<b>summary</b>
<b>Network LSAs</b>	Number of network link-state advertisements in the link-state database.	<b>summary</b>
<b>Summary LSAs</b>	Number of summary link-state advertisements in the link-state database.	<b>summary</b>
<b>NSSA LSAs</b>	Number of not-so-stubby area link-state advertisements in the link-state database.	<b>summary</b>

## Sample Output

```

show ospf database      user@host> show ospf database
                          OSPF link state database, Area 0.0.0.1
                          Type      ID          Adv Rtr      Seq      Age  Opt  Cksum  Len
                          Router    10.255.70.103  10.255.70.103 0x80000002  215  0x20 0x4112  48
                          Router    *10.255.71.242 10.255.71.242 0x80000002  214  0x20 0x11b1  48
                          Summary   *23.1.1.0      10.255.71.242 0x80000002  172  0x20 0x6d72  28
                          Summary   *24.1.1.0      10.255.71.242 0x80000002  177  0x20 0x607e  28
                          NSSA      *33.1.1.1      10.255.71.242 0x80000002  217  0x28 0x73bd  36

                          OSPF link state database, Area 0.0.0.2
                          Type      ID          Adv Rtr      Seq      Age  Opt  Cksum  Len
                          Router    10.255.71.52  10.255.71.52  0x80000004  174  0x20 0xd021  36
                          Router    *10.255.71.242 10.255.71.242 0x80000003  173  0x20 0xe191  36
                          Network   *23.1.1.1      10.255.71.242 0x80000002  173  0x20 0x9c76  32
                          Summary   *12.1.1.0      10.255.71.242 0x80000001  217  0x20 0xfeec  28
                          Summary   *24.1.1.0      10.255.71.242 0x80000002  177  0x20 0x607e  28
                          NSSA      *33.1.1.1      10.255.71.242 0x80000001  222  0x28 0xe047  36

                          OSPF link state database, Area 0.0.0.3
                          Type      ID          Adv Rtr      Seq      Age  Opt  Cksum  Len
                          Router    10.255.71.238 10.255.71.238 0x80000003  179  0x20 0x3942  36
                          Router    *10.255.71.242 10.255.71.242 0x80000003  177  0x20 0xf37d  36
                          Network   *24.1.1.1      10.255.71.242 0x80000002  177  0x20 0xc591  32
                          Summary   *12.1.1.0      10.255.71.242 0x80000001  217  0x20 0xfeec  28
                          Summary   *23.1.1.0      10.255.71.242 0x80000002  172  0x20 0x6d72  28
                          NSSA      *33.1.1.1      10.255.71.242 0x80000001  222  0x28 0xeb3b  36

show ospf database      The output for the show ospf database brief command is identical to that for the show
brief                   ospf database command. For sample output, see show ospf database on page 362.

show ospf database      user@host> show ospf database detail
detail                  OSPF link state database, Area 0.0.0.1
                          Type      ID          Adv Rtr      Seq      Age  Opt  Cksum  Len
                          Router    10.255.70.103 10.255.70.103 0x80000002  261  0x20 0x4112  48
                          bits 0x0, link count 2
                          id 10.255.71.242, data 12.1.1.1, Type PointToPoint (1)
                          TOS count 0, TOS 0 metric 1
                          id 12.1.1.0, data 255.255.255.0, Type Stub (3)
                          TOS count 0, TOS 0 metric 1

```



```

Router *10.255.71.242    10.255.71.242    0x80000002    260    0x20 0x11b1    48
  bits 0x3, link count 2
  id 10.255.70.103, data 12.1.1.2, Type PointToPoint (1)
  TOS count 0, TOS 0 metric 1
  id 12.1.1.0, data 255.255.255.0, Type Stub (3)
  TOS count 0, TOS 0 metric 1
Summary *23.1.1.0        10.255.71.242    0x80000002    218    0x20 0x6d72    28
  mask 255.255.255.0
  TOS 0x0, metric 1
Summary *24.1.1.0        10.255.71.242    0x80000002    223    0x20 0x607e    28
  mask 255.255.255.0
  TOS 0x0, metric 1
NSSA  *33.1.1.1          10.255.71.242    0x80000002    263    0x28 0x73bd    36
  mask 255.255.255.255
  Type 2, TOS 0x0, metric 0, fwd addr 12.1.1.2, tag 0.0.0.0

```

OSPF link state database, Area 0.0.0.2

Type	ID	Adv Rtr	Seq	Age	Opt	Cksum	Len
Router	10.255.71.52	10.255.71.52	0x80000004	220	0x20	0xd021	36
bits 0x0, link count 1							
id 23.1.1.1, data 23.1.1.2, Type Transit (2)							
TOS count 0, TOS 0 metric 1							
Router	*10.255.71.242	10.255.71.242	0x80000003	219	0x20	0xe191	36
bits 0x3, link count 1							
id 23.1.1.1, data 23.1.1.1, Type Transit (2)							
TOS count 0, TOS 0 metric 1							
Network	*23.1.1.1	10.255.71.242	0x80000002	219	0x20	0x9c76	32
mask 255.255.255.0							
attached router 10.255.71.242							
attached router 10.255.71.52							
Summary	*12.1.1.0	10.255.71.242	0x80000001	263	0x20	0xfeec	28
mask 255.255.255.0							
TOS 0x0, metric 1							
Summary	*24.1.1.0	10.255.71.242	0x80000002	223	0x20	0x607e	28
mask 255.255.255.0							
TOS 0x0, metric 1							
NSSA	*33.1.1.1	10.255.71.242	0x80000001	268	0x28	0xe047	36
mask 255.255.255.255							
Type 2, TOS 0x0, metric 0, fwd addr 23.1.1.1, tag 0.0.0.0							

OSPF link state database, Area 0.0.0.3

Type	ID	Adv Rtr	Seq	Age	Opt	Cksum	Len
Router	10.255.71.238	10.255.71.238	0x80000003	225	0x20	0x3942	36
bits 0x0, link count 1							
id 24.1.1.1, data 24.1.1.2, Type Transit (2)							
TOS count 0, TOS 0 metric 1							
Router	*10.255.71.242	10.255.71.242	0x80000003	223	0x20	0xf37d	36
bits 0x3, link count 1							
id 24.1.1.1, data 24.1.1.1, Type Transit (2)							
TOS count 0, TOS 0 metric 1							
Network	*24.1.1.1	10.255.71.242	0x80000002	223	0x20	0xc591	32
mask 255.255.255.0							
attached router 10.255.71.242							
attached router 10.255.71.238							
Summary	*12.1.1.0	10.255.71.242	0x80000001	263	0x20	0xfeec	28
mask 255.255.255.0							
TOS 0x0, metric 1							
Summary	*23.1.1.0	10.255.71.242	0x80000002	218	0x20	0x6d72	28
mask 255.255.255.0							
TOS 0x0, metric 1							
NSSA	*33.1.1.1	10.255.71.242	0x80000001	268	0x28	0xeb3b	36



```

mask 255.255.255.255
Type 2, TOS 0x0, metric 0, fwd addr 24.1.1.1, tag 0.0.0.0

show ospf database extensive user@host> show ospf database extensive
      OSPF link state database, Area 0.0.0.1
      Type      ID      Adv Rtr      Seq      Age  Opt  Cksum  Len
Router  10.255.70.103  10.255.70.103  0x80000002  286  0x20 0x4112  48
  bits 0x0, link count 2
  id 10.255.71.242, data 12.1.1.1, Type PointToPoint (1)
  TOS count 0, TOS 0 metric 1
  id 12.1.1.0, data 255.255.255.0, Type Stub (3)
  TOS count 0, TOS 0 metric 1
  Aging timer 00:55:14
  Installed 00:04:43 ago, expires in 00:55:14
  Last changed 00:04:43 ago, Change count: 2
Router  *10.255.71.242  10.255.71.242  0x80000002  285  0x20 0x11b1  48
  bits 0x3, link count 2
  id 10.255.70.103, data 12.1.1.2, Type PointToPoint (1)
  TOS count 0, TOS 0 metric 1
  id 12.1.1.0, data 255.255.255.0, Type Stub (3)
  TOS count 0, TOS 0 metric 1
  Gen timer 00:45:15
  Aging timer 00:55:15
  Installed 00:04:45 ago, expires in 00:55:15, sent 00:04:43 ago
  Last changed 00:04:45 ago, Change count: 2, Ours
Summary *23.1.1.0      10.255.71.242  0x80000002  243  0x20 0x6d72  28
  mask 255.255.255.0
  TOS 0x0, metric 1
  Gen timer 00:45:57
  Aging timer 00:55:57
  Installed 00:04:03 ago, expires in 00:55:57, sent 00:04:01 ago
  Last changed 00:04:48 ago, Change count: 1, Ours
Summary *24.1.1.0      10.255.71.242  0x80000002  248  0x20 0x607e  28
  mask 255.255.255.0
  TOS 0x0, metric 1
  Gen timer 00:45:52
  Aging timer 00:55:52
  Installed 00:04:08 ago, expires in 00:55:52, sent 00:04:06 ago
  Last changed 00:04:48 ago, Change count: 1, Ours
NSSA    *33.1.1.1      10.255.71.242  0x80000002  288  0x28 0x73bd  36
  mask 255.255.255.255
  Type 2, TOS 0x0, metric 0, fwd addr 12.1.1.2, tag 0.0.0.0
  Gen timer 00:45:12
  Aging timer 00:55:12
  Installed 00:04:48 ago, expires in 00:55:12, sent 00:04:48 ago
  Last changed 00:04:48 ago, Change count: 2, Ours

      OSPF link state database, Area 0.0.0.2
      Type      ID      Adv Rtr      Seq      Age  Opt  Cksum  Len
Router  10.255.71.52  10.255.71.52  0x80000004  245  0x20 0xd021  36
  bits 0x0, link count 1
  id 23.1.1.1, data 23.1.1.2, Type Transit (2)
  TOS count 0, TOS 0 metric 1
  Aging timer 00:55:55
  Installed 00:04:02 ago, expires in 00:55:55
  Last changed 00:04:02 ago, Change count: 2
Router  *10.255.71.242  10.255.71.242  0x80000003  244  0x20 0xe191  36
  bits 0x3, link count 1
  id 23.1.1.1, data 23.1.1.1, Type Transit (2)
  TOS count 0, TOS 0 metric 1
  Gen timer 00:45:56

```



```

Aging timer 00:55:56
Installed 00:04:04 ago, expires in 00:55:56, sent 00:04:02 ago
Last changed 00:04:04 ago, Change count: 2, Ours
Network *23.1.1.1      10.255.71.242    0x80000002    244  0x20 0x9c76   32
mask 255.255.255.0
attached router 10.255.71.242
attached router 10.255.71.52
Gen timer 00:45:56
Aging timer 00:55:56
Installed 00:04:04 ago, expires in 00:55:56, sent 00:04:02 ago
Last changed 00:04:04 ago, Change count: 1, Ours
Summary *12.1.1.0      10.255.71.242    0x80000001    288  0x20 0xfeec   28
mask 255.255.255.0
TOS 0x0, metric 1
Gen timer 00:45:12
Aging timer 00:55:12
Installed 00:04:48 ago, expires in 00:55:12, sent 00:04:04 ago
Last changed 00:04:48 ago, Change count: 1, Ours
Summary *24.1.1.0      10.255.71.242    0x80000002    248  0x20 0x607e   28
mask 255.255.255.0
TOS 0x0, metric 1
Gen timer 00:45:52
Aging timer 00:55:52
Installed 00:04:08 ago, expires in 00:55:52, sent 00:04:04 ago
Last changed 00:04:48 ago, Change count: 1, Ours
NSSA  *33.1.1.1      10.255.71.242    0x80000001    293  0x28 0xe047   36
mask 255.255.255.255
Type 2, TOS 0x0, metric 0, fwd addr 23.1.1.1, tag 0.0.0.0
Gen timer 00:45:07
Aging timer 00:55:07
Installed 00:04:53 ago, expires in 00:55:07, sent 00:04:04 ago
Last changed 00:04:53 ago, Change count: 1, Ours

```

#### OSPF link state database, Area 0.0.0.3

```

Type      ID          Adv Rtr      Seq          Age  Opt  Cksum  Len
Router  10.255.71.238    10.255.71.238  0x80000003    250  0x20 0x3942   36
bits 0x0, link count 1
id 24.1.1.1, data 24.1.1.2, Type Transit (2)
TOS count 0, TOS 0 metric 1
Aging timer 00:55:50
Installed 00:04:07 ago, expires in 00:55:50
Last changed 00:04:07 ago, Change count: 2
Router  *10.255.71.242  10.255.71.242  0x80000003    248  0x20 0xf37d   36
bits 0x3, link count 1
id 24.1.1.1, data 24.1.1.1, Type Transit (2)
TOS count 0, TOS 0 metric 1
Gen timer 00:45:52
Aging timer 00:55:52
Installed 00:04:08 ago, expires in 00:55:52, sent 00:04:06 ago
Last changed 00:04:08 ago, Change count: 2, Ours
Network *24.1.1.1      10.255.71.242    0x80000002    248  0x20 0xc591   32
mask 255.255.255.0
attached router 10.255.71.242
attached router 10.255.71.238
Gen timer 00:45:52
Aging timer 00:55:52
Installed 00:04:08 ago, expires in 00:55:52, sent 00:04:06 ago
Last changed 00:04:08 ago, Change count: 1, Ours
Summary *12.1.1.0      10.255.71.242    0x80000001    288  0x20 0xfeec   28
mask 255.255.255.0
TOS 0x0, metric 1

```



```

Gen timer 00:45:12
Aging timer 00:55:12
Installed 00:04:48 ago, expires in 00:55:12, sent 00:04:13 ago
Last changed 00:04:48 ago, Change count: 1, Ours
Summary *23.1.1.0      10.255.71.242    0x80000002    243  0x20 0x6d72  28
mask 255.255.255.0
TOS 0x0, metric 1
Gen timer 00:45:57
Aging timer 00:55:57
Installed 00:04:03 ago, expires in 00:55:57, sent 00:04:01 ago
Last changed 00:04:48 ago, Change count: 1, Ours
NSSA  *33.1.1.1      10.255.71.242    0x80000001    293  0x28 0xeb3b  36
mask 255.255.255.255
Type 2, TOS 0x0, metric 0, fwd addr 24.1.1.1, tag 0.0.0.0
Gen timer 00:45:07
Aging timer 00:55:07
Installed 00:04:53 ago, expires in 00:55:07, sent 00:04:13 ago
Last changed 00:04:53 ago, Change count: 1, Ours

```

**show ospf database** user@host> **show ospf database summary**

**summary**

```

Area 0.0.0.1:
  2 Router LSAs
  2 Summary LSAs
  1 NSSA LSAs
Area 0.0.0.2:
  2 Router LSAs
  1 Network LSAs
  2 Summary LSAs
  1 NSSA LSAs
Area 0.0.0.3:
  2 Router LSAs
  1 Network LSAs
  2 Summary LSAs
  1 NSSA LSAs
Externals:
Interface fe-2/2/1.0:
Interface ge-0/3/2.0:
Interface so-0/1/2.0:
Interface so-0/1/2.0:

```



## show ospf3 database

<b>Syntax</b>	<pre>show ospf3 database &lt;brief   detail   extensive   summary&gt; &lt;advertising-router (address   self)&gt; &lt;area area-id&gt; &lt;external&gt; &lt;instance instance-name&gt; &lt;inter-area-prefix&gt; &lt;inter-area-router&gt; &lt;intra-area-prefix&gt; &lt;link&gt; &lt;link-local&gt; &lt;logical-system (all   logical-system-name)&gt; &lt;lsa-id lsa-id&gt; &lt;network&gt; &lt;nssa&gt; &lt;realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)&gt; &lt;router&gt;</pre>
<b>Syntax (EX Series Switch and QFX Series)</b>	<pre>show ospf3 database &lt;brief   detail   extensive   summary&gt; &lt;advertising-router (address   self)&gt; &lt;area area-id&gt; &lt;external&gt; &lt;instance instance-name&gt; &lt;inter-area-prefix&gt; &lt;inter-area-router&gt; &lt;intra-area-prefix&gt; &lt;link&gt; &lt;link-local&gt; &lt;lsa-id lsa-id&gt; &lt;network&gt; &lt;nssa&gt; &lt;router&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>realm</b> option introduced in Junos OS Release 9.2.</p> <p><b>advertising-router (address   self)</b> option introduced in Junos Release 9.5.</p> <p><b>advertising-router (address   self)</b> option introduced in Junos OS Release 9.5 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p>
<b>Description</b>	Display the entries in the Open Shortest Path First version 3 (OSPFv3) link-state database, which contains data about link-state advertisement (LSA) packets.
<b>Options</b>	<p>none—Display standard information about all entries in the OSPFv3 link-state database.</p> <p>brief   detail   extensive   summary—(Optional) Display the specified level of output.</p> <p>advertising-router (address   self)—(Optional) Display the LSAs advertised either by a particular routing device or by this routing device.</p>



`area area-id`—(Optional) Display the LSAs in a particular area.

`external`—(Optional) Display external LSAs.

`instance instance-name`—(Optional) Display all OSPF database information under the named routing instance.

`inter-area-prefix`—(Optional) Display information about interarea-prefix LSAs.

`inter-area-router`—(Optional) Display information about interarea-router LSAs.

`intra-area-prefix`—(Optional) Display information about intra-area-prefix LSAs.

`link`—(Optional) Display information about link LSAs.

`link-local`—(Optional) Display information about link-local LSAs.

`logical-system (all | logical-system-name)`—(Optional) Perform this operation on all logical systems or on a particular logical system.

`lsa-id lsa-id`—(Optional) Display the LSA with the specified LSA identifier.

`network`—(Optional) Display information about network LSAs.

`nssa`—(Optional) Display information about not-so-stubby area (NSSA) LSAs.

`realm (ipv4-multicast | ipv4-unicast | ipv6-multicast)`—(Optional) Display information about the specified OSPFv3 realm, or address family. Use the **realm** option to specify an address family other than IPv6 unicast, which is the default.

`router`—(Optional) Display information about router LSAs.

**Required Privilege Level** view

**Related Documentation** • [clear \(ospf | ospf3\) database on page 337](#)

**List of Sample Output** [show ospf3 database brief on page 373](#)  
[show ospf3 database extensive on page 373](#)  
[show ospf3 database summary on page 376](#)

**Output Fields** [Table 103 on page 368](#) lists the output fields for the **show ospf3 database** command. Output fields are listed in the approximate order in which they appear.

**Table 103: show ospf3 database Output Fields**

Field Name	Field Description	Level of Output
OSPF link state database, area <i>area-number</i>	Entries in the link-state database for this area.	brief detail extensive
OSPF AS SCOPE link state database	Entries in the AS scope link-state database.	brief detail extensive



Table 103: show ospf3 database Output Fields (*continued*)

Field Name	Field Description	Level of Output
OSPF Link-Local link state database, interface <i>interface-name</i>	Entries in the link-local link-state database for this interface.	brief detail extensive
area	Area number. Area 0.0.0.0 is the backbone area.	All levels
Type	Type of link advertisement: <b>Extern</b> , <b>InterArPfx</b> , <b>InterArRtr</b> , <b>IntraArPrx</b> , <b>Link</b> , <b>Network</b> , <b>NSSA</b> , or <b>Router</b> .	brief detail extensive
ID	Link identifier included in the advertisement. An asterisk (*) preceding the identifier marks database entries that originated from the local routing device.	brief detail extensive
Adv Rtr	Address of the routing device that sent the advertisement.	brief detail extensive
Seq	Link sequence number of the advertisement.	brief detail extensive
Age	Time elapsed since the LSA was originated, in seconds.	brief detail extensive
Cksum	Checksum value of the LSA.	brief detail extensive
Len	Length of the advertisement, in bytes.	brief detail extensive
Router (Router Link-State Advertisements)		
bits	Flags describing the routing device that generated the LSP.	detail extensive
Options	Option bits carried in the router LSA.	detail extensive
For Each Router Link		
Type	Type of interface. The value of all other output fields describing a routing device interface depends on the interface's type: <ul style="list-style-type: none"> <li>• <b>PointToPoint (1)</b>—Point-to-point connection to another routing device.</li> <li>• <b>Transit (2)</b>—Connection to a transit network.</li> <li>• <b>Virtual (4)</b>—Virtual link.</li> </ul>	detail extensive
Loc-if-id	Local interface ID assigned to the interface that uniquely identifies the interface with the routing device.	detail extensive
Nbr-if-id	Interface ID of the neighbor's interface for this routing device link.	detail extensive
Nbr-rtr-id	Router ID of the neighbor routing device (for type 2 interfaces, the attached link's designated router).	detail extensive
Metric	Cost of the router link.	detail extensive
Gen timer	How long until the LSA is regenerated, in the format <i>hours:minutes:seconds</i> .	extensive



Table 103: show ospf3 database Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Aging timer</b>	How long until the LSA expires, in the format <i>hours:minutes:seconds</i> .	extensive
<b>Installed <i>nn:nn:nn</i> ago</b>	How long ago the route was installed, in the format <i>hours:minutes:seconds</i> .	extensive
<b>expires in <i>nn:nn:nn</i></b>	How long until the route expires, in the format <i>hours:minutes:seconds</i> .	extensive
<b>sent <i>nn:nn:nn</i> ago</b>	Time elapsed since the LSA was last transmitted or flooded to an adjacency or an interface, respectively, in the format <i>hours:minutes:seconds</i> .	extensive
<b>Ours</b>	Indicates that this is a local advertisement.	extensive
<b>Network (Network Link-State Advertisements)</b>		
<b>Options</b>	Option bits carried in the network LSA.	detail extensive
<b>Attached Router</b>	Router IDs of each of the routing devices attached to the link. Only routing devices that are fully adjacent to the designated router are listed. The designated router includes itself in this list.	detail extensive
<b>InterArPfx (Interarea-Prefix Link-State Advertisements)</b>		
<b>Prefix</b>	IPv6 address prefix.	detail extensive
<b>Prefix-options</b>	Option bit associated with the prefix.	detail extensive
<b>Metric</b>	Cost of this route. Expressed in the same units as the interface costs in the router LSAs. When the interarea-prefix LSA is describing a route to a range of addresses, the cost is set to the maximum cost to any reachable component of the address range.	detail extensive
<b>Gen timer</b>	How long until the LSA is regenerated, in the format <i>hours:minutes:seconds</i> .	extensive
<b>Aging timer</b>	How long until the LSA expires, in the format <i>hours:minutes:seconds</i> .	extensive
<b>Installed <i>nn:nn:nn</i> ago</b>	How long ago the route was installed, in the format <i>hours:minutes:seconds</i> .	extensive
<b>expires in <i>nn:nn:nn</i></b>	How long until the route expires, in the format <i>hours:minutes:seconds</i> .	extensive
<b>sent <i>nn:nn:nn</i> ago</b>	Time elapsed since the LSA was last transmitted or flooded to an adjacency or an interface, respectively, in the format <i>hours:minutes:seconds</i> .	extensive
<b>Ours</b>	Indicates that this is a local advertisement.	extensive
<b>InterArRtr (Interarea-Router Link-State Advertisements)</b>		
<b>Dest-router-id</b>	Router ID of the routing device described by the LSA.	detail extensive
<b>options</b>	Optional capabilities supported by the routing device.	detail extensive



Table 103: show ospf3 database Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Metric</b>	Cost of this route. Expressed in the same units as the interface costs in the router LSAs. When the interarea-prefix LSA is describing a route to a range of addresses, the cost is set to the maximum cost to any reachable component of the address range.	<b>detail extensive</b>
<b>Prefix</b>	IPv6 address prefix.	<b>extensive</b>
<b>Prefix-options</b>	Option bit associated with the prefix.	<b>extensive</b>
<b>Extern (External Link-State Advertisements)</b>		
<b>Prefix</b>	IPv6 address prefix.	<b>detail extensive</b>
<b>Prefix-options</b>	Option bit associated with the prefix.	<b>detail extensive</b>
<b>Metric</b>	Cost of the route, which depends on the value of <b>Type</b> .	<b>detail extensive</b>
<b>Type <i>n</i></b>	Type of external metric: <b>Type 1</b> or <b>Type 2</b> .	<b>detail extensive</b>
<b>Aging timer</b>	How long until the LSA expires, in the format <i>hours:minutes:seconds</i> .	<b>extensive</b>
<b>Installed <i>nn:nn:nn</i> ago</b>	How long ago the route was installed, in the format <i>hours:minutes:seconds</i> .	<b>extensive</b>
<b>expires in <i>nn:nn:nn</i></b>	How long until the route expires, in the format <i>hours:minutes:seconds</i> .	<b>extensive</b>
<b>sent <i>nn:nn:nn</i> ago</b>	Time elapsed since the LSA was last transmitted or flooded to an adjacency or an interface, respectively, in the format <i>hours:minutes:seconds</i> .	<b>extensive</b>
<b>Link (Link-State Advertisements)</b>		
<b>IPv6-Address</b>	IPv6 link-local address on the link for which this link LSA originated.	<b>detail extensive</b>
<b>Options</b>	Option bits carried in the link LSA.	<b>detail extensive</b>
<b>priority</b>	Router priority of the interface attaching the originating routing device to the link.	<b>detail extensive</b>
<b>Prefix-count</b>	Number of IPv6 address prefixes contained in the LSA. The rest of the link LSA contains a list of IPv6 prefixes to be associated with the link.	<b>detail extensive</b>
<b>Prefix</b>	IPv6 address prefix.	<b>detail extensive</b>
<b>Prefix-options</b>	Option bit associated with the prefix.	<b>detail extensive</b>
<b>Gen timer</b>	How long until the LSA is regenerated, in the format <i>hours:minutes:seconds</i> .	<b>extensive</b>
<b>Aging timer</b>	How long until the LSA expires, in the format <i>hours:minutes:seconds</i> .	<b>extensive</b>



Table 103: show ospf3 database Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Installed <i>nn:nn:nn</i> ago</b>	How long ago the route was installed, in the format <i>hours:minutes:seconds</i> .	extensive
<b>expires in <i>nn:nn:nn</i></b>	How long until the route expires, in the format <i>hours:minutes:seconds</i> .	extensive
<b>sent <i>nn:nn:nn</i> ago</b>	Time elapsed since the LSA was last transmitted or flooded to an adjacency or an interface, respectively, in the format <i>hours:minutes:seconds</i> .	extensive
<b>Ours</b>	Indicates that this is a local advertisement.	extensive
<b>IntraArPfx (Intra-Area-Prefix Link-State Advertisements)</b>		
<b>Ref-lsa-type</b>	LSA type of the referenced LSA.  <ul style="list-style-type: none"> <li><b>Router</b>—Address prefixes are associated with a router LSA.</li> <li><b>Network</b>—Address prefixes are associated with a network LSA.</li> </ul>	detail extensive
<b>Ref-lsa-id</b>	Link-state ID of the referenced LSA.	detail extensive
<b>Ref-router-id</b>	Advertising router ID of the referenced LSA.	detail extensive
<b>Prefix-count</b>	Number of IPv6 address prefixes contained in the LSA. The rest of the link LSA contains a list of IPv6 prefixes to be associated with the link.	detail extensive
<b>Prefix</b>	IPv6 address prefix.	detail extensive
<b>Prefix-options</b>	Option bit associated with the prefix.	detail extensive
<b>Metric</b>	Cost of this prefix. Expressed in the same units as the interface costs in the router LSAs.	detail extensive
<b>Gen timer</b>	How long until the LSA is regenerated, in the format <i>hours:minutes:seconds</i> .	extensive
<b>Aging timer</b>	How long until the LSA expires, in the format <i>hours:minutes:seconds</i> .	extensive
<b>Installed <i>hh:mm:ss</i> ago</b>	How long ago the route was installed, in the format <i>hours:minutes:seconds</i> .	extensive
<b>expires in <i>hh:mm:ss</i></b>	How long until the route expires, in the format <i>hours:minutes:seconds</i> .	extensive
<b>sent <i>hh:mm:ss</i> ago</b>	Time elapsed since the LSA was last transmitted or flooded to an adjacency or an interface, respectively, in the format <i>hours:minutes:seconds</i> .	extensive
<b><i>n</i> Router LSAs</b>	Number of router LSAs in the link-state database.	summary
<b><i>n</i> Network LSAs</b>	Number of network LSAs in the link-state database.	summary
<b><i>n</i> InterArPfx LSAs</b>	Number of interarea-prefix LSAs in the link-state database.	summary



Table 103: show ospf3 database Output Fields (*continued*)

Field Name	Field Description	Level of Output
<i>n</i> InterArRtr LSAs	Number of interarea-router LSAs in the link-state database.	summary
<i>n</i> IntraArPfx LSAs	Number of intra-area-prefix LSAs in the link-state database.	summary
Externals	Display of the external LSA database.	summary
<i>n</i> Extern LSAs	Number of external LSAs in the link-state database.	summary
Interface <i>interface-name</i>	Name of the interface for which link-local LSA information is displayed.	summary
<i>n</i> Link LSAs	Number of link LSAs in the link-state database.	summary

## Sample Output

```

show ospf3 database brief user@host> show ospf3 database brief
                        OSPF3 link state database, area 0.0.0.0
                        Type      ID          Adv Rtr      Seq          Age    Cksum  Len
                        Router     0.0.0.1      10.255.4.85  0x80000003   885    0xa697 40
                        Router     *0.0.0.1      10.255.4.93  0x80000002   953    0xc677 40
                        InterArPfx *0.0.0.2      10.255.4.93  0x80000001   910    0xb96f 44
                        InterArRtr *0.0.0.1      10.255.4.93  0x80000001   910    0xe159 32
                        IntraArPfx *0.0.0.1      10.255.4.93  0x80000002   432    0x788f 72

                        OSPF3 link state database, area 0.0.0.1
                        Type      ID          Adv Rtr      Seq          Age    Cksum  Len
                        Router     *0.0.0.1      10.255.4.93  0x80000003   916    0xea40 40
                        Router     0.0.0.1      10.255.4.97  0x80000006   851    0xc95b 40
                        Network    0.0.0.2      10.255.4.97  0x80000002   916    0x4598 32
                        InterArPfx *0.0.0.1      10.255.4.93  0x80000002   117    0xa980 44
                        InterArPfx *0.0.0.2      10.255.4.93  0x80000002    62    0xd47e 44
                        NSSA       0.0.0.1      10.255.4.97  0x80000002   362    0x45ee 44
                        IntraArPfx 0.0.0.1      10.255.4.97  0x80000006   851    0x2f77 52

                        OSPF3 AS SCOPE link state database
                        Type      ID          Adv Rtr      Seq          Age    Cksum  Len
                        Extern     0.0.0.1      10.255.4.85  0x80000002    63    0x9b86 44
                        Extern     *0.0.0.1      10.255.4.93  0x80000001   910    0x59c9 44

                        OSPF3 Link-Local link state database, interface ge-1/3/0.0
                        Type      ID          Adv Rtr      Seq          Age    Cksum  Len
                        Link       *0.0.0.2      10.255.4.93  0x80000003   916    0x4dab 64

show ospf3 database extensive user@host> show ospf3 database extensive
                        OSPF3 link state database, area 0.0.0.0
                        Type      ID          Adv Rtr      Seq          Age    Cksum  Len
                        Router     0.0.0.1      10.255.4.85  0x80000003  1028    0xa697 40
                        bits 0x2, Options 0x13
                        Type PointToPoint (1), Metric 10
                        Loc-If-Id 2, Nbr-If-Id 3, Nbr-Rtr-Id 10.255.4.93
                        Aging timer 00:42:51
                        Installed 00:17:05 ago, expires in 00:42:52, sent 02:37:54 ago
                        Router     *0.0.0.1      10.255.4.93  0x80000002  1096    0xc677 40

```



```

bits 0x3, Options 0x13
Type PointToPoint (1), Metric 10
  Loc-If-Id 3, Nbr-If-Id 2, Nbr-Rtr-Id 10.255.4.85
Gen timer 00:00:40
Aging timer 00:41:44
Installed 00:18:16 ago, expires in 00:41:44, sent 00:18:14 ago
Ours
InterArPfx *0.0.0.2          10.255.4.93      0x80000001 1053 0xb96f 44
Prefix feee::10:10:2:0/126
Prefix-options 0x0, Metric 10
Gen timer 00:17:02
Aging timer 00:42:26
Installed 00:17:33 ago, expires in 00:42:27, sent 00:17:31 ago
Ours
InterArPfx *0.0.0.3          10.255.4.93      0x80000001 1053 0x71d3 44
Prefix feee::10:255:4:97/128
Prefix-options 0x0, Metric 10
Gen timer 00:21:07
Aging timer 00:42:26
Installed 00:17:33 ago, expires in 00:42:27, sent 00:17:31 ago
Ours
InterArRtr *0.0.0.1          10.255.4.93      0x80000001 1053 0xe159 32
Dest-router-id 10.255.4.97, Options 0x19, Metric 10
Gen timer 00:29:18
Aging timer 00:42:26
Installed 00:17:33 ago, expires in 00:42:27, sent 00:17:31 ago
Ours
IntraArPfx 0.0.0.1           10.255.4.85      0x80000002 1028 0x2403 72
Ref-lsa-type Router, Ref-lsa-id 0.0.0.0, Ref-router-id 10.255.4.85
Prefix-count 2
Prefix feee::10:255:4:85/128
  Prefix-options 0x2, Metric 0
Prefix feee::10:10:1:0/126
  Prefix-options 0x0, Metric 10
Aging timer 00:42:51
Installed 00:17:05 ago, expires in 00:42:52, sent 02:37:54 ago
IntraArPfx *0.0.0.1           10.255.4.93      0x80000002 575 0x788f 72
Ref-lsa-type Router, Ref-lsa-id 0.0.0.0, Ref-router-id 10.255.4.93
Prefix-count 2
Prefix feee::10:255:4:93/128
  Prefix-options 0x2, Metric 0
Prefix feee::10:10:1:0/126
  Prefix-options 0x0, Metric 10
Gen timer 00:33:23
Aging timer 00:50:24
Installed 00:09:35 ago, expires in 00:50:25, sent 00:09:33 ago
  OSPF3 link state database, area 0.0.0.1
Type      ID      Adv Rtr      Seq      Age  Cksum  Len
Router    *0.0.0.1    10.255.4.93  0x80000003 1059 0xea40 40
bits 0x3, Options 0x19
Type Transit (2), Metric 10
  Loc-If-Id 2, Nbr-If-Id 2, Nbr-Rtr-Id 10.255.4.97
Gen timer 00:08:51
Aging timer 00:42:20
Installed 00:17:39 ago, expires in 00:42:21, sent 00:17:37 ago
Router    0.0.0.1      10.255.4.97  0x80000006 994 0xc95b 40
bits 0x2, Options 0x19
Type Transit (2), Metric 10
  Loc-If-Id 2, Nbr-If-Id 2, Nbr-Rtr-Id 10.255.4.97
Aging timer 00:43:25
Installed 00:16:31 ago, expires in 00:43:26, sent 02:37:54 ago

```



```

Network      0.0.0.2          10.255.4.97      0x80000002  1059  0x4598  32
Options 0x11
Attached router 10.255.4.97
Attached router 10.255.4.93
Aging timer 00:42:20
Installed 00:17:36 ago, expires in 00:42:21, sent 02:37:54 ago
InterArPfx *0.0.0.1          10.255.4.93      0x80000002   260  0xa980  44
Prefix feee::10:10:1:0/126
Prefix-options 0x0, Metric 10
Gen timer 00:45:39
Aging timer 00:55:39
Installed 00:04:20 ago, expires in 00:55:40, sent 00:04:18 ago
Ours
InterArPfx *0.0.0.2          10.255.4.93      0x80000002   205  0xd47e  44
Prefix feee::10:255:4:93/128
Prefix-options 0x0, Metric 0
Gen timer 00:46:35
Aging timer 00:56:35
Installed 00:03:25 ago, expires in 00:56:35, sent 00:03:23 ago
Ours
InterArPfx *0.0.0.3          10.255.4.93      0x80000001  1089  0x9bbb  44
Prefix feee::10:255:4:85/128
Prefix-options 0x0, Metric 10
Gen timer 00:04:46
Aging timer 00:41:51
Installed 00:18:09 ago, expires in 00:41:51, sent 00:17:43 ago
Ours
NSSA         0.0.0.1          10.255.4.97      0x80000002   505  0x45ee  44
Prefix feee::200:200:1:0/124
Prefix-options 0x8, Metric 10, Type 2,
Aging timer 00:51:35
Installed 00:08:22 ago, expires in 00:51:35, sent 02:37:54 ago
IntraArPfx 0.0.0.1          10.255.4.97      0x80000006   994  0x2f77  52
Ref-lsa-type Router, Ref-lsa-id 0.0.0.0, Ref-router-id 10.255.4.97
Prefix-count 1
Prefix feee::10:255:4:97/128
Prefix-options 0x2, Metric 0
Aging timer 00:43:25
Installed 00:16:31 ago, expires in 00:43:26, sent 02:37:54 ago
IntraArPfx 0.0.0.3          10.255.4.97      0x80000002  1059  0x4446  52
Ref-lsa-type Network, Ref-lsa-id 0.0.0.2, Ref-router-id 10.255.4.97
Prefix-count 1
Prefix feee::10:10:2:0/126
Prefix-options 0x0, Metric 0
Aging timer 00:42:20
Installed 00:17:36 ago, expires in 00:42:21, sent 02:37:54 ago
OSPF3 AS SCOPE link state database
Type      ID      Adv Rtr      Seq      Age  Cksum  Len
Extern    0.0.0.1    10.255.4.85  0x80000002  206  0x9b86  44
Prefix feee::100:100:1:0/124
Prefix-options 0x0, Metric 20, Type 2,
Aging timer 00:56:34
Installed 00:03:23 ago, expires in 00:56:34, sent 02:37:54 ago
Extern    *0.0.0.1    10.255.4.93  0x80000001  1053  0x59c9  44
Prefix feee::200:200:1:0/124
Prefix-options 0x0, Metric 10, Type 2,
Gen timer 00:25:12
Aging timer 00:42:26
Installed 00:17:33 ago, expires in 00:42:27, sent 00:17:31 ago

OSPF3 Link-Local link state database, interface ge-1/3/0.0

```



```

Type      ID          Adv Rtr      Seq          Age  Cksum  Len
Link      *0.0.0.2      10.255.4.93  0x80000003   1059 0x4dab  64
fe80::290:69ff:fe39:1cdb
Options 0x11, priority 128
Prefix-count 1
Prefix feee::10:10:2:0/126 Prefix-options 0x0
Gen timer 00:12:56
Aging timer 00:42:20
Installed 00:17:39 ago, expires in 00:42:21, sent 00:17:37 ago
Link      0.0.0.2      10.255.4.97  0x80000003   205 0xa87d  64
fe80::290:69ff:fe38:883e
Options 0x11, priority 128
Prefix-count 1
Prefix feee::10:10:2:0/126 Prefix-options 0x0
Aging timer 00:56:35
Installed 00:03:22 ago, expires in 00:56:35, sent 02:37:54 ago

OSPF3 Link-Local link state database, interface so-2/2/0.0
Type      ID          Adv Rtr      Seq          Age  Cksum  Len
Link      0.0.0.2      10.255.4.85  0x80000002   506 0x42bb  64
fe80::280:42ff:fe10:f169
Options 0x13, priority 128
Prefix-count 1
Prefix feee::10:10:1:0/126 Prefix-options 0x0
Aging timer 00:51:34
Installed 00:08:23 ago, expires in 00:51:34, sent 02:37:54 ago
Link      *0.0.0.3      10.255.4.93  0x80000002   505 0x6b7a  64
fe80::280:42ff:fe10:f177
Options 0x13, priority 128
Prefix-count 1
Prefix feee::10:10:1:0/126 Prefix-options 0x0
Gen timer 00:37:28
Aging timer 00:51:35
Installed 00:08:25 ago, expires in 00:51:35, sent 00:08:23 ago
Ours

```

```

show ospf3 database summary user@host> show ospf3 database summary
summary
Area 0.0.0.0:
  2 Router LSAs
  1 InterArPfx LSAs
  1 InterArRtr LSAs
  1 IntraArPfx LSAs
Area 0.0.0.1:
  2 Router LSAs
  1 Network LSAs
  2 InterArPfx LSAs
  1 NSSA LSAs
  1 IntraArPfx LSAs
Externals:
  2 Extern LSAs
Interface ge-1/3/0.0:
  1 Link LSAs
Interface lo0.0:
Interface so-2/2/0.0:
  1 Link LSAs

```



## show (ospf | ospf3) interface

<b>Syntax</b>	<pre>show (ospf   ospf3) interface     &lt;brief   detail   extensive&gt;     &lt;area <i>area-id</i>&gt;     &lt;interface-name&gt;     &lt;instance <i>instance-name</i>&gt;     &lt;logical-system (all   <i>logical-system-name</i>)&gt;     &lt;realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)&gt;</pre>
<b>Syntax (EX Series Switch and QFX Series)</b>	<pre>show (ospf   ospf3) interface     &lt;brief   detail   extensive&gt;     &lt;area <i>area-id</i>&gt;     &lt;interface-name&gt;     &lt;instance <i>instance-name</i>&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>area</b> option introduced in Junos OS Release 9.2.</p> <p><b>area</b> option introduced in Junos OS Release 9.2 for EX Series switches.</p> <p><b>realm</b> option introduced in Junos OS Release 9.2.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p>
<b>Description</b>	Display the status of Open Shortest Path First (OSPF) interfaces.
<b>Options</b>	<p><b>none</b>—Display standard information about the status of all OSPF interfaces for all routing instances</p> <p><b>brief   detail   extensive</b>—(Optional) Display the specified level of output.</p> <p><b>area <i>area-id</i></b>—(Optional) Display information about the interfaces that belong to the specified area.</p> <p><b>interface-name</b>—(Optional) Display information for the specified interface.</p> <p><b>instance <i>instance-name</i></b>—(Optional) Display all OSPF interfaces under the named routing instance.</p> <p><b>logical-system (all   <i>logical-system-name</i>)</b>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><b>realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)</b>—(Optional) (OSPFv3 only) Display information about the interfaces for the specified OSPFv3 realm, or address family. Use the <b>realm</b> option to specify an address family for OSPFv3 other than IPv6 unicast, which is the default.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<p><a href="#">show ospf interface brief on page 380</a></p> <p><a href="#">show ospf interface detail on page 380</a></p> <p><a href="#">show ospf3 interface detail on page 380</a></p>



[show ospf interface detail \(When Multiarea Adjacency Is Configured\) on page 380](#)  
[show ospf interface area area-id on page 381](#)  
[show ospf interface extensive \(When Flooding Reduction Is Enabled\) on page 381](#)  
[show ospf interface extensive \(When LDP Synchronization Is Configured\) on page 382](#)

**Output Fields** Table 104 on page 378 lists the output fields for the **show (ospf | ospf3) interface** command. Output fields are listed in the approximate order in which they appear.

**Table 104: show (ospf | ospf3) interface Output Fields**

Field Name	Field Description	Level of Output
<b>Interface</b>	Name of the interface running OSPF version 2 or OSPF version 3.	All levels
<b>State</b>	State of the interface: <b>BDR</b> , <b>Down</b> , <b>DR</b> , <b>DRother</b> , <b>Loop</b> , <b>PtToPt</b> , or <b>Waiting</b> .	All levels
<b>Area</b>	Number of the area that the interface is in.	All levels
<b>DR ID</b>	Address of the area's designated router.	All levels
<b>BDR ID</b>	Backup designated router for a particular subnet.	All levels
<b>Nbrs</b>	Number of neighbors on this interface.	All levels
<b>Type</b>	Type of interface: <b>LAN</b> , <b>NBMA</b> , <b>P2MP</b> , <b>P2P</b> , or <b>Virtual</b> .	<b>detail extensive</b>
<b>Address</b>	IP address of the neighbor.	<b>detail extensive</b>
<b>Mask</b>	Netmask of the neighbor.	<b>detail extensive</b>
<b>Prefix-length</b>	(OSPFv3) IPv6 prefix length, in bits.	<b>detail extensive</b>
<b>OSPF3-Intf-Index</b>	(OSPFv3) OSPF version 3 interface index.	<b>detail extensive</b>
<b>MTU</b>	Interface maximum transmission unit (MTU).	<b>detail extensive</b>
<b>Cost</b>	Interface cost (metric).	<b>detail extensive</b>
<b>DR addr</b>	Address of the designated router.	<b>detail extensive</b>
<b>BDR addr</b>	Address of the backup designated router.	<b>detail extensive</b>
<b>Adj count</b>	Number of adjacent neighbors.	<b>detail extensive</b>
<b>Secondary</b>	Indicates that this interface is configured as a secondary interface for this area. This interface can belong to more than one area, but can be designated as a primary interface for only one area.	<b>detail extensive</b>
<b>Flood Reduction</b>	Indicates that this interface is configured with flooding reduction. All self-originated LSAs from this interface are initially sent with the <b>DoNotAge</b> bit set. As a result, LSAs are refreshed only when a change occurs.	<b>extensive</b>



Table 104: show (ospf | ospf3) interface Output Fields (*continued*)

Field Name	Field Description	Level of Output
Priority	Router priority used in designated router (DR) election on this interface.	detail extensive
Flood list	List of link-state advertisements (LSAs) that might be about to flood this interface.	extensive
Ack list	Acknowledgment list. List of pending acknowledgments on this interface.	extensive
Descriptor list	List of packet descriptors.	extensive
Hello	Configured value for the hello timer.	detail extensive
Dead	Configured value for the dead timer.	detail extensive
Auth type	(OSPFv2) Authentication mechanism for sending and receiving OSPF protocol packets: <ul style="list-style-type: none"> <li>• <b>MD5</b>—The MD5 mechanism is configured in accordance with RFC 2328.</li> <li>• <b>None</b>—No authentication method is configured.</li> <li>• <b>Password</b>—A simple password (RFC 2328) is configured.</li> </ul>	detail extensive
Topology	(Multiarea adjacency) Name of topology: <b>default</b> or <i>name</i> .	
LDP sync state	(OSPFv2 and LDP synchronization) Current state of LDP synchronization: <b>in sync</b> , <b>in holddown</b> , and <b>not supported</b> .	extensive
reason	(OSPFv2 and LDP synchronization) Reason for the current state of LDP synchronization. The LDP session might be up or down, or adjacency might be up or down.	extensive
config holdtime	(OSPFv2 and LDP synchronization) Configured value of the hold timer.  If the state is not synchronized, and the hold time is not infinity, the <b>remaining</b> field displays the number of seconds that remain until the configured hold timer expires.	extensive
IPSec SA name	(OSPFv2) Name of the IPSec security association name.	detail extensive
Active key ID	(OSPFv2 and MD5) Number from <b>0</b> to <b>255</b> that uniquely identifies an MD5 key.	detail extensive
Start time	(OSPFv2 and MD5) Time at which the routing device starts using an MD5 key to authenticate OSPF packets transmitted on the interface on which this key is configured. To authenticate received OSPF protocol packets, the key becomes effective immediately after the configuration is committed. If the start time option is not configured, the key is effective immediately for send and receive and is displayed as <b>Start time 1970 Jan 01 00:00:00 PST</b> .	detail extensive
ReXmit	Configured value for the Retransmit timer.	detail extensive
Stub, Not Stub, or Stub NSSA	Type of area.	detail extensive



## Sample Output

```

show ospf interface user@host> show ospf interface brief
brief
Intf          State   Area      DR ID      BDR ID      Nbrs
at-5/1/0.0    PtToPt 0.0.0.0    0.0.0.0    0.0.0.0     1
ge-2/3/0.0    DR      0.0.0.0    192.168.4.16 192.168.4.15 1
lo0.0         DR      0.0.0.0    192.168.4.16 0.0.0.0     0
so-0/0/0.0    Down   0.0.0.0    0.0.0.0    0.0.0.0     0
so-6/0/1.0    PtToPt 0.0.0.0    0.0.0.0    0.0.0.0     1
so-6/0/2.0    Down   0.0.0.0    0.0.0.0    0.0.0.0     0
so-6/0/3.0    PtToPt 0.0.0.0    0.0.0.0    0.0.0.0     1

```

```

show ospf interface user@host> show ospf interface detail
detail
Interface      State   Area      DR ID      BDR ID      Nbrs
fe-0/0/1.0     BDR    0.0.0.0    192.168.37.12 10.255.245.215 1
Type LAN, address 192.168.37.11, Mask 255.255.255.248, MTU 4460, Cost 40
DR addr 192.168.37.12, BDR addr 192.168.37.11, Adj count 1, Priority 128
Hello 10, Dead 40, ReXmit 5, Not Stub
t1-0/2/1.0     PtToPt 0.0.0.0    0.0.0.0    0.0.0.0     0
Type P2P, Address 0.0.0.0, Mask 0.0.0.0, MTU 1500, Cost 2604
Adj count 0
Hello 10, Dead 40, ReXmit 5, Not Stub
Auth type: MD5, Active key ID 3, Start time 2002 Nov 19 10:00:00 PST
IPsec SA Name: sa

```

```

show ospf3 interface user@host> show ospf3 interface so-0/0/3.0 detail
detail
Interface      State   Area      DR-ID      BDR-ID      Nbrs
so-0/0/3.0     PtToPt 0.0.0.0    0.0.0.0    0.0.0.0     1
Address fe80::2a0:a5ff:fe28:1dfc, Prefix-length 64
OSPF3-Intf-index 1, Type P2P, MTU 4470, Cost 12, Adj-count 1
Hello 10, Dead 40, ReXmit 5, Not Stub

```

```

show ospf interface user@host> show ospf interface detail
detail
regress@router> show ospf interface detail
(When Multiarea Adjacency Is Configured)
Interface      State   Area      DR ID      BDR ID      Nbrs
lo0.0         DR      0.0.0.0    10.255.245.2 0.0.0.0     0
Type: LAN, Address: 127.0.0.1, Mask: 255.255.255.255, MTU: 65535, Cost: 0
DR addr: 127.0.0.1, Adj count: 0, Priority: 128
Hello: 10, Dead: 40, ReXmit: 5, Not Stub
Auth type: None
Topology default (ID 0) -> Cost: 0
lo0.0         DR      0.0.0.0    10.255.245.2 0.0.0.0     0
Type: LAN, Address: 10.255.245.2, Mask: 255.255.255.255, MTU: 65535, Cost: 0
DR addr: 10.255.245.2, Adj count: 0, Priority: 128
Hello: 10, Dead: 40, ReXmit: 5, Not Stub
Auth type: None
Topology default (ID 0) -> Cost: 0
so-0/0/0.0     PtToPt 0.0.0.0    0.0.0.0    0.0.0.0     1
Type: P2P, Address: 0.0.0.0, Mask: 0.0.0.0, MTU: 4470, Cost: 1
Adj count: 1
Hello: 10, Dead: 40, ReXmit: 5, Not Stub
Auth type: None
Topology default (ID 0) -> Cost: 1
so-0/0/0.0     PtToPt 0.0.0.0    0.0.0.0    0.0.0.0     0
Type: P2P, Address: 192.168.37.46, Mask: 255.255.255.254, MTU: 4470, Cost: 1

```



```

Adj count: 0, , Passive
Hello: 10, Dead: 40, ReXmit: 5, Not Stub
Auth type: None
Topology default (ID 0) -> Passive, Cost: 1
so-1/0/0.0      PtToPt  0.0.0.0      0.0.0.0      0.0.0.0      1

Type: P2P, Address: 0.0.0.0, Mask: 0.0.0.0, MTU: 4470, Cost: 1
Adj count: 1
Hello: 10, Dead: 40, ReXmit: 5, Not Stub
Auth type: None
Topology default (ID 0) -> Cost: 1
so-1/0/0.0      PtToPt  0.0.0.0      0.0.0.0      0.0.0.0      0

Type: P2P, Address: 192.168.37.54, Mask: 255.255.255.254, MTU: 4470, Cost: 1
Adj count: 0, , Passive
Hello: 10, Dead: 40, ReXmit: 5, Not Stub
Auth type: None
Topology default (ID 0) -> Passive, Cost: 1
so-0/0/0.0      PtToPt  1.1.1.1      0.0.0.0      0.0.0.0      1

Type: P2P, Address: 0.0.0.0, Mask: 0.0.0.0, MTU: 4470, Cost: 1
Adj count: 1, Secondary
Hello: 10, Dead: 40, ReXmit: 5, Not Stub
Auth type: None
Topology default (ID 0) -> Cost: 1
so-1/0/0.0      PtToPt  1.1.1.1      0.0.0.0      0.0.0.0      1

Type: P2P, Address: 0.0.0.0, Mask: 0.0.0.0, MTU: 4470, Cost: 1
Adj count: 1, Secondary
Hello: 10, Dead: 40, ReXmit: 5, Not Stub
Auth type: None
Topology default (ID 0) -> Cost: 1
so-0/0/0.0      PtToPt  2.2.2.2      0.0.0.0      0.0.0.0      1

Type: P2P, Address: 0.0.0.0, Mask: 0.0.0.0, MTU: 4470, Cost: 1
Adj count: 1, Secondary
Hello: 10, Dead: 40, ReXmit: 5, Not Stub
Auth type: None
Topology default (ID 0) -> Cost: 1
so-1/0/0.0      PtToPt  2.2.2.2      0.0.0.0      0.0.0.0      1

Type: P2P, Address: 0.0.0.0, Mask: 0.0.0.0, MTU: 4470, Cost: 1
Adj count: 1, Secondary
Hello: 10, Dead: 40, ReXmit: 5, Not Stub
Auth type: None
Topology default (ID 0) -> Cost: 1

```

**show ospf interface  
area area-id**

```

user@host> show ospf interface area 1.1.1.1
Interface      State Area      DR ID      BDR ID      Nbrs
so-0/0/0.0     PtToPt  1.1.1.1    0.0.0.0    0.0.0.0     1
so-1/0/0.0     PtToPt  1.1.1.1    0.0.0.0    0.0.0.0     1

```

**show ospf interface  
extensive  
(When Flooding  
Reduction Is Enabled)**

```

user@host> show ospf interface extensive
Interface      State Area      DR ID      BDR ID      Nbrs
fe-0/0/0.0     PtToPt  0.0.0.0    0.0.0.0    0.0.0.0     0

Type: P2P, Address: 10.10.10.1, Mask: 255.255.255.0, MTU: 1500, Cost: 1
Adj count: 0
Secondary, Flood Reduction
Hello: 10, Dead: 40, ReXmit: 5, Not Stub
Auth type: None

```



Topology default (ID 0) -> Cost: 1

```
show ospf interface extensive
(When LDP Synchronization Is Configured)
```

user@host> show ospf interface extensive

Interface	State	Area	DR ID	BDR ID
Nbrs				
so-1/0/3.0	Down	0.0.0.0	0.0.0.0	0.0.0.0
0				

Type: P2P, Address: 0.0.0.0, Mask: 0.0.0.0, MTU: 4470, Cost: 65535  
Adj count: 0  
Hello: 10, Dead: 40, ReXmit: 5, Not Stub  
Auth type: None  
LDP sync state: in holddown, for: 00:00:08, reason: LDP down during config  
config holdtime: 10 seconds, remaining: 1



## show (ospf | ospf3) io-statistics

<b>Syntax</b>	show (ospf   ospf3) io-statistics <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch and QFX Series)</b>	show (ospf   ospf3) io-statistics
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display Open Shortest Path First (OSPF) input and output statistics.
<b>Options</b>	none—Display OSPF input and output statistics.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear (ospf   ospf3) statistics on page 345</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show ospf io-statistics on page 383</a>
<b>Output Fields</b>	<a href="#">Table 105 on page 383</a> lists the output fields for the <b>show ospf io-statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 105: show (ospf | ospf3) io-statistics Output Fields**

Field Name	Field Description
Packets read	Number of OSPF packets read since the last time the routing protocol was started.
average per run	Total number of packets divided by the total number of times the OSPF read operation is scheduled to run.
max run	Maximum number of packets for a given run among all scheduled runs.
Receive errors	Number of faulty packets received with errors.

## Sample Output

```

user@host> show ospf io-statistics

Packets read: 7361, average per run: 1.00, max run: 1

```



Receive errors:  
None



## show (ospf | ospf3) log

<b>Syntax</b>	show (ospf   ospf3) log <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )> <realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)> <topology <i>topology-name</i> >
<b>Syntax (EX Series Switch and QFX Series)</b>	show (ospf   ospf3) log <instance <i>instance-name</i> > <topology <i>topology-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>topology</b> option introduced in Junos OS Release 9.0. <b>topology</b> option introduced in Junos OS Release 9.0 for EX Series switches. <b>realm</b> option introduced in Junos OS Release 9.2. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display the entries in the Open Shortest Path First (OSPF) log of SPF calculations.
<b>Options</b>	<p>none—Display entries in the OSPF log of SPF calculations for all routing instances.</p> <p>instance <i>instance-name</i>—(Optional) Display entries for the specified routing instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>topology <i>topology-name</i>—(Optional) (OSPFv2 only) Display entries for the specified topology.</p> <p>realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)—(OSPFv3 only) (Optional) Display entries for the specified OSPFv3 realm, or address family. Use the <b>realm</b> option to specify an address family for OSPFv3 other than IPv6 unicast, which is the default.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show ospf log on page 386</a> <a href="#">show ospf log topology voice on page 386</a>
<b>Output Fields</b>	Table 106 on page 385 lists the output fields for the <b>show (ospf   ospf3) log</b> command. Output fields are listed in the approximate order in which they appear.

**Table 106: show (ospf | ospf3) log Output Fields**

Field Name	Field Description
<b>When</b>	Time, in weeks ( <b>w</b> ) and days ( <b>d</b> ), since the SPF calculation was made.



Table 106: show (ospf | ospf3) log Output Fields (*continued*)

Field Name	Field Description
<b>Type</b>	Type of calculation: <b>Cleanup</b> , <b>External</b> , <b>Interarea</b> , <b>NSSA</b> , <b>Redist</b> , <b>SPF</b> , <b>Stub</b> , <b>Total</b> , or <b>Virtuallink</b> .
<b>Elapsed</b>	Amount of time, in seconds, that elapsed during the operation, or the time required to complete the SPF calculation. The start time is the time displayed in the <b>When</b> field.

### Sample Output

```

show ospf log user@host> show ospf log
When          Type          Elapsed
1w4d 17:25:58 Stub          0.000017
1w4d 17:25:58 SPF            0.000070
1w4d 17:25:58 Stub          0.000019
1w4d 17:25:58 Interarea     0.000054
1w4d 17:25:58 External       0.000005
1w4d 17:25:58 Cleanup        0.000203
1w4d 17:25:58 Total         0.000537
1w4d 17:24:48 SPF            0.000125
1w4d 17:24:48 Stub          0.000017
1w4d 17:24:48 SPF            0.000100
1w4d 17:24:48 Stub          0.000016
1w4d 17:24:48 Interarea     0.000056
1w4d 17:24:48 External       0.000005
1w4d 17:24:48 Cleanup        0.000238
1w4d 17:24:48 Total         0.000600
...

```

```

show ospf log topology voice user@host> show ospf log topology voice
voice Topology voice SPF log:

    Last instance of each event type
When          Type          Elapsed
00:06:11      SPF            0.000116
00:06:11      Stub          0.000114
00:06:11      Interarea     0.000126
00:06:11      External       0.000067
00:06:11      NSSA           0.000037
00:06:11      Cleanup        0.000186

    Maximum length of each event type
When          Type          Elapsed
00:13:43      SPF            0.000140
00:13:33      Stub          0.000116
00:13:43      Interarea     0.000128
00:13:33      External       0.000075
00:13:38      NSSA           0.000039
00:13:53      Cleanup        0.000657

    Last 100 events
When          Type          Elapsed
00:13:53      SPF            0.000090

```



00:13:53	Stub	0.000041
00:13:53	Interarea	0.000123
00:13:53	External	0.000040
00:13:53	NSSA	0.000038
00:13:53	Cleanup	0.000657
00:13:53	Total	0.001252
.		
.		
00:06:11	SPF	0.000116
00:06:11	Stub	0.000114
00:06:11	Interarea	0.000126
00:06:11	External	0.000067
00:06:11	NSSA	0.000037
00:06:11	Cleanup	0.000186
00:06:11	Total	0.000818



## show (ospf | ospf3) neighbor

<b>Syntax</b>	<pre>show (ospf   ospf3) neighbor &lt;brief   detail   extensive&gt; &lt;area <i>area-id</i>&gt; &lt;instance (all   <i>instance-name</i>)&gt; &lt;interface <i>interface-name</i>&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;neighbor&gt; &lt;realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)&gt;</pre>
<b>Syntax (EX Series Switch and QFX Series)</b>	<pre>show (ospf   ospf3) neighbor &lt;brief   detail   extensive&gt; &lt;area <i>area-id</i>&gt; &lt;instance (all   <i>instance-name</i>)&gt; &lt;interface <i>interface-name</i>&gt; &lt;neighbor&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>instance all</b> option introduced in Junos OS Release 9.1.</p> <p><b>instance all</b> option introduced in Junos OS Release 9.1 for EX Series switches.</p> <p><b>area</b>, <b>interface</b>, and <b>realm</b> options introduced in Junos OS Release 9.2.</p> <p><b>area</b> and <b>interface</b> options introduced in Junos OS Release 9.2 for EX Series switches.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p>
<b>Description</b>	Display information about Open Shortest Path First (OSPF) neighbors.
<b>Options</b>	<p><b>none</b>—Display standard information about all OSPF neighbors for all routing instances.</p> <p><b>brief   detail   extensive</b>—(Optional) Display the specified level of output.</p> <p><b>area <i>area-id</i></b>—(Optional) Display information about the OSPF neighbors for the specified area.</p> <p><b>instance (all   <i>instance-name</i>)</b>—(Optional) Display all OSPF interfaces for all routing instances or under the named routing instance.</p> <p><b>interface <i>interface-name</i></b>—(Optional) Display information about OSPF neighbors for the specified logical interface.</p> <p><b>logical-system (all   <i>logical-system-name</i>)</b>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><b>neighbor</b>—(Optional) Display information about the specified OSPF neighbor.</p> <p><b>realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)</b>—(Optional) (OSPFv3 only) Display information about the OSPF neighbors for the specified OSPFv3 realm, or address family. Use the <b>realm</b> option to specify an address family for OSPFv3 other than IPv6 unicast, which is the default.</p>



**Required Privilege Level** view

**Related Documentation** • [clear \(ospf | ospf3\) neighbor on page 342](#)

**List of Sample Output** [show ospf neighbor brief on page 390](#)  
[show ospf neighbor detail on page 391](#)  
[show ospf neighbor extensive on page 391](#)  
[show ospf3 neighbor detail on page 392](#)  
[show ospf neighbor area area-id on page 392](#)  
[show ospf neighbor interface interface-name on page 392](#)  
[show ospf3 neighbor instance all \(OSPFv3 Multiple Family Address Support Enabled\) on page 392](#)

**Output Fields** [Table 107 on page 389](#) lists the output fields for the **show (ospf | ospf3) neighbor** command. Output fields are listed in the approximate order in which they appear.

**Table 107: show (ospf | ospf3) neighbor Output Fields**

Field Name	Field Description	Level of Output
<b>Address</b>	Address of the neighbor.	All levels
<b>Interface</b>	Interface through which the neighbor is reachable.	All levels
<b>State</b>	State of the neighbor: <ul style="list-style-type: none"> <li>• <b>Attempt</b>—Valid only for neighbors attached to nonbroadcast networks. It indicates that no recent information has been received from the neighbor, but that a more concerted effort must be made to contact the neighbor.</li> <li>• <b>Down</b>—Initial state of a neighbor conversation. It indicates that no recent information has been received from the neighbor. Hello packets might continue to be sent to neighbors in the <b>Down</b> state, although at a reduced frequency.</li> <li>• <b>Exchange</b>—Routing device is describing its entire link-state database by sending database description packets to the neighbor. Each packet has a sequence number and is explicitly acknowledged.</li> <li>• <b>ExStart</b>—First step in creating an adjacency between the two neighboring routing devices. The goal of this step is to determine which routing device is the master, and to determine the initial sequence number.</li> <li>• <b>Full</b>—Neighboring routing devices are fully adjacent. These adjacencies appear in router link and network link advertisements.</li> <li>• <b>Init</b>—A hello packet has recently been sent by the neighbor. However, bidirectional communication has not yet been established with the neighbor. This state may occur, for example, because the routing device itself did not appear in the neighbor's hello packet.</li> <li>• <b>Loading</b>—Link-state request packets are sent to the neighbor to acquire more recent advertisements that have been discovered (but not yet received) in the <b>Exchange</b> state.</li> <li>• <b>2Way</b>—Communication between the two routing devices is bidirectional. This state has been ensured by the operation of the Hello Protocol. This is the most advanced state short of beginning adjacency establishment. The (backup) designated router is selected from the set of neighbors in state <b>2Way</b> or greater.</li> </ul>	All levels



Table 107: show (ospf | ospf3) neighbor Output Fields (*continued*)

Field Name	Field Description	Level of Output
ID	Router ID of the neighbor.	All levels
Pri	Priority of the neighbor to become the designated router.	All levels
Dead	Number of seconds until the neighbor becomes unreachable.	All levels
Link state acknowledgment list	Number of link-state acknowledgments received.	extensive
Link state retransmission list	Total number of link-state advertisements retransmitted. For <b>extensive</b> output only, the following information is also displayed: <ul style="list-style-type: none"> <li><b>Type</b>—Type of link advertisement: <b>ASBR</b>, <b>Sum</b>, <b>Extern</b>, <b>Network</b>, <b>NSSA</b>, <b>OpaqArea</b>, <b>Router</b>, or <b>Summary</b>.</li> <li><b>LSA ID</b>—LSA identifier included in the advertisement. An asterisk preceding the identifier marks database entries that originated from the local routing device.</li> <li><b>Adv rtr</b>—Address of the routing device that sent the advertisement.</li> <li><b>Seq</b>—Link sequence number of the advertisement.</li> </ul>	detail extensive
Neighbor-address	(OSPFv3 only) If the neighbor uses virtual links, the <b>Neighbor-address</b> is the site-local, local, or global address. If the neighbor uses a physical interface, the <b>Neighbor-address</b> is an IPv6 link-local address.	detail extensive
area	Area that the neighbor is in.	detail extensive
OSPF3-Intf-Index	(OSPFv3 only) Displays the OSPFv3 interface index.	detail extensive
opt	Option bits received in the hello packets from the neighbor.	detail extensive
DR or DR-ID	Address of the designated router.	detail extensive
BDR or BDR-ID	Address of the backup designated router.	detail extensive
Up	Length of time since the neighbor came up.	detail extensive
adjacent	Length of time since the adjacency with the neighbor was established.	detail extensive

## Sample Output

```

show ospf neighbor brief user@host> show ospf neighbor brief
      Address      Intf      State      ID          Pri      Dead
192.168.254.225    fxp3.0    2Way       10.250.240.32 128      36
192.168.254.230    fxp3.0    Full       10.250.240.8  128      38
192.168.254.229    fxp3.0    Full       10.250.240.35 128      33
10.1.1.129         fxp2.0    Full       10.250.240.12 128      37
10.1.1.131         fxp2.0    Full       10.250.240.11 128      38

```



10.1.2.1	fxp1.0	Full	10.250.240.9	128	32
10.1.2.81	fxp0.0	Full	10.250.240.10	128	33

### show ospf neighbor detail

```
user@host> show ospf neighbor detail
```

Address	Interface	State	ID	Pri	Dead
10.5.1.2	ge-1/2/0.1	Full	10.5.1.2	128	37
area 0.0.0.1, opt 0x42, DR 10.5.1.2, BDR 10.5.1.1					
Up 06:09:28, adjacent 05:17:36					
Link state acknowledgment list: 3 entries					
Link state retransmission list: 9 entries					
10.5.10.2	ge-1/2/0.10	ExStart	10.5.1.38	128	34
area 0.0.0.1, opt 0x42, DR 10.5.10.2, BDR 10.5.10.1					
Up 06:09:28					
master, seq 0xac1530f8, rexmit DBD in 3 sec					
rexmit LSREQ in 0 sec					
10.5.11.2	ge-1/2/0.11	Full	10.5.1.42	128	38
area 0.0.0.1, opt 0x42, DR 10.5.11.2, BDR 10.5.11.1					
Up 06:09:28, adjacent 05:26:46					
Link state retransmission list: 1 entries					
10.5.12.2	ge-1/2/0.12	ExStart	10.5.1.46	128	33
area 0.0.0.1, opt 0x42, DR 10.5.12.2, BDR 10.5.12.1					
Up 06:09:28					
master, seq 0xac188a68, rexmit DBD in 2 sec					
rexmit LSREQ in 0 sec					

### show ospf neighbor extensive

```
user@host> show ospf neighbor extensive
```

Address	Interface	State	ID	Pri	Dead
10.5.1.2	ge-1/2/0.1	Full	10.5.1.2	128	33
area 0.0.0.1, opt 0x42, DR 10.5.1.2, BDR 10.5.1.1					
Up 06:09:42, adjacent 05:17:50					
Link state retransmission list:					
Type	LSA ID	Adv rtr	Seq		
Summary	10.8.56.0	172.25.27.82	0x8000004d		
Router	10.5.1.94	10.5.1.94	0x8000005c		
Network	10.5.24.2	10.5.1.94	0x80000036		
Summary	10.8.57.0	172.25.27.82	0x80000024		
Extern	1.10.90.0	10.8.1.2	0x80000041		
Extern	1.4.109.0	10.6.1.2	0x80000041		
Router	10.5.1.190	10.5.1.190	0x8000005f		
Network	10.5.48.2	10.5.1.190	0x8000003d		
Summary	10.8.58.0	172.25.27.82	0x8000004d		
Extern	1.10.91.0	10.8.1.2	0x80000041		
Extern	1.4.110.0	10.6.1.2	0x80000041		
Router	10.5.1.18	10.5.1.18	0x8000005f		



```

Network 10.5.5.2          10.5.1.18          0x80000033
Summary 10.8.59.0         172.25.27.82       0x8000003a
Summary 10.8.62.0         172.25.27.82       0x80000025

10.5.10.2      ge-1/2/0.10      ExStart 10.5.1.38      128   38
area 0.0.0.1, opt 0x42, DR 10.5.10.2, BDR 10.5.10.1
Up 06:09:42
  master, seq 0xac1530f8, rexmit DBD in 2 sec
  rexmit LSREQ in 0 sec
10.5.11.2      ge-1/2/0.11      Full    10.5.1.42      128   33
area 0.0.0.1, opt 0x42, DR 10.5.11.2, BDR 10.5.11.1
Up 06:09:42, adjacent 05:27:00
Link state retransmission list:

  Type      LSA ID          Adv rtr          Seq
Summary 10.8.58.0      172.25.27.82     0x8000004d
Extern 1.10.91.0   10.8.1.2         0x80000041
Extern 1.1.247.0   10.5.1.2         0x8000003f
Extern 1.4.110.0   10.6.1.2         0x80000041
Router 10.5.1.18   10.5.1.18        0x8000005f
Network 10.5.5.2   10.5.1.18        0x80000033
Summary 10.8.59.0   172.25.27.82     0x8000003a

show ospf3 neighbor detail user@host> show ospf3 neighbor detail
ID          Interface          State      Pri   Dead
10.255.71.13 fe-0/0/2.0         Full      128   30
Neighbor-address fe80::290:69ff:fe9b:e002
area 0.0.0.0, opt 0x13, OSPF3-Intf-Index 2
DR-ID 10.255.71.13, BDR-ID 10.255.71.12
Up 02:51:43, adjacent 02:51:43

show ospf neighbor area area-id user@host >show ospf neighbor area 1.1.1.1
Address      Interface          State      ID          Pri   Dead
192.168.37.47 so-0/0/0.0         Full      10.255.245.4 128   33
Area 1.1.1.1
192.168.37.55 so-1/0/0.0         Full      10.255.245.5 128   37
Area 1.1.1.1

show ospf neighbor interface interface-name user@host >show ospf neighbor interface so-0/0/0.0
Address      Interface          State      ID          Pri   Dead
192.168.37.47 so-0/0/0.0         Full      10.255.245.4 128   37
Area 0.0.0.0
192.168.37.47 so-0/0/0.0         Full      10.255.245.4 128   33
Area 1.1.1.1
192.168.37.47 so-0/0/0.0         Full      10.255.245.4 128   32
Area 2.2.2.2

show ospf3 neighbor instance all (OSPFv3 Multiple Family) user @host > show ospf3 neighbor instance all
Instance: ina
Realm: ipv6-unicast
ID          Interface          State      Pri   Dead

```



Address Support  
Enabled)

100.1.1.1	fe-0/0/2.0	Full	128	37
Neighbor-address fe80::217:cb00:c87c:8c03				
Instance: inb				
Realm: ipv4-unicast				
ID	Interface	State	Pri	Dead
100.1.2.1	fe-0/0/2.1	Full	128	33
Neighbor-address fe80::217:cb00:c97c:8c03				



## show (ospf | ospf3) overview

<b>Syntax</b>	show (ospf   ospf3) overview <brief   extensive> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )> <realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)>
<b>Syntax (EX Series Switch and QFX Series)</b>	show (ospf   ospf3) overview <brief   extensive> <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>realm</b> option introduced in Junos OS Release 9.2. Database protection introduced in Junos 10.2. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display Open Shortest Path First (OSPF) overview information.
<b>Options</b>	<p>none—Display standard information about all OSPF neighbors for all routing instances.</p> <p>brief   extensive—(Optional) Display the specified level of output.</p> <p>instance <i>instance-name</i>—(Optional) Display all OSPF interfaces under the named routing instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)—(Optional) (OSPFv3 only) Display information about the specified OSPFv3 realm, or address family. Use the <b>realm</b> option to specify an address family for OSPFv3 other than IPv6 unicast, which is the default.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show ospf overview on page 396</a> <a href="#">show ospf overview (With Database Protection) on page 396</a> <a href="#">show ospf3 overview (With Database Protection) on page 397</a> <a href="#">show ospf overview extensive on page 397</a>
<b>Output Fields</b>	<a href="#">Table 108 on page 394</a> lists the output fields for the <b>show ospf overview</b> command. Output fields are listed in the approximate order in which they appear.

Table 108: show ospf overview Output Fields

Field name	Field Description	Level of Output
Instance	OSPF routing instance.	All levels



Table 108: show ospf overview Output Fields (*continued*)

Field name	Field Description	Level of Output
<b>Router ID</b>	Router ID of the routing device.	All levels
<b>Route table index</b>	Route table index.	All levels
<b>Configured overload</b>	Overload capability is enabled. If the overload timer is also configured, display the time that remains before it is set to expire. This field is not displayed after the timer expires.	All levels
<b>Topology</b>	Topology identifier.	All levels
<b>Prefix export count</b>	Number of prefixes exported into OSPF.	All levels
<b>Full SPF runs</b>	Number of complete Shortest Path First calculations.	All levels
<b>SPF delay</b>	Delay before performing consecutive Shortest Path First calculations.	All levels
<b>SPF holddown</b>	Delay before performing additional Shortest Path First (SPF) calculations after the maximum number of consecutive SPF calculations is reached.	All levels
<b>SPF rapid runs</b>	Maximum number of Shortest Path First calculations that can be performed in succession before the hold-down timer begins.	All levels
<b>LSA refresh time</b>	Refresh period for link-state advertisement (in minutes).	All levels
<b>Database protection state</b>	Current state of database protection.	All levels
<b>Warning threshold</b>	Threshold at which a warning message is logged (percentage of maximum LSA count).	All levels
<b>Non self-generated LSAs</b>	Number of LSAs whose router ID is not equal to the local router ID: <b>Current</b> , <b>Warning</b> (threshold), and <b>Allowed</b> .	All levels
<b>Ignore time</b>	How long the database has been in the ignore state.	All levels
<b>Reset time</b>	How long the database must stay out of the ignore or isolated state before it returns to normal operations.	All levels
<b>Ignore count</b>	Number of times the database has been in the ignore state: <b>Current</b> and <b>Allowed</b> .	All levels
<b>Restart</b>	Graceful restart capability: <b>enabled</b> or <b>disabled</b> .	All levels
<b>Restart duration</b>	Time period for complete reacquisition of OSPF neighbors.	All levels
<b>Restart grace period</b>	Time period for which the neighbors should consider the restarting routing device as part of the topology.	All levels



Table 108: show ospf overview Output Fields (*continued*)

Field name	Field Description	Level of Output
Graceful restart helper mode	(OSPFv2) Standard graceful restart helper capability (based on RFC 3623): <b>enabled</b> or <b>disabled</b> .	All levels
Restart-signaling helper mode	(OSPFv2) Restart signaling-based graceful restart helper capability (based on RFC 4811, RFC 4812, and RFC 4813): <b>enabled</b> or <b>disabled</b> .	All levels
Helper mode	(OSPFv3) Graceful restart helper capability: <b>enabled</b> or <b>disabled</b> .	All levels
Trace options	OSPF-specific trace options.	<b>extensive</b>
Trace file	Name of the file to receive the output of the tracing operation.	<b>extensive</b>
Area	Area number. Area 0.0.0.0 is the backbone area.	All levels
Stub type	Stub type of area: <b>Normal Stub</b> , <b>Not Stub</b> , or <b>Not so Stubby Stub</b> .	All levels
Authentication Type	Type of authentication: <b>None</b> , <b>Password</b> , or <b>MD5</b> .	All levels
Area border routers	Number of area border routers.	All levels
Neighbors	Number of autonomous system boundary routers.	All levels

## Sample Output

```

show ospf overview  user@host> show ospf overview
                    Instance: master
                      Router ID: 10.255.245.6
                      Route table index: 0
                      Configured overload, expires in 118 seconds
                      LSA refresh time: 50 minutes
                      Restart: Enabled
                        Restart duration: 20 sec
                        Restart grace period: 40 sec
                        Helper mode: enabled
                      Area: 0.0.0.0
                        Stub type: Not Stub
                        Authentication Type: None
                        Area border routers: 0, AS boundary routers: 0
                        Neighbors
                          Up (in full state): 0
                      Topology: default (ID 0)
                      Prefix export count: 0
                      Full SPF runs: 1
                      SPF delay: 0.200000 sec, SPF holddown: 5 sec, SPF rapid runs: 3

show ospf overview  user@host> show ospf overview
(With Database      Instance: master
Protection)         Router ID: 10.255.112.218
                    Route table index: 0

```



```

LSA refresh time: 50 minutes
Traffic engineering
Restart: Enabled
  Restart duration: 180 sec
  Restart grace period: 210 sec
  Graceful restart helper mode: Enabled
  Restart-signaling helper mode: Enabled
Database protection state: Normal
  Warning threshold: 70 percent
  Non self-generated LSAs: Current 582, Warning 700, Allowed 1000
  Ignore time: 30, Reset time: 60
  Ignore count: Current 0, Allowed 1
Area: 0.0.0.0
  Stub type: Not Stub
  Authentication Type: None
  Area border routers: 0, AS boundary routers: 0
  Neighbors
    Up (in full state): 160
Topology: default (ID 0)
  Prefix export count: 0
  Full SPF runs: 70
  SPF delay: 0.200000 sec, SPF holddown: 5 sec, SPF rapid runs: 3
  Backup SPF: Not Needed

```

**show ospf3 overview  
(With Database  
Protection)**

```

user@host> show ospf3 overview
Instance: master
Router ID: 10.255.112.128
Route table index: 0
LSA refresh time: 50 minutes
Database protection state: Normal
  Warning threshold: 80 percent
  Non self-generated LSAs: Current 3, Warning 8, Allowed 10
  Ignore time: 30, Reset time: 60
  Ignore count: Current 0, Allowed 2
Area: 0.0.0.0
  Stub type: Not Stub
  Area border routers: 0, AS boundary routers: 0
  Neighbors
    Up (in full state): 1
Topology: default (ID 0)
  Prefix export count: 0
  Full SPF runs: 7
  SPF delay: 0.200000 sec, SPF holddown: 5 sec, SPF rapid runs: 3
  Backup SPF: Not Needed

```

**show ospf overview  
extensive**

```

user@host> show ospf overview extensive
Instance: master
Router ID: 1.1.1.103
Route table index: 0
Full SPF runs: 13, SPF delay: 0.200000 sec
LSA refresh time: 50 minutes
Restart: Disabled
Trace options: lsa
Trace file: /var/log/ospf size 131072 files 10
Area: 0.0.0.0
  Stub type: Not Stub
  Authentication Type: None
  Area border routers: 0, AS boundary routers: 0
  Neighbors
    Up (in full state): 1

```







## show (ospf | ospf3) route

<b>Syntax</b>	<pre>show (ospf   ospf3) route &lt;brief   detail   extensive&gt; &lt;abr   asbr   extern   inter   intra&gt; &lt;destination&gt; &lt;instance (default   ipv4-multicast   <i>instance-name</i>)&gt; &lt;logical-system (default   ipv4-multicast   <i>logical-system-name</i>)&gt; &lt;network&gt; &lt;no-backup-coverage&gt; &lt;realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)&gt; &lt;router&gt; &lt;topology (default   ipv4-multicast   <i>topology-name</i>)&gt; &lt;transit&gt;</pre>
<b>Syntax (EX Series Switch and QFX Series)</b>	<pre>show (ospf   ospf3) route &lt;brief   detail   extensive&gt; &lt;abr   asbr   extern   inter   intra&gt; &lt;destination&gt; &lt;instance <i>instance-name</i> &lt;network&gt; &lt;no-backup-coverage&gt; &lt;router&gt; &lt;topology (default   ipv4-multicast   <i>topology-name</i>)&gt; &lt;transit&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>topology</b> option introduced in Junos OS Release 9.0.</p> <p><b>realm</b> option introduced in Junos OS Release 9.2.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p>
<b>Description</b>	Display the entries in the Open Shortest Path First (OSPF) routing table.
<b>Options</b>	<p><b>none</b>—Display standard information about all entries in the OSPF routing table for all routing instances and all topologies.</p> <p><i>destination</i>—Display routes to the specified IP address (with optional destination prefix length).</p> <p><b>brief   detail   extensive</b>—(Optional) Display the specified level of output.</p> <p><b>abr</b>—(Optional) Display routes to area border routers.</p> <p><b>asbr</b>—(Optional) Display routes to autonomous system border routers.</p> <p><b>extern</b>—(Optional) Display external routes.</p> <p><b>inter</b>—(Optional) Display interarea routes.</p> <p><b>intra</b>—(Optional) Display intra-area routes.</p>



**instance** (default | ipv4-multicast | *instance-name*)—(Optional) Display entries for the default routing instance, the IPv4 multicast routing instance, or for the specified routing instance.

**logical-system** (default | ipv4-multicast | *logical-system-name*)—(Optional) Perform this operation on the default logical system, the IPv4 multicast logical system, or on a particular logical system.

**network**—(Optional) Display routes to networks.

**no-backup-coverage**—(Optional) Display routes with no backup coverage.

**realm** (ipv4-multicast | ipv4-unicast | ipv6-multicast)—(OSPFv3 only) (Optional) Display entries in the routing table for the specified OSPFv3 realm, or address family. Use the **realm** option to specify an address family for OSPFv3 other than IPv6 unicast, which is the default.

**router**—(Optional) Display routes to all routers.

**topology** (default | ipv4-multicast | *topology-name*)—(OSPFv2 only) (Optional) Display routes for the default OSPF topology, IPv4 multicast topology, or for a particular topology.

**transit**—(Optional) (OSPFv3 only) Display OSPFv3 routes to pseudonodes.

**Required Privilege Level** view

**List of Sample Output** [show ospf route on page 402](#)  
[show ospf route detail on page 402](#)  
[show ospf3 route on page 402](#)  
[show ospf3 route detail on page 403](#)  
[show ospf route topology voice on page 403](#)

**Output Fields** [Table 109 on page 400](#) list the output fields for the **show (ospf | ospf3) route** command. Output fields are listed in the approximate order in which they appear.

**Table 109: show (ospf | ospf3) route Output Fields**

Field Name	Field Description	Output Level
<b>Topology</b>	Name of the topology.	All levels
<b>Prefix</b>	Destination of the route.	All levels
<b>Path type</b>	How the route was learned: <ul style="list-style-type: none"> <li><b>Inter</b>—Interarea route</li> <li><b>Ext1</b>—External type 1 route</li> <li><b>Ext2</b>—External type 2 route</li> <li><b>Intra</b>—Intra-area route</li> </ul>	All levels



Table 109: show (ospf | ospf3) route Output Fields (*continued*)

Field Name	Field Description	Output Level
<b>Route type</b>	The type of routing device from which the route was learned: <ul style="list-style-type: none"> <li>• <b>AS BR</b>—Route to AS border router.</li> <li>• <b>Area BR</b>—Route to area border router.</li> <li>• <b>Area/AS BR</b>—Route to router that is both an <b>Area BR</b> and <b>AS BR</b>.</li> <li>• <b>Network</b>—Network router.</li> <li>• <b>Router</b>—Route to a router that is neither an <b>Area BR</b> nor an <b>AS BR</b>.</li> <li>• <b>Transit</b>—(OSPFv3 only) Route to a pseudonode representing a transit network, LAN, or nonbroadcast multiaccess (NBMA) link.</li> <li>• <b>Discard</b>—Route to a summary discard.</li> </ul>	All levels
<b>NH Type</b>	Next-hop type: <b>LSP</b> or <b>IP</b> .	All levels
<b>Metric</b>	Route's metric value.	All levels
<b>NH-interface</b>	(OSPFv3 only) Interface through which the route's next hop is reachable.	All levels
<b>NH-addr</b>	(OSPFv3 only) IPv6 address of the next hop.	All levels
<b>NextHop Interface</b>	(OSPFv2 only) Interface through which the route's next hop is reachable.	All levels
<b>Nexthop addr/label</b>	(OSPFv2 only) If the <b>NH Type</b> is <b>IP</b> , then it is the address of the next hop. If the <b>NH Type</b> is <b>LSP</b> , then it is the name of the label-switched path.	All levels
<b>Area</b>	Area ID of the route.	<b>detail</b>
<b>Origin</b>	Router from which the route was learned.	<b>detail</b>
<b>Type 7</b>	Route was learned through a not-so-stubby area (NSSA) link-state advertisement (LSA).	<b>detail</b>
<b>P-bit</b>	Route was learned through NSSA LSA and the propagate bit was set.	<b>detail</b>
<b>Fwd NZ</b>	Forwarding address is nonzero. <b>Fwd NZ</b> is only displayed if the route is learned through an NSSA LSA.	<b>detail</b>
<b>optional-capability</b>	Optional capabilities propagated in the router LSA. This field is in the output for intra-area router routes only (when <b>Route Type</b> is <b>Area BR</b> , <b>AS BR</b> , <b>Area/AS BR</b> , or <b>Router</b> ), not for interarea router routes or network routes. Three bits in this field are defined as follows: <ul style="list-style-type: none"> <li>• <b>0x4 (V)</b>—Routing device is at the end of a virtual active link.</li> <li>• <b>0x2 (E)</b>—Routing device is an autonomous system boundary router.</li> <li>• <b>0x1 (B)</b>—Routing device is an area border router.</li> </ul>	<b>detail</b>



Table 109: show (ospf | ospf3) route Output Fields (*continued*)

Field Name	Field Description	Output Level
<b>priority</b>	The priority assigned to the prefix: <ul style="list-style-type: none"> <li>• <b>high</b></li> <li>• <b>medium</b></li> <li>• <b>low</b></li> </ul> <p><b>NOTE:</b> The <b>priority</b> field applies only to routes of type <b>Network</b>.</p>	<b>detail</b>

### Sample Output

```

show ospf route user@host> show ospf route
Prefix                Path   Route   NH   Metric  NextHop   Nexthop
                    Type   Type    Type
10.255.71.12          Intra Router  IP    1      fe-0/0/2.0 192.16.22.86
10.255.71.13/32       Intra Network IP    0      lo0.0
192.168.222.84/30     Intra Network LSP   1      fe-0/0/2.0 lsp-ab

```

```

show ospf route detail user@host> show ospf route detail
Topology default Route Table:

Prefix                Path   Route   NH   Metric  NextHop   Nexthop
                    Type   Type    Type
10.255.14.174          Inter AS BR  IP    210     t1-3/0/1.0
    area 0.0.0.2, origin 10.255.14.185
10.255.14.178          Intra Router  IP    200     t3-3/1/3.0
    area 0.0.0.2, origin 10.255.14.178, optional-capability 0x0
10.210.1.0/30          Intra Network IP    10      t3-3/1/2.0
    area 0.0.0.2, origin 10.255.14.172, priority medium
100.1.1.1/32           Inter Network IP    210     t1-3/0/1.0
    area 0.0.0.2, origin 10.255.14.185, priority low
112.3.1.0/24           Ext2  Network  IP    0       t1-3/0/1.0
    area 0.0.0.0, origin 10.255.14.174, priority high
200.3.3.0/30           Inter Network IP    220     t1-3/0/1.0
    area 0.0.0.2, origin 10.255.14.185, priority high

```

```

show ospf3 route user@host> show ospf3 route
Prefix                Path   Route   NH   Metric  NextHop   Nexthop
                    Type   Type    Type
10.255.71.13          Intra Router  IP    1
    NH-interface fe-0/0/2.0, NH-addr fe80::290:69ff:fe9b:e002
10.255.71.13;0.0.0.2
10.255.245.1          Intra Router  IP    40     fxp1.1      192.168.36.17
    area 0.0.0.0, origin 10.255.245.1 optional-capability 0x0,
10.255.245.3          Intra AS BR  IP    1      fxp2.3      192.168.36.34
    area 0.0.0.0, origin 10.255.245.3 optional-capability 0x0,
10.255.245.1/32       Intra Network IP    40     fxp1.1      192.168.36.17
    area 0.0.0.0, origin 10.255.245.1, priority high
10.255.245.2/32       Intra Network IP    0      lo0.0
    area 0.0.0.0, origin 10.255.245.2, priority medium
10.255.245.3/32       Intra Network IP    1      fxp2.3      192.168.36.34

```



```

    area 0.0.0.0, origin 10.255.245.3, priority low
        Intra Transit IP 1
    NH-interface fe-0/0/2.0
192::168:222:84/126 Intra Network IP 1
    NH-interface fe-0/0/2.0
abcd::71:12/128 Intra Network IP 0
    NH-interface lo0.0
abcd::71:13/128 Intra Network LSP 1
    NH-interface fe-0/0/2.0, NH-addr lsp-cd

```

```

show ospf3 route detail user@host> show ospf3 route detail
Prefix Path Route NH Metric
        type type type
10.255.14.174 Intra Area/AS BR IP 110
    NH-interface so-1/2/2.0
    Area 0.0.0.0, Origin 10.255.14.174, Optional-capability 0x3
10.255.14.178 Intra Router IP 200
    NH-interface t3-3/1/3.0
    Area 0.0.0.0, Origin 10.255.14.178, Optional-capability 0x0
10.255.14.185;0.0.0.2 Intra Transit IP 200
    NH-interface t1-3/0/1.0
    NH-interface so-1/2/2.0
    Area 0.0.0.0, Origin 10.255.14.185
1000:1:1::1/128 Inter Network IP 110
    NH-interface so-1/2/2.0
    Area 0.0.0.0, Origin 10.255.14.174, Priority low
1001:2:1::/48 Ext1 Network IP 110
    NH-interface so-1/2/2.0
    Area 0.0.0.0, Origin 10.255.14.174, Fwd NZ, Priority medium
1002:1:7::/48 Ext2 Network IP 0
    NH-interface so-1/2/2.0
    Area 0.0.0.0, Origin 10.255.14.174, Fwd NZ, Priority low
1002:3:4::/48 Ext2 Network IP 0
    NH-interface so-1/2/2.0
    Area 0.0.0.0, Origin 10.255.14.174, Fwd NZ, Priority high
abcd::10:255:14:172/128 Intra Network IP 0
    NH-interface lo0.0
    Area 0.0.0.0, Origin 10.255.14.172, Priority low

```

```

show ospf route topology voice user@host show ospf route topology voice
Topology voice Route Table:
Prefix Path Route NH Metric NextHop Nexthop
        Type Type Type
10.255.8.2 Intra Router IP 1 so-0/2/0.0
10.255.8.3 Intra Router IP 2 so-0/2/0.0
10.255.8.1/32 Intra Network IP 0 lo0.0
10.255.8.2/32 Intra Network IP 1 so-0/2/0.0
10.255.8.3/32 Intra Network IP 2 so-0/2/0.0
192.168.8.0/29 Intra Network IP 2 so-0/2/0.0
192.168.8.44/30 Intra Network IP 2 so-0/2/0.0
192.168.8.46/32 Intra Network IP 1 so-0/2/0.0
192.168.8.48/30 Intra Network IP 1 so-0/2/1.0
192.168.8.52/30 Intra Network IP 2 so-0/2/0.0
192.168.9.44/30 Intra Network IP 1 so-0/2/0.0
192.168.9.45/32 Intra Network IP 2 so-0/2/0.0

```



## show (ospf | ospf3) statistics

<b>Syntax</b>	show (ospf   ospf3) statistics <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )> <realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)>
<b>Syntax (EX Series Switch and QFX Series)</b>	show (ospf   ospf3) statistics <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>realm</b> option introduced in Junos OS Release 9.2. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display OSPF statistics.
<b>Options</b>	none—Display OSPF statistics for all routing instances.  instance <i>instance-name</i> —(Optional) Display all statistics for the specified routing instance.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.  realm (ipv4-multicast   ipv4-unicast   ipv6-multicast)—(Optional) (OSPFv3 only) Display all statistics for the specified OSPFv3 realm, or address family. Use the <b>realm</b> option to specify an address family for OSPFv3 other than IPv6 unicast, which is the default.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">clear (ospf   ospf3) statistics on page 345</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show ospf statistics on page 405</a>
<b>Output Fields</b>	Table 110 on page 404 lists the output fields for the <b>show (ospf   ospf3) statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 110: show (ospf | ospf3) statistics Output Fields**

Field Name	Field Description
Packet type	Type of OSPF packet.
Total Sent/Total Received	Total number of packets sent and received.
Last 5 seconds Sent/Last 5 seconds Received	Total number of packets sent and received in the last 5 seconds.



Table 110: show (ospf | ospf3) statistics Output Fields (*continued*)

Field Name	Field Description
LSAs retransmitted	Total number of link-state advertisements transmitted, and number retransmitted in the last 5 seconds.
Receive errors	Number and type of receive errors.

## Sample Output

**show ospf statistics**

```
user@host> show ospf statistics
Packet type      Total
                Sent    Received
Hello            505739  990495
  DbD              20      26
  LSReq             6       5
LSUpdate         27060  15319
LSAck            10923  52470
                Sent    Received
Last 5 seconds
Hello            4       5
  DbD              0       0
  LSReq             0       0
LSUpdate         0       0
LSAck            0       0
```

LSAs retransmitted: 16, last 5 seconds: 0

Receive errors:  
 862 no interface found  
 115923 no virtual link found







# Protocol-Independent Routing Operational Mode Commands

Table 111 on page 407 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot protocol-independent routing properties. Commands are listed in alphabetical order.



**NOTE:** The `show route` command has a lengthy set of options. Therefore, this chapter describes each option as a separate command. You can, however, combine several options and issue them as single `show route` command. For example, `show route ccc exact`.

The exceptions to this convention are the `show as-path`, `show route damping`, `show route export`, `show route export-vrf-target`, `show route forwarding-table`, `show route instance`, and `show route martians` commands, which cannot be used with any other options (other than level of output options, such as `detail` and `extensive`).

The `show route flow validation` command can only be used with the `table` option.

Table 111: Protocol-Independent Routing Operational Mode Commands

Task	Command
Display known autonomous system (AS) paths.	<code>show as-path</code>
Display AS path domain information.	<code>show as-path domain</code>
Display AS path summary information.	<code>show as-path summary</code>
Display information about the entries in the routing tables.	<code>show route</code>
Display routes that are currently active.	<code>show route active-path</code>
Display routes transmitted by a particular routing protocol.	<code>show route advertising-protocol</code>
Display all information about all routes.	<code>show route all</code>



**Table 111: Protocol-Independent Routing Operational Mode Commands** (*continued*)

Task	Command
Display routes containing a specified AS path.	<code>show route aspath-regex</code>
Display the best route to the specified address or range of addresses.	<code>show route best</code>
Display brief information about the entries in the routing table.	<code>show route brief</code>
Display circuit cross-connect (CCC) entries in the Multiprotocol Link Switching (MPLS) routing table.	<code>show route ccc</code>
Display routes containing members of a specified BGP community.	<code>show route community</code>
Display routes containing members of a specified BGP community based on a particular community name.	<code>show route community-name</code>
Display routes that have been damped.	<code>show route damping</code>
Display detailed information about the entries in the routing table.	<code>show route detail</code>
Display routes that exactly match the specified address or range of addresses.	<code>show route exact</code>
Display list of instances or routing tables that are importers or exporters of routes.	<code>show route export</code>
Display target communities for which autoexport is currently distributing routes.	<code>show route export vrf-target</code>
Display extensive information about the entries in the routing table.	<code>show route extensive</code>
Display the best route to an address.	<code>show route flow validation</code>
Display the Junos OS forwarding table.	<code>show route forwarding-table</code>
Display information about the interfaces in the Junos OS forwarding table.	<code>show route forwarding-table interface-name</code>
Display hidden routes only.	<code>show route hidden</code>
Display routes that are not preferred.	<code>show route inactive-path</code>
Display routes that are currently inactive.	<code>show route inactive-prefix</code>
Display routing instance information.	<code>show route instance</code>



Table 111: Protocol-Independent Routing Operational Mode Commands (*continued*)

Task	Command
Display routes corresponding to a specified label value.	<code>show route label</code>
Display routes that form a label-switched path.	<code>show route label-switched-path</code>
Display route localization information.	<code>show route localization</code>
Display information about martian addresses.	<code>show route martians</code>
Display routes that contain the specified next hop.	<code>show route next-hop</code>
Display routes not associated with any BGP community.	<code>show route no-community</code>
Display routes exiting the router through the specified interface.	<code>show route output</code>
Display routes learned by the specified protocol.	<code>show route protocol</code>
Display routes in a range of destination prefixes.	<code>show route range</code>
Display routes received by a particular routing protocol.	<code>show route receive-protocol</code>
Display entries in the next-hop resolution database.	<code>show route resolution</code>
Display routes learned from snooping.	<code>show route snooping</code>
Display routes learned from the specified source.	<code>show route source-gateway</code>
Display statistics about the routes in all routing tables.	<code>show route summary</code>
Display routes in a particular routing table.	<code>show route table</code>
Display high-level summary of routing table information.	<code>show route terse</code>



**NOTE:** For information about how to configure protocol-independent features, see the *Junos Routing Protocols Configuration Guide* and the *Junos Policy Framework Configuration Guide*.



## show as-path

<b>Syntax</b>	show as-path <brief   detail> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show as-path <brief   detail>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display the distribution of autonomous system (AS) paths that the local routing device is using (usually through the routing table). Use this command to debug problems for AS paths and to understand how AS paths have been manipulated through a policy (through the <b>as-path-prepend</b> action) or through aggregation.
<b>Options</b>	<p>none—Display basic information about AS paths that the local routing device is using (same as brief).</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show as-path on page 411</a> <a href="#">show as-path detail on page 412</a>
<b>Output Fields</b>	<a href="#">Table 112 on page 410</a> lists the output fields for the <b>show as-path</b> command. Output fields are listed in the approximate order in which they appear.

**Table 112: show as-path Output Fields**

Field Name	Field Description	Level of Output
<b>Total AS paths</b>	Total number of AS paths.	<b>brief</b> none
<b>Bucket</b>	Bucket value. This value represents a traffic classification on the interface.	All levels
<b>Count</b>	Path reference count.	All levels



Table 112: show as-path Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>AS path</b>	<p>AS path through which the route was learned. The letters at the end of the AS path indicate the path origin, providing an indication of the state of the route at the point at which the AS path originated:</p> <ul style="list-style-type: none"> <li>• <b>I</b>—IGP.</li> <li>• <b>E</b>—EGP.</li> <li>• <b>?</b>—Incomplete; typically, the AS path was aggregated.</li> <li>• <b>Atomic</b>—Route is an aggregate of several route prefixes.</li> <li>• <b>Aggregator</b>—Routing device has summarized a range of prefixes.</li> </ul>	All levels
<b>domain</b>	Number of independent AS domains. The AS paths of an independent AS domain are not shared with the AS paths and AS path attributes of other domains, including the master routing instance domain.	detail
<b>neighbor as</b>	AS peer address.	detail
<b>length</b>	Length of the AS path.	detail
<b>segments</b>	Length of the AS segment descriptor.	detail
<b>references</b>	Path reference count.	detail

## Sample Output

```

show as-path user@host> show as-path
Total AS paths: 30382
Bucket 0      Count: 36
  I
14203 2914 174 31752 I
14203 2914 701 21512 I
14203 2914 1239 26632 I
14203 2914 1239 29704 I
14203 2914 4323 10248 I
14203 2914 4766 23560 I
14203 2914 6395 32776 I
14203 2914 7911 11272 I
14203 2914 12180 18440 I
14203 2914 17408 17416 I
14203 2914 701 702 24586 I
14203 2914 1239 4657 9226 I
14203 2914 1239 7132 16394 I
14203 2914 1299 8308 34826 I
14203 2914 3320 5603 28682 I
14203 2914 3491 1680 33802 I
14203 2914 3549 7908 27658 I
14203 2914 3549 20804 30730 I
14203 2914 7018 2687 9226 I
14203 2914 174 9318 9318 23564 I
14203 2914 701 3786 3786 23564 I
14203 2914 701 4761 4795 9228 I
14203 2914 1239 7132 5673 18444 I
14203 2914 3491 20485 24588 24588 I

```



```

14203 2914 5511 2200 1945 2060 I
14203 2914 7911 14325 14325 14348 I
14203 2914 701 4637 9230 9230 9230 I
14203 2914 6395 14 14 14 14 I
14203 2914 9299 6163 6163 6163 9232 I
14203 2914 3356 3356 3356 3356 3356 11955 21522 I
14203 2914 9837 9837 9219 I Aggregator: 9219 202.27.91.253
14203 2914 174 30209 30222 30222 30222 ?
14203 2914 1299 5377 I (Atomic) Aggregator: 5377 193.219.192.22
14203 2914 4323 36097 I (Atomic) Aggregator: 36097 216.69.252.254
14203 2914 209 2516 17676 23813 I (Atomic) Aggregator: 23813 219.127.233.66
Bucket 1    Count: 28
14203 2914 35847 I
14203 2914 174 19465 I
14203 2914 174 35849 I
14203 2914 2828 32777 I
14203 2914 4323 14345 I
14203 2914 4323 29705 I
14203 2914 6395 32777 I

```

...

#### show as-path detail

```

user@host> show as-path detail
Total AS paths: 30410
Bucket 0    Count: 36
AS path: I
  domain 0, length 0, segments 0, references 54
AS path: 14203 2914 174 31752 I
  domain 1, neighbor as: 14203, length 4, segments 1, references 2
AS path: 14203 2914 701 21512 I
  domain 1, neighbor as: 14203, length 4, segments 1, references 2
AS path: 14203 2914 1239 26632 I
  domain 1, neighbor as: 14203, length 4, segments 1, references 2
AS path: 14203 2914 1239 29704 I
  domain 1, neighbor as: 14203, length 4, segments 1, references 2
AS path: 14203 2914 4323 10248 I
  domain 1, neighbor as: 14203, length 4, segments 1, references 2
AS path: 14203 2914 4766 23560 I
  domain 1, neighbor as: 14203, length 4, segments 1, references 2
AS path: 14203 2914 6395 32776 I
  domain 1, neighbor as: 14203, length 4, segments 1, references 3
AS path: 14203 2914 7911 11272 I
  domain 1, neighbor as: 14203, length 4, segments 1, references 2
AS path: 14203 2914 12180 18440 I
  domain 1, neighbor as: 14203, length 4, segments 1, references 3
AS path: 14203 2914 17408 17416 I
  domain 1, neighbor as: 14203, length 4, segments 1, references 3
AS path: 14203 2914 701 702 24586 I
  domain 1, neighbor as: 14203, length 5, segments 1, references 3
AS path: 14203 2914 1239 4657 9226 I
  domain 1, neighbor as: 14203, length 5, segments 1, references 7
AS path: 14203 2914 1239 7132 16394 I
  domain 1, neighbor as: 14203, length 5, segments 1, references 2
AS path: 14203 2914 1299 8308 34826 I
  domain 1, neighbor as: 14203, length 5, segments 1, references 2
AS path: 14203 2914 3320 5603 28682 I
  domain 1, neighbor as: 14203, length 5, segments 1, references 2
AS path: 14203 2914 3491 1680 33802 I
  domain 1, neighbor as: 14203, length 5, segments 1, references 2
AS path: 14203 2914 3549 7908 27658 I
  domain 1, neighbor as: 14203, length 5, segments 1, references 2

```



```
AS path: 14203 2914 3549 20804 30730 I
  domain 1, neighbor as: 14203, length 5, segments 1, references 2
AS path: 14203 2914 7018 2687 9226 I
  domain 1, neighbor as: 14203, length 5, segments 1, references 3
AS path: 14203 2914 174 9318 9318 23564 I
  domain 1, neighbor as: 14203, length 6, segments 1, references 2
AS path: 14203 2914 701 3786 3786 23564 I
  domain 1, neighbor as: 14203, length 6, segments 1, references 2
AS path: 14203 2914 701 4761 4795 9228 I
  domain 1, neighbor as: 14203, length 6, segments 1, references 14
AS path: 14203 2914 1239 7132 5673 18444 I
  domain 1, neighbor as: 14203, length 6, segments 1, references 2
AS path: 14203 2914 3491 20485 24588 24588 I
  domain 1, neighbor as: 14203, length 6, segments 1, references 4
AS path: 14203 2914 5511 2200 1945 2060 I
  domain 1, neighbor as: 14203, length 6, segments 1, references 2
AS path: 14203 2914 7911 14325 14325 14348 I
  domain 1, neighbor as: 14203, length 6, segments 1, references 2
AS path: 14203 2914 701 4637 9230 9230 9230 I
  domain 1, neighbor as: 14203, length 7, segments 1, references 3
AS path: 14203 2914 6395 14 14 14 14 I
  domain 1, neighbor as: 14203, length 7, segments 1, references 10
...
```



## show as-path domain

<b>Syntax</b>	show as-path domain <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show as-path domain
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display autonomous system (AS) path domain information.
<b>Options</b>	none—(Optional) Display AS path domain information for all routing instances.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show as-path domain on page 415</a>
<b>Output Fields</b>	<a href="#">Table 113 on page 414</a> lists the output fields for the <b>show as-path domain</b> command. Output fields are listed in the approximate order in which they appear

**Table 113: show as-path domain Output Fields**

Field Name	Field Description
<b>Domain</b>	Number of independent AS domains. The AS paths of an independent AS domain are not shared with the AS paths and AS path attributes of other domains, including the master routing instance domain.
<b>Primary</b>	Primary AS number.
<b>References</b>	Path reference count.
<b>Number Paths</b>	Number of known AS paths.
<b>Flags</b>	Information about the AS path: <ul style="list-style-type: none"> <li>• <b>ASLoop</b>—Path contains an AS loop.</li> <li>• <b>Atomic</b>—Path includes the ATOMIC_AGGREGATE path attribute.</li> <li>• <b>Local</b>—Path was created by local aggregation.</li> <li>• <b>Master</b>—Path was created by the master routing instance.</li> </ul>
<b>Local AS</b>	AS number of the local routing device.
<b>Loops</b>	How many times this AS number can appear in an AS path.



## Sample Output

```
show as-path domain  user@host> show as-path domain
Domain: 1             Primary: 10458
References:           3 Paths:      30383
Flags: Master
Local AS: 10458  Loops: 1
```



## show as-path summary

<b>Syntax</b>	show as-path summary <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show as-path summary
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display autonomous system (AS) path summary information.
<b>Options</b>	none—(Optional) Display AS path summary information for all routing instances.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show as-path summary on page 416</a>
<b>Output Fields</b>	<a href="#">Table 114 on page 416</a> lists the output fields for the <b>show as-path summary</b> command. Output fields are listed in the approximate order in which they appear.

**Table 114: show as-path summary Output Fields**

Field Name	Field Description
AS Path	AS path number.
Buckets	Bucket value. This value represents a traffic classification on the interface.
Max	Maximum limit for the number of AS numbers.
Min	Minimum limit for the number of AS numbers.
Avg	Average number of AS numbers.
Std deviation	Standard deviation for the number of AS numbers.

### Sample Output

```

show as-path summary  user@host> show as-path summary
                        AS Paths  Buckets   Max    Min    Avg    Std deviation
                        30425     1024    95     12    29     6.481419

```



## show route

<b>Syntax</b>	show route <all> <destination-prefix> <logical-system (all   <i>logical-system-name</i> )> <private>
<b>Syntax (EX Series Switch)</b>	show route <all> <destination-prefix> <private>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>private</b> option introduced in Junos OS Release 9.5. <b>private</b> option introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display the active entries in the routing tables.
<b>Options</b>	<p>none—Display brief information about all active entries in the routing tables.</p> <p>all—(Optional) Display information about all routing tables, including private, or internal, routing tables.</p> <p>destination-prefix—(Optional) Display active entries for the specified address or range of addresses.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>private—(Optional) Display information only about all private, or internal, routing tables.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route on page 420</a> <a href="#">show route destination-prefix on page 420</a> <a href="#">show route extensive on page 420</a>
<b>Output Fields</b>	<a href="#">Table 115 on page 417</a> describes the output fields for the <b>show route</b> command. Output fields are listed in the approximate order in which they appear.

**Table 115: show route Output Fields**

Field Name	Field Description
<i>routing-table-name</i>	Name of the routing table (for example, <b>inet.0</b> ).
<i>number destinations</i>	Number of destinations for which there are routes in the routing table.



Table 115: show route Output Fields (*continued*)

Field Name	Field Description
<i>number routes</i>	<p>Number of routes in the routing table and total number of routes in the following states:</p> <ul style="list-style-type: none"> <li>• <b>active</b> (routes that are active).</li> <li>• <b>holddown</b> (routes that are in the pending state before being declared inactive).</li> <li>• <b>hidden</b> (routes that are not used because of a routing policy).</li> </ul>
<i>destination-prefix</i>	<p>Route destination (for example:10.0.0.1/24). Sometimes the route information is presented in another format, such as:</p> <ul style="list-style-type: none"> <li>• <b>MPLS-label</b> (for example, 80001).</li> <li>• <b>interface-name</b> (for example, ge-1/0/2).</li> <li>• <b>neighbor-address:control-word-status:encapsulation type:vc-id:source</b> (Layer 2 circuit only; for example, 10.1.1.195:NoCtrlWord:1:1:Local/96): <ul style="list-style-type: none"> <li>• <b>neighbor-address</b>—Address of the neighbor.</li> <li>• <b>control-word-status</b>—Whether the use of the control word has been negotiated for this virtual circuit: <b>NoCtrlWord</b> or <b>CtrlWord</b>.</li> <li>• <b>encapsulation type</b>—Type of encapsulation, represented by a number: (1) Frame Relay DLCI, (2) ATM AAL5 VCC transport, (3) ATM transparent cell transport, (4) Ethernet, (5) VLAN Ethernet, (6) HDLC, (7) PPP, (8) ATM VCC cell transport, (10) ATM VPC cell transport.</li> <li>• <b>vc-id</b>—Virtual circuit identifier.</li> </ul> </li> <li>• <b>source</b>—Source of the advertisement: <b>Local</b> or <b>Remote</b>.</li> </ul>
[ <i>protocol, preference</i> ]	<p>Protocol from which the route was learned and the preference value for the route.</p> <ul style="list-style-type: none"> <li>• <b>+</b>—A plus sign indicates the active route, which is the route installed from the routing table into the forwarding table.</li> <li>• <b>-</b>—A hyphen indicates the last active route.</li> <li>• <b>*</b>—An asterisk indicates that the route is both the active and the last active route. An asterisk before a <b>to</b> line indicates the best subpath to the route.</li> </ul> <p>In every routing metric except for the BGP <b>LocalPref</b> attribute, a lesser value is preferred. In order to use common comparison routines, Junos OS stores the 1's complement of the <b>LocalPref</b> value in the <b>Preference2</b> field. For example, if the <b>LocalPref</b> value for Route 1 is 100, the <b>Preference2</b> value is -101. If the <b>LocalPref</b> value for Route 2 is 155, the <b>Preference2</b> value is -156. Route 2 is preferred because it has a higher <b>LocalPref</b> value and a lower <b>Preference2</b> value.</p>
<i>weeks:days hours:minutes:seconds</i>	How long the route been known (for example, 2w4d 13:11:14, or 2 weeks, 4 days, 13 hours, 11 minutes and 14 seconds).
<i>metric</i>	Cost value of the indicated route. For routes within an AS, the cost is determined by IGP and the individual protocol metrics. For external routes, destinations, or routing domains, the cost is determined by a preference value.
<i>localpref</i>	Local preference value included in the route.
<i>from</i>	Interface from which the route was received.



Table 115: show route Output Fields (*continued*)

Field Name	Field Description
AS path	<p>AS path through which the route was learned. The letters at the end of the AS path indicate the path origin, providing an indication of the state of the route at the point at which the AS path originated:</p> <ul style="list-style-type: none"> <li>• <b>I</b>—IGP.</li> <li>• <b>E</b>—EGP.</li> <li>• <b>?</b>—Incomplete; typically, the AS path was aggregated.</li> </ul> <p>When AS path numbers are included in the route, the format is as follows:</p> <ul style="list-style-type: none"> <li>• <b>[ ]</b>—Brackets enclose the local AS number associated with the AS path if more than one AS number is configured on the routing device, or if AS path prepending is configured.</li> <li>• <b>{ }</b>—Braces enclose AS sets, which are groups of AS numbers in which the order does not matter. A set commonly results from route aggregation. The numbers in each AS set are displayed in ascending order.</li> <li>• <b>( )</b>—Parentheses enclose a confederation.</li> <li>• <b>( [ ] )</b>—Parentheses and brackets enclose a confederation set.</li> </ul> <p><b>NOTE:</b> In Junos OS Release 10.3 and later, the AS path field displays an unrecognized attribute and associated hexadecimal value if BGP receives attribute 128 (attribute set) and you have not configured an independent domain in any routing instance.</p>
to	Next hop to the destination. An angle bracket (>) indicates that the route is the selected route.
via	<p>Interface used to reach the next hop. If there is more than one interface available to the next hop, the interface that is actually used is followed by the word <b>Selected</b>. This field can also contain the following information:</p> <ul style="list-style-type: none"> <li>• <b>Weight</b>—Value used to distinguish primary, secondary, and fast reroute backup routes. Weight information is available when Multiprotocol Label Switching (MPLS) label-switched path (LSP) link protection, node-link protection, or fast reroute is enabled, or when the standby state is enabled for secondary paths. A lower weight value is preferred. Among routes with the same weight value, load balancing is possible.</li> <li>• <b>Balance</b>—Balance coefficient indicating how traffic of unequal cost is distributed among next hops when a routing device is performing unequal-cost load balancing. This information is available when you enable Border Gateway Protocol (BGP) multipath load balancing.</li> <li>• <b>lsp-path-name</b>—Name of the label-switched path (LSP) used to reach the next hop.</li> <li>• <b>label-action</b>—MPLS label and operation occurring at the next hop. The operation can be <b>pop</b> (where a label is removed from the top of the stack), <b>push</b> (where another label is added to the label stack), or <b>swap</b> (where a label is replaced by another label).</li> </ul>



## Sample Output

```

show route      user@host> show route
inet.0: 10 destinations, 10 routes (9 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both
0.0.0.0/0          *[Static/5] 1w5d 20:30:29
                   Discard
10.255.245.51/32   *[Direct/0] 2w4d 13:11:14
                   > via lo0.0
172.16.0.0/12      *[Static/5] 2w4d 13:11:14
                   > to 192.168.167.254 via fxp0.0
192.168.0.0/18     *[Static/5] 1w5d 20:30:29
                   > to 192.168.167.254 via fxp0.0
192.168.40.0/22    *[Static/5] 2w4d 13:11:14
                   > to 192.168.167.254 via fxp0.0
192.168.64.0/18    *[Static/5] 2w4d 13:11:14
                   > to 192.168.167.254 via fxp0.0
192.168.164.0/22   *[Direct/0] 2w4d 13:11:14
                   > via fxp0.0
192.168.164.51/32  *[Local/0] 2w4d 13:11:14
                   Local via fxp0.0
207.17.136.192/32 *[Static/5] 2w4d 13:11:14
                   > to 192.168.167.254 via fxp0.0

green.inet.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both
100.101.0.0/16     *[Direct/0] 1w5d 20:30:28
                   > via fe-0/0/3.0
100.101.2.3/32     *[Local/0] 1w5d 20:30:28
                   Local via fe-0/0/3.0
224.0.0.5/32       *[OSPF/10] 1w5d 20:30:29, metric 1
                   MultiRecv

red.inet.0: 11 destinations, 11 routes (11 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both
10.10.10.10/32     *[Direct/0] 01:08:46
                   > via lo0.1
10.255.245.212/32  *[BGP/170] 00:01:40, localpref 100, from 10.255.245.204
                   AS path: 300 I
                   > to 100.1.2.2 via ge-1/1/0.0, label-switched-path to_fix
10.255.245.213/32  *[BGP/170] 00:40:47, localpref 100
                   AS path: 100 I
                   > to 100.1.1.1 via so-0/0/1.0

show route      user@host> show route 172.16.0.0/12
destination-prefix
inet.0: 10 destinations, 10 routes (9 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

172.16.0.0/12      *[Static/5] 2w4d 12:54:27
                   > to 192.168.167.254 via fxp0.0

show route extensive user@host> show route extensive
inet.0: 335844 destinations, 335845 routes (335395 active, 0 holddown, 450 hidden)
1.9.0.0/16 (1 entry, 1 announced)
TSI:
KRT in-kernel 1.9.0.0/16 -> {indirect(342)}
Page 0 idx 1 Type 1 val db31a80
NextHop: Self
AS path: [69] 10458 14203 2914 4788 4788 I

```



```

Communities: 2914:410 2914:2403 2914:3400
Path 1.9.0.0 from 192.168.69.71 Vector len 4. Val: 1
  *BGP    Preference: 170/-101
          Next hop type: Indirect
          Next-hop reference count: 1006553
          Source: 192.168.69.71
          Next hop type: Router, Next hop index: 324
          Next hop: 192.168.167.254 via fxp0.0, selected
          Protocol next hop: 192.168.69.71
          Indirect next hop: 8e166c0 342
          State: <Active Ext>
          Local AS: 69 Peer AS: 10458
          Age: 6d 10:58:10 Metric2: 0
          Task: BGP_10458.192.168.69.71+179
          Announcement bits (3): 0-KRT 2-BGP RT Background 3-Resolve tree
1
  AS path: 10458 14203 2914 4788 4788 I
  Communities: 2914:410 2914:2403 2914:3400
  Accepted
  Localpref: 100
  Router ID: 207.17.136.192
  Indirect next hops: 1
    Protocol next hop: 192.168.69.71
    Indirect next hop: 8e166c0 342
    Indirect path forwarding next hops: 1
      Next hop type: Router
      Next hop: 192.168.167.254 via fxp0.0
    192.168.0.0/16 Originating RIB: inet.0
    Node path count: 1
    Forwarding nexthops: 1
      Nexthop: 192.168.167.254 via fxp0.0

```



## show route active-path

<b>Syntax</b>	show route active-path <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show route active-path <brief   detail   extensive   terse>
<b>Release Information</b>	Command introduced in Junos OS Release 8.0. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display all active routes for destinations. An active route is a route that is selected as the best path. Inactive routes are not displayed.
<b>Options</b>	<p>none—Display all active routes.</p> <p>brief   detail   extensive   terse—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to brief.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route active-path on page 422</a> <a href="#">show route active-path brief on page 423</a> <a href="#">show route active-path detail on page 423</a> <a href="#">show route active-path extensive on page 424</a> <a href="#">show route active-path terse on page 425</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> , the <a href="#">show route extensive</a> , or the <a href="#">show route terse</a> .

## Sample Output

```

user@host> show route active-path

inet.0: 7 destinations, 7 routes (6 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

10.255.70.19/32    *[Direct/0] 21:33:52
                  > via lo0.0
10.255.71.50/32   *[IS-IS/15] 00:18:13, metric 10
                  > to 100.1.2.1 via so-2/1/3.0
100.1.2.0/24      *[Direct/0] 00:18:36
                  > via so-2/1/3.0
100.1.2.2/32      *[Local/0] 00:18:41
                  Local via so-2/1/3.0
192.168.64.0/21   *[Direct/0] 21:33:52
                  > via fxp0.0
192.168.70.19/32  *[Local/0] 21:33:52
                  Local via fxp0.0

```



**show route active-path brief** The output for the **show route active-path brief** command is identical to that for the **show route active-path** command. For sample output, see [show route active-path on page 422](#).

```

user@host> show route active-path detail

inet.0: 7 destinations, 7 routes (6 active, 0 holddown, 1 hidden)

10.255.70.19/32 (1 entry, 1 announced)
  *Direct Preference: 0
    Next hop type: Interface
    Next-hop reference count: 3
    Next hop: via lo0.0, selected
    State: <Active Int>
    Local AS: 200
    Age: 21:37:10
    Task: IF
    Announcement bits (3): 2-IS-IS 5-Resolve tree 2 6-Resolve tree 3

    AS path: I

10.255.71.50/32 (1 entry, 1 announced)
  *IS-IS Preference: 15
    Level: 1
    Next hop type: Router, Next hop index: 397
    Next-hop reference count: 4
    Next hop: 100.1.2.1 via so-2/1/3.0, selected
    State: <Active Int>
    Local AS: 200
    Age: 21:31      Metric: 10
    Task: IS-IS
    Announcement bits (4): 0-KRT 2-IS-IS 5-Resolve tree 2 6-Resolve
tree 3
    AS path: I

100.1.2.0/24 (1 entry, 1 announced)
  *Direct Preference: 0
    Next hop type: Interface
    Next-hop reference count: 3
    Next hop: via so-2/1/3.0, selected
    State: <Active Int>
    Local AS: 200
    Age: 21:54
    Task: IF
    Announcement bits (3): 2-IS-IS 5-Resolve tree 2 6-Resolve tree 3

    AS path: I

100.1.2.2/32 (1 entry, 1 announced)
  *Local Preference: 0
    Next hop type: Local
    Next-hop reference count: 11
    Interface: so-2/1/3.0
    State: <Active NoReadvrt Int>
    Local AS: 200
    Age: 21:59
    Task: IF
    Announcement bits (2): 5-Resolve tree 2 6-Resolve tree 3
    AS path: I

192.168.64.0/21 (1 entry, 1 announced)

```



```

*Direct Preference: 0
  Next hop type: Interface
  Next-hop reference count: 3
  Next hop: via fxp0.0, selected
  State: <Active Int>
  Local AS: 200
  Age: 21:37:10
  Task: IF
  Announcement bits (2): 5-Resolve tree 2 6-Resolve tree 3
  AS path: I

```

```
192.168.70.19/32 (1 entry, 1 announced)
```

```

*Local Preference: 0
  Next hop type: Local
  Next-hop reference count: 11
  Interface: fxp0.0
  State: <Active NoReadvrt Int>
  Local AS: 200
  Age: 21:37:10
  Task: IF
  Announcement bits (2): 5-Resolve tree 2 6-Resolve tree 3
  AS path: I

```

#### show route active-path extensive

```
user@host> show route active-path extensive
```

```
inet.0: 7 destinations, 7 routes (6 active, 0 holddown, 1 hidden)
```

```
10.255.70.19/32 (1 entry, 1 announced)
```

```
TSI:
```

```
IS-IS level 1, LSP fragment 0
```

```
IS-IS level 2, LSP fragment 0
```

```

*Direct Preference: 0
  Next hop type: Interface
  Next-hop reference count: 3
  Next hop: via lo0.0, selected
  State: <Active Int>
  Local AS: 200
  Age: 21:39:47
  Task: IF
  Announcement bits (3): 2-IS-IS 5-Resolve tree 2 6-Resolve tree 3
  AS path: I

```

```
10.255.71.50/32 (1 entry, 1 announced)
```

```
TSI:
```

```
KRT in-kernel 10.255.71.50/32 -> {100.1.2.1}
```

```
IS-IS level 2, LSP fragment 0
```

```

*IS-IS Preference: 15
  Level: 1
  Next hop type: Router, Next hop index: 397
  Next-hop reference count: 4
  Next hop: 100.1.2.1 via so-2/1/3.0, selected
  State: <Active Int>
  Local AS: 200
  Age: 24:08      Metric: 10
  Task: IS-IS
  Announcement bits (4): 0-KRT 2-IS-IS 5-Resolve tree 2 6-Resolve
tree 3
  AS path: I

```

```
100.1.2.0/24 (1 entry, 1 announced)
```

```
TSI:
```



```

IS-IS level 1, LSP fragment 0
IS-IS level 2, LSP fragment 0
  *Direct Preference: 0
    Next hop type: Interface
    Next-hop reference count: 3
    Next hop: via so-2/1/3.0, selected
    State: <Active Int>
    Local AS: 200
    Age: 24:31
    Task: IF
    Announcement bits (3): 2-IS-IS 5-Resolve tree 2 6-Resolve tree 3

    AS path: I

100.1.2.2/32 (1 entry, 1 announced)
  *Local Preference: 0
    Next hop type: Local
    Next-hop reference count: 11
    Interface: so-2/1/3.0
    State: <Active NoReadvrt Int>
    Local AS: 200
    Age: 24:36
    Task: IF
    Announcement bits (2): 5-Resolve tree 2 6-Resolve tree 3
    AS path: I

192.168.64.0/21 (1 entry, 1 announced)
  *Direct Preference: 0
    Next hop type: Interface
    Next-hop reference count: 3
    Next hop: via fxp0.0, selected
    State: <Active Int>
    Local AS: 200
    Age: 21:39:47
    Task: IF
    Announcement bits (2): 5-Resolve tree 2 6-Resolve tree 3
    AS path: I

192.168.70.19/32 (1 entry, 1 announced)
  *Local Preference: 0
    Next hop type: Local
    Next-hop reference count: 11
    Interface: fxp0.0
    State: <Active NoReadvrt Int>
    Local AS: 200
    Age: 21:39:47
    Task: IF
    Announcement bits (2): 5-Resolve tree 2 6-Resolve tree 3
    AS path: I

```

**show route active-path terse**      user@host> show route active-path terse

```

inet.0: 7 destinations, 7 routes (6 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

```

A	Destination	P	Prf	Metric 1	Metric 2	Next hop	AS path
*	10.255.70.19/32	D	0			>100.0	
*	10.255.71.50/32	I	15	10		>100.1.2.1	
*	100.1.2.0/24	D	0			>so-2/1/3.0	
*	100.1.2.2/32	L	0			Local	



```
* 192.168.64.0/21    D    0                >fxp0.0
* 192.168.70.19/32  L    0                Local
```



## show route advertising-protocol

<b>Syntax</b>	show route advertising-protocol <i>protocol neighbor-address</i> <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display the routing information as it has been prepared for advertisement to a particular neighbor of a particular dynamic routing protocol.
<b>Options</b>	<p><i>protocol</i>—Protocol transmitting the route:</p> <ul style="list-style-type: none"> <li>• <b>bgp</b>—Border Gateway Protocol</li> <li>• <b>dvmrp</b>—Distance Vector Multicast Routing Protocol</li> <li>• <b>msdp</b>—Multicast Source Discovery Protocol</li> <li>• <b>pim</b>—Protocol Independent Multicast</li> <li>• <b>rip</b>—Routing Information Protocol</li> <li>• <b>ripng</b>—Routing Information Protocol next generation</li> </ul> <p><i>neighbor-address</i>—Address of the neighboring router to which the route entry is being transmitted.</p> <p>brief   detail   extensive   terse—(Optional) Display the specified level of output.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Additional Information</b>	Routes displayed are routes that the routing table has exported into the routing protocol and that have been filtered by the associated protocol's <b>export</b> routing policy statements. For more information, see the <i>Junos Routing Protocols Configuration Guide</i> .
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route advertising-protocol bgp (Layer 3 VPN) on page 429</a> <a href="#">show route advertising-protocol bgp detail on page 429</a> <a href="#">show route advertising-protocol bgp detail (Layer 2 VPN) on page 430</a> <a href="#">show route advertising-protocol bgp detail (Layer 3 VPN) on page 430</a> <a href="#">show route advertising-protocol bgp extensive all (Next Hop Self with RIB-out IP Address) on page 430</a>
<b>Output Fields</b>	<a href="#">Table 116 on page 428</a> lists the output fields for the <b>show route advertising-protocol</b> command. Output fields are listed in the approximate order in which they appear.



Table 116: show route advertising-protocol Output Fields

Field Name	Field Description	Level of Output
<i>routing-table-name</i>	Name of the routing table—for example, <b>inet.0</b> .	All levels
<i>number destinations</i>	Number of destinations for which there are routes in the routing table.	All levels
<i>number routes</i>	Number of routes in the routing table and total number of routes in the following states: <ul style="list-style-type: none"> <li>• <b>active</b> (routes that are active)</li> <li>• <b>holddown</b> (routes that are in the pending state before being declared inactive)</li> <li>• <b>hidden</b> (the routes are not used because of a routing policy)</li> </ul>	All levels
<b>Prefix</b>	Destination prefix.	<b>brief none</b>
<i>destination-prefix (entry, announced)</i>	Destination prefix. The <b>entry</b> value is the number of routes for this destination, and the <b>announced</b> value is the number of routes being announced for this destination.	<b>detail extensive</b>
<b>BGP group and type</b>	BGP group name and type ( <b>Internal</b> or <b>External</b> ).	<b>detail extensive</b>
<b>Route Distinguisher</b>	Unique 64-bit prefix augmenting each IP subnet.	<b>detail extensive</b>
<b>Advertised Label</b>	Incoming label advertised by the Label Distribution Protocol (LDP). When an IP packet enters a label-switched path (LSP), the ingress router examines the packet and assigns it a label based on its destination, placing the label in the packet's header. The label transforms the packet from one that is forwarded based on its IP routing information to one that is forwarded based on information associated with the label.	<b>detail extensive</b>
<b>Label-Base, range</b>	First label in a block of labels and label block size. A remote PE router uses this first label when sending traffic toward the advertising PE router.	<b>detail extensive</b>
<b>VPN Label</b>	Virtual private network (VPN) label. Packets are sent between CE and PE routers by advertising VPN labels. VPN labels transit over either a Resource Reservation Protocol (RSVP) or a Label Distribution Protocol (LDP) label-switched path (LSP) tunnel.	<b>detail extensive</b>
<b>Nexthop</b>	Next hop to the destination. An angle bracket (>) indicates that the route is the selected route.  If the next-hop advertisement to the peer is <b>Self</b> , and the RIB-out next hop is a specific IP address, the RIB-out IP address is included in the extensive output. See <a href="#">show route advertising-protocol bgp extensive all (Next Hop Self with RIB-out IP Address)</a> on page 430.	All levels
<b>MED</b>	Multiple exit discriminator value included in the route.	<b>brief</b>
<b>Lclpref or Localpref</b>	Local preference value included in the route.	All levels



Table 116: show route advertising-protocol Output Fields (*continued*)

Field Name	Field Description	Level of Output
AS path	<p>AS path through which the route was learned. The letters at the end of the AS path indicate the path origin, providing an indication of the state of the route at the point at which the AS path originated:</p> <ul style="list-style-type: none"> <li>• <b>I</b>—IGP.</li> <li>• <b>E</b>—EGP.</li> <li>• <b>?</b>—Incomplete; typically, the AS path was aggregated.</li> </ul> <p>When AS path numbers are included in the route, the format is as follows:</p> <ul style="list-style-type: none"> <li>• <b>[ ]</b>—Brackets enclose the local AS number associated with the AS path if configured on the router, or if AS path prepending is configured.</li> <li>• <b>{ }</b>—Braces enclose AS sets, which are groups of AS numbers in which the order does not matter. A set commonly results from route aggregation. The numbers in each AS set are displayed in ascending order.</li> <li>• <b>( )</b>—Parentheses enclose a confederation.</li> <li>• <b>( [ ] )</b>—Parentheses and brackets enclose a confederation set.</li> </ul> <p><b>NOTE:</b> In Junos OS Release 10.3 and later, the AS path field displays an unrecognized attribute and associated hexadecimal value if BGP receives attribute 128 (attribute set) and you have not configured an independent domain in any routing instance.</p>	All levels
Communities	Community path attribute for the route. see the output field table for the <a href="#">show route detail</a> command for all possible values for this field.	detail extensive
Attrset AS	Number, local preference, and path of the autonomous system (AS) that originated the route. These values are stored in the <b>Attrset</b> attribute at the originating router.	detail extensive
Layer2-info: encaps	Layer 2 encapsulation (for example, VPLS).	detail extensive
control flags	Control flags: <b>none</b> or <b>Site Down</b> .	detail extensive
mtu	Maximum transmission unit (MTU) of the Layer 2 circuit.	detail extensive

## Sample Output

```

show route advertising-protocol bgp (Layer 3 VPN)
user@host> show route advertising-protocol bgp 10.255.14.171
VPN-A.inet.0: 6 destinations, 6 routes (6 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED    Lclpref AS path
10.255.14.172/32 Self              1      100 I
VPN-B.inet.0: 6 destinations, 6 routes (6 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED    Lclpref AS path
10.255.14.181/32 Self              2      100 I

show route advertising-protocol bgp detail
user@host> show route advertising-protocol bgp 111.222.1.3 detail
bgp20.inet.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
111.222.1.11/32 (1 entry, 1 announced)
  BGP group pe-pe type Internal
  Route Distinguisher: 111.255.14.11:69
  Advertised Label: 100000

```



```

        next hop: Self
        Localpref: 100
        AS path: 2 I
        Communities: target:69:20
111.8.0.0/16 (1 entry, 1 announced)
  BGP group pe-pe type Internal
    Route Distinguisher: 111.255.14.11:69
    Advertised Label: 100000
    Next hop: Self
    Localpref: 100
    AS path: 2 I
    Communities: target:69:20

show route      user@host> show route advertising-protocol bgp 192.168.24.1 detail
advertising-protocol  vpn-a.12vpn.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)
bgp detail (Layer 2  192.168.16.1:1:1:1/96 (1 entry, 1 announced)
VPN)             BGP group int type Internal
                    Route Distinguisher: 192.168.16.1:1
                    Label-base : 32768, range : 3
                    Nexthop: Self
                    Localpref: 100
                    AS path: I
                    Communities: target:65412:100
                    Layer2-info: encaps:VLAN, control flags:, mtu:

show route      user@host> show route advertising-protocol bgp 10.255.14.176 detail
advertising-protocol  vpn.a.inet.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
bgp detail (Layer 3  * 10.49.0.0/30 (1 entry, 1 announced)
VPN)             BGP group ibgp type Internal
                    Route Distinguisher: 10.255.14.174:2
                    VPN Label: 101264
                    Nexthop: Self
                    Localpref: 100
                    AS path: I
                    Communities: target:200:100
                    AttrSet AS: 100
                      Localpref: 100
                      AS path: I
                    ...

show route      user@host> show route advertising-protocol bgp 200.0.0.2 170.0.1.0/24 extensive all
advertising-protocol  inet.0: 13 destinations, 19 routes (13 active, 0 holddown, 6 hidden)
bgp extensive all (Next  170.0.1.0/24 (2 entries, 1 announced)
Hop Self with RIB-out  BGP group eBGP-INTEROP type External
IP Address)          Nexthop: Self (rib-out 10.100.3.2)
                      AS path: [4713] 200 I
                      ...

```



## show route all

<b>Syntax</b>	show route all <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show route all
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display information about all routes in all routing tables, including private, or internal, tables.
<b>Options</b>	none—Display information about all routes in all routing tables, including private, or internal, tables.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route all on page 431</a>
<b>Output Fields</b>	In Junos OS Release 9.5 and later, only the output fields for the <b>show route all</b> command display all routing tables, including private, or hidden, routing tables. The output field table of the <b>show route</b> command does not display entries for private, or hidden, routing tables in Junos OS Release 9.5 and later.

## Sample Output

**show route all** The following example displays a snippet of output from the **show route** command and then displays the same snippet of output from the **show route all** command:

```

user@host> show route
mpls.0: 7 destinations, 7 routes (5 active, 0 holddown, 2 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both
0          *[MPLS/0] 2d 02:24:39, metric 1
            Receive
1          *[MPLS/0] 2d 02:24:39, metric 1
            Receive
2          *[MPLS/0] 2d 02:24:39, metric 1
            Receive
800017     *[VPLS/7] 1d 14:00:16
            > via vt-3/2/0.32769, Pop
800018     *[VPLS/7] 1d 14:00:26
            > via vt-3/2/0.32772, Pop

user@host> show route all
mpls.0: 7 destinations, 7 routes (5 active, 0 holddown, 2 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both
0          *[MPLS/0] 2d 02:19:12, metric 1

```



```

1          Receive
          *[MPLS/0] 2d 02:19:12, metric 1
          Receive
2          *[MPLS/0] 2d 02:19:12, metric 1
          Receive
800017     *[VPLS/7] 1d 13:54:49
          > via vt-3/2/0.32769, Pop
800018     *[VPLS/7] 1d 13:54:59
          > via vt-3/2/0.32772, Pop
vt-3/2/0.32769 [VPLS/7] 1d 13:54:49
          Unusable
vt-3/2/0.32772 [VPLS/7] 1d 13:54:59
          Unusable
```



## show route aspath-regex

<b>Syntax</b>	show route aspath-regex <i>regular-expression</i> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show route aspath-regex <i>regular-expression</i>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display the entries in the routing table that match the specified autonomous system (AS) path regular expression.
<b>Options</b>	<p><i>regular-expression</i>—Regular expression that matches an entire AS path.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Additional Information</b>	<p>You can specify a regular expression as:</p> <ul style="list-style-type: none"> <li>• An individual AS number</li> <li>• A period wildcard used in place of an AS number</li> <li>• An AS path regular expression that is enclosed in parentheses</li> </ul> <p>You also can include the operators described in the table of AS path regular expression operators in the <i>Junos Policy Framework Configuration Guide</i>. The following list summarizes these operators:</p> <ul style="list-style-type: none"> <li>• <b>{<i>m,n</i>}</b>—At least <i>m</i> and at most <i>n</i> repetitions of the AS path term.</li> <li>• <b>{<i>m</i>}</b>—Exactly <i>m</i> repetitions of the AS path term.</li> <li>• <b>{<i>m</i>,}</b>—<i>m</i> or more repetitions of the AS path term.</li> <li>• <b>*</b>—Zero or more repetitions of an AS path term.</li> <li>• <b>+</b>—One or more repetitions of an AS path term.</li> <li>• <b>?</b>—Zero or one repetition of an AS path term.</li> <li>• <b>aspath_term   aspath_term</b>—Match one of the two AS path terms.</li> </ul> <p>When you specify more than one AS number or path term, or when you include an operator in the regular expression, enclose the entire regular expression in quotation marks. For example, to match any path that contains AS number 234, specify the following command:</p> <pre>show route aspath-regex ".* 234 ."</pre>
<b>Required Privilege Level</b>	view



<b>List of Sample Output</b>	<a href="#">show route aspath-regex (Matching a Specific AS Number) on page 434</a> <a href="#">show route aspath-regex (Matching Any Path with Two AS Numbers) on page 434</a>
<b>Output Fields</b>	For information about output fields, see the output field table for the <a href="#">show route</a> command.

## Sample Output

```

show route      user@host> show route aspath-regex 65477
aspath-regex    inet.0: 46411 destinations, 46411 routes (46409 active, 0 holddown, 2 hidden)
(Matching a Specific
AS Number)      + = Active Route, - = Last Active, * = Both

111.222.1.0/25    *[BGP/170] 00:08:48, localpref 100, from 111.222.2.24
                  AS Path: [65477] ({65488 65535}) IGP
                  to 111.222.18.225 via fpa0.0(111.222.18.233)
111.222.1.128/25 *[IS-IS/15] 09:15:37, metric 37, tag 1
                  to 111.222.18.225 via fpa0.0(111.222.18.233)
                  [BGP/170] 00:08:48, localpref 100, from 111.222.2.24
                  AS Path: [65477] ({65488 65535}) IGP
                  to 111.222.18.225 via fpa0.0(111.222.18.233)
...

show route      user@host> show route aspath-regex ?.* 234 3561.*?
aspath-regex    inet.0: 46351 destinations, 46351 routes (46349 active, 0 holddown, 2 hidden)
(Matching Any Path
with Two AS Numbers) + = Active Route, - = Last Active, * = Both

9.20.0.0/17       *[BGP/170] 01:35:00, localpref 100, from 131.103.20.49
                  AS Path: [666] 234 3561 2685 2686 Incomplete
                  to 192.156.169.1 via 192.156.169.14(so-0/0/0)
12.10.231.0/24    *[BGP/170] 01:35:00, localpref 100, from 131.103.20.49
                  AS Path: [666] 234 3561 5696 7369 IGP
                  to 192.156.169.1 via 192.156.169.14(so-0/0/0)
24.64.32.0/19     *[BGP/170] 01:34:59, localpref 100, from 131.103.20.49
                  AS Path: [666] 234 3561 6327 IGP
                  to 192.156.169.1 via 192.156.169.14(so-0/0/0)
...

```



## show route best

<b>Syntax</b>	<code>show route best <i>destination-prefix</i></code> <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	<code>show route best <i>destination-prefix</i></code> <brief   detail   extensive   terse>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display the route in the routing table that is the best route to the specified address or range of addresses. The best route is the longest matching route.
<b>Options</b>	<i>destination-prefix</i> —Address or range of addresses.  brief   detail   extensive   terse—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to brief.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route best on page 435</a> <a href="#">show route best detail on page 436</a> <a href="#">show route best extensive on page 436</a> <a href="#">show route best terse on page 437</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

```

user@host> show route best 10.255.70.103
inet.0: 24 destinations, 25 routes (23 active, 0 holddown, 1 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both
10.255.70.103/32    *[OSPF/10] 1d 13:19:20, metric 2
                  > to 10.31.1.6 via ge-3/1/0.0
                  via so-0/3/0.0

inet.3: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both
10.255.70.103/32    *[RSVP/7] 1d 13:20:13, metric 2
                  > via so-0/3/0.0, label-switched-path green-r1-r3

private1___.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both
10.0.0.0/8         *[Direct/0] 2d 01:43:34

```



```

> via fxp2.0
[Direct/0] 2d 01:43:34
> via fxp1.0

```

```

show route best detail  user@host> show route best 10.255.70.103 detail
inet.0: 24 destinations, 25 routes (23 active, 0 holddown, 1 hidden)
Restart Complete
10.255.70.103/32 (1 entry, 1 announced)
    *OSPF    Preference: 10
              Next-hop reference count: 9
              Next hop: 10.31.1.6 via ge-3/1/0.0, selected
              Next hop: via so-0/3/0.0
              State: <Active Int>
              Local AS:    69
              Age: 1d 13:20:06      Metric: 2
              Area: 0.0.0.0
              Task: OSPF
              Announcement bits (2): 0-KRT 3-Resolve tree 2
              AS path: I

inet.3: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
Restart Complete
10.255.70.103/32 (1 entry, 1 announced)
    State: <FlashAll>
    *RSVP    Preference: 7
              Next-hop reference count: 5
              Next hop: via so-0/3/0.0 weight 0x1, selected
              Label-switched-path green-r1-r3
              Label operation: Push 100016
              State: <Active Int>
              Local AS:    69
              Age: 1d 13:20:59      Metric: 2
              Task: RSVP
              Announcement bits (1): 1-Resolve tree 2
              AS path: I

private1__inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)
10.0.0.0/8 (2 entries, 0 announced)
    *Direct Preference: 0
              Next hop type: Interface
              Next-hop reference count: 1
              Next hop: via fxp2.0, selected
              State: <Active Int>
              Age: 2d 1:44:20
              Task: IF
              AS path: I
    Direct Preference: 0
              Next hop type: Interface
              Next-hop reference count: 1
              Next hop: via fxp1.0, selected
              State: <NotBest Int>
              Inactive reason: No difference
              Age: 2d 1:44:20
              Task: IF
              AS path: I

```

**show route best extensive** The output for the **show route best extensive** command is identical to that for the **show route best detail** command. For sample output, see the [show route best detail on page 436](#).



```

show route best terse user@host> show route best 10.255.70.103 terse
inet.0: 24 destinations, 25 routes (23 active, 0 holddown, 1 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both

A Destination      P Prf  Metric 1   Metric 2   Next hop      AS path
* 10.255.70.103/32  0  10           2           >10.31.1.6
                                     so-0/3/0.0

inet.3: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both

A Destination      P Prf  Metric 1   Metric 2   Next hop      AS path
* 10.255.70.103/32  R   7           2           >so-0/3/0.0

private1__inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

A Destination      P Prf  Metric 1   Metric 2   Next hop      AS path
* 10.0.0.0/8        D   0           0           >fxp2.0
                    D   0           0           >fxp1.0

```



## show route brief

<b>Syntax</b>	show route brief <destination-prefix> <logical-system (all   logical-system-name)>
<b>Syntax (EX Series Switch)</b>	show route brief <destination-prefix>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display brief information about the active entries in the routing tables.
<b>Options</b>	none—Display all active entries in the routing table.  destination-prefix—(Optional) Display active entries for the specified address or range of addresses.  logical-system (all   logical-system-name)—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route brief on page 438</a>
<b>Output Fields</b>	For information about output fields, see the Output Field table of the <a href="#">show route</a> command.

## Sample Output

```

user@host> show route brief
inet.0: 10 destinations, 10 routes (9 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

0.0.0.0/0          *[Static/5] 1w5d 20:30:29
                   Discard
10.255.245.51/32   *[Direct/0] 2w4d 13:11:14
                   > via lo0.0
172.16.0.0/12      *[Static/5] 2w4d 13:11:14
                   > to 192.168.167.254 via fxp0.0
192.168.0.0/18     *[Static/5] 1w5d 20:30:29
                   > to 192.168.167.254 via fxp0.0
192.168.40.0/22    *[Static/5] 2w4d 13:11:14
                   > to 192.168.167.254 via fxp0.0
192.168.64.0/18    *[Static/5] 2w4d 13:11:14
                   > to 192.168.167.254 via fxp0.0
192.168.164.0/22   *[Direct/0] 2w4d 13:11:14
                   > via fxp0.0
192.168.164.51/32  *[Local/0] 2w4d 13:11:14
                   Local via fxp0.0
207.17.136.192/32 *[Static/5] 2w4d 13:11:14
                   > to 192.168.167.254 via fxp0.0

```



```
green.inet.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both
100.101.0.0/16    *[Direct/0] 1w5d 20:30:28
                  > via fe-0/0/3.0
100.101.2.3/32   *[Local/0] 1w5d 20:30:28
                  Local via fe-0/0/3.0
224.0.0.5/32     *[OSPF/10] 1w5d 20:30:29, metric 1
                  MultiRecv
```



## show route ccc

<b>Syntax</b>	show route ccc ccc <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display circuit cross-connect (CCC) entries in the Multiprotocol Link Switching (MPLS) routing table.
<b>Options</b>	ccc—Name of an entry with a circuit cross-connect interface.  brief   detail   extensive   terse—(Optional) Display the specified level of output.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show connections on page 682</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show route ccc extensive on page 440</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

```

user@host> show route ccc fe-0/1/0.600 extensive
extensive
mpls.0: 19 destinations, 19 routes (19 active, 0 holddown, 0 hidden)
fe-0/1/2.600 (1 entry, 1 announced)
TSI:
KRT in-kernel fe-0/1/2.600.0      /16 -> {0.0.0.0}
      *CCC      Preference: 7
                Next-hop reference count: 2
                Next hop: via so-0/0/3.0 weight 0x1, selected
                Label operation: Push 101424
                State: <Active Int>
                Local AS: 100
                Age: 28:13   Metric: 3
                Task: MPLS
                Announcement bits (1): 0-KRT
                AS path: I

```



## show route community

<b>Syntax</b>	<code>show route community <i>as-number:community-value</i></code> <code>&lt;brief   detail   extensive   terse&gt;</code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code>
<b>Syntax (EX Series Switch)</b>	<code>show route community <i>as-number:community-value</i></code> <code>&lt;brief   detail   extensive   terse&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display the route entries in each routing table that are members of a Border Gateway Protocol (BGP) community.
<b>Options</b>	<p><i>as-number:community-value</i>—One or more community identifiers. <b><i>as-number</i></b> is the AS number, and <b><i>community-value</i></b> is the community identifier. When you specify more than one community identifier, enclose the identifiers in double quotation marks. Community identifiers can include wildcards.</p> <p><code>brief   detail   extensive   terse</code>—(Optional) Display the specified level of output.</p> <p><code>logical-system (all   <i>logical-system-name</i>)</code>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Additional Information</b>	Specifying the community option displays all routes matching the community found within the routing table. The community option does not limit the output to only the routes being advertised to the neighbor after any egress routing policy.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show route detail on page 450</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show route community on page 441</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

```

user@host> show route community 234:80
inet.0: 46511 destinations, 46511 routes (46509 active, 0 holddown, 2 hidden)
+ = Active Route, - = Last Active, * = Both

4.0.0.0/8          *[BGP/170] 03:33:07, localpref 100, from 131.103.20.49
                   AS Path: {666} 234 2548 1 IGP
                   to 192.156.169.1 via 192.156.169.14(so-0/0/0)
6.0.0.0/8          *[BGP/170] 03:33:07, localpref 100, from 131.103.20.49
                   AS Path: {666} 234 2548 568 721 Incomplete

```



```
9.2.0.0/16          to 192.156.169.1 via 192.156.169.14(so-0/0/0)
                    *[BGP/170] 03:33:06, localpref 100, from 131.103.20.49
                    AS Path: {666} 234 2548 1673 1675 1747 IGP
                    to 192.156.169.1 via 192.156.169.14(so-0/0/0)
```



## show route community-name

<b>Syntax</b>	<code>show route community-name <i>community-name</i></code> <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	<code>show route community-name <i>community-name</i></code> <brief   detail   extensive   terse>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display the route entries in each routing table that are members of a Border Gateway Protocol (BGP) community, specified by a community name.
<b>Options</b>	<i>community-name</i> —Name of the community.  brief   detail   extensive   terse—(Optional) Display the specified level of output.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route community-name on page 443</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

```

show route community-name user@host> show route community-name red-com
inet.0: 17 destinations, 17 routes (16 active, 0 holddown, 1 hidden)

inet.3: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

instance1.inet.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

red.inet.0: 11 destinations, 11 routes (11 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

10.255.245.212/32  *[BGP/170] 00:04:40, localpref 100, from 10.255.245.204
                  AS path: 300 I
                  > to 100.1.2.2 via ge-1/1/0.0, label-switched-path to_fix
20.20.20.20/32    *[BGP/170] 00:04:40, localpref 100, from 10.255.245.204
                  AS path: I
                  > to 100.1.2.2 via ge-1/1/0.0, label-switched-path to_fix
100.1.4.0/24     *[BGP/170] 00:04:40, localpref 100, from 10.255.245.204
                  AS path: I
                  > to 100.1.2.2 via ge-1/1/0.0, label-switched-path to_fix

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

```



```
mpls.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)

bgp.l3vpn.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

10.255.245.204:10:10.255.245.212/32
    *[BGP/170] 00:06:40, localpref 100, from 10.255.245.204
        AS path: 300 I
        > to 100.1.2.2 via ge-1/1/0.0, label-switched-path to_fix
10.255.245.204:10:20.20.20.20/32
    *[BGP/170] 00:36:02, localpref 100, from 10.255.245.204
        AS path: I
        > to 100.1.2.2 via ge-1/1/0.0, label-switched-path to_fix
10.255.245.204:10:100.1.4.0/24
    *[BGP/170] 00:36:02, localpref 100, from 10.255.245.204
        AS path: I
        > to 100.1.2.2 via ge-1/1/0.0, label-switched-path to_fix

inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

instance1.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
```



## show route damping

<b>Syntax</b>	show route damping (decayed   history   suppressed) <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>	
<b>Syntax (EX Series Switch and QFX Series)</b>	show route damping (decayed   history   suppressed) <brief   detail   extensive   terse>	
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.	
<b>Description</b>	Display the BGP routes for which updates might have been reduced because of route flap damping.	
<b>Options</b>	brief   detail   extensive   terse—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to brief.  decayed—Display route damping entries that might no longer be valid, but are not suppressed.  history—Display entries that have already been withdrawn, but have been logged.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.  suppressed—Display entries that have been suppressed and are no longer being installed into the forwarding table or exported by routing protocols.	
<b>Required Privilege Level</b>	view	
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear bgp damping on page 34</a></li> <li>• <a href="#">show policy damping on page 71</a></li> </ul>	
<b>List of Sample Output</b>	<a href="#">show route damping decayed detail on page 448</a> <a href="#">show route damping history on page 448</a> <a href="#">show route damping history detail on page 449</a>	
<b>Output Fields</b>	Table 117 on page 445 lists the output fields for the <b>show route damping</b> command. Output fields are listed in the approximate order in which they appear.	

**Table 117: show route damping Output Fields**

Field Name	Field Description	Level of Output
<i>routing-table-name</i>	Name of the routing table—for example, <b>inet.0</b> .	All levels
<b>destinations</b>	Number of destinations for which there are routes in the routing table.	All levels



Table 117: show route damping Output Fields (*continued*)

Field Name	Field Description	Level of Output
<i>number routes</i>	Number of routes in the routing table and total number of routes in the following states: <ul style="list-style-type: none"> <li>• <b>active</b></li> <li>• <b>holdddown</b> (routes that are in a pending state before being declared inactive)</li> <li>• <b>hidden</b> (the routes are not used because of a routing policy)</li> </ul>	All levels
<i>destination-prefix (entry, announced)</i>	Destination prefix. The <b>entry</b> value is the number of routes for this destination, and the <b>announced</b> value is the number of routes being announced for this destination.	<b>detail extensive</b>
<i>[protocol, preference]</i>	Protocol from which the route was learned and the preference value for the route. <ul style="list-style-type: none"> <li>• <b>+</b>—A plus sign indicates the active route, which is the route installed from the routing table into the forwarding table.</li> <li>• <b>-</b>—A hyphen indicates the last active route.</li> <li>• <b>*</b>—An asterisk indicates that the route is both the active and the last active route. An asterisk before a <b>to</b> line indicates the best subpath to the route.</li> </ul> <p>In every routing metric except for the BGP <b>LocalPref</b> attribute, a lesser value is preferred. In order to use common comparison routines, Junos OS stores the 1's complement of the <b>LocalPref</b> value in the <b>Preference2</b> field. For example, if the <b>LocalPref</b> value for Route 1 is 100, the <b>Preference2</b> value is -101. If the <b>LocalPref</b> value for Route 2 is 155, the <b>Preference2</b> value is -156. Route 2 is preferred because it has a higher <b>LocalPref</b> value and a lower <b>Preference2</b> value.</p>	All levels
<b>Next-hop reference count</b>	Number of references made to the next hop.	<b>detail extensive</b>
<b>Source</b>	IP address of the route source.	<b>detail extensive</b>
<b>Next hop</b>	Network layer address of the directly reachable neighboring system.	<b>detail extensive</b>
<b>via</b>	Interface used to reach the next hop. If there is more than one interface available to the next hop, the interface that is actually used is followed by the word <b>Selected</b> .	<b>detail extensive</b>
<b>Protocol next hop</b>	Network layer address of the remote routing device that advertised the prefix. This address is used to derive a forwarding next hop.	<b>detail extensive</b>
<b>Indirect next hop</b>	Index designation used to specify the mapping between protocol next hops, tags, kernel export policy, and the forwarding next hops.	<b>detail extensive</b>
<b>State</b>	Flags for this route. For a description of possible values for this field, see the output field table for the <a href="#">show route detail</a> command.	<b>detail extensive</b>
<b>Local AS</b>	AS number of the local routing device.	<b>detail extensive</b>
<b>Peer AS</b>	AS number of the peer routing device.	<b>detail extensive</b>



Table 117: show route damping Output Fields (*continued*)

Field Name	Field Description	Level of Output
Age	How long the route has been known.	detail extensive
Metric	Metric for the route.	detail extensive
Task	Name of the protocol that has added the route.	detail extensive
Announcement bits	List of protocols that announce this route. <i>n-Resolve inet</i> indicates that the route is used for route resolution for next hops found in the routing table. <i>n</i> is an index used by Juniper Networks customer support only.	detail extensive
AS path	<p>AS path through which the route was learned. The letters at the end of the AS path indicate the path origin, providing an indication of the state of the route at the point at which the AS path originated:</p> <ul style="list-style-type: none"> <li>• I—IGP.</li> <li>• E—EGP.</li> <li>• ?—Incomplete; typically, the AS path was aggregated.</li> </ul> <p>When AS path numbers are included in the route, the format is as follows:</p> <ul style="list-style-type: none"> <li>• [ ]—Brackets enclose the local AS number associated with the AS path if more than one AS number is configured on the routing device or if AS path prepending is configured.</li> <li>• { }—Braces enclose AS sets, which are groups of AS numbers in which the order does not matter. A set commonly results from route aggregation. The numbers in each AS set are displayed in ascending order.</li> <li>• ( )—Parentheses enclose a confederation.</li> <li>• ( [ ] )—Parentheses and brackets enclose a confederation set.</li> </ul> <p><b>NOTE:</b> In Junos OS Release 10.3 and later, the AS path field displays an unrecognized attribute and associated hexadecimal value if BGP receives attribute 128 (attribute set) and you have not configured an independent domain in any routing instance.</p>	All levels
to	Next hop to the destination. An angle bracket (>) indicates that the route is the selected route.	brief none
via	Interface used to reach the next hop. If there is more than one interface available to the next hop, the interface that is actually used is followed by the word <b>Selected</b> .	brief none
Communities	Community path attribute for the route. See the output field table for the <a href="#">show route detail</a> command.	detail extensive
Localpref	Local preference value included in the route.	All levels
Router ID	BGP router ID as advertised by the neighbor in the open message.	detail extensive
Merit (last update/now)	Last updated and current figure-of-merit value.	detail extensive



Table 117: show route damping Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>damping-parameters</b>	Name that identifies the damping parameters used, which is defined in the damping statement at the <b>[edit policy-options]</b> hierarchy level.	<b>detail extensive</b>
<b>Last update</b>	Time of most recent change in path attributes.	<b>detail extensive</b>
<b>First update</b>	Time of first change in path attributes, which started the route damping process.	<b>detail extensive</b>
<b>Flaps</b>	Number of times the route has gone up or down or its path attributes have changed.	<b>detail extensive</b>
<b>Suppressed</b>	( <b>suppressed</b> keyword only) This route is currently suppressed. A suppressed route does not appear in the forwarding table and routing protocols do not export it.	All levels
<b>Reusable in</b>	( <b>suppressed</b> keyword only) Time when a suppressed route will again be available.	All levels
<b>Preference will be</b>	( <b>suppressed</b> keyword only) Preference value that will be applied to the route when it is again active.	All levels

## Sample Output

```

show route damping decayed detail  user@host> show route damping decayed detail
inet.0: 173319 destinations, 1533668 routes (172625 active, 4 holddown, 108083
hidden)
10.0.111.0/24 (7 entries, 1 announced)
    *BGP      Preference: 170/-101
                Next-hop reference count: 151973
                Source: 172.23.2.129
                Next hop: via so-1/2/0.0
                Next hop: via so-5/1/0.0, selected
                Next hop: via so-6/0/0.0
                Protocol next hop: 172.23.2.129
                Indirect next hop: 89a1a00 264185
                State: <Active Ext>
                Local AS: 65000 Peer AS: 65490
                Age: 3:28      Metric2: 0
                Task: BGP_65490.172.23.2.129+179
                Announcement bits (6): 0-KRT 1-RT 4-KRT 5-BGP.0.0.0.0+179

        6-Resolve tree 2 7-Resolve tree 3
        AS path: 65490 65520 65525 65525 65525 65525 I ()
        Communities: 65501:390 65501:2000 65501:3000 65504:701
        Localpref: 100
        Router ID: 172.23.2.129
        Merit (last update/now): 1934/1790
        damping-parameters: damping-high
        Last update:      00:03:28 First update:      00:06:40
        Flaps: 2

show route damping history  user@host> show route damping history
inet.0: 173320 destinations, 1533529 routes (172624 active, 6 holddown, 108122
hidden)

```



+ = Active Route, - = Last Active, \* = Both

```
10.108.0.0/15      [BGP ] 2d 22:47:58, localpref 100
                  AS path: 65220 65501 65502 I
                  > to 192.168.60.85 via so-3/1/0.0
```

# **show route damping history detail**

```
user@host> show route damping history detail
inet.0: 173319 destinations, 1533435 routes (172627 active, 2 holddown, 108105
hidden)
10.108.0.0/15 (3 entries, 1 announced)
    BGP                /-101
        Next-hop reference count: 69058
        Source: 192.168.60.85
        Next hop: 192.168.60.85 via so-3/1/0.0, selected
        State: <Hidden Ext>
        Inactive reason: Unusable path
        Local AS: 65000 Peer AS: 65220
        Age: 2d 22:48:10
        Task: BGP_65220.192.168.60.85+179
        AS path: 65220 65501 65502 I ()
        Communities: 65501:390 65501:2000 65501:3000 65504:3561
        Localpref: 100
        Router ID: 192.168.80.25
        Merit (last update/now): 1000/932
        damping-parameters: set-normal
        Last update:          00:01:05 First update:          00:01:05
        Flaps: 1
```



## show route detail

<b>Syntax</b>	show route detail <destination-prefix> <logical-system (all   logical-system-name)>
<b>Syntax (EX Series Switch)</b>	show route detail <destination-prefix>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display detailed information about the active entries in the routing tables.
<b>Options</b>	<p>none—Display all active entries in the routing table on all systems.</p> <p>destination-prefix—(Optional) Display active entries for the specified address or range of addresses.</p> <p>logical-system (all   logical-system-name)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route detail on page 459</a> <a href="#">show route detail (with BGP Multipath) on page 464</a>
<b>Output Fields</b>	<p><a href="#">Table 118 on page 450</a> describes the output fields for the <b>show route detail</b> command. Output fields are listed in the approximate order in which they appear.</p>

**Table 118: show route detail Output Fields**

Field Name	Field Description
<i>routing-table-name</i>	Name of the routing table (for example, <b>inet.0</b> ).
<i>number destinations</i>	Number of destinations for which there are routes in the routing table.
<i>number routes</i>	Number of routes in the routing table and total number of routes in the following states: <ul style="list-style-type: none"> <li><b>active</b> (routes that are active)</li> <li><b>holddown</b> (routes that are in the pending state before being declared inactive)</li> <li><b>hidden</b> (routes that are not used because of a routing policy)</li> </ul>



Table 118: show route detail Output Fields (*continued*)

Field Name	Field Description
<i>route-destination</i> (entry, announced)	<p>Route destination (for example:10.0.0.1/24). The <b>entry</b> value is the number of routes for this destination, and the <b>announced</b> value is the number of routes being announced for this destination. Sometimes the route destination is presented in another format, such as:</p> <ul style="list-style-type: none"> <li>• <b>MPLS-label</b> (for example, 80001).</li> <li>• <b>interface-name</b> (for example, ge-1/0/2).</li> <li>• <b>neighbor-address:control-word-status:encapsulation type:vc-id:source</b> (Layer 2 circuit only; for example, 10.1.1.195:NoCtrlWord:1:1:Local/96).</li> <li>• <b>neighbor-address</b>—Address of the neighbor.</li> <li>• <b>control-word-status</b>—Whether the use of the control word has been negotiated for this virtual circuit: <b>NoCtrlWord</b> or <b>CtrlWord</b>.</li> <li>• <b>encapsulation type</b>—Type of encapsulation, represented by a number: (1) Frame Relay DLCI, (2) ATM AAL5 VCC transport, (3) ATM transparent cell transport, (4) Ethernet, (5) VLAN Ethernet, (6) HDLC, (7) PPP, (8) ATM VCC cell transport, (10) ATM VPC cell transport</li> <li>• <b>vc-id</b>—Virtual circuit identifier.</li> <li>• <b>source</b>—Source of the advertisement: <b>Local</b> or <b>Remote</b>.</li> </ul>
label stacking	<p>(Next-to-the-last-hop routing device for MPLS only) Depth of the Multiprotocol Label Switching (MPLS) label stack, where the label-popping operation is needed to remove one or more labels from the top of the stack. A pair of routes is displayed, because the pop operation is performed only when the stack depth is two or more labels.</p> <ul style="list-style-type: none"> <li>• <b>S=0 route</b> indicates that a packet with an incoming label stack depth of 2 or more exits this routing device with one fewer label (the label-popping operation is performed).</li> <li>• If there is no <b>S=</b> information, the route is a normal MPLS route, which has a stack depth of 1 (the label-popping operation is not performed).</li> </ul>
[ <i>protocol, preference</i> ]	<p>Protocol from which the route was learned and the preference value for the route.</p> <ul style="list-style-type: none"> <li>• <b>+—</b>A plus sign indicates the active route, which is the route installed from the routing table into the forwarding table.</li> <li>• <b>- —</b>A hyphen indicates the last active route.</li> <li>• <b>*—</b>An asterisk indicates that the route is both the active and the last active route. An asterisk before a <b>to</b> line indicates the best subpath to the route.</li> </ul> <p>In every routing metric except for the BGP <b>LocalPref</b> attribute, a lesser value is preferred. In order to use common comparison routines, Junos OS stores the 1's complement of the <b>LocalPref</b> value in the <b>Preference2</b> field. For example, if the <b>LocalPref</b> value for Route 1 is 100, the <b>Preference2</b> value is -101. If the <b>LocalPref</b> value for Route 2 is 155, the <b>Preference2</b> value is -156. Route 2 is preferred because it has a higher <b>LocalPref</b> value and a lower <b>Preference2</b> value.</p>
Level	<p>(IS-IS only). In IS-IS, a single AS can be divided into smaller groups called areas. Routing between areas is organized hierarchically, allowing a domain to be administratively divided into smaller areas. This organization is accomplished by configuring Level 1 and Level 2 intermediate systems. Level 1 systems route within an area; when the destination is outside an area, they route toward a Level 2 system. Level 2 intermediate systems route between areas and toward other ASs.</p>
Route Distinguisher	IP subnet augmented with a 64-bit prefix.
Next-hop type	Type of next hop. For a description of possible values for this field, see <a href="#">Table 119 on page 454</a> .



Table 118: show route detail Output Fields (*continued*)

Field Name	Field Description
<b>Next-hop reference count</b>	Number of references made to the next hop.
<b>Flood nexthop branches exceed maximum message</b>	Indicates that the number of flood next-hop branches exceeded the system limit of 32 branches, and only a subset of the flood next-hop branches were installed in the kernel.
<b>Source</b>	IP address of the route source.
<b>Next hop</b>	Network layer address of the directly reachable neighboring system.
<b>via</b>	<p>Interface used to reach the next hop. If there is more than one interface available to the next hop, the name of interface that is actually used is followed by the word <b>Selected</b>. This field can also contain the following information:</p> <ul style="list-style-type: none"> <li>• <b>Weight</b>—Value used to distinguish primary, secondary, and fast reroute backup routes. Weight information is available when Multiprotocol Label Switching (MPLS) label-switched path (LSP) link protection, node-link protection, or fast reroute is enabled, or when the standby state is enabled for secondary paths. A lower weight value is preferred. Among routes with the same weight value, load balancing is possible.</li> <li>• <b>Balance</b>—Balance coefficient indicating how traffic of unequal cost is distributed among next hops when a routing device is performing unequal-cost load balancing. This information is available when you enable Border Gateway Protocol (BGP) multipath load balancing.</li> </ul>
<b>Label-switched-path lsp-path-name</b>	Name of the label-switched path (LSP) used to reach the next hop.
<b>Label operation</b>	MPLS label and operation occurring at this routing device. The operation can be <b>pop</b> (where a label is removed from the top of the stack), <b>push</b> (where another label is added to the label stack), or <b>swap</b> (where a label is replaced by another label).
<b>Interface</b>	(Local only) Local interface name.
<b>Protocol next hop</b>	Network layer address of the remote routing device that advertised the prefix. This address is used to derive a forwarding next hop.
<b>Indirect next hop</b>	Index designation used to specify the mapping between protocol next hops, tags, kernel export policy, and the forwarding next hops.
<b>State</b>	State of the route (a route can be in more than one state). See <a href="#">Table 120 on page 456</a> .
<b>Local AS</b>	AS number of the local routing device.
<b>Age</b>	How long the route has been known.
<b>Metricn</b>	Cost value of the indicated route. For routes within an AS, the cost is determined by IGP and the individual protocol metrics. For external routes, destinations, or routing domains, the cost is determined by a preference value.
<b>MED-plus-IGP</b>	Metric value for BGP path selection to which the IGP cost to the next-hop destination has been added.



Table 118: show route detail Output Fields (*continued*)

Field Name	Field Description
<b>TTL-Action</b>	For MPLS LSPs, state of the TTL propagation attribute. Can be enabled or disabled for all RSVP-signalled and LDP-signalled LSPs or for specific VRF routing instances.  For sample output, see <a href="#">show route table</a> .
<b>Task</b>	Name of the protocol that has added the route.
<b>Announcement bits</b>	List of protocols that announce this route. <b>n-Resolve inet</b> indicates that the route is used for route resolution for next hops found in the routing table. <b>n</b> is an index used by Juniper Networks customer support only.
<b>AS path</b>	<p>AS path through which the route was learned. The letters at the end of the AS path indicate the path origin, providing an indication of the state of the route at the point at which the AS path originated:</p> <ul style="list-style-type: none"> <li>• <b>I</b>—IGP.</li> <li>• <b>E</b>—EGP.</li> <li>• <b>?</b>—Incomplete; typically, the AS path was aggregated.</li> </ul> <p>When AS path numbers are included in the route, the format is as follows:</p> <ul style="list-style-type: none"> <li>• <b>[ ]</b>—Brackets enclose the number that precedes the AS path. This number represents the number of ASs present in the AS path, when calculated as defined in RFC 4271. This value is used in the AS-path merge process, as defined in RFC 4893.</li> <li>• <b>[ ]</b>—If more than one AS number is configured on the routing device, or if AS path prepending is configured, brackets enclose the local AS number associated with the AS path.</li> <li>• <b>{ }</b>—Braces enclose AS sets, which are groups of AS numbers in which the order does not matter. A set commonly results from route aggregation. The numbers in each AS set are displayed in ascending order.</li> <li>• <b>( )</b>—Parentheses enclose a confederation.</li> <li>• <b>( [ ] )</b>—Parentheses and brackets enclose a confederation set.</li> </ul> <p><b>NOTE:</b> In Junos OS Release 10.3 and later, the AS path field displays an unrecognized attribute and associated hexadecimal value if BGP receives attribute 128 (attribute set) and you have not configured an independent domain in any routing instance.</p>
<b>VC Label</b>	MPLS label assigned to the Layer 2 circuit virtual connection.
<b>MTU</b>	Maximum transmission unit (MTU) of the Layer 2 circuit.
<b>VLAN ID</b>	VLAN identifier of the Layer 2 circuit.
<b>Prefixes bound to route</b>	Forwarding Equivalent Class (FEC) bound to this route. Applicable only to routes installed by LDP.
<b>Communities</b>	Community path attribute for the route. See <a href="#">Table 121 on page 458</a> for all possible values for this field.
<b>Layer2-info: encaps</b>	Layer 2 encapsulation (for example, VPLS).
<b>control flags</b>	Control flags: <b>none</b> or <b>Site Down</b> .
<b>mtu</b>	Maximum transmission unit (MTU) information.



Table 118: show route detail Output Fields (*continued*)

Field Name	Field Description
<b>Label-Base, range</b>	First label in a block of labels and label block size. A remote PE routing device uses this first label when sending traffic toward the advertising PE routing device.
<b>status vector</b>	Layer 2 VPN and VPLS network layer reachability information (NLRI).
<b>Accepted Multipath</b>	Current active path when BGP multipath is configured.
<b>Accepted MultipathContrib</b>	Path currently contributing to BGP multipath.
<b>Localpref</b>	Local preference value included in the route.
<b>Router ID</b>	BGP router ID as advertised by the neighbor in the open message.
<b>Primary Routing Table</b>	In a routing table group, the name of the primary routing table in which the route resides.
<b>Secondary Tables</b>	In a routing table group, the name of one or more secondary tables in which the route resides.

[Table 119 on page 454](#) describes all possible values for the **Next-hop Types** output field.

Table 119: Next-Hop Types Output Field Values

Next-Hop Type	Description
<b>Broadcast (bcast)</b>	Broadcast next hop.
<b>Deny</b>	Deny next hop.
<b>Discard</b>	Discard next hop.
<b>Flood</b>	Flood next hop. Consists of components called branches, up to a maximum of 32 branches. Each flood next-hop branch sends a copy of the traffic to the forwarding interface. Used by P2MP RSVP, P2MP LDP, P2MP CCC, and multicast.
<b>Hold</b>	Next hop is waiting to be resolved into a unicast or multicast type.
<b>Indexed (idxd)</b>	Indexed next hop.
<b>Indirect (indr)</b>	Used with applications that have a protocol next hop address that is remote. You are likely to see this next-hop type for internal BGP (IBGP) routes when the BGP next hop is a BGP neighbor that is not directly connected.
<b>Interface</b>	Used for a network address assigned to an interface. Unlike the <b>router</b> next hop, the <b>interface</b> next hop does not reference any specific node on the network.



Table 119: Next-Hop Types Output Field Values (*continued*)

Next-Hop Type	Description
<b>Local (locl)</b>	Local address on an interface. This next-hop type causes packets with this destination address to be received locally.
<b>Routed multicast (mcrt)</b>	Regular multicast next hop.
<b>Multicast (mcst)</b>	Wire multicast next hop (limited to the LAN).
<b>Multicast discard (mdsc)</b>	Multicast discard.
<b>Multicast group (mgrp)</b>	Multicast group member.
<b>Receive (recv)</b>	Receive.
<b>Reject (rjct)</b>	Discard. An ICMP unreachable message was sent.
<b>Router</b>	<p>A specific node or set of nodes to which the routing device forwards packets that match the route prefix.</p> <p>To qualify as next-hop type router, the route must meet the following criteria:</p> <ul style="list-style-type: none"> <li>• Must not be a direct or local subnet for the routing device.</li> <li>• Must have a next hop that is directly connected to the routing device.</li> </ul>
<b>Resolve (rslv)</b>	Resolving next hop.
<b>Table</b>	Routing table next hop.
<b>Unicast (ucst)</b>	Unicast.
<b>Unilist (ulst)</b>	List of unicast next hops. A packet sent to this next hop goes to any next hop in the list.



Table 120 on page 456 describes all possible values for the **State** output field. A route can be in more than one state (for example, <Active NoReadvrt Int Ext>).

**Table 120: State Output Field Values**

Value	Description
<b>Accounting</b>	Route needs accounting.
<b>Active</b>	Route is active.
<b>Always Compare MED</b>	Path with a lower multiple exit discriminator (MED) is available.
<b>AS path</b>	Shorter AS path is available.
<b>Clone</b>	Route is a clone.
<b>Cisco Non-deterministic MED selection</b>	Cisco nondeterministic MED is enabled and a path with a lower MED is available.
<b>Cluster list length</b>	Length of cluster list sent by the route reflector.
<b>Delete</b>	Route has been deleted.
<b>Ex</b>	Exterior route.
<b>Ext</b>	BGP route received from an external BGP neighbor.
<b>FlashAll</b>	Forces all protocols to be notified of a change to any route, active or inactive, for a prefix. When not set, protocols are informed of a prefix only when the active route changes.
<b>Hidden</b>	Route not used because of routing policy.
<b>IfCheck</b>	Route needs forwarding RPF check.
<b>IGP metric</b>	Path through next hop with lower IGP metric is available.
<b>Local Preference</b>	Path with a higher local preference value is available.
<b>Inactive reason</b>	Flags for this route, which was not selected as best for a particular destination.
<b>Initial</b>	Route being added.
<b>Int</b>	Interior route.
<b>Int Ext</b>	BGP route received from an internal BGP peer or a BGP confederation peer.



Table 120: State Output Field Values (*continued*)

Value	Description
Interior > Exterior > Exterior via Interior	Direct, static, IGP, or EBGp path is available.
Martian	Route is a martian (ignored because it is obviously invalid).
MartianOK	Route exempt from martian filtering.
Next hop address	Path with lower metric next hop is available.
No difference	Path from neighbor with lower IP address is available.
NoReadvrt	Route not to be advertised.
NotBest	Route not chosen because it does not have the lowest MED.
Not Best in its group	Incoming BGP AS is not the best of a group (only one AS can be the best).
NotInstall	Route not to be installed in the forwarding table.
Number of gateways	Path with greater number of next hops is available.
Origin	Path with lower origin code is available.
Pending	Route pending because of a hold-down configured on another route.
Release	Route scheduled for release.
RIB preference	Route from a higher-numbered routing table is available.
Route Distinguisher	64-bit prefix added to IP subnets to make them unique.
Route Metric or MED comparison	Route with a lower metric or MED is available.
Route Preference	Route with lower preference value is available
Router ID	Path through neighbor with lower ID is available.
Secondary	Route not a primary route.
Unusable path	Path is not usable because of one of the following conditions: <ul style="list-style-type: none"> <li>• The route is damped.</li> <li>• The route is rejected by an import policy.</li> <li>• The route is unresolved.</li> </ul>
Update source	Last tiebreaker is the lowest IP address value.



Table 121 on page 458 describes the possible values for the **Communities** output field.

**Table 121: Communities Output Field Values**

Value	Description
<i>area-number</i>	4 bytes, encoding a 32-bit area number. For AS-external routes, the value is 0. A nonzero value identifies the route as internal to the OSPF domain, and as within the identified area. Area numbers are relative to a particular OSPF domain.
<i>bandwidth: local AS number:link-bandwidth-number</i>	Link-bandwidth community value used for unequal-cost load balancing. When BGP has several candidate paths available for multipath purposes, it does not perform unequal-cost load balancing according to the link-bandwidth community unless all candidate paths have this attribute.
<i>domain-id</i>	Unique configurable number that identifies the OSPF domain.
<i>domain-id-vendor</i>	Unique configurable number that identifies the OSPF domain.
<i>link-bandwidth-number</i>	Link-bandwidth number: from 0 through 4,294,967,295 (bytes per second).
<i>local AS number</i>	Local AS number: from 1 through 65,535.
<i>options</i>	1 byte. Currently this is only used if the route type is 5 or 7. Setting the least significant bit in the field indicates that the route carries a type 2 metric.
<i>origin</i>	(Used with VPNs) Identifies where the route came from.
<i>ospf-route-type</i>	1 byte, encoded as 1 or 2 for intra-area routes (depending on whether the route came from a type 1 or a type 2 LSA); 3 for summary routes; 5 for external routes (area number must be 0); 7 for NSSA routes; or 129 for sham link endpoint addresses.
<i>rte-type</i>	Displays the area number, OSPF route type, and option of the route. This is configured using the BGP extended community attribute 0x0306. The format is <i>area-number:ospf-route-type:options</i> .
<i>route-type-vendor</i>	Displays the area number, OSPF route type, and option of the route. This is configured using the BGP extended community attribute 0x8000. The format is <i>area-number:ospf-route-type:options</i> .
<i>target</i>	Defines which VPN the route participates in; <b>target</b> has the format <i>32-bit IP address:16-bit number</i> . For example, 10.19.0.0:100.
<i>unknown IANA</i>	Incoming IANA codes with a value between 0x1 and 0x7fff. This code of the BGP extended community attribute is accepted, but it is not recognized.
<i>unknown OSPF vendor community</i>	Incoming IANA codes with a value above 0x8000. This code of the BGP extended community attribute is accepted, but it is not recognized.



## Sample Output

```

show route detail  user@host> show route detail

inet.0: 22 destinations, 23 routes (21 active, 0 holddown, 1 hidden)
10.10.0.0/16 (1 entry, 1 announced)
    *Static Preference: 5
        Next-hop reference count: 29
        Next hop: 192.168.71.254 via fxp0.0, selected
        State: <Active NoReadvrt Int Ext>
        Local AS: 69
        Age: 1:31:43
        Task: RT
        Announcement bits (2): 0-KRT 3-Resolve tree 2
        AS path: I

10.31.1.0/30 (2 entries, 1 announced)
    *Direct Preference: 0
        Next hop type: Interface
        Next-hop reference count: 2
        Next hop: via so-0/3/0.0, selected
        State: <Active Int>
        Local AS: 69
        Age: 1:30:17
        Task: IF
        Announcement bits (1): 3-Resolve tree 2
        AS path: I
    OSPF Preference: 10
        Next-hop reference count: 1
        Next hop: via so-0/3/0.0, selected
        State: <Int>
        Inactive reason: Route Preference
        Local AS: 69
        Age: 1:30:17 Metric: 1
        Area: 0.0.0.0
        Task: OSPF
        AS path: I

10.31.1.1/32 (1 entry, 1 announced)
    *Local Preference: 0
        Next hop type: Local
        Next-hop reference count: 7
        Interface: so-0/3/0.0
        State: <Active NoReadvrt Int>
        Local AS: 69
        Age: 1:30:20
        Task: IF
        Announcement bits (1): 3-Resolve tree 2
        AS path: I

...

```



```

10.31.2.0/30 (1 entry, 1 announced)
  *OSPF   Preference: 10
          Next-hop reference count: 9
          Next hop: via so-0/3/0.0
          Next hop: 10.31.1.6 via ge-3/1/0.0, selected
          State: <Active Int>
          Local AS: 69
          Age: 1:29:56   Metric: 2
          Area: 0.0.0.0
          Task: OSPF
          Announcement bits (2): 0-KRT 3-Resolve tree 2
          AS path: I

...

224.0.0.2/32 (1 entry, 1 announced)
  *PIM    Preference: 0
          Next-hop reference count: 18
          State: <Active NoReadvrt Int>
          Local AS: 69
          Age: 1:31:45
          Task: PIM Recv
          Announcement bits (2): 0-KRT 3-Resolve tree 2
          AS path: I

...

224.0.0.22/32 (1 entry, 1 announced)
  *IGMP   Preference: 0
          Next-hop reference count: 18
          State: <Active NoReadvrt Int>
          Local AS: 69
          Age: 1:31:43
          Task: IGMP
          Announcement bits (2): 0-KRT 3-Resolve tree 2
          AS path: I

inet.3: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

10.255.70.103/32 (1 entry, 1 announced)
  State: <FlashAll>
  *RSVP   Preference: 7
          Next-hop reference count: 6
          Next hop: 10.31.1.6 via ge-3/1/0.0 weight 0x1, selected
          Label-switched-path green-r1-r3
          Label operation: Push 100096
          State: <Active Int>
          Local AS: 69
          Age: 1:25:49   Metric: 2
          Task: RSVP
          Announcement bits (2): 1-Resolve tree 1 2-Resolve tree 2
          AS path: I

10.255.71.238/32 (1 entry, 1 announced)
  State: <FlashAll>
  *RSVP   Preference: 7
          Next-hop reference count: 6
          Next hop: via so-0/3/0.0 weight 0x1, selected
          Label-switched-path green-r1-r2
          State: <Active Int>
          Local AS: 69

```



```

Age: 1:25:49    Metric: 1
Task: RSVP
Announcement bits (2): 1-Resolve tree 1 2-Resolve tree 2
AS path: I

private__inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

47.0005.80ff.f800.0000.0108.0001.0102.5507.1052/152 (1 entry, 0 announced)
  *Direct Preference: 0
    Next hop type: Interface
    Next-hop reference count: 1
    Next hop: via lo0.0, selected
    State: <Active Int>
    Local AS: 69
    Age: 1:31:44
    Task: IF
    AS path: I

mpls.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
0 (1 entry, 1 announced)
  *MPLS Preference: 0
    Next hop type: Receive
    Next-hop reference count: 6
    State: <Active Int>
    Local AS: 69
    Age: 1:31:45    Metric: 1
    Task: MPLS
    Announcement bits (1): 0-KRT
    AS path: I

...

mpls.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
299776 (1 entry, 1 announced)
TSI:
KRT in-kernel 299776 /52 -> {Flood}
  *RSVP Preference: 7
    Next hop type: Flood
    Next-hop reference count: 130
    Flood nexthop branches exceed maximum
    Address: 0x8ea65d0

...

800010 (1 entry, 1 announced)
  *VPLS Preference: 7
    Next-hop reference count: 2
    Next hop: via vt-3/2/0.32769, selected
    Label operation: Pop
    State: <Active Int>
    Age: 1:29:30
    Task: Common L2 VC
    Announcement bits (1): 0-KRT
    AS path: I

vt-3/2/0.32769 (1 entry, 1 announced)
  *VPLS Preference: 7
    Next-hop reference count: 2
    Next hop: 10.31.1.6 via ge-3/1/0.0 weight 0x1, selected
    Label-switched-path green-r1-r3

```



```
Label operation: Push 800012, Push 100096(top)
Protocol next hop: 10.255.70.103
Push 800012
Indirect next hop: 87272e4 1048574
State: <Active Int>
Age: 1:29:30    Metric2: 2
Task: Common L2 VC
Announcement bits (2): 0-KRT 1-Common L2 VC
AS path: I
Communities: target:11111:1 Layer2-info: encaps:VPLS,
control flags:, mtu: 0

inet6.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)

abcd::10:255:71:52/128 (1 entry, 0 announced)
  *Direct Preference: 0
    Next hop type: Interface
    Next-hop reference count: 1
    Next hop: via lo0.0, selected
    State: <Active Int>
    Local AS:    69
    Age: 1:31:44
    Task: IF
    AS path: I

fe80::280:42ff:fe10:f179/128 (1 entry, 0 announced)
  *Direct Preference: 0
    Next hop type: Interface
    Next-hop reference count: 1
    Next hop: via lo0.0, selected
    State: <Active NoReadvrt Int>
    Local AS:    69
    Age: 1:31:44
    Task: IF
    AS path: I

ff02::2/128 (1 entry, 1 announced)
  *PIM Preference: 0
    Next-hop reference count: 18
    State: <Active NoReadvrt Int>
    Local AS:    69
    Age: 1:31:45
    Task: PIM Recv6
    Announcement bits (1): 0-KRT
    AS path: I

ff02::d/128 (1 entry, 1 announced)
  *PIM Preference: 0
    Next-hop reference count: 18
    State: <Active NoReadvrt Int>
    Local AS:    69
    Age: 1:31:45
    Task: PIM Recv6
    Announcement bits (1): 0-KRT
    AS path: I

ff02::16/128 (1 entry, 1 announced)
  *MLD Preference: 0
    Next-hop reference count: 18
    State: <Active NoReadvrt Int>
    Local AS:    69
```



```

Age: 1:31:43
Task: MLD
Announcement bits (1): 0-KRT
AS path: I

private.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

fe80::280:42ff:fe10:f179/128 (1 entry, 0 announced)
  *Direct Preference: 0
    Next hop type: Interface
    Next-hop reference count: 1
    Next hop: via lo0.16385, selected
    State: <Active NoReadvrt Int>
    Age: 1:31:44
    Task: IF
    AS path: I

green.l2vpn.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)

10.255.70.103:1:3:1/96 (1 entry, 1 announced)
  *BGP Preference: 170/-101
    Route Distinguisher: 10.255.70.103:1
    Next-hop reference count: 7
    Source: 10.255.70.103
    Protocol next hop: 10.255.70.103
    Indirect next hop: 2 no-forward
    State: <Secondary Active Int Ext>
    Local AS: 69 Peer AS: 69
    Age: 1:25:49 Metric2: 1
    Task: BGP_69.10.255.70.103+179
    Announcement bits (1): 0-green-l2vpn
    AS path: I
    Communities: target:11111:1 Layer2-info: encaps:VPLS,
    control flags:, mtu: 0
    Label-base: 800008, range: 8
    Localpref: 100
    Router ID: 10.255.70.103
    Primary Routing Table bgp.l2vpn.0

10.255.71.52:1:1:1/96 (1 entry, 1 announced)
  *L2VPN Preference: 170/-1
    Next-hop reference count: 5
    Protocol next hop: 10.255.71.52
    Indirect next hop: 0 -
    State: <Active Int Ext>
    Age: 1:31:40 Metric2: 1
    Task: green-l2vpn
    Announcement bits (1): 1-BGP.0.0.0.0+179
    AS path: I
    Communities: Layer2-info: encaps:VPLS, control flags:Site-Down,
    mtu: 0
    Label-base: 800016, range: 8, status-vector: 0x9F

10.255.71.52:1:5:1/96 (1 entry, 1 announced)
  *L2VPN Preference: 170/-101
    Next-hop reference count: 5
    Protocol next hop: 10.255.71.52
    Indirect next hop: 0 -
    State: <Active Int Ext>
    Age: 1:31:40 Metric2: 1
    Task: green-l2vpn

```



```

Announcement bits (1): 1-BGP.0.0.0+179
AS path: I
Communities: Layer2-info: encaps:VPLS, control flags:, mtu: 0
Label-base: 800008, range: 8, status-vector: 0x9F

...

l2circuit.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
10.245.255.63:CtrlWord:4:3:Local/96 (1 entry, 1 announced)
  *L2CKT Preference: 7
    Next hop: via so-1/1/2.0 weight 1, selected
    Label-switched-path my-lsp
    Label operation: Push 100000[0]
    Protocol next hop: 10.245.255.63 Indirect next hop: 86af000 296
    State: <Active Int>
    Local AS: 99
    Age: 10:21
    Task: l2 circuit
    Announcement bits (1): 0-LDP
    AS path: I
    VC Label 100000, MTU 1500, VLAN ID 512

```

**show route detail (with BGP Multipath)**      user@host> show route detail

```

10.1.1.8/30 (2 entries, 1 announced)
  *BGP Preference: 170/-101
    Next hop type: Router, Next hop index: 262142
    Address: 0x901a010
    Next-hop reference count: 2
    Source: 10.1.1.2
    Next hop: 10.1.1.2 via lt-0/3/0.1, selected
    Next hop: 10.1.1.6 via lt-0/3/0.5
    State: <Active Ext>
    Local AS: 1 Peer AS: 2
    Age: 5:04:43
    Task: BGP_2.10.1.1.2+59955
    Announcement bits (1): 0-KRT
    AS path: 2 I
    Accepted Multipath
    Localpref: 100
    Router ID: 1.1.1.2
  BGP Preference: 170/-101
    Next hop type: Router, Next hop index: 678
    Address: 0x8f97520
    Next-hop reference count: 9
    Source: 10.1.1.6
    Next hop: 10.1.1.6 via lt-0/3/0.5, selected
    State: <NotBest Ext>
    Inactive reason: Not Best in its group - Active preferred
    Local AS: 1 Peer AS: 2
    Age: 5:04:43
    Task: BGP_2.10.1.1.6+58198
    AS path: 2 I
    Accepted MultipathContrib
    Localpref: 100
    Router ID: 1.1.1.3

```



## show route exact

<b>Syntax</b>	<code>show route exact <i>destination-prefix</i></code> <code>&lt;brief   detail   extensive   terse&gt;</code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code>
<b>Syntax (EX Series Switch)</b>	<code>show route exact <i>destination-prefix</i></code> <code>&lt;brief   detail   extensive   terse&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display only the routes that exactly match the specified address or range of addresses.
<b>Options</b>	<code>brief   detail   extensive   terse</code> —(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to brief.  <i>destination-prefix</i> —Address or range of addresses.  <code>logical-system (all   <i>logical-system-name</i>)</code> —(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route exact on page 465</a> <a href="#">show route exact detail on page 465</a> <a href="#">show route exact extensive on page 466</a> <a href="#">show route exact terse on page 466</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

<b>show route exact</b>	<pre> user@host&gt; show route exact 207.17.136.0/24  inet.0: 24 destinations, 25 routes (23 active, 0 holddown, 1 hidden) Restart Complete + = Active Route, - = Last Active, * = Both 207.17.136.0/24    *[Static/5] 2d 03:30:22                   &gt; to 192.168.71.254 via fxp0.0 </pre>
<b>show route exact detail</b>	<pre> user@host&gt; show route exact 207.17.136.0/24 detail  inet.0: 24 destinations, 25 routes (23 active, 0 holddown, 1 hidden) Restart Complete 207.17.136.0/24 (1 entry, 1 announced)   *Static Preference: 5     Next-hop reference count: 29     Next hop: 192.168.71.254 via fxp0.0, selected     State: &lt;Active NoReadvrt Int Ext&gt;     Local AS:      69 </pre>



```
Age: 2d 3:30:26
Task: RT
Announcement bits (2): 0-KRT 3-Resolve tree 2
AS path: I
```

```
show route exact extensive user@host> show route exact 207.17.136.0/24 extensive
inet.0: 22 destinations, 23 routes (21 active, 0 holddown, 1 hidden)
207.17.136.0/24 (1 entry, 1 announced)
TSI:
KRT in-kernel 207.17.136.0/24 -> {192.168.71.254}
  *Static Preference: 5
    Next-hop reference count: 29
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Local AS: 69
    Age: 1:25:18
    Task: RT
    Announcement bits (2): 0-KRT 3-Resolve tree 2
    AS path: I
```

```
show route exact terse user@host> show route exact 207.17.136.0/24 terse

inet.0: 22 destinations, 23 routes (21 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both
A Destination      P Prf  Metric 1   Metric 2   Next hop      AS path
* 207.17.136.0/24  S   5                      >192.168.71.254
```



## show route export

<b>Syntax</b>	show route export <brief   detail> <instance <instance-name>   routing-table-name> <logical-system (all   logical-system-name)>
<b>Syntax (EX Series Switch)</b>	show route export <brief   detail> <instance <instance-name>   routing-table-name>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display policy-based route export information. Policy-based export simplifies the process of exchanging route information between routing instances.
<b>Options</b>	<p>none—(Same as <b>brief</b>.) Display standard information about policy-based export for all instances and routing tables on all systems.</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>instance &lt;instance-name&gt;—(Optional) Display a particular routing instance for which policy-based export is currently enabled.</p> <p>logical-system (all   logical-system-name)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>routing-table-name—(Optional) Display information about policy-based export for all routing tables whose name begins with this string (for example, <b>inet.0</b> and <b>inet6.0</b> are both displayed when you run the <b>show route export inet</b> command).</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route export on page 468</a> <a href="#">show route export detail on page 468</a> <a href="#">show route export instance detail on page 468</a>
<b>Output Fields</b>	Table 122 on page 467 lists the output fields for the <b>show route export</b> command. Output fields are listed in the approximate order in which they appear.

**Table 122: show route export Output Fields**

Field Name	Field Description	Level of Output
<b>Table</b> or <b>table-name</b>	Name of the routing tables that either import or export routes.	All levels
<b>Routes</b>	Number of routes exported from this table into other tables. If a particular route is exported to different tables, the counter will only increment by one.	<b>brief</b> none
<b>Export</b>	Whether the table is currently exporting routes to other tables: <b>Y</b> or <b>N</b> (Yes or No).	<b>brief</b> none



Table 122: show route export Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Import</b>	Tables currently importing routes from the originator table. (Not displayed for tables that are not exporting any routes.)	<b>detail</b>
<b>Flags</b>	( <b>instance</b> keyword only) Flags for this feature on this instance: <ul style="list-style-type: none"> <li><b>config auto-policy</b>—The policy was deduced from the configured IGP export policies.</li> <li><b>cleanup</b>—Configuration information for this instance is no longer valid.</li> <li><b>config</b>—The instance was explicitly configured.</li> </ul>	<b>detail</b>
<b>Options</b>	( <b>instance</b> keyword only) Configured option displays the type of routing tables the feature handles: <ul style="list-style-type: none"> <li><b>unicast</b>—Indicates <i>instance.inet.0</i>.</li> <li><b>multicast</b>—Indicates <i>instance.inet.2</i>.</li> <li><b>unicast multicast</b>—Indicates <i>instance.inet.0</i> and <i>instance.inet.2</i>.</li> </ul>	<b>detail</b>
<b>Import policy</b>	( <b>instance</b> keyword only) Policy that <b>route export</b> uses to construct the import-export matrix. Not displayed if the instance type is <b>vrf</b> .	<b>detail</b>
<b>Instance</b>	( <b>instance</b> keyword only) Name of the routing instance.	<b>detail</b>
<b>Type</b>	( <b>instance</b> keyword only) Type of routing instance: <b>forwarding</b> , <b>non-forwarding</b> , or <b>vrf</b> .	<b>detail</b>

## Sample Output

```

show route export user@host> show route export
Table                Export      Routes
inet.0                N          0
black.inet.0          Y          3
red.inet.0            Y          4

show route export    user@host> show route export detail
detail              inet.0                Routes:      0
                    black.inet.0          Routes:      3
                    Import: [ inet.0 ]
                    red.inet.0          Routes:      4
                    Import: [ inet.0 ]

show route export    user@host> show route export instance detail
instance detail      Instance: master      Type: forwarding
                    Flags: <config auto-policy> Options: <unicast multicast>
                    Import policy: [ (ospf-master-from-red || isis-master-from-black) ]
                    Instance: black      Type: non-forwarding
                    Instance: red        Type: non-forwarding

```



## show route export vrf-target

<b>Syntax</b>	show route export vrf-target <brief   detail> <community <i>community--regular-expression</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display the VPN routing and forwarding (VRF) target communities for which policy-based route export is currently distributing routes. This command is relevant when there are overlapping virtual private networks (VPNs).
<b>Options</b>	<p>none—Display standard information about all target communities.</p> <p>brief   detail—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to brief.</p> <p>community <i>community-regular-expression</i>—(Optional) Display information about the specified community.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route export vrf-target on page 470</a> <a href="#">show route export vrf-target community on page 470</a> <a href="#">show route export vrf-target detail on page 470</a>
<b>Output Fields</b>	Table 123 on page 469 lists the output fields for the <b>show route export vrf-target</b> command. Output fields are listed in the approximate order in which they appear.

Table 123: show route export vrf-target Output Fields

Field Name	Field Description	Level of Output
Route target	Target communities for which auto-export is currently distributing routes.	brief none
Family	Routing table entries for the specified family.	brief none
<i>type-of-routing-table(s)</i>	Type of routing tables the feature handles: <ul style="list-style-type: none"> <li>unicast—Indicates <i>instance.inet.0</i>.</li> <li>multicast—Indicates <i>instance.inet.2</i>.</li> <li>unicast multicast—Indicates <i>instance.inet.0</i> and <i>instance.inet.2</i>.</li> </ul>	brief none
Import	Number of routing tables that are currently importing routes with this target community. Omitted for tables that are not importing routes.	brief none



Table 123: show route export vrf-target Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Export</b>	Number of routing tables that are currently exporting routes with this target community. Omitted for tables that are not exporting routes.	<b>brief</b> none
<b>Target</b>	Target communities, family, and options for which auto-export is currently distributing routes.	<b>detail</b>
<b>Import table(s)</b>	Name of the routing tables that are importing a particular route target.	<b>detail</b>
<b>Export table(s)</b>	Name of the routing tables that are exporting a particular route target.	<b>detail</b>

### Sample Output

```

show route export vrf-target user@host> show route export vrf-target
Route Target      Family      Import      Export
69:1              inet        unicast     2           2
69:2              inet        unicast     2           2

show route export vrf-target community user@host> show route export vrf-target community target:69:1
Route Target      Family      Import      Export
69:1              inet        unicast     2           2

show route export vrf-target detail user@host> show route export vrf-target detail
Target: 1:12      inet        unicast
  Import table(s): vrf-11.inet.0 vrf-12.inet.0
  Export table(s): vrf-12.inet.0
Target: 1:13      inet        unicast
  Import table(s): vrf-12.inet.0 vrf-13.inet.0
  Export table(s): vrf-13.inet.0

```



## show route extensive

<b>Syntax</b>	show route extensive <destination-prefix> <logical-system (all   logical-system-name)>
<b>Syntax (EX Series Switch)</b>	show route extensive <destination-prefix>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display extensive information about the active entries in the routing tables.
<b>Options</b>	none—Display all active entries in the routing table.  destination-prefix—(Optional) Display active entries for the specified address or range of addresses.  logical-system (all   logical-system-name)—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route extensive on page 476</a> <a href="#">show route extensive (Access Route) on page 482</a> <a href="#">show route extensive (Route Reflector) on page 482</a>
<b>Output Fields</b>	<a href="#">Table 124 on page 471</a> describes the output fields for the <b>show route extensive</b> command. Output fields are listed in the approximate order in which they appear.

**Table 124: show route extensive Output Fields**

Field Name	Field Description
<i>routing-table-name</i>	Name of the routing table (for example, inet.0).
<i>number destinations</i>	Number of destinations for which there are routes in the routing table.
<i>number routes</i>	Number of routes in the routing table and total number of routes in the following states: <ul style="list-style-type: none"> <li><b>active</b> (routes that are active).</li> <li><b>holddown</b> (routes that are in the pending state before being declared inactive).</li> <li><b>hidden</b> (routes that are not used because of a routing policy).</li> </ul>



Table 124: show route extensive Output Fields (*continued*)

Field Name	Field Description
<i>route-destination</i> (entry, announced)	<p>Route destination (for example:10.0.0.1/24). The <b>entry</b> value is the number of route for this destination, and the <b>announced</b> value is the number of routes being announced for this destination. Sometimes the route destination is presented in another format, such as:</p> <ul style="list-style-type: none"> <li>• <b>MPLS-label</b> (for example, 80001).</li> <li>• <b>interface-name</b> (for example, ge-1/0/2).</li> <li>• <b>neighbor-address:control-word-status:encapsulation type:vc-id:source</b> (Layer 2 circuit only; for example, 10.1.1.195:NoCtrlWord:1:1:Local/96).</li> <li>• <b>neighbor-address</b>—Address of the neighbor.</li> <li>• <b>control-word-status</b>—Whether the use of the control word has been negotiated for this virtual circuit: <b>NoCtrlWord</b> or <b>CtrlWord</b>.</li> <li>• <b>encapsulation type</b>—Type of encapsulation, represented by a number: (1) Frame Relay DLCI, (2) ATM AAL5 VCC transport, (3) ATM transparent cell transport, (4) Ethernet, (5) VLAN Ethernet, (6) HDLC, (7) PPP, (8) ATM VCC cell transport, (10) ATM VPC cell transport.</li> <li>• <b>vc-id</b>—Virtual circuit identifier.</li> <li>• <b>source</b>—Source of the advertisement: <b>Local</b> or <b>Remote</b>.</li> </ul>
TSI	Protocol header information.
label stacking	<p>(Next-to-the-last-hop routing device for MPLS only) Depth of the Multiprotocol Label Switching (MPLS) label stack, where the label-popping operation is needed to remove one or more labels from the top of the stack. A pair of routes is displayed, because the pop operation is performed only when the stack depth is two or more labels.</p> <ul style="list-style-type: none"> <li>• <b>S=0 route</b> indicates that a packet with an incoming label stack depth of two or more exits this router with one fewer label (the label-popping operation is performed).</li> <li>• If there is no <b>S=</b> information, the route is a normal MPLS route, which has a stack depth of 1 (the label-popping operation is not performed).</li> </ul>
[ <i>protocol, preference</i> ]	<p>Protocol from which the route was learned and the preference value for the route.</p> <ul style="list-style-type: none"> <li>• <b>+</b>—A plus sign indicates the active route, which is the route installed from the routing table into the forwarding table.</li> <li>• <b>-</b>—A hyphen indicates the last active route.</li> <li>• <b>*</b>—An asterisk indicates that the route is both the active and the last active route. An asterisk before a <b>to</b> line indicates the best subpath to the route.</li> </ul> <p>In every routing metric except for the BGP <b>LocalPref</b> attribute, a lesser value is preferred. In order to use common comparison routines, Junos OS stores the 1's complement of the <b>LocalPref</b> value in the <b>Preference2</b> field. For example, if the <b>LocalPref</b> value for Route 1 is 100, the <b>Preference2</b> value is -101. If the <b>LocalPref</b> value for Route 2 is 155, the <b>Preference2</b> value is -156. Route 2 is preferred because it has a higher <b>LocalPref</b> value and a lower <b>Preference2</b> value.</p>
Level	<p>(IS-IS only). In IS-IS, a single autonomous system (AS) can be divided into smaller groups called areas. Routing between areas is organized hierarchically, allowing a domain to be administratively divided into smaller areas. This organization is accomplished by configuring Level 1 and Level 2 intermediate systems. Level 1 systems route within an area; when the destination is outside an area, they route toward a Level 2 system. Level 2 intermediate systems route between areas and toward other ASs.</p>



Table 124: show route extensive Output Fields (*continued*)

Field Name	Field Description
Route Distinguisher	IP subnet augmented with a 64-bit prefix.
Next-hop type	Type of next hop. For a description of possible values for this field, see the Output Field table in the <a href="#">show route detail</a> command.
Next-hop reference count	Number of references made to the next hop.
Flood nexthop branches exceed maximum message	Indicates that the number of flood next-hop branches exceeded the system limit of 32 branches, and only a subset of the flood next-hop branches were installed in the kernel.
Source	IP address of the route source.
Next hop	Network layer address of the directly reachable neighboring system.
via	<p>Interface used to reach the next hop. If there is more than one interface available to the next hop, the name of the interface that is actually used is followed by the word <b>Selected</b>. This field can also contain the following information:</p> <ul style="list-style-type: none"> <li>Weight—Value used to distinguish primary, secondary, and fast reroute backup routes. Weight information is available when Multiprotocol Label Switching (MPLS) label-switched path (LSP) link protection, node-link protection, or fast reroute is enabled, or when the standby state is enabled for secondary paths. A lower weight value is preferred. Among routes with the same weight value, load balancing is possible.</li> <li>Balance—Balance coefficient indicating how traffic of unequal cost is distributed among next hops when a routing device is performing unequal-cost load balancing. This information is available when you enable Border Gateway Protocol (BGP) multipath load balancing.</li> </ul>
Label-switched-path <i>lsp-path-name</i>	Name of the label-switched path (LSP) used to reach the next hop.
Label operation	MPLS label and operation occurring at this routing device. The operation can be <b>pop</b> (where a label is removed from the top of the stack), <b>push</b> (where another label is added to the label stack), or <b>swap</b> (where a label is replaced by another label).
Offset	Whether the metric has been increased or decreased by an offset value.
Interface	(Local only) Local interface name.
Protocol next hop	Network layer address of the remote routing device that advertised the prefix. This address is used to recursively derive a forwarding next hop.
<i>label-operation</i>	MPLS label and operation occurring at this routing device. The operation can be <b>pop</b> (where a label is removed from the top of the stack), <b>push</b> (where another label is added to the label stack), or <b>swap</b> (where a label is replaced by another label).
Indirect next hops	When present, a list of nodes that are used to resolve the path to the next-hop destination, in the order that they are resolved.



Table 124: show route extensive Output Fields (*continued*)

Field Name	Field Description
<b>State</b>	State of the route (a route can be in more than one state). See the Output Field table in the <a href="#">show route detail</a> command.
<b>Inactive reason</b>	<p>If the route is inactive, the reason for its current state is indicated. Typical reasons include:</p> <ul style="list-style-type: none"> <li>• <b>Active preferred</b>—Currently active route was selected over this route.</li> <li>• <b>Always compare MED</b>—Path with a lower multiple exit discriminator (MED) is available.</li> <li>• <b>AS path</b>—Shorter AS path is available.</li> <li>• <b>Cisco Non-deterministic MED selection</b>—Cisco nondeterministic MED is enabled and a path with a lower MED is available.</li> <li>• <b>Cluster list length</b>—Path with a shorter cluster list length is available.</li> <li>• <b>Forwarding use only</b>—Path is only available for forwarding purposes.</li> <li>• <b>IGP metric</b>—Path through the next hop with a lower IGP metric is available.</li> <li>• <b>IGP metric type</b>—Path with a lower OSPF link-state advertisement type is available.</li> <li>• <b>Interior &gt; Exterior &gt; Exterior via Interior</b>—Direct, static, IGP, or EBGP path is available.</li> <li>• <b>Local preference</b>—Path with a higher local preference value is available.</li> <li>• <b>Next hop address</b>—Path with a lower metric next hop is available.</li> <li>• <b>No difference</b>—Path from a neighbor with a lower IP address is available.</li> <li>• <b>Not Best in its group</b>—Occurs when multiple peers of the same external AS advertise the same prefix and are grouped together in the selection process. When this reason is displayed, an additional reason is provided (typically one of the other reasons listed).</li> <li>• <b>Number of gateways</b>—Path with a higher number of next hops is available.</li> <li>• <b>Origin</b>—Path with a lower origin code is available.</li> <li>• <b>OSPF version</b>—Path does not support the indicated OSPF version.</li> <li>• <b>RIB preference</b>—Route from a higher-numbered routing table is available.</li> <li>• <b>Route distinguisher</b>—64-bit prefix added to IP subnets to make them unique.</li> <li>• <b>Route metric or MED comparison</b>—Route with a lower metric or MED is available.</li> <li>• <b>Route preference</b>—Route with a lower preference value is available.</li> <li>• <b>Router ID</b>—Path through a neighbor with a lower ID is available.</li> <li>• <b>Unusable path</b>—Path is not usable because of one of the following conditions: the route is damped, the route is rejected by an import policy, or the route is unresolved.</li> <li>• <b>Update source</b>—Last tiebreaker is the lowest IP address value.</li> </ul>
<b>Local AS</b>	Autonomous system (AS) number of the local routing device.
<b>Age</b>	How long the route has been known.
<b>Metric</b>	Cost value of the indicated route. For routes within an AS, the cost is determined by IGP and the individual protocol metrics. For external routes, destinations, or routing domains, the cost is determined by a preference value.
<b>MED-plus-IGP</b>	Metric value for BGP path selection to which the IGP cost to the next-hop destination has been added.
<b>TTL-Action</b>	<p>For MPLS LSPs, state of the TTL propagation attribute. Can be enabled or disabled for all RSVP-signalled and LDP-signalled LSPs or for specific VRF routing instances.</p> <p>For sample output, see <a href="#">show route table</a>.</p>



Table 124: show route extensive Output Fields (*continued*)

Field Name	Field Description
<b>Task</b>	Name of the protocol that has added the route.
<b>Announcement bits</b>	List of protocols that announce this route. <b>n-Resolve inet</b> indicates that the route is used for route resolution for next hops found in the routing table. <b>n</b> is an index used by Juniper Networks customer support only.
<b>AS path</b>	<p>AS path through which the route was learned. The letters at the end of the AS path indicate the path origin, providing an indication of the state of the route at the point at which the AS path originated:</p> <ul style="list-style-type: none"> <li>• <b>I</b>—IGP.</li> <li>• <b>E</b>—EGP.</li> <li>• <b>?</b>—Incomplete; typically, the AS path was aggregated.</li> </ul> <p>When AS path numbers are included in the route, the format is as follows:</p> <ul style="list-style-type: none"> <li>• <b>[ ]</b>—Brackets enclose the local AS number associated with the AS path if more than one AS number is configured on the routing device, or if AS path prepending is configured.</li> <li>• <b>{ }</b>—Braces enclose AS sets, which are groups of AS numbers in which the order does not matter. A set commonly results from route aggregation. The numbers in each AS set are displayed in ascending order.</li> <li>• <b>( )</b>—Parentheses enclose a confederation.</li> <li>• <b>( [ ] )</b>—Parentheses and brackets enclose a confederation set.</li> </ul> <p><b>NOTE:</b> In Junos OS Release 10.3 and later, the AS path field displays an unrecognized attribute and associated hexadecimal value if BGP receives attribute 128 (attribute set) and you have not configured an independent domain in any routing instance.</p>
<b>AS path: I &lt;Originator&gt;</b>	(For route reflected output only) Originator ID attribute set by the route reflector.
<b>VC Label</b>	MPLS label assigned to the Layer 2 circuit virtual connection.
<b>MTU</b>	Maximum transmission unit (MTU) of the Layer 2 circuit.
<b>VLAN ID</b>	VLAN identifier of the Layer 2 circuit.
<b>Cluster list</b>	(For route reflected output only) Cluster ID sent by the route reflector.
<b>Originator ID</b>	(For route reflected output only) Address of router that originally sent the route to the route reflector.
<b>Prefixes bound to route</b>	Forwarding Equivalent Class (FEC) bound to this route. Applicable only to routes installed by LDP.
<b>Communities</b>	Community path attribute for the route. See the Output Field table in the <a href="#">show route detail</a> command for all possible values for this field.
<b>Layer2-info: encaps</b>	Layer 2 encapsulation (for example, VPLS).
<b>control flags</b>	Control flags: <b>none</b> or Site Down.
<b>mtu</b>	Maximum transmission unit (MTU) information.



Table 124: show route extensive Output Fields (*continued*)

Field Name	Field Description
<b>Label-Base, range</b>	First label in a block of labels and label block size. A remote PE routing device uses this first label when sending traffic toward the advertising PE routing device.
<b>status vector</b>	Layer 2 VPN and VPLS network layer reachability information (NLRI).
<b>Localpref</b>	Local preference value included in the route.
<b>Router ID</b>	BGP router ID as advertised by the neighbor in the open message.
<b>Primary Routing Table</b>	In a routing table group, the name of the primary routing table in which the route resides.
<b>Secondary Tables</b>	In a routing table group, the name of one or more secondary tables in which the route resides.
<b>Originating RIB</b>	Name of the routing table whose active route was used to determine the forwarding next-hop entry in the resolution database. For example, in the case of <b>inet.0</b> resolving through <b>inet.0</b> and <b>inet.3</b> , this field indicates which routing table, <b>inet.0</b> or <b>inet.3</b> , provided the best path for a particular prefix.
<b>Node path count</b>	Number of nodes in the path.
<b>Forwarding nexthops</b>	Number of forwarding next hops. The forwarding next hop is the network layer address of the directly reachable neighboring system (if applicable) and the interface used to reach it.

## Sample Output

```

show route extensive  user@host> show route extensive
inet.0: 22 destinations, 23 routes (21 active, 0 holddown, 1 hidden)
10.10.0.0/16 (1 entry, 1 announced)
TSI:
KRT in-kerne1 10.10.0.0/16 -> {192.168.71.254}
    *Static Preference: 5
        Next-hop reference count: 29
        Next hop: 192.168.71.254 via fxp0.0, selected
        State: <Active NoReadvrt Int Ext>
        Local AS: 69
        Age: 1:34:06
        Task: RT
        Announcement bits (2): 0-KRT 3-Resolve tree 2
        AS path: I

10.31.1.0/30 (2 entries, 1 announced)
    *Direct Preference: 0
        Next hop type: Interface
        Next-hop reference count: 2
        Next hop: via so-0/3/0.0, selected
        State: <Active Int>
        Local AS: 69
        Age: 1:32:40
        Task: IF
        Announcement bits (1): 3-Resolve tree 2
        AS path: I

```



```

    OSPF    Preference: 10
            Next-hop reference count: 1
            Next hop: via so-0/3/0.0, selected
            State: <Int>
            Inactive reason: Route Preference
            Local AS:    69
            Age: 1:32:40    Metric: 1
            Area: 0.0.0.0
            Task: OSPF
            AS path: I

10.31.1.1/32 (1 entry, 1 announced)
  *Local    Preference: 0
            Next hop type: Local
            Next-hop reference count: 7
            Interface: so-0/3/0.0
            State: <Active NoReadvrt Int>
            Local AS:    69
            Age: 1:32:43
            Task: IF
            Announcement bits (1): 3-Resolve tree 2
            AS path: I

...

10.31.2.0/30 (1 entry, 1 announced)
TSI:
KRT in-kernel 10.31.2.0/30 -> {10.31.1.6}
  *OSPF    Preference: 10
            Next-hop reference count: 9
            Next hop: via so-0/3/0.0
            Next hop: 10.31.1.6 via ge-3/1/0.0, selected
            State: <Active Int>
            Local AS:    69
            Age: 1:32:19    Metric: 2
            Area: 0.0.0.0
            Task: OSPF
            Announcement bits (2): 0-KRT 3-Resolve tree 2
            AS path: I

...

224.0.0.2/32 (1 entry, 1 announced)
TSI:
KRT in-kernel 224.0.0.2/32 -> {}
  *PIM     Preference: 0
            Next-hop reference count: 18
            State: <Active NoReadvrt Int>
            Local AS:    69
            Age: 1:34:08
            Task: PIM Recv
            Announcement bits (2): 0-KRT 3-Resolve tree 2
            AS path: I

...

224.0.0.22/32 (1 entry, 1 announced)
TSI:
KRT in-kernel 224.0.0.22/32 -> {}
  *IGMP    Preference: 0
            Next-hop reference count: 18

```



```

        State: <Active NoReadvrt Int>
        Local AS: 69
        Age: 1:34:06
        Task: IGMP
        Announcement bits (2): 0-KRT 3-Resolve tree 2
        AS path: I

inet.3: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

10.255.70.103/32 (1 entry, 1 announced)
    State: <FlashAll>
    *RSVP Preference: 7
        Next-hop reference count: 6
        Next hop: 10.31.1.6 via ge-3/1/0.0 weight 0x1, selected
        Label-switched-path green-r1-r3
        Label operation: Push 100096
        State: <Active Int>
        Local AS: 69
        Age: 1:28:12 Metric: 2
        Task: RSVP
        Announcement bits (2): 1-Resolve tree 1 2-Resolve tree 2
        AS path: I

10.255.71.238/32 (1 entry, 1 announced)
    State: <FlashAll>
    *RSVP Preference: 7
        Next-hop reference count: 6
        Next hop: via so-0/3/0.0 weight 0x1, selected
        Label-switched-path green-r1-r2
        State: <Active Int>
        Local AS: 69
        Age: 1:28:12 Metric: 1
        Task: RSVP
        Announcement bits (2): 1-Resolve tree 1 2-Resolve tree 2
        AS path: I

private1__inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

...

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

47.0005.80ff.f800.0000.0108.0001.0102.5507.1052/152 (1 entry, 0 announced)
    *Direct Preference: 0
        Next hop type: Interface
        Next-hop reference count: 1
        Next hop: via lo0.0, selected
        State: <Active Int>
        Local AS: 69
        Age: 1:34:07
        Task: IF
        AS path: I

mpls.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)

0 (1 entry, 1 announced)
TSI:
KRT in-kernel 0 /36 -> {}
    *MPLS Preference: 0
        Next hop type: Receive
        Next-hop reference count: 6

```



```

        State: <Active Int>
        Local AS: 69
        Age: 1:34:08 Metric: 1
        Task: MPLS
        Announcement bits (1): 0-KRT
        AS path: I

...

mpls.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
299776 (1 entry, 1 announced)
TSI:
KRT in-kernel 299776 /52 -> {Flood}
    *RSVP Preference: 7
        Next hop type: Flood
        Next-hop reference count: 130
        Flood nexthop branches exceed maximum
        Address: 0x8ea65d0

...

800010 (1 entry, 1 announced)

TSI:
KRT in-kernel 800010 /36 -> {vt-3/2/0.32769}
    *VPLS Preference: 7
        Next-hop reference count: 2
        Next hop: via vt-3/2/0.32769, selected
        Label operation: Pop
        State: <Active Int>
        Age: 1:31:53
        Task: Common L2 VC
        Announcement bits (1): 0-KRT
        AS path: I

vt-3/2/0.32769 (1 entry, 1 announced)
TSI:
KRT in-kernel vt-3/2/0.32769.0 /16 -> {indirect(1048574)}
    *VPLS Preference: 7
        Next-hop reference count: 2
        Next hop: 10.31.1.6 via ge-3/1/0.0 weight 0x1, selected
        Label-switched-path green-r1-r3
        Label operation: Push 800012, Push 100096(top)
        Protocol next hop: 10.255.70.103
        Push 800012
        Indirect next hop: 87272e4 1048574
        State: <Active Int>
        Age: 1:31:53 Metric2: 2
        Task: Common L2 VC
        Announcement bits (2): 0-KRT 1-Common L2 VC
        AS path: I
        Communities: target:11111:1 Layer2-info: encaps:VPLS,
        control flags:, mtu: 0
        Indirect next hops: 1
            Protocol next hop: 10.255.70.103 Metric: 2
            Push 800012
            Indirect next hop: 87272e4 1048574
            Indirect path forwarding next hops: 1
                Next hop: 10.31.1.6 via ge-3/1/0.0 weight 0x1
                10.255.70.103/32 Originating RIB: inet.3
                Metric: 2 Node path count: 1
                Forwarding nexthops: 1

```



```

                                Nexthop: 10.31.1.6 via ge-3/1/0.0

inet6.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)

abcd::10:255:71:52/128 (1 entry, 0 announced)
  *Direct Preference: 0
    Next hop type: Interface
    Next-hop reference count: 1
    Next hop: via lo0.0, selected
    State: <Active Int>
    Local AS: 69
    Age: 1:34:07
    Task: IF
    AS path: I

fe80::280:42ff:fe10:f179/128 (1 entry, 0 announced)
  *Direct Preference: 0
    Next hop type: Interface
    Next-hop reference count: 1
    Next hop: via lo0.0, selected
    State: <Active NoReadvrt Int>
    Local AS: 69
    Age: 1:34:07
    Task: IF
    AS path: I

ff02::2/128 (1 entry, 1 announced)
TSI:
KRT in-kernel ff02::2/128 -> {}
  *PIM Preference: 0
    Next-hop reference count: 18
    State: <Active NoReadvrt Int>
    Local AS: 69
    Age: 1:34:08
    Task: PIM Recv6
    Announcement bits (1): 0-KRT
    AS path: I

ff02::d/128 (1 entry, 1 announced)
TSI:
KRT in-kernel ff02::d/128 -> {}
  *PIM Preference: 0
    Next-hop reference count: 18
    State: <Active NoReadvrt Int>
    Local AS: 69
    Age: 1:34:08
    Task: PIM Recv6
    Announcement bits (1): 0-KRT
    AS path: I

ff02::16/128 (1 entry, 1 announced)
TSI:
KRT in-kernel ff02::16/128 -> {}
  *MLD Preference: 0
    Next-hop reference count: 18
    State: <Active NoReadvrt Int>
    Local AS: 69
    Age: 1:34:06
    Task: MLD
    Announcement bits (1): 0-KRT
    AS path: I
```



```

private.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

fe80::280:42ff:fe10:f179/128 (1 entry, 0 announced)
  *Direct Preference: 0
    Next hop type: Interface
    Next-hop reference count: 1
    Next hop: via lo0.16385, selected
    State: <Active NoReadvrt Int>
    Age: 1:34:07
    Task: IF
    AS path: I

green.l2vpn.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)

10.255.70.103:1:3:1/96 (1 entry, 1 announced)
  *BGP Preference: 170/-101
    Route Distinguisher: 10.255.70.103:1
    Next-hop reference count: 7
    Source: 10.255.70.103
    Protocol next hop: 10.255.70.103
    Indirect next hop: 2 no-forward
    State: <Secondary Active Int Ext>
    Local AS: 69 Peer AS: 69
    Age: 1:28:12 Metric2: 1
    Task: BGP_69.10.255.70.103+179
    Announcement bits (1): 0-green-l2vpn
    AS path: I
    Communities: target:11111:1 Layer2-info: encaps:VPLS,
    control flags:, mtu: 0
    Label-base: 800008, range: 8
    Localpref: 100
    Router ID: 10.255.70.103
    Primary Routing Table bgp.l2vpn.0

10.255.71.52:1:1:1/96 (1 entry, 1 announced)
TSI:
Page 0 idx 0 Type 1 val 8699540
  *L2VPN Preference: 170/-1
    Next-hop reference count: 5
    Protocol next hop: 10.255.71.52
    Indirect next hop: 0 -
    State: <Active Int Ext>
    Age: 1:34:03 Metric2: 1
    Task: green-l2vpn
    Announcement bits (1): 1-BGP.0.0.0+179
    AS path: I
    Communities: Layer2-info: encaps:VPLS, control flags:Site-Down,
    mtu: 0
    Label-base: 800016, range: 8, status-vector: 0x9F

10.255.71.52:1:5:1/96 (1 entry, 1 announced)
TSI:
Page 0 idx 0 Type 1 val 8699528
  *L2VPN Preference: 170/-101
    Next-hop reference count: 5
    Protocol next hop: 10.255.71.52
    Indirect next hop: 0 -
    State: <Active Int Ext>
    Age: 1:34:03 Metric2: 1
    Task: green-l2vpn

```



```

Announcement bits (1): 1-BGP.0.0.0+179
AS path: I
Communities: Layer2-info: encaps:VPLS, control flags:, mtu: 0
Label-base: 800008, range: 8, status-vector: 0x9F

```

```
...
```

```
l2circuit.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
```

```
TSI:
```

```

10.245.255.63:CtrlWord:4:3:Local/96 (1 entry, 1 announced)
  *L2CKT Preference: 7
    Next hop: via so-1/1/2.0 weight 1, selected
    Label-switched-path my-lsp
    Label operation: Push 100000[0]
    Protocol next hop: 10.245.255.63 Indirect next hop: 86af000 296
    State: <Active Int>
    Local AS: 99
    Age: 10:21
    Task: l2 circuit
    Announcement bits (1): 0-LDP
    AS path: I
    VC Label 100000, MTU 1500, VLAN ID 512

```

**show route extensive  
(Access Route)**

```

user@host> show route 13.160.0.102 extensive
inet.0: 39256 destinations, 39258 routes (39255 active, 0 holddown, 1 hidden)
13.160.0.102/32 (1 entry, 1 announced)
TSI:
KRT in-kernel 13.160.0.102/32 -> {13.160.0.2}
OSPF area : 0.0.0.0, LSA ID : 13.160.0.102, LSA type : Extern
  *Access Preference: 13
    Next-hop reference count: 78472
    Next hop: 13.160.0.2 via fe-0/0/0.0, selected
    State: <Active Int>
    Age: 12
    Task: RPD Unix Domain Server./var/run/rpd_serv.local
    Announcement bits (2): 0-KRT 1-OSPFv2
    AS path: I

```

**show route extensive  
(Route Reflector)**

```

user@host> show route extensive
1.0.0.0/8 (1 entry, 1 announced)
TSI:
KRT in-kernel 1.0.0.0/8 -> {indirect(40)}
  *BGP Preference: 170/-101
    Source: 192.168.4.214
    Protocol next hop: 207.17.136.192 Indirect next hop: 84ac908 40
    State: <Active Int Ext>
    Local AS: 10458 Peer AS: 10458
    Age: 3:09 Metric: 0 Metric2: 0
    Task: BGP_10458.192.168.4.214+1033
    Announcement bits (2): 0-KRT 4-Resolve inet.0
    AS path: 3944 7777 I <Originator>
    Cluster list: 1.1.1.1
    Originator ID: 10.255.245.88
    Communities: 7777:7777
    Localpref: 100
    Router ID: 4.4.4.4
    Indirect next hops: 1
      Protocol next hop: 207.17.136.192 Metric: 0

```



```
Indirect next hop: 84ac908 40
Indirect path forwarding next hops: 0
  Next hop type: Discard
```



## show route flow validation

<b>Syntax</b>	show route flow validation <brief   detail> <ip-prefix> <table table-name> <logical-system (all   logical-system-name)>
<b>Syntax (EX Series Switch)</b>	show route flow validation <brief   detail> <ip-prefix> <table table-name>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display flow route information.
<b>Options</b>	<p>none—Display flow route information.</p> <p>brief   detail—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to brief.</p> <p>ip-prefix—(Optional) IP address for the flow route.</p> <p>logical-system (all   logical-system-name)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>table table-name—(Optional) Display flow route information for all routing tables whose name begins with this string (for example, <b>inet.0</b> and <b>inet6.0</b> are both displayed when you run the <b>show route flow validation inet</b> command).</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route flow validation on page 485</a>
<b>Output Fields</b>	Table 125 on page 484 lists the output fields for the <b>show route flow validation</b> command. Output fields are listed in the approximate order in which they appear.

**Table 125: show route flow validation Output Fields**

Field Name	Field Description	Level of Output
<i>routing-table-name</i>	Name of the routing table (for example, <b>inet.0</b> ).	All levels
<i>prefix</i>	Route address.	All levels
<b>Active unicast route</b>	Active route in the routing table.	All levels
<b>Dependent flow destinations</b>	Number of flows for which there are routes in the routing table.	All levels



Table 125: show route flow validation Output Fields (*continued*)

Field Name	Field Description	Level of Output
Origin	Source of the route flow.	All levels
Neighbor AS	Autonomous system identifier of the neighbor.	All levels
Flow destination	Number of entries and number of destinations that match the route flow.	All levels
Unicast best match	Destination that is the best match for the route flow.	All levels
Flags	Information about the route flow.	All levels

### Sample Output

```

show route flow validation user@host> show route flow validation
inet.0:
10.0.5.0/24Active unicast route
Dependent flow destinations: 1
Origin: 192.168.224.218, Neighbor AS: 65001
Flow destination (3 entries, 1 match origin)
Unicast best match: 10.0.5.0/24
Flags: SubtreeApex Consistent

```



## show route forwarding-table

<b>Syntax</b>	<pre>show route forwarding-table &lt;detail   extensive   summary&gt; &lt;all&gt; &lt;ccc interface-name&gt; &lt;destination destination-prefix&gt; &lt;family family   matching matching&gt; &lt;label name&gt; &lt;multicast&gt; &lt;table (default   logical-system-name/routing-instance-name   routing-instance-name)&gt; &lt;vlan (all   vlan-name)&gt; &lt;vpn vpn&gt;</pre>
<b>Syntax (MX Series Routers)</b>	<pre>show route forwarding-table &lt;detail   extensive   summary&gt; &lt;all&gt; &lt;bridge-domain (all   domain-name)&gt; &lt;ccc interface-name&gt; &lt;destination destination-prefix&gt; &lt;family family   matching matching&gt; &lt;label name&gt; &lt;learning-vlan-id learning-vlan-id&gt; &lt;multicast&gt; &lt;table (default   logical-system-name/routing-instance-name   routing-instance-name)&gt; &lt;vlan (all   vlan-name)&gt; &lt;vpn vpn&gt;</pre>
<b>Syntax (Routing Matrix)</b>	<pre>show route forwarding-table &lt;detail   extensive   summary&gt; &lt;all&gt; &lt;ccc interface-name&gt; &lt;destination destination-prefix&gt; &lt;family family   matching matching&gt; &lt;label name&gt; &lt;lcc number&gt; &lt;multicast&gt; &lt;table routing-instance-name&gt; &lt;vpn vpn&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p><b>bridge-domain</b> option introduced in Junos OS Release 7.5</p> <p><b>learning-vlan-id</b> option introduced in Junos OS Release 8.4</p> <p><b>all</b> and <b>vlan</b> options introduced in Junos OS Release 9.6.</p> <p>Command introduced in Junos OS Release 11.3 for the QFX Series.</p>
<b>Description</b>	<p>Display the Routing Engine's forwarding table, including the network-layer prefixes and their next hops. This command is used to help verify that the routing protocol process has relayed the correction information to the forwarding table. The Routing Engine constructs and maintains one or more routing tables. From the routing tables, the Routing Engine derives a table of active routes, called the forwarding table.</p>





**NOTE:** The Routing Engine copies the forwarding table to the Packet Forwarding Engine, the part of the router that is responsible for forwarding packets. To display the entries in the Packet Forwarding Engine's forwarding table, use the `show pfe route` command. For more information, see the *Junos System Basics and Services Command Reference*.

- Options** `none`—Display the routes in the forwarding tables. By default, the `show route forwarding-table` command does not display information about private, or internal, forwarding tables.
- `detail | extensive | summary`—(Optional) Display the specified level of output.
- `all`—(Optional) Display routing table entries for all forwarding tables, including private, or internal, tables.
- `bridge-domain (all | bridge-domain-name)`—(MX Series routers only) (Optional) Display route entries for all bridge domains or the specified bridge domain.
- `ccc interface-name`—(Optional) Display route entries for the specified circuit cross-connect interface.
- `destination destination-prefix`—(Optional) Destination prefix.
- `family family`—(Optional) Display routing table entries for the specified family: **inet**, **inet6**, **iso**, **mpls**, **tnp**, **unix**, or **vpls**.
- `label name`—(Optional) Display route entries for the specified label.
- `lcc number`—(Routing matrix only) (Optional) On a routing matrix composed of a TX Matrix Plus router and T640 routers configured in the routing matrix, display information for the specified T640 router (or line-card chassis) connected to the TX Matrix router. On a routing matrix composed of the TX Matrix Plus router and T1600 routers configured in the routing matrix, display information for the specified T1600 router (or line-card chassis) connected to the TX Matrix Plus router. Replace ***number*** with a value from 0 through 3.
- `learning-vlan-id learning-vlan-id`—(MX Series routers only) (Optional) Display learned information for all VLANs or for the specified VLAN.
- `matching matching`—(Optional) Display routing table entries matching the specified prefix or prefix length.
- `multicast`—(Optional) Display routing table entries for multicast routes.
- `table (default | logical-system-name/routing-instance-name | routing-instance-name)`—(Optional) Display route entries for all the routing tables in the main routing instance or for the specified routing instance. If your device supports logical systems, you can also display route entries for the specified logical system



and routing instance. To view the routing instances on your device, use the [show route instance](#) command.

`vlan (all | vlan-name)`—(Optional) Display information for all VLANs or for the specified VLAN.

`vpn vpn`—(Optional) Display routing table entries for a specified VPN.

**Required Privilege Level** view

**List of Sample Output** [show route forwarding-table on page 491](#)  
[show route forwarding-table detail on page 492](#)  
[show route forwarding-table destination extensive \(Weights and Balances\) on page 492](#)  
[show route forwarding-table extensive on page 493](#)  
[show route forwarding-table extensive \(RPF\) on page 494](#)  
[show route forwarding-table family mpls on page 495](#)  
[show route forwarding-table family vpls on page 495](#)  
[show route forwarding-table family vpls extensive on page 495](#)  
[show route forwarding-table table default on page 496](#)  
[show route forwarding-table table](#)  
[logical-system-name/routing-instance-name on page 497](#)  
[show route forwarding-table vpn on page 498](#)

**Output Fields** [Table 126 on page 488](#) lists the output fields for the **show route forwarding-table** command. Output fields are listed in the approximate order in which they appear. Field names may be abbreviated (as shown in parentheses) when no level of output is specified, or when the **detail** keyword is used instead of the **extensive** keyword.

**Table 126: show route forwarding-table Output Fields**

Field Name	Field Description	Level of Output
Logical system	Name of the logical system. This field is displayed if you specify the <b>table logical-system-name/routing-instance-name</b> option on a device that is configured for and supports logical systems.	All levels
Routing table	Name of the routing table (for example, <b>inet</b> , <b>inet6</b> , <b>mpls</b> ).	All levels
Address family	Address family (for example, <b>IP</b> , <b>IPv6</b> , <b>ISO</b> , <b>MPLS</b> , and <b>VPLS</b> ).	All levels
Destination	Destination of the route.	<b>detail extensive</b>



Table 126: show route forwarding-table Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Route Type (Type)</b>	How the route was placed into the forwarding table. When the <b>detail</b> keyword is used, the route type might be abbreviated (as shown in parentheses): <ul style="list-style-type: none"> <li>• <b>cloned (clon)</b>—(TCP or multicast only) Cloned route.</li> <li>• <b>destination (dest)</b>—Remote addresses directly reachable through an interface.</li> <li>• <b>destination down (iddn)</b>—Destination route for which the interface is unreachable.</li> <li>• <b>interface cloned (ifcl)</b>—Cloned route for which the interface is unreachable.</li> <li>• <b>route down (ifdn)</b>—Interface route for which the interface is unreachable.</li> <li>• <b>ignore (ignr)</b>—Ignore this route.</li> <li>• <b>interface (intf)</b>—Installed as a result of configuring an interface.</li> <li>• <b>permanent (perm)</b>—Routes installed by the kernel when the routing table is initialized.</li> <li>• <b>user</b>—Routes installed by the routing protocol process or as a result of the configuration.</li> </ul>	All levels
<b>Route Reference (RtRef)</b>	Number of routes to reference.	<b>detail extensive</b>
<b>Flags</b>	Route type flags: <ul style="list-style-type: none"> <li>• <b>none</b>—No flags are enabled.</li> <li>• <b>accounting</b>—Route has accounting enabled.</li> <li>• <b>cached</b>—Cache route.</li> <li>• <b>incoming-iface</b><i>interface-number</i>—Check against incoming interface.</li> <li>• <b>prefix load balance</b>—Load balancing is enabled for this prefix.</li> <li>• <b>rt nh decoupled</b>—Route has been decoupled from the next hop to the destination.</li> <li>• <b>sent to PFE</b>—Route has been sent to the Packet Forwarding Engine.</li> <li>• <b>static</b>—Static route.</li> </ul>	<b>extensive</b>
<b>Next hop</b>	IP address of the next hop to the destination.	<b>detail extensive</b>



Table 126: show route forwarding-table Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Next hop Type (Type)</b>	<p>Next-hop type. When the <b>detail</b> keyword is used, the next-hop type might be abbreviated (as indicated in parentheses):</p> <ul style="list-style-type: none"> <li>• <b>broadcast (bcst)</b>—Broadcast.</li> <li>• <b>deny</b>—Deny.</li> <li>• <b>hold</b>—Next hop is waiting to be resolved into a unicast or multicast type.</li> <li>• <b>indexed (idxd)</b>—Indexed next hop.</li> <li>• <b>indirect (indr)</b>—Indirect next hop.</li> <li>• <b>local (locl)</b>—Local address on an interface.</li> <li>• <b>routed multicast (mcrst)</b>—Regular multicast next hop</li> <li>• <b>multicast (mcst)</b>—Wire multicast next hop (limited to the LAN).</li> <li>• <b>multicast discard (mdsc)</b>—Multicast discard.</li> <li>• <b>multicast group (mgrp)</b> —Multicast group member.</li> <li>• <b>receive (rcv)</b>—Receive.</li> <li>• <b>reject (rjct)</b> Discard. An ICMP unreachable message was sent.</li> <li>• <b>resolve (rslv)</b>—Resolving the next hop.</li> <li>• <b>unicast (ucst)</b>—Unicast.</li> <li>• <b>unilist (ulst)</b>—List of unicast next hops. A packet sent to this next hop goes to any next hop in the list.</li> </ul>	<b>detail extensive</b>
<b>Index</b>	Software index of the next hop that is used to route the traffic for a given prefix.	<b>detail extensive none</b>
<b>Route interface-index</b>	Logical interface index from which the route is learned. For example, for interface routes, this is the logical interface index of the route itself. For static routes, this field is zero. For routes learned through routing protocols, this is the logical interface index from which the route is learned.	<b>extensive</b>
<b>Reference (NhRef)</b>	Number of routes that refer to this next hop.	<b>none detail extensive</b>
<b>Next-hop interface (Netif)</b>	Interface used to reach the next hop.	<b>none detail extensive</b>
<b>Weight</b>	Value used to distinguish primary, secondary, and fast reroute backup routes. Weight information is available when Multiprotocol Label Switching (MPLS) label-switched path (LSP) link protection, node-link protection, or fast reroute is enabled, or when the standby state is enabled for secondary paths. A lower weight value is preferred. Among routes with the same weight value, load balancing is possible (see the <b>Balance</b> field description).	<b>extensive</b>
<b>Balance</b>	Balance coefficient indicating how traffic of unequal cost is distributed among next hops when a router is performing unequal-cost load balancing. This information is available when you enable Border Gateway Protocol (BGP) multipath load balancing.	<b>extensive</b>
<b>RPF interface</b>	List of interfaces from which the prefix can be accepted. Reverse path forwarding (RPF) information is displayed only when <b>rpf-check</b> is configured on the interface.	<b>extensive</b>



## Sample Output

```

show route forwarding-table user@host> show route forwarding-table
Routing table: default.inet
Internet:
Destination      Type RtRef Next hop      Type Index NhRef Netif
default          perm  0          Type Index NhRef Netif
0.0.0.0/32       perm  0          dscd  44    1
1.1.1.0/24       ifdn  0          rslv  608   1 ge-2/0/1.0
1.1.1.0/32       iddn  0 1.1.1.0    recv  606   1 ge-2/0/1.0
1.1.1.1/32       user  0          rjct  46    4
1.1.1.1/32       intf  0 1.1.1.1    locl  607   2
1.1.1.1/32       iddn  0 1.1.1.1    locl  607   2
1.1.1.255/32     iddn  0 ff:ff:ff:ff:ff:ff bcst  605   1 ge-2/0/1.0
10.0.0.0/24      intf  0          rslv  616   1 ge-2/0/0.0
10.0.0.0/32      dest  0 10.0.0.0    recv  614   1 ge-2/0/0.0
10.0.0.1/32      intf  0 10.0.0.1    locl  615   2
10.0.0.1/32      dest  0 10.0.0.1    locl  615   2
10.0.0.255/32    dest  0 10.0.0.255  bcst  613   1 ge-2/0/0.0
10.1.1.0/24      ifdn  0          rslv  612   1 ge-2/0/1.0
10.1.1.0/32      iddn  0 10.1.1.0    recv  610   1 ge-2/0/1.0
10.1.1.1/32      user  0          rjct  46    4
10.1.1.1/32      intf  0 10.1.1.1    locl  611   2
10.1.1.1/32      iddn  0 10.1.1.1    locl  611   2
10.1.1.255/32    iddn  0 ff:ff:ff:ff:ff:ff bcst  609   1 ge-2/0/1.0
10.206.0.0/16    user  0 10.209.63.254 ucst  419   20 fxp0.0
10.209.0.0/16    user  1 0:12:1e:ca:98:0 ucst  419   20 fxp0.0
10.209.0.0/18    intf  0          rslv  418   1 fxp0.0
10.209.0.0/32    dest  0 10.209.0.0    recv  416   1 fxp0.0
10.209.2.131/32  intf  0 10.209.2.131  locl  417   2
10.209.2.131/32  dest  0 10.209.2.131  locl  417   2
10.209.17.55/32  dest  0 0:30:48:5b:78:d2 ucst  435   1 fxp0.0
10.209.63.42/32  dest  0 0:23:7d:58:92:ca ucst  434   1 fxp0.0
10.209.63.254/32 dest  0 0:12:1e:ca:98:0 ucst  419   20 fxp0.0
10.209.63.255/32 dest  0 10.209.63.255 bcst  415   1 fxp0.0
10.227.0.0/16    user  0 10.209.63.254 ucst  419   20 fxp0.0

...

Routing table: iso
ISO:
Destination      Type RtRef Next hop      Type Index NhRef Netif
default          perm  0          rjct  27    1
47.0005.80ff.f800.0000.0108.0003.0102.5524.5220.00
intf  0          locl  28    1

Routing table: inet6
Internet6:
Destination      Type RtRef Next hop      Type Index NhRef Netif
default          perm  0          rjct  6     1
ff00::/8         perm  0          mdsc  4     1
ff02::1/128      perm  0 ff02::1      mcst  3     1

Routing table: ccc
MPLS:
Interface.Label  Type RtRef Next hop      Type Index NhRef Netif
default          perm  0          rjct  16    1
100004(top)fe-0/0/1.0

```



```

show route forwarding-table detail
user@host> show route forwarding-table detail
Routing table: inet
Internet:
Destination      Type RtRef Next hop          Type Index NhRef Netif
default          user  2 0:90:69:8e:b1:1b ucst  132  4 fxp0.0
default          perm  0                               rjct  14  1
10.1.1.0/24      intf  0 ff.3.0.21         ucst  322  1 so-5/3/0.0
10.1.1.0/32      dest  0 10.1.1.0         recv  324  1 so-5/3/0.0
10.1.1.1/32      intf  0 10.1.1.1         locl  321  1
10.1.1.255/32    dest  0 10.1.1.255       bcst  323  1 so-5/3/0.0
10.21.21.0/24    intf  0 ff.3.0.21         ucst  326  1 so-5/3/0.0
10.21.21.0/32    dest  0 10.21.21.0       recv  328  1 so-5/3/0.0
10.21.21.1/32    intf  0 10.21.21.1       locl  325  1
10.21.21.255/32  dest  0 10.21.21.255     bcst  327  1 so-5/3/0.0
127.0.0.1/32     intf  0 127.0.0.1        locl  320  1
172.17.28.19/32  clon  1 192.168.4.254     ucst  132  4 fxp0.0
172.17.28.44/32  clon  1 192.168.4.254     ucst  132  4 fxp0.0
...

Routing table: private1__inet
Internet:
Destination      Type RtRef Next hop          Type Index NhRef Netif
default          perm  0                               rjct  46  1
10.0.0.0/8       intf  0                               rslv  136  1 fxp1.0
10.0.0.0/32      dest  0 10.0.0.0         recv  134  1 fxp1.0
10.0.0.4/32      intf  0 10.0.0.4         locl  135  2
10.0.0.4/32      dest  0 10.0.0.4         locl  135  2
...

Routing table: iso
ISO:
Destination      Type RtRef Next hop          Type Index NhRef Netif
default          perm  0                               rjct  38  1

Routing table: inet6
Internet6:
Destination      Type RtRef Next hop          Type Index NhRef Netif
default          perm  0                               rjct  22  1
ff00::/8         perm  0                               mdsc  21  1
ff02::1/128      perm  0 ff02::1          mcst  17  1
...

Routing table: mpls
MPLS:
Destination      Type RtRef Next hop          Type Index NhRef Netif
default          perm  0                               rjct  28  1

show route forwarding-table destination extensive
(Weights and Balances)
user@host> show route forwarding-table destination 3.4.2.1 extensive
Routing table: inet [Index 0]
Internet:
Destination: 3.4.2.1/32
Route type: user
Route reference: 0
Flags: sent to PFE
Next-hop type: unicast
Next-hop: 4.4.4.4
Next-hop type: unicast
Route interface-index: 0
Index: 262143 Reference: 1
Index: 335 Reference: 2

```



```

Next-hop interface: so-1/1/0.0      Weight: 22      Balance: 3
Next-hop: 145.12.1.2
Next-hop type: unicast              Index: 337      Reference: 2
Next-hop interface: so-0/1/2.0      Weight: 33      Balance: 33

show route forwarding-table extensive
user@host> show route forwarding-table extensive
Routing table: inet [Index 0]
Internet:

Destination: default
Route type: user
Route reference: 2                      Route interface-index: 0
Flags: sent to PFE
Next-hop: 0:90:69:8e:b1:1b
Next-hop type: unicast                  Index: 132      Reference: 4
Next-hop interface: fxp0.0

Destination: default
Route type: permanent
Route reference: 0                      Route interface-index: 0
Flags: none
Next-hop type: reject                  Index: 14       Reference: 1

Destination: 127.0.0.1/32
Route type: interface
Route reference: 0                      Route interface-index: 0
Flags: sent to PFE
Next-hop: 127.0.0.1
Next-hop type: local                   Index: 320      Reference: 1

...

Routing table: private1__inet [Index 1]
Internet:

Destination: default
Route type: permanent
Route reference: 0                      Route interface-index: 0
Flags: sent to PFE
Next-hop type: reject                  Index: 46       Reference: 1

Destination: 10.0.0.0/8
Route type: interface
Route reference: 0                      Route interface-index: 3
Flags: sent to PFE
Next-hop type: resolve                 Index: 136      Reference: 1
Next-hop interface: fxp1.0

...

Routing table: iso [Index 0]
ISO:

Destination: default
Route type: permanent
Route reference: 0                      Route interface-index: 0
Flags: sent to PFE
Next-hop type: reject                  Index: 38       Reference: 1

Routing table: inet6 [Index 0]
Internet6:

```



```

Destination: default
  Route type: permanent
  Route reference: 0
  Flags: sent to PFE
  Next-hop type: reject
                                Route interface-index: 0
                                Index: 22      Reference: 1

Destination: ff00::/8
  Route type: permanent
  Route reference: 0
  Flags: sent to PFE
  Next-hop type: multicast discard
                                Route interface-index: 0
                                Index: 21      Reference: 1

...

Routing table: private1__inet6 [Index 1]
Internet6:

Destination: default
  Route type: permanent
  Route reference: 0
  Flags: sent to PFE
  Next-hop type: reject
                                Route interface-index: 0
                                Index: 54      Reference: 1

Destination: fe80::2a0:a5ff:fe3d:375/128
  Route type: interface
  Route reference: 0
  Flags: sent to PFE
  Nexthop: fe80::2a0:a5ff:fe3d:375
  Next-hop type: local
                                Route interface-index: 0
                                Index: 75      Reference: 1

...

```

**show route  
forwarding-table  
extensive (RPF)**

The next example is based on the following configuration, which enables an RPF check on all routes that are learned from this interface, including the interface route:

```

so-1/1/0 {
  unit 0 {
    family inet {
      rpf-check;
      address 15.95.1.2/30;
    }
  }
}

```

```
user@host> show route forwarding-table extensive
```

```

Routing table: inet [Index 0]
Internet:
...
...
Destination: 15.95.1.3/32
  Route type: destination
  Route reference: 0
  Flags: sent to PFE
  Nexthop: 15.95.1.3
  Next-hop type: broadcast
  Next-hop interface: so-1/1/0.0
  RPF interface: so-1/1/0.0
                                Route interface-index: 67
                                Index: 328      Reference: 1

```



```

show route forwarding-table family mpls
user@host> show route forwarding-table family mpls
Routing table: mpls
MPLS:
Destination      Type RtRef Next hop      Type Index NhRef Netif
default          perm  0
0                user  0
1                user  0
2                user  0
100000           user  0 10.31.1.6      swap 100001      fe-1/1/0.0
800002           user  0                Pop                vt-0/3/0.32770

vt-0/3/0.32770 (VPLS)
                        user  0                indr  351      4
                        Push 800000, Push 100002(top)

so-0/0/0.0

show route forwarding-table family vpls
user@host> show route forwarding-table family vpls
Routing table: green.vpls
VPLS:
Destination      Type RtRef Next hop      Type Index NhRef Netif
default          dnm  0
default          perm  0
fe-0/1/0.0       dnm  0
00:90:69:0c:20:1f/48      <<<<<Remote CE

                        dnm  0                indr  351      4
                        Push 800000, Push 100002(top)

so-0/0/0.0
00:90:69:85:b0:1f/48      <<<<<Local CE

                        dnm  0                ucst  354      2 fe-0/1/0.0

show route forwarding-table family vpls extensive
user@host> show route forwarding-table family vpls extensive
Routing table: green.vpls [Index 2]
VPLS:

Destination: default
Route type: dynamic
Route reference: 0
Flags: sent to PFE
Next-hop type: flood
Next-hop type: unicast
Next-hop interface: fe-0/1/3.0
Next-hop type: unicast
Next-hop interface: fe-0/1/2.0
Route interface-index: 72
Index: 289      Reference: 1
Index: 291      Reference: 3
Index: 290      Reference: 3

Destination: default
Route type: permanent
Route reference: 0
Flags: none
Next-hop type: discard
Route interface-index: 0
Index: 341      Reference: 1

Destination: fe-0/1/2.0
Route type: dynamic
Route reference: 0
Flags: sent to PFE
Next-hop type: flood
Next-hop type: indirect
Next-hop type: Push 800016
Next-hop interface: at-1/0/1.0
Route interface-index: 69
Index: 293      Reference: 1
Index: 363      Reference: 4

```



```

Next-hop type: indirect          Index: 301      Reference: 5
Next hop: 10.31.3.2
Next-hop type: Push 800000
Next-hop interface: fe-0/1/1.0
Next-hop type: unicast          Index: 291      Reference: 3
Next-hop interface: fe-0/1/3.0

Destination: fe-0/1/3.0
Route type: dynamic
Route reference: 0              Route interface-index: 70
Flags: sent to PFE
Next-hop type: flood            Index: 292      Reference: 1
Next-hop type: indirect         Index: 363      Reference: 4
Next-hop type: Push 800016
Next-hop interface: at-1/0/1.0
Next-hop type: indirect         Index: 301      Reference: 5
Next hop: 10.31.3.2
Next-hop type: Push 800000
Next-hop interface: fe-0/1/1.0
Next-hop type: unicast          Index: 290      Reference: 3
Next-hop interface: fe-0/1/2.0

Destination: 10:00:00:01:01:01/48
Route type: dynamic
Route reference: 0              Route interface-index: 70
Flags: sent to PFE, prefix load balance
Next-hop type: unicast          Index: 291      Reference: 3
Next-hop interface: fe-0/1/3.0
Route used as destination:
  Packet count:      6640    Byte count:      675786
Route used as source:
  Packet count:      6894    Byte count:      696424

Destination: 10:00:00:01:01:04/48
Route type: dynamic
Route reference: 0              Route interface-index: 69
Flags: sent to PFE, prefix load balance
Next-hop type: unicast          Index: 290      Reference: 3
Next-hop interface: fe-0/1/2.0
Route used as destination:
  Packet count:      96      Byte count:      8079
Route used as source:
  Packet count:      296      Byte count:      24955

Destination: 10:00:00:01:03:05/48
Route type: dynamic
Route reference: 0              Route interface-index: 74
Flags: sent to PFE, prefix load balance
Next-hop type: indirect         Index: 301      Reference: 5
Next hop: 10.31.3.2
Next-hop type: Push 800000
Next-hop interface: fe-0/1/1.0

```

**show route  
forwarding-table table  
default**

user@host> **show route forwarding-table table default**

Routing table: default.inet

Internet:

Destination	Type	RtRef	Next hop	Type	Index	NhRef	Netif
default	perm	0		rjct	36	2	
0.0.0.0/32	perm	0		dscd	34	1	
10.0.60.0/30	user	0	10.0.60.13	ucst	713	5	fe-0/1/3.0
10.0.60.12/30	intf	0		rslv	688	1	fe-0/1/3.0



```

10.0.60.12/32      dest      0 10.0.60.12      recv    686      1 fe-0/1/3.0
10.0.60.13/32      dest      0 0:5:85:8b:bc:22  ucst    713      5 fe-0/1/3.0
10.0.60.14/32      intf      0 10.0.60.14      locl    687      2
10.0.60.14/32      dest      0 10.0.60.14      locl    687      2
10.0.60.15/32      dest      0 10.0.60.15      bcst    685      1 fe-0/1/3.0
10.0.67.12/30      user      0 10.0.60.13      ucst    713      5 fe-0/1/3.0
10.0.80.0/30       ifdn      0 ff.3.0.21       ucst    676      1 so-0/0/1.0
10.0.80.0/32       dest      0 10.0.80.0       recv    678      1 so-0/0/1.0
10.0.80.2/32       user      0                rjct     36      2
10.0.80.2/32       intf      0 10.0.80.2       locl    675      1
10.0.80.3/32       dest      0 10.0.80.3       bcst    677      1 so-0/0/1.0
10.0.90.12/30      intf      0                rslv    684      1 fe-0/1/0.0
10.0.90.12/32      dest      0 10.0.90.12      recv    682      1 fe-0/1/0.0
10.0.90.14/32      intf      0 10.0.90.14      locl    683      2
10.0.90.14/32      dest      0 10.0.90.14      locl    683      2
10.0.90.15/32      dest      0 10.0.90.15      bcst    681      1 fe-0/1/0.0
10.5.0.0/16        user      0 192.168.187.126 ucst    324     15 fxp0.0
10.10.0.0/16        user      0 192.168.187.126 ucst    324     15 fxp0.0
10.13.10.0/23       user      0 192.168.187.126 ucst    324     15 fxp0.0
10.84.0.0/16        user      0 192.168.187.126 ucst    324     15 fxp0.0
10.150.0.0/16       user      0 192.168.187.126 ucst    324     15 fxp0.0
10.157.64.0/19      user      0 192.168.187.126 ucst    324     15 fxp0.0
10.209.0.0/16       user      0 192.168.187.126 ucst    324     15 fxp0.0

```

...

Routing table: default.iso

ISO:

Destination	Type	RtRef	Next hop	Type	Index	NhRef	Netif
default	perm	0		rjct	60	1	

Routing table: default.inet6

Internet6:

Destination	Type	RtRef	Next hop	Type	Index	NhRef	Netif
default	perm	0		rjct	44	1	
::/128	perm	0		dscd	42	1	
ff00::/8	perm	0		mdsc	43	1	
ff02::1/128	perm	0	ff02::1	mcst	39	1	

Routing table: default.mpls

MPLS:

Destination	Type	RtRef	Next hop	Type	Index	NhRef	Netif
default	perm	0		dscd	50	1	

**show route**  
**forwarding-table table**  
**logical-system-name/**  
**routing-instance-name**

user@host> run show route forwarding-table table R4/vpn-red

Logical system: R4

Routing table: vpn-red.inet

Internet:

Destination	Type	RtRef	Next hop	Type	Index	NhRef	Netif
default	perm	0		rjct	563	1	
0.0.0.0/32	perm	0		dscd	561	2	
1.0.0.1/32	user	0		dscd	561	2	
2.0.2.0/24	intf	0		rslv	771	1	lt-1/2/0.3
2.0.2.0/32	dest	0	2.0.2.0	recv	769	1	lt-1/2/0.3
2.0.2.1/32	intf	0	2.0.2.1	locl	770	2	
2.0.2.1/32	dest	0	2.0.2.1	locl	770	2	
2.0.2.2/32	dest	0	0.4.80.3.0.1b.c0.d5.e4.bd.0.1b.c0.d5.e4.bc.8.0	ucst	789	1	lt-1/2/0.3
2.0.2.255/32	dest	0	2.0.2.255	bcst	768	1	lt-1/2/0.3
224.0.0.0/4	perm	1		mdsc	562	1	
224.0.0.1/32	perm	0	224.0.0.1	mcst	558	1	



```
255.255.255.255/32 perm 0 bcst 559 1
```

Logical system: R4

Routing table: vpn-red.iso

ISO:

Destination	Type	RtRef	Next hop	Type	Index	NhRef	Netif
default	perm	0		rjct	608	1	

Logical system: R4

Routing table: vpn-red.inet6

Internet6:

Destination	Type	RtRef	Next hop	Type	Index	NhRef	Netif
default	perm	0		rjct	708	1	
::/128	perm	0		dscd	706	1	
ff00::/8	perm	0		mdsc	707	1	
ff02::1/128	perm	0	ff02::1	mcst	704	1	

Logical system: R4

Routing table: vpn-red.mpls

MPLS:

Destination	Type	RtRef	Next hop	Type	Index	NhRef	Netif
default	perm	0		dscd	638		

# **show route forwarding-table vpn**

```
user@host> show route forwarding-table vpn VPN-A
```

Routing table:: VPN-A.inet

Internet:

Destination	Type	RtRef	Nexthop	Type	Index	NhRef	Netif
default	perm	0		rjct	4	4	
10.39.10.20/30	intf	0	ff.3.0.21	ucst	40	1	
so-0/0/0.0							
10.39.10.21/32	intf	0	10.39.10.21	loc1	36	1	
10.255.14.172/32	user	0		ucst	69	2	
so-0/0/0.0							
10.255.14.175/32	user	0		indr	81	3	
				Push	100004	Push	
100004(top) so-1/0/0.0							
224.0.0.0/4	perm	2		mdsc	5	3	
224.0.0.1/32	perm	0	224.0.0.1	mcst	1	8	
224.0.0.5/32	user	1	224.0.0.5	mcst	1	8	
255.255.255.255/32	perm	0		bcst	2	3	



## show route forwarding-table interface-name

<b>Syntax</b>	show route forwarding-table interface-name <i>interface-name</i> <detail   extensive> <all>
<b>Release Information</b>	Command introduced in Junos OS Release 9.6.
<b>Description</b>	Display the interfaces in the Routing Engine's forwarding table.
<b>Options</b>	<p>none—Display information for the specified interface.</p> <p>detail   extensive—(Optional) Display the specified level of output.</p> <p>all—(Optional) Display all interfaces in the routing table.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route forwarding-table interface-name fe-0/1/1 on page 500</a> <a href="#">show route forwarding-table interface-name all on page 500</a> <a href="#">show route forwarding-table interface-name all detail on page 501</a>
<b>Output Fields</b>	Table 127 on page 499 lists the output fields for the <b>show route forwarding-table interface-name</b> command. Output fields are listed in the approximate order in which they appear.

Table 127: show route forwarding-table interface-name Output Fields

Field Name	Field Description	Level of Output
<b>Name</b>	Name of the interface (for example <b>fe-0/1/1</b> , <b>lo0</b> , <b>ae0</b> , and so on).	All levels
<b>MTU</b>	Interface's maximum transmission unit (MTU).	All levels
<b>Afam</b>	Configured address family (for example <b>inet</b> , <b>tnp</b> , <b>inet6</b> , and so on).	<b>detail extensive</b>
<b>Network</b>	Network information: <ul style="list-style-type: none"> <li>• <b>&lt;Link&gt;</b>—Physical interface, not a logical interface.</li> <li>• <b>&lt;PtoP&gt;</b>—Point-to-point network.</li> <li>• <b>ipaddress</b>—Network address.</li> </ul>	All levels
<b>Address</b>	Address of the interface. The address can be a MAC address, IPv4 address, IPv6 address, and so on.	All levels
<b>IPkts</b>	Number of packets received on the interface.	All levels
<b>Ierr</b>	Number of packets received on the interface with errors.	All levels
<b>Opkts</b>	Number of packets transmitted or sent from the interface.	All levels



Table 127: show route forwarding-table interface-name Output Fields (*continued*)

Field Name	Field Description	Level of Output
Oerr	Number of packets transmitted or sent from the interface with errors.	All levels
Coll	Number of packets that experienced collisions on the interface.	All levels

## Sample Output

```

show route forwarding-table interface-name fe-0/1/1
user@host> show route forwarding-table interface-name fe-0/1/1
Name      Mtu Network      Address      Ipkts Ierr  Opkts Oerr  Coll
fe-0/1/1  1514 <Link>      00.05.85.88.cc.20      0    0      0    0    0

show route forwarding-table interface-name all
user@host> show route forwarding-table interface-name all
Name      Mtu Network      Address      Ipkts Ierr  Opkts Oerr  Coll
fxp0      1514 <Link>      00.a0.a5.56.03.83      180965 0     39907 0     0

  unit 0      1500 192.168.187.0/ 192.168.187.10
  fxp1      1514 <Link>      02.00.00.00.00.04 33010497 0 30110800 0 0

  unit 0      1500 10.0.0.0/8      10.0.0.1
           10.0.0.0/8      10.0.0.4
           128.0.0.0/2      128.0.0.1
           128.0.0.0/2      128.0.0.4
           1500 fe80::/64      fe80::200:ff:fe0
           fec0::/64      fec0::a:0:0:4
           1500
           4
  lsi      1496 <Link>
  dsc      max <Link>      0    0      0    0    0
  lo0      max <Link>      8980 0     8980 0     0

  unit 0      max 127.0.0.1/8      127.0.0.1
           192.168.0.1/8 192.168.0.1
  unit 16384 max 127.0.0.1/8      127.0.0.1
  unit 16385 max
  gre      max <Link>
  ipip     max <Link>
  tap      max <Link>
  pime     max <Link>
  pimd     max <Link>
  mtun     max <Link>
  so-0/0/0 4474 <Link>      1679900 0 1068611 0 0

  unit 0      4470 <PtoP>      10.0.60.2      0    0      0    0
  0
  so-0/0/1 4474 <Link>      0    0      0    0    0

  unit 0      4470 <PtoP>      10.0.80.2      0    0      0    0
  0
  so-0/0/2 4474 <Link>      0    0      0    0    0
  so-0/0/3 4474 <Link>      0    0      0    0    0
  fe-0/1/0 1514 <Link>      00.05.85.88.cc.1f 523120 0 623044 0 0

  unit 0      1500 10.0.90.12/30 10.0.90.14      0    0      0    0
  0
  fe-0/1/1 1514 <Link>      00.05.85.88.cc.20      0    0      0    0    0

```



```

fe-0/1/2    1514 <Link>    00.05.85.88.cc.21      0    0    0    0    0
...

show route forwarding-table interface-name all detail
user@host> show route forwarding-table interface-name all detail
Name      Mtu AFam   Network      Address      Ipkts Ierr   Opkts
Oerr Coll
fxp0      1514      <Link>    00.a0.a5.56.03.83  181005    0  39948
0        0
unit 0    1500 inet   192.168.187.0/ 192.168.187.10
fxp1      1514      <Link>    02.00.00.00.00.04 33012676    0 30112468
0        0
unit 0    1500 inet   10.0.0.0/8     10.0.0.1
                        10.0.0.0/8     10.0.0.4
                        128.0.0.0/2    128.0.0.1
                        128.0.0.0/2    128.0.0.4
                        1500 inet6    fe80::/64      fe80::200:ff:fe0
                        fec0::/64      fec0::a:0:0:4
                        1500 tnp      4
lsi        1496      <Link>
dsc        max      <Link>      0    0    0
0        0
lo0        max      <Link>      8980    0  8980
0        0
unit 0    max inet   127.0.0.1/8    127.0.0.1
                        192.168.0.1/8  192.168.0.1
unit 16384 max inet   127.0.0.1/8    127.0.0.1
unit 16385 max inet
gre        max      <Link>
ipip       max      <Link>
tap        max      <Link>
pime       max      <Link>
pimd       max      <Link>
mtun       max      <Link>
so-0/0/0   4474      <Link>      1679980    0 1068661
0        0
unit 0    4470 inet   <PtoP>      10.0.60.2    0    0    0
0        0
...

```



## show route hidden

<b>Syntax</b>	show route hidden <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display only hidden route information. A hidden route is unusable, even if it is the best path.
<b>Options</b>	<p>brief   detail   extensive   terse—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to brief.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route hidden on page 502</a> <a href="#">show route hidden detail on page 503</a> <a href="#">show route hidden extensive on page 503</a> <a href="#">show route hidden terse on page 503</a>
<b>Output Fields</b>	For information about output fields, see the output field table for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

```

user@host> show route hidden
inet.0: 25 destinations, 26 routes (24 active, 0 holddown, 1 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both
127.0.0.1/32      [Direct/0] 04:26:38
                  > via lo0.0

private1___.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

red.inet.0: 6 destinations, 8 routes (4 active, 0 holddown, 3 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both
10.5.5.5/32      [BGP/170] 03:44:10, localpref 100, from 10.4.4.4
                  AS path: 100 I
                  Unusable
10.12.1.0/24     [BGP/170] 03:44:10, localpref 100, from 10.4.4.4
                  AS path: 100 I
                  Unusable
10.12.80.4/30    [BGP/170] 03:44:10, localpref 100, from 10.4.4.4
                  AS path: I
                  Unusable
...

```



**show route hidden detail**    user@host> **show route hidden detail**

```
inet.0: 25 destinations, 26 routes (24 active, 0 holddown, 1 hidden)
Restart Complete
127.0.0.1/32 (1 entry, 0 announced)
    Direct Preference: 0
        Next hop type: Interface
        Next-hop reference count: 1
        Next hop: via lo0.0, selected
        State: <Hidden Martian Int>
        Local AS:      1
        Age: 4:27:37
        Task: IF
        AS path: I

private1__inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

red.inet.0: 6 destinations, 8 routes (4 active, 0 holddown, 3 hidden)
Restart Complete

10.5.5.5/32 (1 entry, 0 announced)
    BGP    Preference: 170/-101
        Route Distinguisher: 10.4.4.4:4
        Next hop type: Unusable
        Next-hop reference count: 6
        State: <Secondary Hidden Int Ext>
        Local AS:      1 Peer AS:      1
        Age: 3:45:09
        Task: BGP_1.10.4.4.4+2493
        AS path: 100 I
        Communities: target:1:999
        VPN Label: 100064
        Localpref: 100
        Router ID: 10.4.4.4
        Primary Routing Table bgp.13vpn.0

...
```

**show route hidden extensive**    The output for the **show route hidden extensive** command is identical to that of the **show route hidden detail** command. For sample output, see [show route hidden detail on page 503](#).

**show route hidden terse**    user@host> **show route hidden terse**

```
inet.0: 25 destinations, 26 routes (24 active, 0 holddown, 1 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both

A Destination      P Prf  Metric 1   Metric 2   Next hop      AS path
127.0.0.1/32      D   0                      >100.0

private1__inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

red.inet.0: 6 destinations, 8 routes (4 active, 0 holddown, 3 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both

A Destination      P Prf  Metric 1   Metric 2   Next hop      AS path
10.5.5.5/32       B 170      100          Unusable     100 I
10.12.1.0/24      B 170      100          Unusable     100 I
```



```

10.12.80.4/30      B 170      100      Unusable      I

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Restart Complete

mpls.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Restart Complete

bgp.l3vpn.0: 3 destinations, 3 routes (0 active, 0 holddown, 3 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both

A Destination      P Prf  Metric 1  Metric 2  Next hop      AS path
10.4.4.4:4:10.5.5.5/32
                    B 170      100      Unusable      100 I
10.4.4.4:4:10.12.1.0/24
                    B 170      100      Unusable      100 I
10.4.4.4:4:10.12.80.4/30
                    B 170      100      Unusable      I

inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
Restart Complete

private1___.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

```



## show route inactive-path

<b>Syntax</b>	show route inactive-path <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show route inactive-path <brief   detail   extensive   terse>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display routes for destinations that have no active route. An inactive route is a route that was not selected as the best path.
<b>Options</b>	<p>none—Display all inactive routes.</p> <p>brief   detail   extensive   terse—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to brief.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route inactive-path on page 505</a> <a href="#">show route inactive-path detail on page 506</a> <a href="#">show route inactive-path extensive on page 507</a> <a href="#">show route inactive-path terse on page 507</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

```

show route inactive-path user@host> show route inactive-path

inet.0: 25 destinations, 26 routes (24 active, 0 holddown, 1 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both

10.12.100.12/30      [OSPF/10] 03:57:28, metric 1
> via so-0/3/0.0

private1__inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

10.0.0.0/8          [Direct/0] 04:39:56
> via fxp1.0

red.inet.0: 6 destinations, 8 routes (4 active, 0 holddown, 3 hidden)
Restart Complete

```



+ = Active Route, - = Last Active, \* = Both

```
10.12.80.0/30      [BGP/170] 04:38:17, localpref 100
                  AS path: 100 I
                  > to 10.12.80.1 via ge-6/3/2.0
```

```
iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Restart Complete
```

```
mpls.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Restart Complete
```

```
bgp.l3vpn.0: 3 destinations, 3 routes (0 active, 0 holddown, 3 hidden)
Restart Complete
```

```
inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
Restart Complete
```

```
private1___.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
```

#### show route inactive-path detail

```
user@host> show route inactive-path detail
```

```
inet.0: 25 destinations, 26 routes (24 active, 0 holddown, 1 hidden)
Restart Complete
```

```
10.12.100.12/30 (2 entries, 1 announced)
  OSPF      Preference: 10
            Next-hop reference count: 1
            Next hop: via so-0/3/0.0, selected
            State: <Int>
            Inactive reason: Route Preference
            Local AS:      1
            Age: 3:58:24    Metric: 1
            Area: 0.0.0.0
            Task: OSPF
            AS path: I
```

```
private1___.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)
```

```
10.0.0.0/8 (2 entries, 0 announced)
  Direct Preference: 0
            Next hop type: Interface
            Next-hop reference count: 1
            Next hop: via fxp1.0, selected
            State: <NotBest Int>
            Inactive reason: No difference
            Age: 4:40:52
            Task: IF
            AS path: I
```

```
red.inet.0: 6 destinations, 8 routes (4 active, 0 holddown, 3 hidden)
Restart Complete
```

```
10.12.80.0/30 (2 entries, 1 announced)
  BGP      Preference: 170/-101
            Next-hop reference count: 6
            Source: 10.12.80.1
            Next hop: 10.12.80.1 via ge-6/3/2.0, selected
            State: <Ext>
            Inactive reason: Route Preference
            Peer AS: 100
```



```

Age: 4:39:13
Task: BGP_100.10.12.80.1+179
AS path: 100 I
Localpref: 100
Router ID: 10.0.0.0

```

**show route inactive-path extensive** The output for the **show route inactive-path extensive** command is identical to that of the **show route inactive-path detail** command. For sample output, see [show route inactive-path detail on page 506](#).

**show route inactive-path terse**

```

user@host> show route inactive-path terse

inet.0: 25 destinations, 26 routes (24 active, 0 holddown, 1 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both

A Destination      P Prf  Metric 1   Metric 2  Next hop      AS path
  10.12.100.12/30   0  10           1           >so-0/3/0.0

private1___.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

A Destination      P Prf  Metric 1   Metric 2  Next hop      AS path
  10.0.0.0/8        D   0           0           >fxp1.0

red.inet.0: 6 destinations, 8 routes (4 active, 0 holddown, 3 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both

A Destination      P Prf  Metric 1   Metric 2  Next hop      AS path
  10.12.80.0/30     B  170          100          >10.12.80.1    100 I

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Restart Complete

mpls.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Restart Complete

bgp.13vpn.0: 3 destinations, 3 routes (0 active, 0 holddown, 3 hidden)
Restart Complete

inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
Restart Complete

private1___.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

```



## show route inactive-prefix

<b>Syntax</b>	show route inactive-prefix <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show route inactive-prefix <brief   detail   extensive   terse>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display inactive route destinations in each routing table.
<b>Options</b>	<p>none—Display all inactive route destination.</p> <p>brief   detail   extensive   terse—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to brief.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route inactive-prefix on page 508</a> <a href="#">show route inactive-prefix detail on page 508</a> <a href="#">show route inactive-prefix extensive on page 509</a> <a href="#">show route inactive-prefix terse on page 509</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

```

show route inactive-prefix user@host> show route inactive-prefix
inet.0: 14 destinations, 14 routes (13 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

127.0.0.1/32          [Direct/0] 00:04:54
> via lo0.0

show route inactive-prefix detail user@host> show route inactive-prefix detail
inet.0: 14 destinations, 14 routes (13 active, 0 holddown, 1 hidden)
127.0.0.1/32 (1 entry, 0 announced)
  Direct Preference: 0
    Next hop type: Interface
    Next-hop reference count: 1
    Next hop: via lo0.0, selected
    State: <Hidden Martian Int>
    Age: 4:51

```



Task: IF  
AS path: I00:04:54  
> via 1o0.0

**show route inactive-prefix extensive** The output for the **show route inactive-prefix extensive** command is identical to that of the **show route inactive-path detail** command. For sample output, see [show route inactive-prefix detail on page 508](#).

**show route inactive-prefix terse** user@host> show route inactive-prefix terse

inet.0: 18 destinations, 18 routes (17 active, 0 holddown, 1 hidden)  
+ = Active Route, - = Last Active, \* = Both

A	Destination	P	Prf	Metric 1	Metric 2	Next hop	AS path
	127.0.0.1/32	D	0			>1o0.0	



## show route instance

<b>Syntax</b>	show route instance <brief   detail   summary> <instance-name> <logical-system (all   <i>logical-system-name</i> )> <operational>
<b>Syntax (EX Series Switch and QFX Series)</b>	show route instance <brief   detail   summary> <instance-name> <operational>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.3 for the QFX Series.
<b>Description</b>	Display routing instance information.
<b>Options</b>	<p>none—(Same as <b>brief</b>) Display standard information about all routing instances.</p> <p>brief   detail   summary—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to <b>brief</b>. (These options are not available with the <b>operational</b> keyword.)</p> <p><i>instance-name</i>—(Optional) Display information for all routing instances whose name begins with this string (for example, <b>cust1</b>, <b>cust11</b>, and <b>cust111</b> are all displayed when you run the <b>show route instance cust1</b> command).</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>operational—(Optional) Display operational routing instances.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route instance on page 511</a> <a href="#">show route instance detail (Graceful Restart Complete) on page 512</a> <a href="#">show route instance detail (Graceful Restart Incomplete) on page 513</a> <a href="#">show route instance detail (VPLS Routing Instance) on page 515</a> <a href="#">show route instance operational on page 515</a> <a href="#">show route instance summary on page 516</a>
<b>Output Fields</b>	Table 128 on page 510 lists the output fields for the <b>show route instance</b> command. Output fields are listed in the approximate order in which they appear.

Table 128: show route instance Output Fields

Field Name	Field Description	Level of Output
Instance or <i>instance-name</i>	Name of the routing instance.	All levels



Table 128: show route instance Output Fields (*continued*)

Field Name	Field Description	Level of Output
Operational Routing Instances	( <b>operational</b> keyword only) Names of all operational routing instances.	—
Type	Type of routing instance: <b>forwarding</b> , <b>l2vpn</b> , <b>no-forwarding</b> , <b>vpls</b> , <b>virtual-router</b> , or <b>vrf</b> .	All levels
State	State of the routing instance: <b>active</b> or <b>inactive</b> .	<b>brief detail none</b>
Interfaces	Name of interfaces belonging to this routing instance.	<b>brief detail none</b>
Restart State	Status of graceful restart for this instance: <b>Pending</b> or <b>Complete</b> .	<b>detail</b>
Path selection timeout	Maximum amount of time, in seconds, remaining until graceful restart is declared complete. The default is 300.	<b>detail</b>
Tables	Tables (and number of routes) associated with this routing instance.	<b>none brief detail</b>
Route-distinguisher	Unique route distinguisher associated with this routing instance.	<b>detail</b>
Vrf-import	VPN routing and forwarding instance import policy name.	<b>detail</b>
Vrf-export	VPN routing and forwarding instance export policy name.	<b>detail</b>
Vrf-import-target	VPN routing and forwarding instance import target community name.	<b>detail</b>
Vrf-export-target	VPN routing and forwarding instance export target community name.	<b>detail</b>
Fast-reroute-priority	Fast reroute priority setting for a VPLS routing instance: <b>high</b> , <b>medium</b> , or <b>low</b> . The default is <b>low</b> .	<b>detail</b>
Restart State	Restart state: <ul style="list-style-type: none"> <li><b>Pending:protocol-name</b>—List of protocols that have not yet completed graceful restart for this routing table.</li> <li><b>Complete</b>—All protocols have restarted for this routing table.</li> </ul>	<b>detail</b>
Primary rib	Primary table for this routing instance.	<b>brief none summary</b>
Active/holddown/hidden	Number of active, hold-down, and hidden routes.	All levels

## Sample Output

```

show route instance user@host> show route instance
Instance           Type
Primary RIB
master             forwarding
inet.0             16/0/1
iso.0              1/0/0
mpls.0             0/0/0
inet6.0            2/0/0

```



```

12circuit.0                                0/0/0
__juniper_private1__ forwarding
  __juniper_private1__.inet.0              12/0/0
  __juniper_private1__.inet6.0             1/0/0

```

**show route instance  
detail (Graceful  
Restart Complete)**

```

user@host> show route instance detail
master:
  Router ID: 10.255.14.176
  Type: forwarding      State: Active
  Restart State: Complete Path selection timeout: 300
  Tables:
    inet.0              : 17 routes (15 active, 0 holddown, 1 hidden)
    Restart Complete
    inet.3              : 2 routes (2 active, 0 holddown, 0 hidden)
    Restart Complete
    iso.0               : 1 routes (1 active, 0 holddown, 0 hidden)
    Restart Complete
    mpls.0              : 19 routes (19 active, 0 holddown, 0 hidden)
    Restart Complete
    bgp.l3vpn.0         : 10 routes (10 active, 0 holddown, 0 hidden)
    Restart Complete
    inet6.0             : 2 routes (2 active, 0 holddown, 0 hidden)
    Restart Complete
    bgp.l2vpn.0         : 1 routes (1 active, 0 holddown, 0 hidden)
    Restart Complete
  BGP-INET:
    Router ID: 10.69.103.1
    Type: vrf           State: Active
    Restart State: Complete Path selection timeout: 300
    Interfaces:
      t3-0/0/0.103
    Route-distinguisher: 10.255.14.176:103
    Vrf-import: [ BGP-INET-import ]
    Vrf-export: [ BGP-INET-export ]
    Tables:
      BGP-INET.inet.0    : 4 routes (4 active, 0 holddown, 0 hidden)
      Restart Complete
  BGP-L:
    Router ID: 10.69.104.1
    Type: vrf           State: Active
    Restart State: Complete Path selection timeout: 300
    Interfaces:
      t3-0/0/0.104
    Route-distinguisher: 10.255.14.176:104
    Vrf-import: [ BGP-L-import ]
    Vrf-export: [ BGP-L-export ]
    Tables:
      BGP-L.inet.0       : 4 routes (4 active, 0 holddown, 0 hidden)
      Restart Complete
      BGP-L.mpls.0       : 3 routes (3 active, 0 holddown, 0 hidden)
      Restart Complete
  L2VPN:
    Router ID: 0.0.0.0
    Type: l2vpn         State: Active
    Restart State: Complete Path selection timeout: 300
    Interfaces:
      t3-0/0/0.512
    Route-distinguisher: 10.255.14.176:512
    Vrf-import: [ L2VPN-import ]
    Vrf-export: [ L2VPN-export ]
    Tables:

```



```

L2VPN.12vpn.0          : 2 routes (2 active, 0 holddown, 0 hidden)
Restart Complete
LDP:
Router ID: 10.69.105.1
Type: vrf               State: Active
Restart State: Complete Path selection timeout: 300
Interfaces:
  t3-0/0/0.105
Route-distinguisher: 10.255.14.176:105
Vrf-import: [ LDP-import ]
Vrf-export: [ LDP-export ]
Tables:
  LDP.inet.0            : 5 routes (4 active, 0 holddown, 0 hidden)
Restart Complete
OSPF:
Router ID: 10.69.101.1
Type: vrf               State: Active
Restart State: Complete Path selection timeout: 300
Interfaces:
  t3-0/0/0.101
Route-distinguisher: 10.255.14.176:101
Vrf-import: [ OSPF-import ]
Vrf-export: [ OSPF-export ]
Vrf-import-target: [ target:11111
Tables:
  OSPF.inet.0           : 8 routes (7 active, 0 holddown, 0 hidden)
Restart Complete
RIP:
Router ID: 10.69.102.1
Type: vrf               State: Active
Restart State: Complete Path selection timeout: 300
Interfaces:
  t3-0/0/0.102
Route-distinguisher: 10.255.14.176:102
Vrf-import: [ RIP-import ]
Vrf-export: [ RIP-export ]
Tables:
  RIP.inet.0            : 6 routes (6 active, 0 holddown, 0 hidden)
Restart Complete
STATIC:
Router ID: 10.69.100.1
Type: vrf               State: Active
Restart State: Complete Path selection timeout: 300
Interfaces:
  t3-0/0/0.100
Route-distinguisher: 10.255.14.176:100
Vrf-import: [ STATIC-import ]
Vrf-export: [ STATIC-export ]
Tables:
  STATIC.inet.0         : 4 routes (4 active, 0 holddown, 0 hidden)
Restart Complete

```

**show route instance  
detail (Graceful  
Restart Incomplete)**

```

user@host> show route instance detail
master:
Router ID: 10.255.14.176
Type: forwarding        State: Active
Restart State: Pending  Path selection timeout: 300
Tables:
  inet.0                 : 17 routes (15 active, 1 holddown, 1 hidden)
Restart Pending: OSPF LDP
  inet.3                 : 2 routes (2 active, 0 holddown, 0 hidden)

```



```

Restart Pending: OSPF LDP
iso.0                  : 1 routes (1 active, 0 holddown, 0 hidden)
Restart Complete
mpls.0                 : 23 routes (23 active, 0 holddown, 0 hidden)
Restart Pending: LDP VPN
bgp.l3vpn.0            : 10 routes (10 active, 0 holddown, 0 hidden)
Restart Pending: BGP VPN
inet6.0                : 2 routes (2 active, 0 holddown, 0 hidden)
Restart Complete
bgp.l2vpn.0            : 1 routes (1 active, 0 holddown, 0 hidden)
Restart Pending: BGP VPN
BGP-INET:
  Router ID: 10.69.103.1
  Type: vrf              State: Active
  Restart State: Pending Path selection timeout: 300
  Interfaces:
    t3-0/0/0.103
  Route-distinguisher: 10.255.14.176:103
  Vrf-import: [ BGP-INET-import ]
  Vrf-export: [ BGP-INET-export ]
  Tables:
    BGP-INET.inet.0      : 6 routes (5 active, 0 holddown, 0 hidden)
    Restart Pending: VPN
BGP-L:
  Router ID: 10.69.104.1
  Type: vrf              State: Active
  Restart State: Pending Path selection timeout: 300
  Interfaces:
    t3-0/0/0.104
  Route-distinguisher: 10.255.14.176:104
  Vrf-import: [ BGP-L-import ]
  Vrf-export: [ BGP-L-export ]
  Tables:
    BGP-L.inet.0         : 6 routes (5 active, 0 holddown, 0 hidden)
    Restart Pending: VPN
    BGP-L.mpls.0         : 2 routes (2 active, 0 holddown, 0 hidden)
    Restart Pending: VPN
L2VPN:
  Router ID: 0.0.0.0
  Type: l2vpn            State: Active
  Restart State: Pending Path selection timeout: 300
  Interfaces:
    t3-0/0/0.512
  Route-distinguisher: 10.255.14.176:512
  Vrf-import: [ L2VPN-import ]
  Vrf-export: [ L2VPN-export ]
  Tables:
    L2VPN.l2vpn.0        : 2 routes (2 active, 0 holddown, 0 hidden)
    Restart Pending: VPN L2VPN
LDP:
  Router ID: 10.69.105.1
  Type: vrf              State: Active
  Restart State: Pending Path selection timeout: 300
  Interfaces:
    t3-0/0/0.105
  Route-distinguisher: 10.255.14.176:105
  Vrf-import: [ LDP-import ]
  Vrf-export: [ LDP-export ]
  Tables:
    LDP.inet.0           : 5 routes (4 active, 1 holddown, 0 hidden)
    Restart Pending: OSPF LDP VPN

```



```

OSPF:
  Router ID: 10.69.101.1
  Type: vrf                      State: Active
  Restart State: Pending Path selection timeout: 300
  Interfaces:
    t3-0/0/0.101
  Route-distinguisher: 10.255.14.176:101
  Vrf-import: [ OSPF-import ]
  Vrf-export: [ OSPF-export ]
  Tables:
    OSPF.inet.0                : 8 routes (7 active, 1 holddown, 0 hidden)
    Restart Pending: OSPF VPN

RIP:
  Router ID: 10.69.102.1
  Type: vrf                      State: Active
  Restart State: Pending Path selection timeout: 300
  Interfaces:
    t3-0/0/0.102
  Route-distinguisher: 10.255.14.176:102
  Vrf-import: [ RIP-import ]
  Vrf-export: [ RIP-export ]
  Tables:
    RIP.inet.0                 : 8 routes (6 active, 2 holddown, 0 hidden)
    Restart Pending: RIP VPN

STATIC:
  Router ID: 10.69.100.1
  Type: vrf                      State: Active
  Restart State: Pending Path selection timeout: 300
  Interfaces:
    t3-0/0/0.100
  Route-distinguisher: 10.255.14.176:100
  Vrf-import: [ STATIC-import ]
  Vrf-export: [ STATIC-export ]
  Tables:
    STATIC.inet.0              : 4 routes (4 active, 0 holddown, 0 hidden)
    Restart Pending: VPN

show route instance detail (VPLS Routing Instance)
user@host> show route instance detail test-vpls
test-vpls:
  Router ID: 0.0.0.0
  Type: vpls                      State: Active
  Interfaces:
    lsi.1048833
    lsi.1048832
    fe-0/1/0.513
  Route-distinguisher: 10.255.37.65:1
  Vrf-import: [ __vrf-import-test-vpls-internal__ ]
  Vrf-export: [ __vrf-export-test-vpls-internal__ ]
  Vrf-import-target: [ target:300:1 ]
  Vrf-export-target: [ target:300:1 ]
  Fast-reroute-priority: high
  Tables:
    test-vpls.l2vpn.0          : 3 routes (3 active, 0 holddown, 0 hidden)

show route instance operational
user@host> show route instance operational
Operational Routing Instances:

master
default

```



```

show route instance summary
user@host> show route instance summary

```

Instance	Type	Primary rib	Active/holddown/hidden
master	forwarding	inet.0	15/0/1
		iso.0	1/0/0
		mpls.0	35/0/0
		l3vpn.0	0/0/0
		inet6.0	2/0/0
		l2vpn.0	0/0/0
		l2circuit.0	0/0/0
BGP-INET	vrf	BGP-INET.inet.0	5/0/0
		BGP-INET.iso.0	0/0/0
		BGP-INET.inet6.0	0/0/0
BGP-L	vrf	BGP-L.inet.0	5/0/0
		BGP-L.iso.0	0/0/0
		BGP-L.mpls.0	4/0/0
		BGP-L.inet6.0	0/0/0
L2VPN	l2vpn	L2VPN.inet.0	0/0/0
		L2VPN.iso.0	0/0/0
		L2VPN.inet6.0	0/0/0
		L2VPN.l2vpn.0	2/0/0
LDP	vrf	LDP.inet.0	4/0/0
		LDP.iso.0	0/0/0
		LDP.mpls.0	0/0/0
		LDP.inet6.0	0/0/0
		LDP.l2circuit.0	0/0/0
OSPF	vrf	OSPF.inet.0	7/0/0
		OSPF.iso.0	0/0/0
		OSPF.inet6.0	0/0/0
RIP	vrf	RIP.inet.0	6/0/0
		RIP.iso.0	0/0/0
		RIP.inet6.0	0/0/0
STATIC	vrf	STATIC.inet.0	4/0/0
		STATIC.iso.0	0/0/0
		STATIC.inet6.0	0/0/0



## show route label

<b>Syntax</b>	<code>show route label <i>label</i></code> <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	<code>show route label <i>label</i></code> <brief   detail   extensive   terse>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display the routes based on a specified Multiprotocol Label Switching (MPLS) label value.
<b>Options</b>	<i>label</i> —Value of the MPLS label.  brief   detail   extensive   terse—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to brief.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route label on page 517</a> <a href="#">show route label detail on page 517</a> <a href="#">show route label extensive on page 518</a> <a href="#">show route label terse on page 518</a>
<b>Output Fields</b>	For information about output fields, see the output field table for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

<b>show route label</b>	<pre> user@host&gt; show route label 100016  mpls.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden) Restart Complete + = Active Route, - = Last Active, * = Both 100016          *[VPN/170] 03:25:41                  &gt; to 10.12.80.1 via ge-6/3/2.0, Pop </pre>
<b>show route label detail</b>	<pre> user@host&gt; show route label 100016 detail  mpls.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden) Restart Complete 100016 (1 entry, 1 announced)    *VPN      Preference: 170               Next-hop reference count: 2               Source: 10.12.80.1 </pre>



```

Next hop: 10.12.80.1 via ge-6/3/2.0, selected
Label operation: Pop
State: <Active Int Ext>
Local AS:      1
Age: 3:23:31
Task: BGP.0.0.0.0+179
Announcement bits (1): 0-KRT
AS path: 100 I
Ref Cnt: 2

```

**show route label extensive** The output for the show route label extensive command is identical to that of the **show route label detail** command. For sample output, see [show route label detail on page 517](#).

**show route label terse** user@host> show route label 100016 terse

```

mpls.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both

```

A Destination	P Prf	Metric 1	Metric 2	Next hop	AS path
* 100016	V 170			>10.12.80.1	



## show route label-switched-path

<b>Syntax</b>	<code>show route label-switched-path <i>path-name</i></code> <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	<code>show route label-switched-path <i>path-name</i></code> <brief   detail   extensive   terse>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display the routes used in a Multiprotocol Label Switching (MPLS) label-switched path (LSP).
<b>Options</b>	brief   detail   extensive   terse—(Optional) Display the specified level of output.  <i>path-name</i> —LSP tunnel name.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route label-switched-path on page 519</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

```

show route label-switched-path user@host> show route label-switched-path sf-to-ny
inet.0: 29 destinations, 29 routes (29 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

1.1.1.1/32      [MPLS/7] 00:00:06, metric 0
                > to 111.222.1.9 via s0-0/0/0, label-switched-path sf-to-ny
3.3.3.3/32      *[MPLS/7] 00:00:06, metric 0
                > to 111.222.1.9 via s0-0/0/0, label-switched-path sf-to-ny

inet.3: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

2.2.2.2/32      *[MPLS/7] 00:00:06, metric 0
                > to 111.222.1.9 via s0-0/0/0, label-switched-path sf-to-ny
4.4.4.4/32      *[MPLS/7] 00:00:06, metric 0
                to 111.222.1.9 via s0-0/0/0, label-switched-path abc
                > to 111.222.1.9 via s0-0/0/0, label-switched-path xyz
                to 111.222.1.9 via s0-0/0/0, label-switched-path sf-to-ny
111.222.1.9/32  [MPLS/7] 00:00:06, metric 0
                > to 111.222.1.9 via s0-0/0/0, label-switched-path sf-to-ny

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

```



+ = Active Route, - = Last Active, \* = Both

mpls.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

+ = Active Route, - = Last Active, \* = Both



## show route localization

<b>Syntax</b>	show route localization
<b>Release Information</b>	Command introduced in Junos OS Release 11.4.
<b>Description</b>	(T320, T640, and T1600 routers only) Display route localization details.
<b>Options</b>	detail—Display detailed output.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>Example: Configuring Packet Forwarding Engine FIB Localization</li> </ul>
<b>Output Fields</b>	Table 129 on page 521 lists the output fields for the <b>show route localization</b> command. Output fields are listed in the approximate order in which they appear.

**Table 129: show route localization Output Fields**

Field Name	Field Description
<b>FIB-local</b>	FPCs configured as FIB-local.
<b>FIB-remote</b>	FPCs configured as FIB-remote.
<b>Normal</b>	FPCs neither configured as <b>FIB-local</b> or <b>FIB-remote</b> .
<b>Protocols</b>	IPv4 (inet) or IPv6 (inet6) traffic configured for route localization.

## Sample Output

```

user@R0> show route localization
FIB localization ready FPCs (and FIB-local Forwarding Engine addresses)
  FIB-local:  FPC2(4,5)
  FIB-remote: FPC0, FPC1
  Normal:     FPC3, FPC4, FPC5, FPC6, FPC7

user@R0> show route localization detail
FIB localization ready FPCs (and FIB-local Forwarding Engine addresses)
  FIB-local:  FPC2(4,5)
  FIB-remote: FPC0, FPC1
  Normal:     FPC3, FPC4, FPC5, FPC6, FPC7
FIB localization configuration
  Protocols:  inet, inet6
  FIB-local:  FPC2
  FIB-remote: FPC0, FPC1
Forwarding Engine addresses
  FPC0: 1
  FPC1: 2
  FPC2: 4, 5
  FPC3: 6

```



FPC4: 8  
FPC5: 11  
FPC6: 13  
FPC7: 15



## show route martians

<b>Syntax</b>	show route martians <logical-system (all   <i>logical-system-name</i> )> <table <i>routing-table-name</i> >
<b>Syntax (EX Series Switch)</b>	show route martians <table <i>routing-table-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display the martian (invalid and ignored) entries associated with each routing table.
<b>Options</b>	<p>none—Display standard information about route martians for all routing tables.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>table <i>routing-table-name</i>—(Optional) Display information about route martians for all routing tables whose name begins with this string (for example, <b>inet.0</b> and <b>inet6.0</b> are both displayed when you run the <b>show route martians table inet</b> command).</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route martians on page 523</a>
<b>Output Fields</b>	<a href="#">Table 130 on page 523</a> lists the output fields for the <b>show route martians</b> command. Output fields are listed in the approximate order in which they appear

**Table 130: show route martians Output Fields**

Field Name	Field Description
<i>table-name</i>	Name of the route table in which the route martians reside.
<i>destination-prefix</i>	Route destination.
<i>match value</i>	Route match parameter.
<i>status</i>	Status of the route: <b>allowed</b> or <b>disallowed</b> .

## Sample Output

```

show route martians  user@host> show route martians
inet.0:
    0.0.0.0/0 exact -- allowed
    0.0.0.0/8 orlonger -- disallowed
    127.0.0.0/8 orlonger -- disallowed
    128.0.0.0/16 orlonger -- disallowed
    191.255.0.0/16 orlonger -- disallowed

```



```
192.0.0.0/24 orlonger -- disallowed
223.255.255.0/24 orlonger -- disallowed
240.0.0.0/4 orlonger -- disallowed
224.0.0.0/4 exact -- disallowed
224.0.0.0/24 exact -- disallowed

inet.1:
0.0.0.0/0 exact -- allowed
0.0.0.0/8 orlonger -- disallowed
127.0.0.0/8 orlonger -- disallowed
128.0.0.0/16 orlonger -- disallowed
191.255.0.0/16 orlonger -- disallowed
192.0.0.0/24 orlonger -- disallowed
223.255.255.0/24 orlonger -- disallowed
240.0.0.0/4 orlonger -- disallowed

inet.2:
0.0.0.0/0 exact -- allowed
0.0.0.0/8 orlonger -- disallowed
127.0.0.0/8 orlonger -- disallowed
128.0.0.0/16 orlonger -- disallowed
191.255.0.0/16 orlonger -- disallowed
192.0.0.0/24 orlonger -- disallowed
223.255.255.0/24 orlonger -- disallowed
240.0.0.0/4 orlonger -- disallowed
224.0.0.0/4 exact -- disallowed
224.0.0.0/24 exact -- disallowed

inet.3:
0.0.0.0/0 exact -- allowed
0.0.0.0/8 orlonger -- disallowed
127.0.0.0/8 orlonger -- disallowed
128.0.0.0/16 orlonger -- disallowed
191.255.0.0/16 orlonger -- disallowed
192.0.0.0/24 orlonger -- disallowed
223.255.255.0/24 orlonger -- disallowed
240.0.0.0/4 orlonger -- disallowed
224.0.0.0/4 exact -- disallowed
224.0.0.0/24 exact -- disallowed

...

inet6.0:
::1/128 exact -- disallowed
ff00::/8 exact -- disallowed
ff02::/16 exact -- disallowed

inet6.1:
::1/128 exact -- disallowed

...
```



## show route next-hop

<b>Syntax</b>	<code>show route next-hop <i>next-hop</i></code> <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	<code>show route next-hop <i>next-hop</i></code> <brief   detail   extensive   terse>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display the entries in the routing table that are being sent to the specified next-hop address.
<b>Options</b>	brief   detail   extensive   terse—(Optional) Display the specified level of output.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.  <i>next-hop</i> —Next-hop address.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route next-hop on page 525</a> <a href="#">show route next-hop detail on page 526</a> <a href="#">show route next-hop extensive on page 527</a> <a href="#">show route next-hop terse on page 529</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

```

show route next-hop user@host> show route next-hop 192.168.71.254

inet.0: 18 destinations, 18 routes (17 active, 0 holddown, 1 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both

10.10.0.0/16      *[Static/5] 06:26:25
                  > to 192.168.71.254 via fxp0.0
10.209.0.0/16     *[Static/5] 06:26:25
                  > to 192.168.71.254 via fxp0.0
172.16.0.0/12     *[Static/5] 06:26:25
                  > to 192.168.71.254 via fxp0.0
192.168.0.0/16    *[Static/5] 06:26:25
                  > to 192.168.71.254 via fxp0.0
192.168.102.0/23  *[Static/5] 06:26:25
                  > to 192.168.71.254 via fxp0.0
207.17.136.0/24  *[Static/5] 06:26:25
                  > to 192.168.71.254 via fxp0.0

```



```

207.17.136.192/32 *[Static/5] 06:26:25
> to 192.168.71.254 via fxp0.0

private1___.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

red.inet.0: 4 destinations, 5 routes (4 active, 0 holddown, 0 hidden)
Restart Complete

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Restart Complete

mpls.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Restart Complete

inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
Restart Complete

private1___.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

```

**show route next-hop  
detail**

```

user@host> show route next-hop 192.168.71.254 detail

inet.0: 18 destinations, 18 routes (17 active, 0 holddown, 1 hidden)
Restart Complete
10.10.0.0/16 (1 entry, 1 announced)
    *Static Preference: 5
        Next-hop reference count: 36
        Next hop: 192.168.71.254 via fxp0.0, selected
        State: <Active NoReadvrt Int Ext>
        Local AS: 1
        Age: 6:27:41
        Task: RT
        Announcement bits (3): 0-KRT 3-Resolve tree 1 5-Resolve tree 2
        AS path: I

10.209.0.0/16 (1 entry, 1 announced)
    *Static Preference: 5
        Next-hop reference count: 36
        Next hop: 192.168.71.254 via fxp0.0, selected
        State: <Active NoReadvrt Int Ext>
        Local AS: 1
        Age: 6:27:41
        Task: RT
        Announcement bits (3): 0-KRT 3-Resolve tree 1 5-Resolve tree 2
        AS path: I

172.16.0.0/12 (1 entry, 1 announced)
    *Static Preference: 5
        Next-hop reference count: 36
        Next hop: 192.168.71.254 via fxp0.0, selected
        State: <Active NoReadvrt Int Ext>
        Local AS: 1
        Age: 6:27:41
        Task: RT
        Announcement bits (3): 0-KRT 3-Resolve tree 1 5-Resolve tree 2
        AS path: I

192.168.0.0/16 (1 entry, 1 announced)
    *Static Preference: 5
        Next-hop reference count: 36
        Next hop: 192.168.71.254 via fxp0.0, selected
        State: <Active NoReadvrt Int Ext>

```



```

Local AS:      1
Age: 6:27:41
Task: RT
Announcement bits (3): 0-KRT 3-Resolve tree 1 5-Resolve tree 2
AS path: I

192.168.102.0/23 (1 entry, 1 announced)
  *Static Preference: 5
    Next-hop reference count: 36
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Local AS:      1
    Age: 6:27:41
    Task: RT
    Announcement bits (3): 0-KRT 3-Resolve tree 1 5-Resolve tree 2
    AS path: I

207.17.136.0/24 (1 entry, 1 announced)
  *Static Preference: 5
    Next-hop reference count: 36
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Local AS:      1
    Age: 6:27:41
    Task: RT
    Announcement bits (3): 0-KRT 3-Resolve tree 1 5-Resolve tree 2
    AS path: I

207.17.136.192/32 (1 entry, 1 announced)
  *Static Preference: 5
    Next-hop reference count: 36
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Local AS:      1
    Age: 6:27:41
    Task: RT
    Announcement bits (3): 0-KRT 3-Resolve tree 1 5-Resolve tree 2
    AS path: I

private1___.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

red.inet.0: 4 destinations, 5 routes (4 active, 0 holddown, 0 hidden)
Restart Complete

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Restart Complete

mpls.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Restart Complete

inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
Restart Complete

private1___.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

show route next-hop extensive user@host> show route next-hop 192.168.71.254 extensive
extensive
inet.0: 18 destinations, 18 routes (17 active, 0 holddown, 1 hidden)
10.10.0.0/16 (1 entry, 1 announced)
TSI:
KRT in-kernel 10.10.0.0/16 -> {192.168.71.254}

```



```
*Static Preference: 5
  Next-hop reference count: 22
  Next hop: 192.168.71.254 via fxp0.0, selected
  State: <Active NoReadvrt Int Ext>
  Local AS: 69
  Age: 2:02:28
  Task: RT
  Announcement bits (1): 0-KRT
  AS path: I

10.209.0.0/16 (1 entry, 1 announced)
TSI:
KRT in-kernel 10.209.0.0/16 -> {192.168.71.254}
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Local AS: 69
    Age: 2:02:28
    Task: RT
    Announcement bits (1): 0-KRT
    AS path: I

172.16.0.0/12 (1 entry, 1 announced)
TSI:
KRT in-kernel 172.16.0.0/12 -> {192.168.71.254}
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Local AS: 69
    Age: 2:02:28
    Task: RT
    Announcement bits (1): 0-KRT
    AS path: I

192.168.0.0/16 (1 entry, 1 announced)
TSI:
KRT in-kernel 192.168.0.0/16 -> {192.168.71.254}
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Local AS: 69
    Age: 2:02:28
    Task: RT
    Announcement bits (1): 0-KRT
    AS path: I

192.168.102.0/23 (1 entry, 1 announced)
TSI:
KRT in-kernel 192.168.102.0/23 -> {192.168.71.254}
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Local AS: 69
    Age: 2:02:28
    Task: RT
    Announcement bits (1): 0-KRT
    AS path: I
```



```

207.17.136.0/24 (1 entry, 1 announced)
TSI:
KRT in-kernel 207.17.136.0/24 -> {192.168.71.254}
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Local AS: 69
    Age: 2:02:28
    Task: RT
    Announcement bits (1): 0-KRT
    AS path: I

207.17.136.192/32 (1 entry, 1 announced)
TSI:
KRT in-kernel 207.17.136.192/32 -> {192.168.71.254}
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Local AS: 69
    Age: 2:02:28
    Task: RT
    Announcement bits (1): 0-KRT
    AS path: I

private1___.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

mpls.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)

inet6.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)

private1___.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

green.l2vpn.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

red.l2vpn.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

```

### show route next-hop terse

```

user@host> show route next-hop 192.168.71.254 terse

inet.0: 25 destinations, 26 routes (24 active, 0 holddown, 1 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both

A Destination      P Prf  Metric 1  Metric 2  Next hop      AS path
* 10.10.0.0/16     S  5                >192.168.71.254
* 10.209.0.0/16    S  5                >192.168.71.254
* 172.16.0.0/12    S  5                >192.168.71.254
* 192.168.0.0/16   S  5                >192.168.71.254
* 192.168.102.0/23 S  5                >192.168.71.254
* 207.17.136.0/24  S  5                >192.168.71.254
* 207.17.136.192/32 S  5                >192.168.71.254

private1___.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

red.inet.0: 4 destinations, 5 routes (4 active, 0 holddown, 0 hidden)
Restart Complete

```



iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)  
Restart Complete

mpls.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)  
Restart Complete

inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)  
Restart Complete

private1\_\_inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)



## show route no-community

<b>Syntax</b>	show route no-community <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show route no-community <brief   detail   extensive   terse>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display the route entries in each routing table that are not associated with any community.
<b>Options</b>	none—(Same as <b>brief</b> ) Display the route entries in each routing table that are not associated with any community.  brief   detail   extensive   terse—(Optional) Display the specified level of output.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route no-community on page 531</a> <a href="#">show route no-community detail on page 532</a> <a href="#">show route no-community extensive on page 532</a> <a href="#">show route no-community terse on page 533</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

```

user@host> show route no-community
inet.0: 28 destinations, 30 routes (27 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

10.10.0.0/16      *[Static/5] 00:36:27
                  > to 192.168.71.254 via fxp0.0
10.209.0.0/16    *[Static/5] 00:36:27
                  > to 192.168.71.254 via fxp0.0
10.255.71.52/32  *[Direct/0] 00:36:27
                  > via lo0.0
10.255.71.63/32  *[OSPF/10] 00:04:39, metric 1
                  > to 35.1.1.2 via ge-3/1/0.0
10.255.71.64/32  *[OSPF/10] 00:00:08, metric 2
                  > to 35.1.1.2 via ge-3/1/0.0
10.255.71.240/32 *[OSPF/10] 00:05:04, metric 2
                  via so-0/1/2.0
                  > via so-0/3/2.0
10.255.71.241/32 *[OSPF/10] 00:05:14, metric 1

```



```

> via so-0/1/2.0
10.255.71.242/32  * [OSPF/10] 00:05:19, metric 1
> via so-0/3/2.0
12.1.1.0/24      * [OSPF/10] 00:05:14, metric 2
> via so-0/3/2.0
14.1.1.0/24      * [OSPF/10] 00:00:08, metric 3
> to 35.1.1.2 via ge-3/1/0.0
    via so-0/1/2.0
    via so-0/3/2.0
16.1.1.0/24      * [OSPF/10] 00:05:14, metric 2
> via so-0/1/2.0
.....

```

**show route no-community detail**  
**no-community detail**

```

user@host> show route no-community detail
inet.0: 28 destinations, 30 routes (27 active, 0 holddown, 1 hidden)
10.10.0.0/16 (1 entry, 1 announced)
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Age: 38:08
    Task: RT
    Announcement bits (1): 0-KRT
    AS path: I

10.209.0.0/16 (1 entry, 1 announced)
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Age: 38:08
    Task: RT
    Announcement bits (1): 0-KRT
    AS path: I

....

```

**show route no-community extensive**  
**no-community extensive**

```

user@host> show route no-community extensive
inet.0: 18 destinations, 18 routes (17 active, 0 holddown, 1 hidden)
10.10.0.0/16 (1 entry, 1 announced)
TSI:
KRT in-kernel 10.10.0.0/16 -> {192.168.71.254}
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Local AS: 69
    Age: 2:03:33
    Task: RT
    Announcement bits (1): 0-KRT
    AS path: I

10.209.0.0/16 (1 entry, 1 announced)
TSI:
KRT in-kernel 10.209.0.0/16 -> {192.168.71.254}
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Local AS: 69

```



```

Age: 2:03:33
Task: RT
Announcement bits (1): 0-KRT
AS path: I

```

```

show route no-community terse
user@host> show route no-community terse

```

```

inet.0: 28 destinations, 30 routes (27 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

```

A	Destination	P	Prf	Metric 1	Metric 2	Next hop	AS path
*	10.10.0.0/16	S	5			>192.168.71.254	
*	10.209.0.0/16	S	5			>192.168.71.254	
*	10.255.71.52/32	D	0			>100.0	
*	10.255.71.63/32	O	10	1		>35.1.1.2	
*	10.255.71.64/32	O	10	2		>35.1.1.2	
*	10.255.71.240/32	O	10	2		so-0/1/2.0	
						>so-0/3/2.0	
*	10.255.71.241/32	O	10	1		>so-0/1/2.0	
*	10.255.71.242/32	O	10	1		>so-0/3/2.0	
*	12.1.1.0/24	O	10	2		>so-0/3/2.0	
*	14.1.1.0/24	O	10	3		>35.1.1.2	
						so-0/1/2.0	
						so-0/3/2.0	
*	16.1.1.0/24	O	10	2		>so-0/1/2.0	
	...						



## show route output

---

<b>Syntax</b>	show route output (address <i>ip-address</i>   interface <i>interface-name</i> ) <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show route output (address <i>ip-address</i>   interface <i>interface-name</i> ) <brief   detail   extensive   terse>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	<p>Display the entries in the routing table learned through static routes and interior gateway protocols that are to be sent out the interface with either the specified IP address or specified name.</p> <p>To view routes advertised to a neighbor or received from a neighbor for the BGP protocol, use the <b>show route advertising-protocol bgp</b> and <b>show route receive-protocol bgp</b> commands instead.</p>
<b>Options</b>	<p>address <i>ip-address</i>—Display entries in the routing table that are to be sent out the interface with the specified IP address.</p> <p>brief   detail   extensive   terse—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to brief.</p> <p>interface <i>interface-name</i>—Display entries in the routing table that are to be sent out the interface with the specified name.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route output address on page 535</a> <a href="#">show route output address detail on page 535</a> <a href="#">show route output address extensive on page 535</a> <a href="#">show route output address terse on page 536</a> <a href="#">show route output interface on page 536</a> <a href="#">show route output interface detail on page 536</a> <a href="#">show route output interface extensive on page 537</a> <a href="#">show route output interface terse on page 537</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.



## Sample Output

```

show route output address user@host> show route output address 36.1.1.1/24

inet.0: 28 destinations, 30 routes (27 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

36.1.1.0/24          *[Direct/0] 00:19:56
                    > via so-0/1/2.0
                    [OSPF/10] 00:19:55, metric 1
                    > via so-0/1/2.0

private1___.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

mpls.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)

inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

private1___.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

```

```

show route output address detail user@host> show route output address 36.1.1.1 detail

inet.0: 28 destinations, 30 routes (27 active, 0 holddown, 1 hidden)
36.1.1.0/24 (2 entries, 0 announced)
    *Direct Preference: 0
        Next hop type: Interface
        Next-hop reference count: 1
        Next hop: via so-0/1/2.0, selected
        State: <Active Int>
        Age: 23:00
        Task: IF
        AS path: I
    OSPF Preference: 10
        Next-hop reference count: 1
        Next hop: via so-0/1/2.0, selected
        State: <Int>
        Inactive reason: Route Preference
        Age: 22:59      Metric: 1
        Area: 0.0.0.0
        Task: OSPF
        AS path: I

private1___.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

mpls.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)

inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

private1___.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

```

**show route output address extensive** The output for the **show route output address extensive** command is identical to that of the **show route output address detail** command. For sample output, see [show route output address detail on page 535](#).



```

show route output address terse
user@host> show route output address 36.1.1.1 terse

inet.0: 28 destinations, 30 routes (27 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

A Destination      P Prf  Metric 1   Metric 2   Next hop      AS path
* 36.1.1.0/24      D   0           1           >so-0/1/2.0
                        0  10           1           >so-0/1/2.0

private1___.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

mpls.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)

inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

private1___.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)


show route output interface
user@host> show route output interface so-0/1/2.0

inet.0: 28 destinations, 30 routes (27 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

10.255.71.240/32  *[OSPF/10] 00:13:00, metric 2
                   via so-0/1/2.0
                   > via so-0/3/2.0
10.255.71.241/32  *[OSPF/10] 00:13:10, metric 1
                   > via so-0/1/2.0
14.1.1.0/24       *[OSPF/10] 00:05:11, metric 3
                   to 35.1.1.2 via ge-3/1/0.0
                   > via so-0/1/2.0
                   via so-0/3/2.0
16.1.1.0/24       *[OSPF/10] 00:13:10, metric 2
                   > via so-0/1/2.0
36.1.1.0/24       *[Direct/0] 00:13:21
                   > via so-0/1/2.0
                   [OSPF/10] 00:13:20, metric 1
                   > via so-0/1/2.0

private1___.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

mpls.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)

inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

private1___.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)


show route output interface detail
user@host> show route output interface so-0/1/2.0 detail

inet.0: 28 destinations, 30 routes (27 active, 0 holddown, 1 hidden)
10.255.71.240/32 (1 entry, 1 announced)
    *OSPF    Preference: 10
              Next-hop reference count: 2
              Next hop: via so-0/1/2.0
              Next hop: via so-0/3/2.0, selected
              State: <Active Int>
              Age: 14:52      Metric: 2

```



```

Area: 0.0.0.0
Task: OSPF
Announcement bits (1): 0-KRT
AS path: I

10.255.71.241/32 (1 entry, 1 announced)
  *OSPF Preference: 10
    Next-hop reference count: 4
    Next hop: via so-0/1/2.0, selected
    State: <Active Int>
    Age: 15:02 Metric: 1
    Area: 0.0.0.0
    Task: OSPF
    Announcement bits (1): 0-KRT
    AS path: I
...

```

**show route output interface extensive** The output for the **show route output interface extensive** command is identical to that of the **show route output interface detail** command. For sample output, see [show route output interface detail on page 536](#).

**show route output interface terse** user@host> show route output interface so-0/1/2.0 terse

```

inet.0: 28 destinations, 30 routes (27 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

A Destination      P Prf  Metric 1  Metric 2  Next hop      AS path
* 10.255.71.240/32  0 10      2          so-0/1/2.0
                    >so-0/3/2.0
* 10.255.71.241/32  0 10      1          >so-0/1/2.0
* 14.1.1.0/24       0 10      3          35.1.1.2
                    >so-0/1/2.0
                    so-0/3/2.0
* 16.1.1.0/24       0 10      2          >so-0/1/2.0
* 36.1.1.0/24       D 0       1          >so-0/1/2.0
                    0 10      1          >so-0/1/2.0

private1___.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

mpls.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)

inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

private1___.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

```



## show route protocol

---

<b>Syntax</b>	<code>show route protocol <i>protocol</i></code> <code>&lt;brief   detail   extensive   terse&gt;</code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code>
<b>Syntax (EX Series Switch)</b>	<code>show route protocol <i>protocol</i></code> <code>&lt;brief   detail   extensive   terse&gt;</code>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>ospf2</b> and <b>ospf3</b> options introduced in Junos OS Release 9.2.</p> <p><b>ospf2</b> and <b>ospf3</b> options introduced in Junos OS Release 9.2 for EX Series switches.</p> <p><b>flow</b> option introduced in Junos OS Release 10.0.</p> <p><b>flow</b> option introduced in Junos OS Release 10.0 for EX Series switches.</p>
<b>Description</b>	Display the route entries in the routing table that were learned from a particular protocol.
<b>Options</b>	<p><i>protocol</i>—Protocol from which the route was learned:</p> <ul style="list-style-type: none"><li>• <b>access</b>—Access route for use by DHCP application</li><li>• <b>access-internal</b>—Access-internal route for use by DHCP application</li><li>• <b>aggregate</b>—Locally generated aggregate route</li><li>• <b>atmvpn</b>—Asynchronous Transfer Mode virtual private network</li><li>• <b>bgp</b>—Border Gateway Protocol</li><li>• <b>ccc</b>—Circuit cross-connect</li><li>• <b>direct</b>—Directly connected route</li><li>• <b>dvmrp</b>—Distance Vector Multicast Routing Protocol</li><li>• <b>esis</b>—End System-to-Intermediate System</li><li>• <b>flow</b>—Locally defined flow-specification route.</li><li>• <b>isis</b>—Intermediate System-to-Intermediate System</li><li>• <b>ldp</b>—Label Distribution Protocol</li><li>• <b>l2circuit</b>—Layer 2 circuit</li><li>• <b>l2vpn</b>—Layer 2 virtual private network</li><li>• <b>local</b>—Local address</li><li>• <b>mpls</b>—Multiprotocol Label Switching</li><li>• <b>msdp</b>—Multicast Source Discovery Protocol</li><li>• <b>ospf</b>—Open Shortest Path First versions 2 and 3</li><li>• <b>ospf2</b>—Open Shortest Path First versions 2 only</li><li>• <b>ospf3</b>—Open Shortest Path First version 3 only</li></ul>



- **pim**—Protocol Independent Multicast
- **rip**—Routing Information Protocol
- **ripng**—Routing Information Protocol next generation
- **rsvp**—Resource Reservation Protocol
- **rtarget**—Local route target virtual private network
- **static**—Statically defined route
- **tunnel**—Dynamic tunnel
- **vpn**—Virtual private network



**NOTE:** EX Series switches run a subset of these protocols. See the switch CLI for details.

**brief | detail | extensive | terse**—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to brief.

**logical-system (all | *logical-system-name*)**—(Optional) Perform this operation on all logical systems or on a particular logical system.

**Required Privilege Level** view

**List of Sample Output**

- [show route protocol access on page 540](#)
- [show route protocol access-internal extensive on page 540](#)
- [show route protocol bgp on page 540](#)
- [show route protocol bgp detail on page 540](#)
- [show route protocol bgp extensive on page 541](#)
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- [show route protocol l2vpn extensive on page 543](#)
- [show route protocol ldp on page 543](#)
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- [show route protocol ospf \(Layer 3 VPN\) on page 545](#)
- [show route protocol ospf detail on page 545](#)
- [show route protocol rip on page 545](#)
- [show route protocol rip detail on page 546](#)
- [show route protocol ripng table inet6 on page 546](#)

**Output Fields** For information about output fields, see the output field tables for the [show route](#) command, the [show route detail](#) command, the [show route extensive](#) command, or the [show route terse](#) command.



## Sample Output

```

show route protocol access      user@host> show route protocol access
                                inet.0: 30380 destinations, 30382 routes (30379 active, 0 holddown, 1 hidden)
                                + = Active Route, - = Last Active, * = Both

                                13.160.0.3/32      *[Access/13] 00:00:09
                                    > to 13.160.0.2 via fe-0/0/0.0
                                13.160.0.4/32      *[Access/13] 00:00:09
                                    > to 13.160.0.2 via fe-0/0/0.0
                                13.160.0.5/32      *[Access/13] 00:00:09
                                    > to 13.160.0.2 via fe-0/0/0.0

show route protocol access-internal extensive user@host> show route protocol access-internal 13.160.0.19 extensive
                                inet.0: 100020 destinations, 100022 routes (100019 active, 0 holddown, 1 hidden)
                                13.160.0.19/32 (1 entry, 1 announced)
                                TSI:
                                KRT in-kernel 13.160.0.19/32 -> {13.160.0.2}
                                    *Access-internal Preference: 12
                                        Next-hop reference count: 200000
                                        Next hop: 13.160.0.2 via fe-0/0/0.0, selected
                                        State: <Active Int>
                                Age: 36
                                    Task: RPD Unix Domain Server./var/run/rpd_serv.local
                                    Announcement bits (1): 0-KRT
                                    AS path: I

show route protocol bgp        user@host> show route protocol bgp 192.168.64.0/21
                                inet.0: 335832 destinations, 335833 routes (335383 active, 0 holddown, 450 hidden)
                                + = Active Route, - = Last Active, * = Both

                                192.168.64.0/21      *[BGP/170] 6d 10:41:16, localpref 100, from 192.168.69.71
                                    AS path: 10458 14203 2914 4788 4788 I
                                    > to 192.168.167.254 via fxp0.0

show route protocol bgp detail show route protocol bgp 66.117.63.0/24 exact detail
                                inet.0: 335805 destinations, 335806 routes (335356 active, 0 holddown, 450 hidden)
                                66.117.63.0/24 (1 entry, 1 announced)
                                    *BGP      Preference: 170/-101
                                        Next hop type: Indirect
                                        Next-hop reference count: 1006436
                                        Source: 192.168.69.71
                                        Next hop type: Router, Next hop index: 324
                                        Next hop: 192.168.167.254 via fxp0.0, selected
                                        Protocol next hop: 192.168.69.71
                                        Indirect next hop: 8e166c0 342
                                        State: <Active Ext>
                                        Local AS: 69 Peer AS: 10458
                                        Age: 6d 10:42:42      Metric2: 0
                                        Task: BGP_10458.192.168.69.71+179
                                        Announcement bits (3): 0-KRT 2-BGP RT Background 3-Resolve tree
                                1
                                    AS path: 10458 14203 2914 4788 4788 I
                                    Communities: 2914:410 2914:2403 2914:3400
                                    Accepted
                                    Localpref: 100
                                    Router ID: 207.17.136.192

```



```

show route protocol bgp extensive
user@host> show route protocol bgp 192.168.64.0/21 extensive
inet.0: 335827 destinations, 335828 routes (335378 active, 0 holddown, 450 hidden)
192.168.64.0/21 (1 entry, 1 announced)
TSI:
KRT in-kernel 1.9.0.0/16 -> {indirect(342)}
Page 0 idx 1 Type 1 val db31a80
  Nexthop: Self
  AS path: [69] 10458 14203 2914 4788 4788 I
  Communities: 2914:410 2914:2403 2914:3400
Path 1.9.0.0 from 192.168.69.71 Vector len 4. Val: 1
  *BGP Preference: 170/-101
    Next hop type: Indirect
    Next-hop reference count: 1006502
    Source: 192.168.69.71
    Next hop type: Router, Next hop index: 324
    Next hop: 192.168.167.254 via fxp0.0, selected
    Protocol next hop: 192.168.69.71
    Indirect next hop: 8e166c0 342
    State: <Active Ext>
    Local AS: 69 Peer AS: 10458
    Age: 6d 10:44:45 Metric2: 0
    Task: BGP_10458.192.168.69.71+179
    Announcement bits (3): 0-KRT 2-BGP RT Background 3-Resolve tree
1
  AS path: 10458 14203 2914 4788 4788 I
  Communities: 2914:410 2914:2403 2914:3400
  Accepted
  Localpref: 100
  Router ID: 207.17.136.192
  Indirect next hops: 1
    Protocol next hop: 192.168.69.71
    Indirect next hop: 8e166c0 342
    Indirect path forwarding next hops: 1
      Next hop type: Router
      Next hop: 192.168.167.254 via fxp0.0
    192.168.0.0/16 Originating RIB: inet.0
    Node path count: 1
    Forwarding nexthops: 1
      Nexthop: 192.168.167.254 via fxp0.0

show route protocol bgp terse
user@host> show route protocol bgp 192.168.64.0/21 terse
inet.0: 24 destinations, 32 routes (23 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

A Destination      P Prf  Metric 1  Metric 2  Next hop      AS path
192.168.64.0/21   B 170      100          >100.1.3.2    10023 21 I

show route protocol direct
user@host> show route protocol direct
inet.0: 335843 destinations, 335844 routes (335394 active, 0 holddown, 450 hidden)
+ = Active Route, - = Last Active, * = Both

8.8.8.0/24        *[Direct/0] 17w0d 10:31:49
> via fe-1/3/1.0
10.255.165.1/32   *[Direct/0] 25w4d 04:13:18
> via lo0.0
30.30.30.0/24     *[Direct/0] 17w0d 23:06:26
> via fe-1/3/2.0

```



```

192.168.164.0/22    *[Direct/0] 25w4d 04:13:20
                  > via fxp0.0

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

47.0005.80ff.f800.0000.0108.0001.0102.5516.5001/152
                  *[Direct/0] 25w4d 04:13:21
                  > via lo0.0

inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

abcd::10:255:165:1/128
                  *[Direct/0] 25w4d 04:13:21
                  > via lo0.0
fe80::2a0:a5ff:fe12:ad7/128
                  *[Direct/0] 25w4d 04:13:21
                  > via lo0.0

```

#### show route protocol l2circuit detail

```

user@host> show route protocol l2circuit detail

mpls.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
100000 (1 entry, 1 announced)
  *L2CKT Preference: 7
    Next hop: via ge-2/0/0.0, selected
    Label operation: Pop          Offset: 4
    State: <Active Int>
    Local AS:    99
    Age: 9:52
    Task: Common L2 VC
    Announcement bits (1): 0-KRT
    AS path: I

ge-2/0/0.0 (1 entry, 1 announced)
  *L2CKT Preference: 7
    Next hop: via so-1/1/2.0 weight 1, selected
    Label-switched-path my-lsp
    Label operation: Push 100000, Push 100000(top)[0] Offset: -4
    Protocol next hop: 10.245.255.63
    Push 100000 Offset: -4
    Indirect next hop: 86af0c0 298
    State: <Active Int>
    Local AS:    99
    Age: 9:52
    Task: Common L2 VC
    Announcement bits (2): 0-KRT 1-Common L2 VC
    AS path: I

l2circuit.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

10.245.255.63:CtrlWord:4:3:Local/96 (1 entry, 1 announced)
  *L2CKT Preference: 7
    Next hop: via so-1/1/2.0 weight 1, selected
    Label-switched-path my-lsp
    Label operation: Push 100000[0]
    Protocol next hop: 10.245.255.63 Indirect next hop: 86af000 296
    State: <Active Int>
    Local AS:    99
    Age: 10:21
    Task: l2 circuit

```



```

Announcement bits (1): 0-LDP
AS path: I
VC Label 100000, MTU 1500, VLAN ID 512

```

```

show route protocol l2vpn extensive user@host> show route protocol l2vpn extensive

inet.0: 14 destinations, 15 routes (13 active, 0 holddown, 1 hidden)

inet.3: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

mpls.0: 7 destinations, 7 routes (7 active, 0 holddown, 0 hidden)
800001 (1 entry, 1 announced)
TSI:
KRT in-kernel 800001 /36 -> {so-0/0/0.0}
    *L2VPN Preference: 7
        Next hop: via so-0/0/0.0 weight 49087 balance 97%, selected
        Label operation: Pop Offset: 4
        State: <Active Int>
        Local AS: 69
        Age: 7:48
        Task: Common L2 VC
        Announcement bits (1): 0-KRT
        AS path: I

so-0/0/0.0 (1 entry, 1 announced)
TSI:
KRT in-kernel so-0/0/0.0 /16 -> {indirect(288)}
    *L2VPN Preference: 7
        Next hop: via so-0/0/1.0, selected
        Label operation: Push 800000 Offset: -4
        Protocol next hop: 10.255.14.220
        Push 800000 Offset: -4
        Indirect next hop: 85142a0 288
        State: <Active Int>
        Local AS: 69
        Age: 7:48
        Task: Common L2 VC
        Announcement bits (2): 0-KRT 1-Common L2 VC
        AS path: I
        Communities: target:69:1 Layer2-info: encaps:PPP,
        control flags:2, mtu: 0

```

```

show route protocol ldp user@host> show route protocol ldp

inet.0: 12 destinations, 13 routes (12 active, 0 holddown, 0 hidden)

inet.3: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

192.168.16.1/32    *[LDP/9] 1d 23:03:35, metric 1
                  > via t1-4/0/0.0, Push 100000
192.168.17.1/32    *[LDP/9] 1d 23:03:35, metric 1
                  > via t1-4/0/0.0

private1___.inet.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

mpls.0: 6 destinations, 6 routes (6 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

100064            *[LDP/9] 1d 23:03:35, metric 1

```



```

> via t1-4/0/0.0, Pop
100064(S=0) *LDP/9] 1d 23:03:35, metric 1
> via t1-4/0/0.0, Pop
100080 *LDP/9] 1d 23:03:35, metric 1
> via t1-4/0/0.0, Swap 100000

show route protocol user@host> show route protocol ldp extensive
ldp extensive 192.168.16.1/32 (1 entry, 1 announced)
                State: <FlashAll>
                *LDP Preference: 9
                  Next-hop reference count: 3
                  Next hop: via t1-4/0/0.0, selected
                  Label operation: Push 100000
                  State: <Active Int>
                  Local AS: 65500
                  Age: 1d 23:03:58 Metric: 1
                  Task: LDP
                  Announcement bits (2): 0-Resolve tree 1 2-Resolve tree 2
                  AS path: I

192.168.17.1/32 (1 entry, 1 announced)
                State: <FlashAll>
                *LDP Preference: 9
                  Next-hop reference count: 3
                  Next hop: via t1-4/0/0.0, selected
                  State: <Active Int>
                  Local AS: 65500
                  Age: 1d 23:03:58 Metric: 1
                  Task: LDP
                  Announcement bits (2): 0-Resolve tree 1 2-Resolve tree 2
                  AS path: I

private1___.inet.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

mpls.0: 6 destinations, 6 routes (6 active, 0 holddown, 0 hidden)

100064 (1 entry, 1 announced)
TSI:
KRT in-kernel 100064 /36 -> {t1-4/0/0.0}
                *LDP Preference: 9
                  Next-hop reference count: 2
                  Next hop: via t1-4/0/0.0, selected
                  State: <Active Int>
                  Local AS: 65500
                  Age: 1d 23:03:58 Metric: 1
                  Task: LDP
                  Announcement bits (1): 0-KRT
                  AS path: I
                  Prefixes bound to route: 192.168.17.1/32

100064(S=0) (1 entry, 1 announced)
TSI:
KRT in-kernel 100064 /40 -> {t1-4/0/0.0}
                *LDP Preference: 9
                  Next-hop reference count: 2
                  Next hop: via t1-4/0/0.0, selected
                  Label operation: Pop
                  State: <Active Int>
                  Local AS: 65500
                  Age: 1d 23:03:58 Metric: 1
                  Task: LDP

```



```
Announcement bits (1): 0-KRT
AS path: I
```

```
100080 (1 entry, 1 announced)
TSI:
KRT in-kernel 100080 /36 -> {t1-4/0/0.0}
    *LDP      Preference: 9
              Next-hop reference count: 2
              Next hop: via t1-4/0/0.0, selected
              Label operation: Swap 100000
              State: <Active Int>
              Local AS: 65500
              Age: 1d 23:03:58      Metric: 1
              Task: LDP
              Announcement bits (1): 0-KRT
              AS path: I
              Prefixes bound to route: 192.168.16.1/32
```

#### show route protocol ospf (Layer 3 VPN)

```
user@host> show route protocol ospf
inet.0: 40 destinations, 40 routes (39 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

10.39.1.4/30      *[OSPF/10] 00:05:18, metric 4
                  > via t3-3/2/0.0
10.39.1.8/30      [OSPF/10] 00:05:18, metric 2
                  > via t3-3/2/0.0
10.255.14.171/32  *[OSPF/10] 00:05:18, metric 4
                  > via t3-3/2/0.0
10.255.14.179/32  *[OSPF/10] 00:05:18, metric 2
                  > via t3-3/2/0.0
224.0.0.5/32      *[OSPF/10] 20:25:55, metric 1

VPN-AB.inet.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

10.39.1.16/30     [OSPF/10] 00:05:43, metric 1
                  > via so-0/2/2.0
10.255.14.173/32  *[OSPF/10] 00:05:43, metric 1
                  > via so-0/2/2.0
224.0.0.5/32      *[OSPF/10] 20:26:20, metric 1
```

#### show route protocol ospf detail

```
user@host> show route protocol ospf detail
VPN-AB.inet.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

10.39.1.16/30 (2 entries, 0 announced)
    OSPF      Preference: 10
              Nexthop: via so-0/2/2.0, selected
              State: <Int>
              Inactive reason: Route Preference
              Age: 6:25      Metric: 1
              Area: 0.0.0.0
              Task: VPN-AB-OSPF
              AS path: I
              Communities: Route-Type:0.0.0.0:1:0

...
```

**show route protocol rip**    user@host> show route protocol rip



```
inet.0: 26 destinations, 27 routes (25 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both
```

```
VPN-AB.inet.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both
10.255.14.177/32    *[RIP/100] 20:24:34, metric 2
                  > to 10.39.1.22 via t3-0/2/2.0
224.0.0.9/32      *[RIP/100] 00:03:59, metric 1
```

#### show route protocol rip detail

```
user@host> show route protocol rip detail
inet.0: 26 destinations, 27 routes (25 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

VPN-AB.inet.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both
10.255.14.177/32 (1 entry, 1 announced)
    *RIP      Preference: 100
              Nexthop: 10.39.1.22 via t3-0/2/2.0, selected
              State: <Active Int>
              Age: 20:25:02   Metric: 2
              Task: VPN-AB-RIPv2
              Announcement bits (2): 0-KRT 2-BGP.0.0.0.0+179
              AS path: I
              Route learned from 10.39.1.22 expires in 96 seconds
```

#### show route protocol ripng table inet6

```
user@host> show route protocol ripng table inet6
inet6.0: 4215 destinations, 4215 routes (4214 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

1111::1/128      *[RIPng/100] 02:13:33, metric 2
                  > to fe80::2a0:a5ff:fe3d:56 via t3-0/2/0.0
1111::2/128      *[RIPng/100] 02:13:33, metric 2
                  > to fe80::2a0:a5ff:fe3d:56 via t3-0/2/0.0
1111::3/128      *[RIPng/100] 02:13:33, metric 2
                  > to fe80::2a0:a5ff:fe3d:56 via t3-0/2/0.0
1111::4/128      *[RIPng/100] 02:13:33, metric 2
                  > to fe80::2a0:a5ff:fe3d:56 via t3-0/2/0.0
1111::5/128      *[RIPng/100] 02:13:33, metric 2
                  > to fe80::2a0:a5ff:fe3d:56 via t3-0/2/0.0
1111::6/128      *[RIPng/100] 02:13:33, metric 2
                  > to fe80::2a0:a5ff:fe3d:56 via t3-0/2/0.0
```



## show route range

<b>Syntax</b>	show route range <brief   detail   extensive   terse> <destination-prefix> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show route range <brief   detail   extensive   terse> <destination-prefix>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display routing table entries using a prefix range.
<b>Options</b>	<p>none—Display standard information about all routing table entries using a prefix range.</p> <p>brief   detail   extensive   terse—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to <b>brief</b>.</p> <p>destination-prefix—(Optional) Destination and prefix mask for the range.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route range on page 547</a> <a href="#">show route range destination-prefix on page 548</a> <a href="#">show route range detail on page 548</a> <a href="#">show route range extensive on page 549</a> <a href="#">show route range terse on page 550</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

```

user@host> show route range

inet.0: 11 destinations, 11 routes (10 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

10.10.0.0/16      *[Static/5] 00:30:01
                  > to 192.168.71.254 via fxp0.0
10.209.0.0/16    *[Static/5] 00:30:01
                  > to 192.168.71.254 via fxp0.0
10.255.71.14/32  *[Direct/0] 00:30:01
                  > via lo0.0
172.16.0.0/12    *[Static/5] 00:30:01

```



```

> to 192.168.71.254 via fxp0.0
192.168.0.0/16    *[Static/5] 00:30:01
> to 192.168.71.254 via fxp0.0
192.168.64.0/21  *[Direct/0] 00:30:01
> via fxp0.0
192.168.71.14/32 *[Local/0] 00:30:01
Local via fxp0.0
192.168.102.0/23 *[Static/5] 00:30:01
> to 192.168.71.254 via fxp0.0
...

```

**show route range destination-prefix** user@host> show route range 192.168.0.0

```

inet.0: 11 destinations, 11 routes (10 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

192.168.0.0/16    *[Static/5] 00:31:14
> to 192.168.71.254 via fxp0.0
192.168.64.0/21  *[Direct/0] 00:31:14
> via fxp0.0
192.168.71.14/32 *[Local/0] 00:31:14
Local via fxp0.0
192.168.102.0/23 *[Static/5] 00:31:14
> to 192.168.71.254 via fxp0.0

```

**show route range detail** user@host> show route range detail

```

inet.0: 11 destinations, 11 routes (10 active, 0 holddown, 1 hidden)
10.10.0.0/16 (1 entry, 1 announced)
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Age: 30:05
    Task: RT
    Announcement bits (1): 0-KRT
    AS path: I

10.209.0.0/16 (1 entry, 1 announced)
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Age: 30:05
    Task: RT
    Announcement bits (1): 0-KRT
    AS path: I

10.255.71.14/32 (1 entry, 0 announced)
  *Direct Preference: 0
    Next hop type: Interface
    Next-hop reference count: 1
    Next hop: via lo0.0, selected
    State: <Active Int>
    Age: 30:05
    Task: IF
    AS path: I

172.16.0.0/12 (1 entry, 1 announced)
  *Static Preference: 5
    Next-hop reference count: 22

```



```

Next hop: 192.168.71.254 via fxp0.0, selected
State: <Active NoReadvrt Int Ext>
Age: 30:05
Task: RT
Announcement bits (1): 0-KRT
AS path: I

...

show route range extensive user@host> show route range extensive
extensive
inet.0: 11 destinations, 11 routes (10 active, 0 holddown, 1 hidden)
10.10.0.0/16 (1 entry, 1 announced)
TSI:
KRT in-kernel 10.10.0.0/16 -> {192.168.71.254}
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Age: 30:17
    Task: RT
    Announcement bits (1): 0-KRT
    AS path: I

10.209.0.0/16 (1 entry, 1 announced)
TSI:
KRT in-kernel 10.209.0.0/16 -> {192.168.71.254}
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Age: 30:17
    Task: RT
    Announcement bits (1): 0-KRT
    AS path: I

10.255.71.14/32 (1 entry, 0 announced)
  *Direct Preference: 0
    Next hop type: Interface
    Next-hop reference count: 1
    Next hop: via lo0.0, selected
    State: <Active Int>
    Age: 30:17
    Task: IF
    AS path: I

172.16.0.0/12 (1 entry, 1 announced)
TSI:
KRT in-kernel 172.16.0.0/12 -> {192.168.71.254}
  *Static Preference: 5
    Next-hop reference count: 22
    Next hop: 192.168.71.254 via fxp0.0, selected
    State: <Active NoReadvrt Int Ext>
    Age: 30:17
    Task: RT
    Announcement bits (1): 0-KRT
    AS path: I

...

```



**show route range terse**    user@host> **show route range terse**

inet.0: 11 destinations, 11 routes (10 active, 0 holddown, 1 hidden)  
 + = Active Route, - = Last Active, \* = Both

A	Destination	P	Prf	Metric 1	Metric 2	Next hop	AS path
*	10.10.0.0/16	S	5			>192.168.71.254	
*	10.209.0.0/16	S	5			>192.168.71.254	
*	10.255.71.14/32	D	0			>100.0	
*	172.16.0.0/12	S	5			>192.168.71.254	
*	192.168.0.0/16	S	5			>192.168.71.254	
*	192.168.64.0/21	D	0			>fxp0.0	
*	192.168.71.14/32	L	0			Local	
*	192.168.102.0/23	S	5			>192.168.71.254	
*	207.17.136.0/24	S	5			>192.168.71.254	
*	207.17.136.192/32	S	5			>192.168.71.254	

\_\_juniper\_private1\_\_.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)  
 + = Active Route, - = Last Active, \* = Both

A	Destination	P	Prf	Metric 1	Metric 2	Next hop	AS path
*	10.0.0.0/8	D	0			>fxp2.0	
		D	0			>fxp1.0	
*	10.0.0.4/32	L	0			Local	

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)  
 + = Active Route, - = Last Active, \* = Both

A	Destination	P	Prf	Metric 1	Metric 2	Next hop	AS path
	47.0005.80ff.f800.0000.0108.0001.0102.5507.1014/152						
*		D	0			>100.0	

inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)  
 + = Active Route, - = Last Active, \* = Both

A	Destination	P	Prf	Metric 1	Metric 2	Next hop	AS path
	abcd::10:255:71:14/128						
*		D	0			>100.0	
	fe80::280:42ff:fe11:226f/128						
*		D	0			>100.0	

\_\_juniper\_private1\_\_.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)  
 + = Active Route, - = Last Active, \* = Both

A	Destination	P	Prf	Metric 1	Metric 2	Next hop	AS path
	fe80::280:42ff:fe11:226f/128						
*		D	0			>100.16385	



## show route receive-protocol

<b>Syntax</b>	show route receive-protocol <i>protocol neighbor-address</i> <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show route receive-protocol <i>protocol neighbor-address</i> <brief   detail   extensive   terse>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display the routing information as it was received through a particular neighbor using a particular dynamic routing protocol.
<b>Options</b>	<p>brief   detail   extensive   terse—(Optional) Display the specified level of output.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>protocol neighbor-address</i>—Protocol transmitting the route (<b>bgp</b>, <b>dvmrp</b>, <b>msdp</b>, <b>pim</b>, <b>rip</b>, or <b>ripng</b>) and address of the neighboring router from which the route entry was received.</p>
<b>Additional Information</b>	The output displays the selected routes and the attributes with which they were received, but does not show the effects of import policy on the routing attributes.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route receive-protocol bgp on page 553</a> <a href="#">show route receive-protocol bgp extensive on page 554</a> <a href="#">show route receive-protocol bgp extensive on page 554</a> <a href="#">show route receive-protocol bgp detail (Layer 2 VPN) on page 554</a> <a href="#">show route receive-protocol bgp extensive (Layer 2 VPN) on page 555</a> <a href="#">show route receive-protocol bgp (Layer 3 VPN) on page 555</a> <a href="#">show route receive-protocol bgp detail (Layer 3 VPN) on page 556</a> <a href="#">show route receive-protocol bgp extensive (Layer 3 VPN) on page 557</a>
<b>Output Fields</b>	<a href="#">Table 131 on page 551</a> describes the output fields for the <b>show route receive-protocol</b> command. Output fields are listed in the approximate order in which they appear.

**Table 131: show route receive-protocol Output Fields**

Field Name	Field Description	Level of Output
<i>routing-table-name</i>	Name of the routing table—for example, <b>inet.0</b> .	All levels
<i>number destinations</i>	Number of destinations for which there are routes in the routing table.	All levels



Table 131: show route receive-protocol Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b><i>number routes</i></b>	Number of routes in the routing table and total number of routes in the following states: <ul style="list-style-type: none"> <li>• <b>active</b></li> <li>• <b>holddown</b> (routes in that are pending state before being declared inactive)</li> <li>• <b>hidden</b> (the routes are not used because of a routing policy)</li> </ul>	All levels
<b>Prefix</b>	Destination prefix.	none <b>brief</b>
<b>MED</b>	Multiple exit discriminator value included in the route.	none <b>brief</b>
<b><i>destination-prefix (entry, announced)</i></b>	Destination prefix. The <b>entry</b> value is the number of routes for this destination, and the <b>announced</b> value is the number of routes being announced for this destination.	<b>detail extensive</b>
<b>Route Distinguisher</b>	64-bit prefix added to IP subnets to make them unique.	<b>detail extensive</b>
<b>Label-Base, range</b>	First label in a block of labels and label block size. A remote PE routing device uses this first label when sending traffic toward the advertising PE routing device.	<b>detail extensive</b>
<b>VPN Label</b>	Virtual private network (VPN) label. Packets are sent between CE and PE routing devices by advertising VPN labels. VPN labels transit over either a Resource Reservation Protocol (RSVP) or a Label Distribution Protocol (LDP) label-switched path (LSP) tunnel.	<b>detail extensive</b>
<b>Next hop</b>	Next hop to the destination. An angle bracket (>) indicates that the route is the selected route.	All levels
<b>Localpref or Lclpref</b>	Local preference value included in the route.	All levels



Table 131: show route receive-protocol Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>AS path</b>	<p>Autonomous system (AS) path through which the route was learned. The letters at the end of the AS path indicate the path origin, providing an indication of the state of the route at the point at which the AS path originated:</p> <ul style="list-style-type: none"> <li>• <b>I</b>—IGP.</li> <li>• <b>E</b>—EGP.</li> <li>• <b>?</b>—Incomplete; typically, the AS path was aggregated.</li> </ul> <p>When AS path numbers are included in the route, the format is as follows:</p> <ul style="list-style-type: none"> <li>• <b>[ ]</b>—Brackets enclose the number that precedes the AS path. This number represents the number of ASs present in the AS path, when calculated as defined in RFC 4271. This value is used the AS-path merge process, as defined in RFC 4893.</li> <li>• <b>[ ]</b>—If more than one AS number is configured on the router, or if AS path prepending is configured, brackets enclose the local AS number associated with the AS path.</li> <li>• <b>{ }</b>—Braces enclose AS sets, which are groups of AS numbers in which the order does not matter. A set commonly results from route aggregation. The numbers in each AS set are displayed in ascending order.</li> <li>• <b>( )</b>—Parentheses enclose a confederation.</li> <li>• <b>( [ ] )</b>—Parentheses and brackets enclose a confederation set.</li> </ul> <p><b>NOTE:</b> In Junos OS Release 10.3 and later, the AS path field displays an unrecognized attribute and associated hexadecimal value if BGP receives attribute 128 (attribute set) and you have not configured an independent domain in any routing instance.</p>	All levels
<b>Cluster list</b>	(For route reflected output only) Cluster ID sent by the route reflector.	<b>detail extensive</b>
<b>Originator ID</b>	(For route reflected output only) Address of routing device that originally sent the route to the route reflector.	<b>detail extensive</b>
<b>Communities</b>	Community path attribute for the route. See the Output Field table in the <a href="#">show route detail</a> command for all possible values for this field.	<b>detail extensive</b>
<b>Attrset AS</b>	Number, local preference, and path of the AS that originated the route. These values are stored in the <b>Attrset</b> attribute at the originating routing device.	<b>detail extensive</b>
<b>Layer2-info:encaps</b>	Layer 2 encapsulation (for example, VPLS).	<b>detail extensive</b>
<b>control flags</b>	Control flags: <b>none</b> or <b>Site Down</b> .	<b>detail extensive</b>
<b>mtu</b>	Maximum transmission unit (MTU) of the Layer 2 circuit.	<b>detail extensive</b>

## Sample Output

```

show route receive-protocol bgp user@host> show route receive-protocol bgp 10.255.245.215
inet.0: 28 destinations, 33 routes (27 active, 0 holddown, 1 hidden)
Prefix                               Next hop                               MED    Lc1pref    AS path

```



```

10.22.1.0/24          10.255.245.215      0      100      I
10.22.2.0/24          10.255.245.215      0      100      I

show route receive-protocol bgp 10.255.245.63 extensive
user@host> show route receive-protocol bgp 10.255.245.63 extensive
inet.0: 244 destinations, 244 routes (243 active, 0 holddown, 1 hidden)
Prefix                Next hop                MED      Lc1pref AS path
1.1.1.0/24 (1 entry, 1 announced)
  Next hop: 10.0.50.3
  Localpref: 100
  AS path: I <Originator>
  Cluster list: 10.2.3.1
  Originator ID: 10.255.245.45
165.3.0.0/16 (1 entry, 1 announced)
  Next hop: 111.222.5.254
  Localpref: 100
  AS path: I <Originator>
  Cluster list: 10.2.3.1
  Originator ID: 10.255.245.68
165.4.0.0/16 (1 entry, 1 announced)
  Next hop: 111.222.5.254
  Localpref: 100
  AS path: I <Originator>
  Cluster list: 10.2.3.1
  Originator ID: 10.255.245.45
195.1.2.0/24 (1 entry, 1 announced)
  Next hop: 111.222.5.254
  Localpref: 100
  AS path: I <Originator>
  Cluster list: 10.2.3.1
  Originator ID: 10.255.245.68
inet.2: 63 destinations, 63 routes (63 active, 0 holddown, 0 hidden)
Prefix                Next hop                MED      Lc1pref AS path
inet.3: 10 destinations, 10 routes (10 active, 0 holddown, 0 hidden)
Prefix                Next hop                MED      Lc1pref AS path
iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Prefix                Next hop                MED      Lc1pref AS path
mpls.0: 48 destinations, 48 routes (48 active, 0 holddown, 0 hidden)

show route receive-protocol bgp 207.17.136.192 table inet.0 66.117.68.0/24 extensive
user@host> show route receive-protocol bgp 207.17.136.192 table inet.0 66.117.68.0/24 extensive
inet.0: 227315 destinations, 227316 routes (227302 active, 0 holddown, 13 hidden)
* 66.117.63.0/24 (1 entry, 1 announced)
  Nexthop: 207.17.136.29
  Localpref: 100
  AS path: AS2 PA[6]: 14203 2914 3356 29748 33437 AS_TRANS
  AS path: AS4 PA[2]: 33437 393219
  AS path: Merged[6]: 14203 2914 3356 29748 33437 393219 I
  Communities: 2914:420

show route receive-protocol bgp 10.255.14.171 detail
user@host> show route receive-protocol bgp 10.255.14.171 detail
inet.0: 68 destinations, 68 routes (67 active, 0 holddown, 1 hidden)
Prefix                Nexthop                MED      Lc1pref AS path
inet.3: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Prefix                Nexthop                MED      Lc1pref AS path
iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Prefix                Nexthop                MED      Lc1pref AS path
mpls.0: 10 destinations, 10 routes (10 active, 0 holddown, 0 hidden)
Prefix                Nexthop                MED      Lc1pref AS path
frame-vpn.12vpn.0: 2 destinations, 2 routes (2 active, 0 holddown, 0
hidden)
Prefix                Nexthop                MED      Lc1pref AS path

```



```

10.255.245.35:1:5:1/96 (1 entry, 1 announced)
  Route Distinguisher: 10.255.245.35:1
  Label-base : 800000, range : 4, status-vector : 0x0
  Nexthop: 10.255.245.35
  Localpref: 100
  AS path: I
  Communities: target:65299:100 Layer2-info: encaps:FRAME RELAY,
  control flags: 0, mtu: 0
bgp.l2vpn.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED    Lclpref AS path
10.255.245.35:1:5:1/96 (1 entry, 0 announced)
  Route Distinguisher: 10.255.245.35:1
  Label-base : 800000, range : 4, status-vector : 0x0
  Nexthop: 10.255.245.35
  Localpref: 100
  AS path: I
  Communities: target:65299:100 Layer2-info: encaps:FRAME RELAY,
  control flags:0, mtu: 0

show route user@host> show route receive-protocol bgp 10.255.14.171 extensive
receive-protocol bgp inet.0: 68 destinations, 68 routes (67 active, 0 holddown, 1 hidden)
extensive (Layer 2 Prefix          Nexthop          MED    Lclpref AS path
VPN)          inet.3: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED    Lclpref AS path
iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED    Lclpref AS path
mpls.0: 10 destinations, 10 routes (10 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED    Lclpref AS path
frame-vpn.l2vpn.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED    Lclpref AS path
10.255.245.35:1:5:1/96 (1 entry, 1 announced)
  Route Distinguisher: 10.255.245.35:1
  Label-base : 800000, range : 4, status-vector : 0x0
  Nexthop: 10.255.245.35
  Localpref: 100
  AS path: I
  Communities: target:65299:100 Layer2-info: encaps:FRAME RELAY,
  control flags:0, mtu: 0
bgp.l2vpn.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED    Lclpref AS path
10.255.245.35:1:5:1/96 (1 entry, 0 announced)
  Route Distinguisher: 10.255.245.35:1
  Label-base : 800000, range : 4, status-vector : 0x0
  Nexthop: 10.255.245.35
  Localpref: 100
  AS path: I
  Communities: target:65299:100 Layer2-info: encaps:FRAME RELAY,
  control flags:0, mtu: 0

show route user@host> show route receive-protocol bgp 10.255.14.171
receive-protocol bgp inet.0: 33 destinations, 33 routes (32 active, 0 holddown, 1 hidden)
(Layer 3 VPN) Prefix          Nexthop          MED    Lclpref AS path
inet.3: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED    Lclpref AS path
VPN-A.inet.0: 6 destinations, 6 routes (6 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED    Lclpref AS path
10.255.14.175/32  10.255.14.171          100 2 I
10.255.14.179/32  10.255.14.171          2    100 I
VPN-B.inet.0: 6 destinations, 6 routes (6 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED    Lclpref AS path
10.255.14.175/32  10.255.14.171          100 2 I

```



```

10.255.14.177/32  10.255.14.171          100 I
iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED    Lclpref AS path
mpls.0: 9 destinations, 9 routes (9 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED    Lclpref AS path
bgp.l3vpn.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED    Lclpref AS path
10.255.14.171:300:10.255.14.177/32
                  10.255.14.171          100 I
10.255.14.171:100:10.255.14.179/32
                  10.255.14.171          2      100 I
10.255.14.171:200:10.255.14.175/32
                  10.255.14.171          100 2 I

```

**show route  
receive-protocol bgp  
detail (Layer 3 VPN)**

```

user@host> show route receive-protocol bgp 10.255.14.174 detail
inet.0: 16 destinations, 17 routes (15 active, 0 holddown, 1 hidden)
inet.3: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
vpna.inet.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
* 10.49.0.0/30 (1 entry, 1 announced)
  Route Distinguisher: 10.255.14.176:2
  VPN Label: 101264
  Nexthop: 10.255.14.174
  Localpref: 100
  AS path: I
  Communities: target:200:100
  AttrSet AS: 100
    Localpref: 100
    AS path: I
* 10.255.14.172/32 (1 entry, 1 announced)
  Route Distinguisher: 10.255.14.176:2
  VPN Label: 101280
  Nexthop: 10.255.14.174
  Localpref: 100
  AS path: I
  Communities: target:200:100
  AttrSet AS: 100
    Localpref: 100
    AS path: I
iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
mpls.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
bgp.l3vpn.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
* 10.255.14.174:2:10.49.0.0/30 (1 entry, 0 announced)
  Route Distinguisher: 10.255.14.174:2
  VPN Label: 101264
  Nexthop: 10.255.14.174
  Localpref: 100
  AS path: I
  Communities: target:200:100
  AttrSet AS: 100
    Localpref: 100
    AS path: I
* 10.255.14.174:2:10.255.14.172/32 (1 entry, 0 announced)
  Route Distinguisher: 10.255.14.174:2
  VPN Label: 101280
  Nexthop: 10.255.14.174
  Localpref: 100
  AS path: I
  Communities: target:200:100
  AttrSet AS: 100
    Localpref: 100

```



```

AS path: I
inet6.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)

show route receive-protocol bgp 10.255.245.63 extensive
receive-protocol bgp extensive (Layer 3 VPN)
user@host> show route receive-protocol bgp 10.255.245.63 extensive
inet.0: 244 destinations, 244 routes (243 active, 0 holddown, 1 hidden)
Prefix          Nexthop          MED      Lclpref AS path
1.1.1.0/24 (1 entry, 1 announced)
  Nexthop: 10.0.50.3
  Localpref: 100
  AS path: I <Originator>
  Cluster list: 10.2.3.1
  Originator ID: 10.255.245.45
165.3.0.0/16 (1 entry, 1 announced)
  Nexthop: 111.222.5.254
  Localpref: 100
  AS path: I <Originator>
  Cluster list: 10.2.3.1
  Originator ID: 10.255.245.68
165.4.0.0/16 (1 entry, 1 announced)
  Nexthop: 111.222.5.254
  Localpref: 100
  AS path: I <Originator>
  Cluster list: 10.2.3.1
  Originator ID: 10.255.245.45
195.1.2.0/24 (1 entry, 1 announced)
  Nexthop: 111.222.5.254
  Localpref: 100
  AS path: I <Originator>
  Cluster list: 10.2.3.1
  Originator ID: 10.255.245.68
inet.2: 63 destinations, 63 routes (63 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED      Lclpref AS path
inet.3: 10 destinations, 10 routes (10 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED      Lclpref AS path
iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Prefix          Nexthop          MED      Lclpref AS path
mpls.0: 48 destinations, 48 routes (48 active, 0 holddown, 0 hidden)

```



## show route resolution

---

<b>Syntax</b>	<code>show route resolution</code> <code>&lt;brief   detail   extensive   summary&gt;</code> <code>&lt;index <i>index</i>&gt;</code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code> <code>&lt;prefix&gt;</code> <code>&lt;table <i>routing-table-name</i>&gt;</code> <code>&lt;unresolved&gt;</code>
<b>Syntax (EX Series Switch)</b>	<code>show route resolution</code> <code>&lt;brief   detail   extensive   summary&gt;</code> <code>&lt;index <i>index</i>&gt;</code> <code>&lt;prefix&gt;</code> <code>&lt;table <i>routing-table-name</i>&gt;</code> <code>&lt;unresolved&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display the entries in the next-hop resolution database. This database provides for recursive resolution of next hops through other prefixes in the routing table.
<b>Options</b>	<p><code>none</code>—Display standard information about all entries in the next-hop resolution database.</p> <p><code>brief   detail   extensive   summary</code>—(Optional) Display the specified level of output.</p> <p><code>index <i>index</i></code>—(Optional) Show the index of the resolution tree.</p> <p><code>logical-system (all   <i>logical-system-name</i>)</code>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><code>prefix <i>network/destination-prefix</i></code>—(Optional) Display database entries for the specified address.</p> <p><code>table <i>routing-table-name</i></code>—(Optional) Display information about a particular routing table (for example, <code>inet.0</code>) where policy-based export is currently enabled. (For information about the different types of routing tables, see the <i>Junos Routing Protocols Configuration Guide</i>.)</p> <p><code>unresolved</code>—(Optional) Display routes that could not be resolved.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route resolution detail on page 559</a> <a href="#">show route resolution summary on page 560</a> <a href="#">show route resolution unresolved on page 560</a>



**Output Fields** Table 132 on page 559 describes the output fields for the **show route resolution** command. Output fields are listed in the approximate order in which they appear.

**Table 132: show route resolution Output Fields**

Field Name	Field Description
<i>routing-table-name</i>	Name of the routing table whose prefixes are resolved using the entries in the route resolution database. For routing table groups, this is the name of the primary routing table whose prefixes are resolved using the entries in the route resolution database.
<b>Tree index</b>	Tree index identifier.
<b>Nodes</b>	Number of nodes in the tree.
<b>Reference count</b>	Number of references made to the next hop.
<b>Contributing routing tables</b>	Routing tables used for next-hop resolution.
<b>Originating RIB</b>	Name of the routing table whose active route was used to determine the forwarding next-hop entry in the resolution database. For example, in the case of <b>inet.0</b> resolving via <b>inet.0</b> and <b>inet.3</b> , this field indicates which routing table, <b>inet.0</b> or <b>inet.3</b> , provided the best path for a particular prefix.
<b>Metric</b>	Metric associated with the forwarding next hop.
<b>Node path count</b>	Number of nodes in the path.
<b>Forwarding next hops</b>	Number of forwarding next hops. The forwarding next hop is the network layer address of the directly reachable neighboring system (if applicable) and the interface used to reach it.

## Sample Output

```

user@host> show route resolution detail
show route resolution detail
Tree Index: 1, Nodes 0, Reference Count 1
Contributing routing tables: inet.3
Tree Index: 2, Nodes 23, Reference Count 1
Contributing routing tables: inet.0 inet.3
10.10.0.0/16 Originating RIB: inet.0
  Node path count: 1
  Forwarding nexthops: 1
10.31.1.0/30 Originating RIB: inet.0
  Node path count: 1
  Forwarding nexthops: 1
10.31.1.1/32 Originating RIB: inet.0
  Node path count: 1
  Forwarding nexthops: 0
10.31.1.4/30 Originating RIB: inet.0
  Node path count: 1
  Forwarding nexthops: 1
10.31.1.5/32 Originating RIB: inet.0
  Node path count: 1

```



```
Forwarding nexthops: 0
10.31.2.0/30 Originating RIB: inet.0
Metric: 2 Node path count: 1
Forwarding nexthops: 2
10.31.11.0/24 Originating RIB: inet.0
Node path count: 1
Forwarding nexthops: 1
```

```
show route resolution summary user@host> show route resolution summary
Tree Index: 1, Nodes 24, Reference Count 1
Contributing routing tables: :voice.inet.0 :voice.inet.3
Tree Index: 2, Nodes 2, Reference Count 1
Contributing routing tables: inet.3
Tree Index: 3, Nodes 43, Reference Count 1
Contributing routing tables: inet.0 inet.3
```

```
show route resolution unresolved user@host> show route resolution unresolved
Tree Index 1
vt-3/2/0.32769.0 /16
Protocol Nexthop: 10.255.71.238 Push 800000
Indirect nexthop: 0 -
vt-3/2/0.32772.0 /16
Protocol Nexthop: 10.255.70.103 Push 800008
Indirect nexthop: 0 -
Tree Index 2
```



## show route snooping

<b>Syntax</b>	<pre>show route snooping &lt;brief   detail   extensive   terse&gt; &lt;all&gt; &lt;best address/prefix&gt; &lt;exact address&gt; &lt;range prefix-range&gt; &lt;summary&gt; &lt;table table-name&gt;</pre>
<b>Release Information</b>	<p>Command introduced in Junos OS Release 8.5.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p>
<b>Description</b>	Display the entries in the routing table that were learned from snooping.
<b>Options</b>	<p><b>none</b>—Display the entries in the routing table that were learned from snooping.</p> <p><b>brief   detail   extensive   terse</b>—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to <b>brief</b>.</p> <p><b>all</b>—(Optional) Display all entries, including hidden entries.</p> <p><b>best address/prefix</b>—(Optional) Display the longest match for the provided address and optional prefix.</p> <p><b>exact address/prefix</b>—(Optional) Display exact matches for the provided address and optional prefix.</p> <p><b>range prefix-range</b>—(Optional) Display information for the provided address range.</p> <p><b>summary</b>—(Optional) Display route snooping summary statistics.</p> <p><b>table table-name</b>—(Optional) Display information for the named table.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route snooping detail on page 561</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

```

show route snooping detail user@host> show route snooping detail
                           __+domainAll__.inet.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
                           224.0.0.2/32 (1 entry, 1 announced)
                             *IGMP      Preference: 0
                                   Next hop type: MultiRecv
                                   Next-hop reference count: 4
                                   State: <Active NoReadvrt Int>
                                   Age: 2:24

```



```
Task: IGMP
Announcement bits (1): 0-KRT
AS path: I

224.0.0.22/32 (1 entry, 1 announced)
  *IGMP Preference: 0
    Next hop type: MultiRecv
    Next-hop reference count: 4
    State: <Active NoReadvrt Int>
    Age: 2:24
    Task: IGMP
    Announcement bits (1): 0-KRT
    AS path: I

__+domainAll__.inet.1: 36 destinations, 36 routes (36 active, 0 holddown, 0 hidden)

224.0.0.0.0.0.0/24 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4), Next hop index: 1048584
    Next-hop reference count: 4
    State: <Active Int>
    Age: 2:24
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

225.0.0.2.11.11.11.100.3.9.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:13
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

225.0.0.3.11.11.11.100.3.9.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:15
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

225.0.0.4.11.11.11.100.3.9.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:17
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

225.0.0.5.11.11.11.100.3.9.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
```



```
Age: 1:58
Task: MC
Announcement bits (1): 0-KRT
AS path: I

225.0.0.6.11.11.11.100.3.9.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:14
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

225.0.0.7.11.11.11.100.3.9.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:12
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

225.0.0.9.11.11.11.100.3.9.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:13
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

225.0.0.10.11.11.11.100.3.9.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:15
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

226.0.0.1.11.11.11.100.3.10.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:09
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

226.0.0.2.11.11.11.100.3.10.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 8
```



```
Task: MC
Announcement bits (1): 0-KRT
AS path: I

226.0.0.4.11.11.11.100.3.10.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:10
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

226.0.0.8.11.11.11.100.3.10.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:12
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

226.0.0.10.11.11.11.100.3.10.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 1:56
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

227.0.0.1.11.11.11.100.3.11.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:10
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

227.0.0.2.11.11.11.100.3.11.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:13
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

227.0.0.3.11.11.11.100.3.11.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:16
    Task: MC
```



```
Announcement bits (1): 0-KRT
AS path: I

227.0.0.4.11.11.11.100.3.11.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:15
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

227.0.0.5.11.11.11.100.3.11.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 1:57
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

227.0.0.7.11.11.11.100.3.11.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 1:57
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

227.0.0.8.11.11.11.100.3.11.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:10
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

227.0.0.10.11.11.11.100.3.11.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:15
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

228.0.0.1.11.11.11.100.3.12.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:09
    Task: MC
    Announcement bits (1): 0-KRT
```



```
AS path: I

228.0.0.2.11.11.11.100.3.12.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:18
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

228.0.0.7.11.11.11.100.3.12.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:11
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

228.0.0.8.11.11.11.100.3.12.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:17
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

228.0.0.9.11.11.11.100.3.12.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 8
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

228.0.0.10.11.11.11.100.3.12.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:12
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

229.0.0.3.11.11.11.100.3.13.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:09
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I
```



```
229.0.0.4.11.11.11.100.3.13.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:12
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

229.0.0.5.11.11.11.100.3.13.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 9
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

229.0.0.6.11.11.11.100.3.13.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:15
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

229.0.0.7.11.11.11.100.3.13.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:15
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

229.0.0.8.11.11.11.100.3.13.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:15
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I

229.0.0.9.11.11.11.100.3.13.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:14
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I
```



```
229.0.0.10.11.11.11.100.3.13.0.0/80 (1 entry, 1 announced)
  *Multicast Preference: 180
    Next hop type: Multicast (IPv4)
    Next-hop reference count: 113
    State: <Active Int>
    Age: 2:13
    Task: MC
    Announcement bits (1): 0-KRT
    AS path: I
```



## show route source-gateway

<b>Syntax</b>	<code>show route source-gateway <i>address</i></code> <brief   detail   extensive   terse> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	<code>show route source-gateway <i>address</i></code> <brief   detail   extensive   terse>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display the entries in the routing table that were learned from a particular address. The <b>Source</b> field in the <code>show route detail</code> command output lists the source for each route, if known.
<b>Options</b>	<p>brief   detail   extensive   terse—(Optional) Display the specified level of output. If you do not specify a level of output, the system defaults to <b>brief</b>.</p> <p><i>address</i>—IP address of the system.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route source-gateway on page 569</a> <a href="#">show route source-gateway detail on page 570</a> <a href="#">show route source-gateway extensive on page 572</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

```

user@host> show route source-gateway 10.255.70.103
inet.0: 24 destinations, 25 routes (23 active, 0 holddown, 1 hidden)
Restart Complete

inet.3: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
Restart Complete

private1__inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Restart Complete

mpls.0: 7 destinations, 7 routes (5 active, 0 holddown, 2 hidden)
Restart Complete

inet6.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
Restart Complete

```



```

private1___.inet6.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)

green.l2vpn.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both

10.255.70.103:1:3:1/96
    *[BGP/170] 12:12:24, localpref 100, from 10.255.70.103
    AS path: I
    > via so-0/3/0.0, label-switched-path green-r1-r3

red.l2vpn.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both

10.255.70.103:2:3:1/96
    *[BGP/170] 12:12:24, localpref 0, from 10.255.70.103
    AS path: I
    > via so-0/3/0.0, label-switched-path green-r1-r3

bgp.l2vpn.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Restart Complete
+ = Active Route, - = Last Active, * = Both

10.255.70.103:1:3:1/96
    *[BGP/170] 12:12:24, localpref 100, from 10.255.70.103
    AS path: I
    > via so-0/3/0.0, label-switched-path green-r1-r3

10.255.70.103:2:3:1/96
    *[BGP/170] 12:12:24, localpref 0, from 10.255.70.103
    AS path: I
    > via so-0/3/0.0, label-switched-path green-r1-r3

```

#### show route source-gateway detail

```

user@host> show route source-gateway 10.255.70.103 detail
inet.0: 24 destinations, 25 routes (23 active, 0 holddown, 1 hidden)
Restart Complete

inet.3: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
Restart Complete

private1___.inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Restart Complete

mpls.0: 7 destinations, 7 routes (5 active, 0 holddown, 2 hidden)
Restart Complete

inet6.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
Restart Complete
green.l2vpn.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)

Restart Complete
10.255.70.103:1:3:1/96 (1 entry, 1 announced)
    *BGP      Preference: 170/-101
              Route Distinguisher: 10.255.70.103:1
              Next-hop reference count: 7
              Source: 10.255.70.103
              Protocol next hop: 10.255.70.103

```



```

Indirect next hop: 2 no-forward
State: <Secondary Active Int Ext>
Local AS: 69 Peer AS: 69
Age: 12:14:00 Metric2: 1
Task: BGP_69.10.255.70.103+179
Announcement bits (1): 0-green-12vpn
AS path: I
Communities: target:11111:1 Layer2-info: encaps:VPLS,
control flags:, mtu: 0
Label-base: 800008, range: 8
Localpref: 100
Router ID: 10.255.70.103
Primary Routing Table bgp.12vpn.0

red.12vpn.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)
Restart Complete

10.255.70.103:2:3:1/96 (1 entry, 1 announced)
*BGP Preference: 170/-1
Route Distinguisher: 10.255.70.103:2
Next-hop reference count: 7
Source: 10.255.70.103
Protocol next hop: 10.255.70.103
Indirect next hop: 2 no-forward
State: <Secondary Active Int Ext>
Local AS: 69 Peer AS: 69
Age: 12:14:00 Metric2: 1
Task: BGP_69.10.255.70.103+179
Announcement bits (1): 0-red-12vpn
AS path: I
Communities: target:11111:2 Layer2-info: encaps:VPLS,
control flags:Site-Down, mtu: 0
Label-base: 800016, range: 8
Localpref: 0
Router ID: 10.255.70.103
Primary Routing Table bgp.12vpn.0

bgp.12vpn.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Restart Complete

10.255.70.103:1:3:1/96 (1 entry, 0 announced)
*BGP Preference: 170/-101
Route Distinguisher: 10.255.70.103:1
Next-hop reference count: 7
Source: 10.255.70.103
Protocol next hop: 10.255.70.103
Indirect next hop: 2 no-forward
State: <Active Int Ext>
Local AS: 69 Peer AS: 69
Age: 12:14:00 Metric2: 1
Task: BGP_69.10.255.70.103+179
AS path: I
Communities: target:11111:1 Layer2-info: encaps:VPLS, control
flags:, mtu: 0
Label-base: 800008, range: 8
Localpref: 100
Router ID: 10.255.70.103
Secondary Tables: green.12vpn.0

10.255.70.103:2:3:1/96 (1 entry, 0 announced)
*BGP Preference: 170/-1
Route Distinguisher: 10.255.70.103:2

```



```

Next-hop reference count: 7
Source: 10.255.70.103
Protocol next hop: 10.255.70.103
Indirect next hop: 2 no-forward
State: <Active Int Ext>
Local AS: 69 Peer AS: 69
Age: 12:14:00 Metric2: 1
Task: BGP_69.10.255.70.103+179
AS path: I
Communities: target:11111:2 Layer2-info: encaps:VPLS,
control flags:Site-Down,
mtu: 0
Label-base: 800016, range: 8
Localpref: 0
Router ID: 10.255.70.103
Secondary Tables: red.l2vpn.0

show route source-gateway extensive
user@host> show route source-gateway 10.255.70.103 extensive
source-gateway inet.0: 24 destinations, 25 routes (23 active, 0 holddown, 1 hidden)
extensive Restart Complete

inet.3: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
Restart Complete

private1__inet.0: 2 destinations, 3 routes (2 active, 0 holddown, 0 hidden)

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Restart Complete

mpls.0: 7 destinations, 7 routes (5 active, 0 holddown, 2 hidden)
Restart Complete

inet6.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
Restart Complete

green.l2vpn.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Restart Complete
10.255.70.103:1:3:1/96 (1 entry, 1 announced)
*BGP Preference: 170/-101
Route Distinguisher: 10.255.70.103:1
Next-hop reference count: 7
Source: 10.255.70.103
Protocol next hop: 10.255.70.103
Indirect next hop: 2 no-forward
State: <Secondary Active Int Ext>
Local AS: 69 Peer AS: 69
Age: 12:15:24 Metric2: 1
Task: BGP_69.10.255.70.103+179
Announcement bits (1): 0-green-l2vpn
AS path: I
Communities: target:11111:1 Layer2-info: encaps:VPLS,
control flags:, mtu: 0
Label-base: 800008, range: 8
Localpref: 100
Router ID: 10.255.70.103
Primary Routing Table bgp.l2vpn.0

red.l2vpn.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)
Restart Complete

10.255.70.103:2:3:1/96 (1 entry, 1 announced)

```



```

*BGP      Preference: 170/-1
          Route Distinguisher: 10.255.70.103:2
          Next-hop reference count: 7
          Source: 10.255.70.103
          Protocol next hop: 10.255.70.103
          Indirect next hop: 2 no-forward
          State: <Secondary Active Int Ext>
          Local AS: 69 Peer AS: 69
          Age: 12:15:24 Metric2: 1
          Task: BGP_69.10.255.70.103+179
          Announcement bits (1): 0-red-12vpn
          AS path: I
          Communities: target:11111:2 Layer2-info: encaps:VPLS,
          control flags:Site-Down, mtu: 0
          Label-base: 800016, range: 8
          Localpref: 0
          Router ID: 10.255.70.103
          Primary Routing Table bgp.12vpn.0

bgp.12vpn.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Restart Complete

10.255.70.103:1:3:1/96 (1 entry, 0 announced)
*BGP      Preference: 170/-101
          Route Distinguisher: 10.255.70.103:1
          Next-hop reference count: 7
          Source: 10.255.70.103
          Protocol next hop: 10.255.70.103
          Indirect next hop: 2 no-forward
          State: <Active Int Ext>
          Local AS: 69 Peer AS: 69
          Age: 12:15:24 Metric2: 1
          Task: BGP_69.10.255.70.103+179
          AS path: I
          Communities: target:11111:1 Layer2-info: encaps:VPLS,
          control flags:, mtu: 0
          Label-base: 800008, range: 8
          Localpref: 100
          Router ID: 10.255.70.103
          Secondary Tables: green.12vpn.0
          Indirect next hops: 1
            Protocol next hop: 10.255.70.103 Metric: 2
            Indirect next hop: 2 no-forward
            Indirect path forwarding next hops: 1
          Next hop: via so-0/3/0.0 weight 0x1
            10.255.70.103/32 Originating RIB: inet.3
            Metric: 2 Node path count: 1
            Forwarding nexthops: 1
            Nexthop: via so-0/3/0.0

10.255.70.103:2:3:1/96 (1 entry, 0 announced)
*BGP      Preference: 170/-1
          Route Distinguisher: 10.255.70.103:2
          Next-hop reference count: 7
          Source: 10.255.70.103
          Protocol next hop: 10.255.70.103
          Indirect next hop: 2 no-forward
          State: <Active Int Ext>
          Local AS: 69 Peer AS: 69
          Age: 12:15:24 Metric2: 1
          Task: BGP_69.10.255.70.103+179

```



```
AS path: I
Communities: target:11111:2 Layer2-info: encaps:VPLS,
control flags:Site-Down,
mtu: 0
Label-base: 800016, range: 8
Localpref: 0
Router ID: 10.255.70.103
Secondary Tables: red.12vpn.0
Indirect next hops: 1
    Protocol next hop: 10.255.70.103 Metric: 2
    Indirect next hop: 2 no-forward
    Indirect path forwarding next hops: 1
Next hop:      via so-0/3/0.0 weight 0x1
    10.255.70.103/32 Originating RIB: inet.3
    Metric: 2                               Node path count: 1
    Forwarding nexthops: 1
    Nexthop: via so-0/3/0.0
```



## show route summary

<b>Syntax</b>	show route summary <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show route summary
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display summary statistics about the entries in the routing table.
<b>Options</b>	none—Display summary statistics about the entries in the routing table.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route summary on page 576</a>
<b>Output Fields</b>	<a href="#">Table 133 on page 575</a> lists the output fields for the <b>show route summary</b> command. Output fields are listed in the approximate order in which they appear.

**Table 133: show route summary Output Fields**

Field Name	Field Description
<i>routing-table-name</i>	Name of the routing table (for example, <b>inet.0</b> ).
<b>destinations</b>	Number of destinations for which there are routes in the routing table.
<b>routes</b>	Number of routes in the routing table: <ul style="list-style-type: none"> <li><b>active</b>—Number of routes that are active.</li> <li><b>holddown</b>—Number of routes that are in the hold-down state before being declared inactive.</li> <li><b>hidden</b>—Number of routes not used because of routing policy.</li> </ul>
<b>Direct</b>	Routes on the directly connected network.
<b>Local</b>	Local routes.
<i>protocol-name</i>	Name of the protocol from which the route was learned. For example, <b>OSPF</b> , <b>RSVP</b> , and <b>Static</b> .



## Sample Output

```

show route summary user@host> show route summary
Autonomous system number: 69
Router ID: 10.255.71.52
Maximum-ECMP: 32
inet.0: 24 destinations, 25 routes (23 active, 0 holddown, 1 hidden)
Restart Complete
    Direct:    6 routes,      5 active
    Local:    4 routes,      4 active
    OSPF:     5 routes,      4 active
    Static:   7 routes,      7 active
    IGMP:     1 routes,      1 active
    PIM:      2 routes,      2 active

inet.3: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
Restart Complete
    RSVP:     2 routes,      2 active

iso.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Restart Complete
    Direct:    1 routes,      1 active

mpls.0: 7 destinations, 7 routes (5 active, 0 holddown, 2 hidden)
Restart Complete
    MPLS:     3 routes,      3 active
    VPLS:     4 routes,      2 active

inet6.0: 5 destinations, 5 routes (5 active, 0 holddown, 0 hidden)
Restart Complete
    Direct:    2 routes,      2 active
    PIM:       2 routes,      2 active
    MLD:       1 routes,      1 active

green.l2vpn.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Restart Complete
    BGP:       2 routes,      2 active
    L2VPN:     2 routes,      2 active

red.l2vpn.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)
Restart Complete
    BGP:       2 routes,      2 active
    L2VPN:     1 routes,      1 active

bgp.l2vpn.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
Restart Complete
    BGP:       4 routes,      4 active

```



## show route table

<b>Syntax</b>	<pre>show route table <i>routing-table-name</i> &lt;brief   detail   extensive   terse&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt;</pre>
<b>Syntax (EX Series Switch)</b>	<pre>show route table <i>routing-table-name</i> &lt;brief   detail   extensive   terse&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p>
<b>Description</b>	Display the route entries in a particular routing table.
<b>Options</b>	<p>brief   detail   extensive   terse—(Optional) Display the specified level of output.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>routing-table-name</i>—Display route entries for all routing tables whose name begins with this string (for example, <b>inet.0</b> and <b>inet6.0</b> are both displayed when you run the <b>show route table inet</b> command).</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show route summary on page 575</a></li> </ul>
<b>List of Sample Output</b>	<p><a href="#">show route table bgp.l2.vpn on page 578</a></p> <p><a href="#">show route table bgp.l3vpn.0 on page 578</a></p> <p><a href="#">show route table bgp.l3vpn.0 detail on page 578</a></p> <p><a href="#">show route table inet.0 on page 579</a></p> <p><a href="#">show route table inet6.0 on page 580</a></p> <p><a href="#">show route table inet6.3 on page 580</a></p> <p><a href="#">show route table l2circuit.0 on page 580</a></p> <p><a href="#">show route table mpls on page 581</a></p> <p><a href="#">show route table mpls extensive on page 581</a></p> <p><a href="#">show route table mpls.0 on page 581</a></p> <p><a href="#">show route table vpls_1 detail on page 582</a></p> <p><a href="#">show route table vpn-a on page 582</a></p> <p><a href="#">show route table vpn-a.mdt.0 on page 582</a></p> <p><a href="#">show route table VPN-AB.inet.0 on page 582</a></p> <p><a href="#">show route table VPN_blue.mvpn-inet6.0 on page 583</a></p> <p><a href="#">show route table VPN-A detail on page 583</a></p> <p><a href="#">show route table inetflow detail on page 584</a></p>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.



## Sample Output

```

show route table      user@host> show route table bgp.l2vpn
bgp.l2vpn             bgp.l2vpn.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
                        + = Active Route, - = Last Active, * = Both

                        192.168.24.1:1:4:1/96
                          *[BGP/170] 01:08:58, localpref 100, from 192.168.24.1
                          AS path: I
                          > to 10.0.16.2 via fe-0/0/1.0, label-switched-path am

show route table      user@host> show route table bgp.l3vpn.0
bgp.l3vpn.0           bgp.l3vpn.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
                        + = Active Route, - = Last Active, * = Both

                        10.255.71.15:100:10.255.71.17/32
                          *[BGP/170] 00:03:59, MED 1, localpref 100, from
                        10.255.71.15
                          AS path: I
                          > via so-2/1/0.0, Push 100020, Push 100011(top)
                        10.255.71.15:200:10.255.71.18/32
                          *[BGP/170] 00:03:59, MED 1, localpref 100, from
                        10.255.71.15
                          AS path: I
                          > via so-2/1/0.0, Push 100021, Push 100011(top)

show route table      user@host> show route table bgp.l3vpn.0 detail
bgp.l3vpn.0 detail    bgp.l3vpn.0: 8 destinations, 8 routes (8 active, 0 holddown, 0 hidden)

                        10.255.245.12:1:4.0.0.0/8 (1 entry, 1 announced)
                          *BGP Preference: 170/-101
                          Route Distinguisher: 10.255.245.12:1
                          Source: 10.255.245.12
                          Next hop: 192.168.208.66 via fe-0/0/0.0, selected
                          Label operation: Push 182449
                          Protocol next hop: 10.255.245.12
                          Push 182449
                          Indirect next hop: 863a630 297
                          State: <Active Int Ext>
                          Local AS: 35 Peer AS: 35
                          Age: 12:19 Metric2: 1
                          Task: BGP_35.10.255.245.12+179
                          Announcement bits (1): 0-BGP.0.0.0.0+179
                          AS path: 30 10458 14203 2914 3356 I (Atomic) Aggregator: 3356 4.68.0.11

                          Communities: 2914:420 target:11111:1 origin:56:78
                          VPN Label: 182449
                          Localpref: 100
                          Router ID: 10.255.245.12

                        10.255.245.12:1:4.17.225.0/24 (1 entry, 1 announced)
                          *BGP Preference: 170/-101
                          Route Distinguisher: 10.255.245.12:1
                          Source: 10.255.245.12
                          Next hop: 192.168.208.66 via fe-0/0/0.0, selected
                          Label operation: Push 182465
                          Protocol next hop: 10.255.245.12
                          Push 182465
                          Indirect next hop: 863a8f0 305
                          State: <Active Int Ext>

```



```

Local AS: 35 Peer AS: 35
Age: 12:19 Metric2: 1
Task: BGP_35.10.255.245.12+179
Announcement bits (1): 0-BGP.0.0.0.0+179
AS path: 30 10458 14203 2914 11853 11853 11853 6496 6496 6496 6496 6496 I
Communities: 2914:410 target:12:34 target:11111:1 origin:12:34
VPN Label: 182465
Localpref: 100
Router ID: 10.255.245.12

10.255.245.12:1:4.17.226.0/23 (1 entry, 1 announced)
*BGP Preference: 170/-101
Route Distinguisher: 10.255.245.12:1
Source: 10.255.245.12
Next hop: 192.168.208.66 via fe-0/0/0.0, selected
Label operation: Push 182465
Protocol next hop: 10.255.245.12
Push 182465
Indirect next hop: 86bd210 330
State: <Active Int Ext>
Local AS: 35 Peer AS: 35
Age: 12:19 Metric2: 1
Task: BGP_35.10.255.245.12+179
Announcement bits (1): 0-BGP.0.0.0.0+179
AS path: 30 10458 14203 2914 11853 11853 11853 6496 6496 6496 6496 6496
6496 I
Communities: 2914:410 target:12:34 target:11111:1 origin:12:34
VPN Label: 182465
Localpref: 100
Router ID: 10.255.245.12

10.255.245.12:1:4.17.251.0/24 (1 entry, 1 announced)
*BGP Preference: 170/-101
Route Distinguisher: 10.255.245.12:1
Source: 10.255.245.12
Next hop: 192.168.208.66 via fe-0/0/0.0, selected
Label operation: Push 182465
Protocol next hop: 10.255.245.12
Push 182465
Indirect next hop: 86bd210 330
State: <Active Int Ext>
Local AS: 35 Peer AS: 35
Age: 12:19 Metric2: 1
Task: BGP_35.10.255.245.12+179
Announcement bits (1): 0-BGP.0.0.0.0+179
AS path: 30 10458 14203 2914 11853 11853 11853 6496 6496 6496 6496 6496
6496 I
Communities: 2914:410 target:12:34 target:11111:1 origin:12:34
VPN Label: 182465
Localpref: 100

```

**show route table inet.0**

```

user@host> show route table inet.0
inet.0: 12 destinations, 12 routes (11 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

0.0.0.0/0          *[Static/5] 00:51:57
                   > to 111.222.5.254 via fxp0.0
1.0.0.1/32        *[Direct/0] 00:51:58
                   > via at-5/3/0.0

```



```

1.0.0.2/32      *[Local/0] 00:51:58
                  Local
12.12.12.21/32  *[Local/0] 00:51:57
                  Reject
13.13.13.13/32  *[Direct/0] 00:51:58
                  > via t3-5/2/1.0
13.13.13.14/32  *[Local/0] 00:51:58
                  Local
13.13.13.21/32  *[Local/0] 00:51:58
                  Local
13.13.13.22/32  *[Direct/0] 00:33:59
                  > via t3-5/2/0.0
127.0.0.1/32    [Direct/0] 00:51:58
                  > via lo0.0
111.222.5.0/24  *[Direct/0] 00:51:58
                  > via fxp0.0
111.222.5.81/32 *[Local/0] 00:51:58
                  Local

```

```

show route table user@host> show route table inet6.0
inet6.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Route, * = Both

```

```

fec0:0:0:3::/64 *[Direct/0] 00:01:34
>via fe-0/1/0.0

```

```

fec0:0:0:3::/128 *[Local/0] 00:01:34
>Local

```

```

fec0:0:0:4::/64 *[Static/5] 00:01:34
>to fec0:0:0:3::ffff via fe-0/1/0.0

```

```

show route table user@router> show route table inet6.3
inet6.3: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

```

```

::10.255.245.195/128
                  *[LDP/9] 00:00:22, metric 1
                  > via so-1/0/0.0
::10.255.245.196/128
                  *[LDP/9] 00:00:08, metric 1
                  > via so-1/0/0.0, Push 100008

```

```

show route table user@host> show route table l2circuit.0
l2circuit.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

```

```

10.1.1.195:NoCtrlWord:1:1:Local/96
                  *[L2CKT/7] 00:50:47
                  > via so-0/1/2.0, Push 100049
                  via so-0/1/3.0, Push 100049
10.1.1.195:NoCtrlWord:1:1:Remote/96
                  *[LDP/9] 00:50:14
                  Discard
10.1.1.195:CtrlWord:1:2:Local/96
                  *[L2CKT/7] 00:50:47
                  > via so-0/1/2.0, Push 100049
                  via so-0/1/3.0, Push 100049
10.1.1.195:CtrlWord:1:2:Remote/96

```



```
*[LDP/9] 00:50:14
Discard
```

```
show route table mpls user@host> show route table mpls
mpls.0: 4 destinations, 4 routes (4 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both
```

```
0          *[MPLS/0] 00:13:55, metric 1
            Receive
1          *[MPLS/0] 00:13:55, metric 1
            Receive
2          *[MPLS/0] 00:13:55, metric 1
            Receive
1024       *[VPN/0] 00:04:18
            to table red.inet.0, Pop
```

```
show route table mpls extensive user@host> show route table mpls extensive
100000 (1 entry, 1 announced)
TSI:
KRT in-kernel 100000 /36 -> {so-1/0/0.0}
      *LDP      Preference: 9
              Next hop: via so-1/0/0.0, selected
              Pop
              State: <Active Int>
              Age: 29:50      Metric: 1
              Task: LDP
              Announcement bits (1): 0-KRT
              AS path: I
              Prefixes bound to route: 10.0.0.194/32
```

```
show route table mpls.0 user@host> show route table mpls.0
mpls.0: 11 destinations, 11 routes (11 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both
```

```
0          *[MPLS/0] 00:45:09, metric 1
            Receive
1          *[MPLS/0] 00:45:09, metric 1
            Receive
2          *[MPLS/0] 00:45:09, metric 1
            Receive
100000     *[L2VPN/7] 00:43:04
            > via so-0/1/0.1, Pop
100001     *[L2VPN/7] 00:43:03
            > via so-0/1/0.2, Pop      Offset: 4
100002     *[LDP/9] 00:43:22, metric 1
            via so-0/1/2.0, Pop
            > via so-0/1/3.0, Pop
100002(S=0) *[LDP/9] 00:43:22, metric 1
            via so-0/1/2.0, Pop
            > via so-0/1/3.0, Pop
100003     *[LDP/9] 00:43:22, metric 1
            > via so-0/1/2.0, Swap 100002
            via so-0/1/3.0, Swap 100002
100004     *[LDP/9] 00:43:16, metric 1
            via so-0/1/2.0, Swap 100049
            > via so-0/1/3.0, Swap 100049
so-0/1/0.1 *[L2VPN/7] 00:43:04
            > via so-0/1/2.0, Push 100001, Push 100049(top)
            via so-0/1/3.0, Push 100001, Push 100049(top)
so-0/1/0.2 *[L2VPN/7] 00:43:03
```



```

        via so-0/1/2.0, Push 100000, Push 100049(top) Offset: -4
    > via so-0/1/3.0, Push 100000, Push 100049(top) Offset: -4

```

```

show route table vpls_1 user@host> show route table vpls_1 detail
detail vpls_1.l2vpn.0: 1 destinations, 1 routes (1 active, 0 holddown, 0 hidden)
Restart Complete

```

```

1.1.1.11:1000:1:1/96 (1 entry, 1 announced)
*L2VPN Preference: 170/-1
Receive table: vpls_1.l2vpn.0
Next-hop reference count: 2
State: <Active Int Ext>
Age: 4:29:47 Metric2: 1
Task: vpls_1-l2vpn
Announcement bits (1): 1-BGP.0.0.0+179
AS path: I
Communities: Layer2-info: encaps:VPLS, control flags:Site-Down
Label-base: 800000, range: 8, status-vector: 0xFF

```

```

show route table vpn-a user@host> show route table vpn-a
vpn-a.l2vpn.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)

```

```

+ = Active Route, - = Last Active, * = Both
192.168.16.1:1:1/96
    *[VPN/7] 05:48:27
        Discard
192.168.24.1:1:2:1/96
    *[BGP/170] 00:02:53, localpref 100, from 192.168.24.1
        AS path: I
        > to 10.0.16.2 via fe-0/0/1.0, label-switched-path am
192.168.24.1:1:3:1/96
    *[BGP/170] 00:02:53, localpref 100, from 192.168.24.1
        AS path: I
        > to 10.0.16.2 via fe-0/0/1.0, label-switched-path am

```

```

show route table user@host> show route table vpn-a.mdt.0
vpn-a.mdt.0 vpn-a.mdt.0: 3 destinations, 3 routes (3 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

```

```

1:1:0:10.255.14.216:232.1.1.1/144
    *[MVPN/70] 01:23:05, metric2 1
        Indirect
1:1:1:10.255.14.218:232.1.1.1/144
    *[BGP/170] 00:57:49, localpref 100, from 10.255.14.218
        AS path: I
        > via so-0/0/0.0, label-switched-path r0e-to-r1
1:1:2:10.255.14.217:232.1.1.1/144
    *[BGP/170] 00:57:49, localpref 100, from 10.255.14.217
        AS path: I
> via so-0/0/1.0, label-switched-path r0-to-r2

```

```

show route table user@host> show route table VPN-AB.inet.0
VPN-AB.inet.0 VPN-AB.inet.0: 8 destinations, 8 routes (8 active, 0 holddown, 0 hidden)
+ = Active Route, - = Last Active, * = Both

```

```

10.39.1.0/30      *[OSPF/10] 00:07:24, metric 1
                  > via so-7/3/1.0
10.39.1.4/30      *[Direct/0] 00:08:42
                  > via so-5/1/0.0
10.39.1.6/32      *[Local/0] 00:08:46

```



```

Local
10.255.71.16/32 *[Static/5] 00:07:24
> via so-2/0/0.0
10.255.71.17/32 *[BGP/170] 00:07:24, MED 1, localpref 100, from
10.255.71.15
AS path: I
> via so-2/1/0.0, Push 100020, Push 100011(top)
10.255.71.18/32 *[BGP/170] 00:07:24, MED 1, localpref 100, from
10.255.71.15
AS path: I
> via so-2/1/0.0, Push 100021, Push 100011(top)
10.255.245.245/32 *[BGP/170] 00:08:35, localpref 100
AS path: 2 I
> to 10.39.1.5 via so-5/1/0.0
10.255.245.246/32 *[OSPF/10] 00:07:24, metric 1
> via so-7/3/1.0

```

**show route table VPN\_blue.mvpn-inet6.0**  
 user@host> show route table VPN\_blue.mvpn-inet6.0  
 vpn\_blue.mvpn-inet6.0: 6 destinations, 6 routes (6 active, 0 holddown, 0 hidden)  
 + = Active Route, - = Last Active, \* = Both

```

1:10.255.2.202:65535:10.255.2.202/432
*[BGP/170] 00:02:37, localpref 100, from 10.255.2.202
AS path: I
> via so-0/1/3.0
1:10.255.2.203:65535:10.255.2.203/432
*[BGP/170] 00:02:37, localpref 100, from 10.255.2.203
AS path: I
> via so-0/1/0.0
1:10.255.2.204:65535:10.255.2.204/432
*[MVPN/70] 00:57:23, metric2 1
Indirect
5:10.255.2.202:65535:128::192.168.90.2:128:ffff::1/432
*[BGP/170] 00:02:37, localpref 100, from 10.255.2.202
AS path: I
> via so-0/1/3.0
6:10.255.2.203:65535:65000:128::10.12.53.12:128:ffff::1/432
*[PIM/105] 00:02:37
Multicast (IPv6)
7:10.255.2.202:65535:65000:128::192.168.90.2:128:ffff::1/432
*[MVPN/70] 00:02:37, metric2 1
Indirect

```

**show route table VPN-A detail**  
 user@host> show route table VPN-A detail  
 VPN-AB.inet.0: 8 destinations, 8 routes (8 active, 0 holddown, 0 hidden)  
 10.255.179.9/32 (1 entry, 1 announced)  
 \*BGP Preference: 170/-101  
 Route Distinguisher: 10.255.179.13:200  
 Next hop type: Indirect  
 Next-hop reference count: 5  
 Source: 10.255.179.13  
 Next hop type: Router, Next hop index: 732  
 Next hop: 10.39.1.14 via fe-0/3/0.0, selected  
 Label operation: Push 299824, Push 299824(top)  
 Protocol next hop: 10.255.179.13  
 Push 299824  
 Indirect next hop: 8f275a0 1048574  
 State: (Secondary Active Int Ext)  
 Local AS: 1 Peer AS: 1  
 Age: 3:41:06 Metric: 1 Metric2: 1  
 Task: BGP\_1.10.255.179.13+64309



```

Announcement bits (2): 0-KRT 1-BGP RT Background
AS path: I
Communities: target:1:200 rte-type:0.0.0.0:1:0
Import Accepted
VPN Label: 299824 TTL Action: vrf-ttl-propagate
Localpref: 100
Router ID: 10.255.179.13
Primary Routing Table bgp.13vpn.0

```

```


show route table inetflow detail
inetflow detail
user@host> show route table inetflow detail
inetflow.0: 2 destinations, 2 routes (2 active, 0 holddown, 0 hidden)
10.12.44.1,*/48 (1 entry, 1 announced)
    *BGP    Preference: 170/-101
            Next-hop reference count: 2
            State: **Active Ext>
            Local AS: 65002 Peer AS: 65000
            Age: 4
            Task: BGP_65000.10.12.99.5+3792
            Announcement bits (1): 0-Flow
            AS path: 65000 I
            Communities: traffic-rate:0:0
            Validation state: Accept, Originator: 10.12.99.5
            Via: 10.12.44.0/24, Active
            Localpref: 100
            Router ID: 10.255.71.161

10.12.56.1,*/48 (1 entry, 1 announced)
    *Flow    Preference: 5
            Next-hop reference count: 2
            State: **Active>
            Local AS: 65002
            Age: 6:30
            Task: RT Flow
            Announcement bits (2): 0-Flow 1-BGP.0.0.0.0+179
            AS path: I
            Communities: 1:1

```



## show route terse

<b>Syntax</b>	show route terse <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show route terse
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display a high-level summary of the routes in the routing table.
<div>  <p><b>NOTE:</b> For BGP routes, the <b>show route terse</b> command displays the local preference attribute and MED instead of metric1 and metric2 values. This is mostly due to historical reasons. To display the metric1 and metric2 value of a BGP route, use the <a href="#">show route extensive</a> command.</p> </div>	
<b>Options</b>	<p>none—Display a high-level summary of the routes in the routing table.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show route terse on page 587</a>
<b>Output Fields</b>	<a href="#">Table 134 on page 585</a> describes the output fields for the <b>show route terse</b> command. Output fields are listed in the approximate order in which they appear.

**Table 134: show route terse Output Fields**

Field Name	Field Description
<i>routing-table-name</i>	Name of the routing table (for example, <i>inet.0</i> ).
<i>number destinations</i>	Number of destinations for which there are routes in the routing table.
<i>number routes</i>	Number of routes in the routing table and total number of routes in the following states: <ul style="list-style-type: none"> <li>• <b>active</b> (routes that are active)</li> <li>• <b>holddown</b> (routes that are in the pending state before being declared inactive)</li> <li>• <b>hidden</b> (routes that are not used because of a routing policy)</li> </ul>



Table 134: show route terse Output Fields (*continued*)

Field Name	Field Description
<b>route key</b>	Key for the state of the route: <ul style="list-style-type: none"> <li>• <b>+</b>—A plus sign indicates the active route, which is the route installed from the routing table into the forwarding table.</li> <li>• <b>-</b>—A hyphen indicates the last active route.</li> <li>• <b>*</b>—An asterisk indicates that the route is both the active and the last active route. An asterisk before a <b>to</b> line indicates the best subpath to the route.</li> </ul>
<b>A</b>	Active route. An asterisk (*) indicates this is the active route.
<b>Destination</b>	Destination of the route.
<b>P</b>	Protocol through which the route was learned: <ul style="list-style-type: none"> <li>• <b>A</b>—Aggregate</li> <li>• <b>B</b>—BGP</li> <li>• <b>C</b>—CCC</li> <li>• <b>D</b>—Direct</li> <li>• <b>G</b>—GMPLS</li> <li>• <b>I</b>—IS-IS</li> <li>• <b>L</b>—L2CKT, L2VPN, LDP, Local</li> <li>• <b>K</b>—Kernel</li> <li>• <b>M</b>—MPLS, MSDP</li> <li>• <b>O</b>—OSPF</li> <li>• <b>P</b>—PIM</li> <li>• <b>R</b>—RIP, RIPng</li> <li>• <b>S</b>—Static</li> <li>• <b>T</b>—Tunnel</li> </ul>
<b>Prf</b>	Preference value of the route. In every routing metric except for the BGP <b>LocalPref</b> attribute, a lesser value is preferred. In order to use common comparison routines, Junos OS stores the 1's complement of the <b>LocalPref</b> value in the <b>Preference2</b> field. For example, if the <b>LocalPref</b> value for Route 1 is 100, the <b>Preference2</b> value is -101. If the <b>LocalPref</b> value for Route 2 is 155, the <b>Preference2</b> value is -156. Route 2 is preferred because it has a higher <b>LocalPref</b> value and a lower <b>Preference2</b> value.
<b>Metric 1</b>	First metric value in the route. For routes learned from BGP, this is the MED metric.
<b>Metric 2</b>	Second metric value in the route. For routes learned from BGP, this is the IGP metric.
<b>Next hop</b>	Next hop to the destination. An angle bracket (>) indicates that the route is the selected route.
<b>AS path</b>	AS path through which the route was learned. The letters at the end of the AS path indicate the path origin, providing an indication of the state of the route at the point at which the AS path originated: <ul style="list-style-type: none"> <li>• <b>I</b>—IGP.</li> <li>• <b>E</b>—EGP.</li> <li>• <b>?</b>—Incomplete; typically, the AS path was aggregated.</li> </ul>



## Sample Output

```

show route terse user@host> show route terse
inet.0: 12 destinations, 12 routes (11 active, 0 holddown, 1 hidden)
+ = Active Route, - = Last Active, * = Both

A Destination          P Prf Metric 1    Metric 2    Next hop      AS path
* 0.0.0.0/0            S   5                      >111.222.5.254
* 1.0.0.1/32           D   0                      >at-5/3/0.0
* 1.0.0.2/32           L   0                      Local
* 12.12.12.21/32       L   0                      Reject
* 13.13.13.13/32       D   0                      >t3-5/2/1.0
* 13.13.13.14/32       L   0                      Local
* 13.13.13.21/32       L   0                      Local
* 13.13.13.22/32       D   0                      >t3-5/2/0.0
 127.0.0.1/32          D   0                      >lo0.0
* 111.222.5.0/24        D   0                      >fxp0.0
* 111.222.5.81/32      L   0                      Local
* 224.0.0.5/32         O  10                      1      MultiRecv

```







## RIP Operational Mode Commands

Table 135 on page 589 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot the Routing Information Protocol (RIP). Commands are listed in alphabetical order.

**Table 135: RIP Operational Mode Commands**

Task	Command
Clear RIP general statistics.	<code>clear rip general-statistics</code>
Clear RIP statistics.	<code>clear rip statistics</code>
Display brief RIP statistics.	<code>show rip general-statistics</code>
Display information about RIP neighbors.	<code>show rip neighbor</code>
Display RIP statistics about messages sent and received on an interface, as well as information received through advertisements from other routers.	<code>show rip statistics</code>



**NOTE:** For more RIP-related commands, such as `show route protocol`, `show route instance`, and `show route table`, see Protocol-Independent Routing Operational Mode Commands.

For information about how to configure RIP, see the *Junos Routing Protocols Configuration Guide*.



## clear rip general-statistics

---

<b>Syntax</b>	clear rip general-statistics <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	clear rip general-statistics
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Clear Routing Information Protocol (RIP) general statistics.
<b>Options</b>	none—Clear RIP general statistics.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show rip general-statistics on page 592</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear rip general-statistics on page 590</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

### Sample Output

clear rip general-statistics	user@host> clear rip general-statistics
---------------------------------	---



## clear rip statistics

---

<b>Syntax</b>	clear rip statistics <instance (all   <i>instance-name</i> )> <logical-system (all   <i>logical-system-name</i> )> <neighbor>
<b>Syntax (EX Series Switch)</b>	clear rip statistics <instance (all   <i>instance-name</i> )> <neighbor>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Clear Routing Information Protocol (RIP) statistics.
<b>Options</b>	<p>none—Reset RIP counters for all neighbors for all routing instances.</p> <p>instance (all   <i>instance-name</i>)—(Optional) Clear RIP statistics for all instances or for the specified routing instance only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>neighbor—(Optional) Clear RIP statistics for the specified neighbor only.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show rip statistics on page 595</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear rip statistics on page 591</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

**clear rip statistics**     user@host> clear rip statistics



## show rip general-statistics

<b>Syntax</b>	show rip general-statistics <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show rip general-statistics
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display brief Routing Information Protocol (RIP) statistics.
<b>Options</b>	none—Display brief RIP statistics.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">clear rip general-statistics on page 590</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show rip general-statistics on page 592</a>
<b>Output Fields</b>	<a href="#">Table 136 on page 592</a> lists the output fields for the <b>show rip general-statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 136: show rip general-statistics Output Fields**

Field Name	Field Description
bad msgs	Number of invalid messages received.
no rcv intf	Number of packets received with no matching interface.
curr memory	Amount of memory currently used by RIP.
max memory	Most memory used by RIP.

## Sample Output

```

show rip general-statistics user@host> show rip general-statistics
RIPv2 I/O info:
  bad msgs      :      0
  no rcv intf   :      0
  curr memory   :      0
  max memory    :      0

```



## show rip neighbor

<b>Syntax</b>	show rip neighbor <instance (all   <i>instance-name</i> )> <logical-system (all   <i>logical-system-name</i> )> < <i>name</i> >
<b>Syntax (EX Series Switch)</b>	show rip neighbor <instance (all   <i>instance-name</i> )> < <i>name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display information about Routing Information Protocol (RIP) neighbors.
<b>Options</b>	<p>none—Display information about all RIP neighbors for all instances.</p> <p>instance (all   <i>instance-name</i>)—(Optional) Display RIP neighbor information for all instances or for only the specified routing instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>name</i>—(Optional) Display detailed information about only the specified RIP neighbor.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show rip neighbor on page 594</a> <a href="#">show rip neighbor (With Demand Circuits Configured) on page 594</a>
<b>Output Fields</b>	Table 137 on page 593 lists the output fields for the <b>show rip neighbor</b> command. Output fields are listed in the approximate order in which they appear.

**Table 137: show rip neighbor Output Fields**

Field Name	Field Description
<b>Neighbor</b>	<p>Name of RIP neighbor.</p> <p><b>NOTE:</b> Beginning with Junos OS Release 11.1, when you configure demand circuits, the output displays a DC flag next to neighbor interfaces configured for demand circuits.</p> <p>If you configure demand circuits at the neighbor hierarchy level, the output shows only the neighbor interface that you specifically configured as a demand circuit. If you configure demand circuits at the group hierarchy level, all of the interfaces in the group are configured as demand circuits. Therefore, the output shows all of the interfaces in that group as demand circuits.</p>
<b>State</b>	State of the connection: <b>Up</b> or <b>Dn</b> (Down).



Table 137: show rip neighbor Output Fields (*continued*)

Field Name	Field Description
Source Address	Source address.
Destination Address	Destination address.
Send Mode	Send options: <b>broadcast</b> , <b>multicast</b> , <b>none</b> , or <b>version 1</b> .
Receive Mode	Type of packets to accept: <b>both</b> , <b>none</b> , <b>version 1</b> , or <b>version 2</b> .
In Met	Metric added to incoming routes when advertising into RIP routes that were learned from other protocols.

## Sample Output

show rip neighbor user@host> show rip neighbor

Neighbor	State	Source Address	Destination Address	Send Mode	Receive Mode	In Met
ge-2/3/0.0	Up	192.168.9.105	192.168.9.107	bcast	both	1
at-5/1/1.42	Dn	(null)	(null)	mcast	v2 only	3
at-5/1/0.42	Dn	(null)	(null)	mcast	both	3
at-5/1/0.0	Up	20.0.0.1	224.0.0.9	mcast	both	3
so-0/0/0.0	Up	192.168.9.97	224.0.0.9	mcast	both	3

show rip neighbor (With Demand Circuits Configured) user@host# show rip neighbor

Neighbor	State	Source Address	Destination Address	Send Mode	Receive Mode	In Met
so-0/1/0.0(DC)	Up	10.10.10.2	224.0.0.9	mcast	both	1
so-0/2/0.0(DC)	Up	13.13.13.2	224.0.0.9	mcast	both	1



## show rip statistics

<b>Syntax</b>	show rip statistics <instance (all   <i>instance-name</i> )> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show rip statistics <instance (all   <i>instance-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display Routing Information Protocol (RIP) statistics about messages sent and received on an interface, as well as information received from advertisements from other routing devices.
<b>Options</b>	<p>none—Display RIP statistics for all routing instances.</p> <p>instance (all   <i>instance-name</i>)—(Optional) Display RIP statistics for all instances or for only the specified routing instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear rip statistics on page 591</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show rip statistics on page 596</a>
<b>Output Fields</b>	<a href="#">Table 138 on page 595</a> lists the output fields for the <b>show rip statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 138: show rip statistics Output Fields**

Field Name	Field Description
RIP info	<p>Information about RIP on the specified interface:</p> <ul style="list-style-type: none"> <li>• <b>port</b>—UDP port number used for RIP.</li> <li>• <b>holddown</b>—Hold-down interval, in seconds.</li> <li>• <b>rts learned</b>—Number of routes learned through RIP.</li> <li>• <b>rts held down</b>—Number of routes held down by RIP.</li> <li>• <b>rqsts dropped</b>—Number of received request packets that were dropped.</li> <li>• <b>resps dropped</b>—Number of received response packets that were dropped.</li> <li>• <b>restart</b>—Graceful restart status. Displayed when RIP is or has been in the process of graceful restart.</li> </ul>



Table 138: show rip statistics Output Fields (*continued*)

Field Name	Field Description
<i>logical-interface</i>	<p>Name of the logical interface and its statistics:</p> <ul style="list-style-type: none"> <li><b>routes learned</b>—Number of routes learned on the logical interface.</li> <li><b>routes advertised</b>—Number of routes advertised by the logical interface.</li> <li><b>timeout</b>—Timeout interval, in seconds.</li> <li><b>update interval</b>—Number of seconds since last update.</li> </ul>
<b>Counter</b>	<p>List of counter types:</p> <ul style="list-style-type: none"> <li><b>Updates Sent</b>—Number of update messages sent.</li> <li><b>Triggered Updates Sent</b>—Number of triggered update messages sent.</li> <li><b>Responses Sent</b>—Number of response messages sent.</li> <li><b>Bad Messages</b>—Number of invalid messages received.</li> <li><b>RIPv1 Updates Received</b>—Number of RIPv1 update messages received.</li> <li><b>RIPv1 Bad Route Entries</b>—Number of RIPv1 invalid route entry messages received.</li> <li><b>RIPv1 Updates Ignored</b>—Number of RIPv1 update messages ignored.</li> <li><b>RIPv2 Updates Received</b>—Number of RIPv2 update messages received.</li> <li><b>RIPv2 Bad Route Entries</b>—Number of RIPv2 invalid route entry messages received.</li> <li><b>RIPv2 Updates Ignored</b>—Number of RIPv2 update messages that were ignored.</li> <li><b>Authentication Failures</b>—Number of received update messages that failed authentication.</li> <li><b>RIP Requests Received</b>—Number of RIP request messages received.</li> <li><b>RIP Requests Ignored</b>—Number of RIP request messages ignored.</li> </ul>
<b>Total</b>	Total number of packets for the selected counter.
<b>Last 5 min</b>	Number of packets for the selected counter in the most recent 5-minute period.
<b>Last minute</b>	Number of packets for the selected counter in the most recent 1-minute period.

## Sample Output

```

show rip statistics user@host> show rip statistics so-0/0/0.0
RIP info: port 520; update interval: 30s; holddown 180s; timeout 120s
restart in progress: restart time 60s; restart will complete in 55s
  rts learned  rts held down  rqsts dropped  resps dropped
           0           0           0           0
so-0/0/0.0: 0 routes learned; 501 routes advertised
Counter      Total  Last 5 min  Last minute
-----
Updates Sent      0         0         0
Triggered Updates Sent  0         0         0
Responses Sent    0         0         0
Bad Messages      0         0         0
RIPv1 Updates Received  0         0         0
RIPv1 Bad Route Entries  0         0         0
RIPv1 Updates Ignored  0         0         0
RIPv2 Updates Received  0         0         0
RIPv2 Bad Route Entries  0         0         0
RIPv2 Updates Ignored  0         0         0

```



Authentication Failures	0	0	0
RIP Requests Received	0	0	0
RIP Requests Ignored	0	0	0







## RIPng Operational Mode Commands

Table 139 on page 599 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot the Routing Information Protocol next generation (RIPng). Commands are listed in alphabetical order.

**Table 139: RIPng Operational Mode Commands**

Task	Command
Clear general statistics.	<code>clear ripng general-statistics</code>
Clear statistics.	<code>clear ripng statistics</code>
Display general statistics.	<code>show ripng general-statistics</code>
Display RIPng neighbors.	<code>show ripng neighbor</code>
Display statistics.	<code>show ripng statistics</code>



**NOTE:** For more RIPng-related commands, such as `show route protocol`, `show route instance`, and `show route table`, see Protocol-Independent Routing Operational Mode Commands.

For information about how to configure RIPng, see the *Junos Routing Protocols Configuration Guide*.



## clear ripng general-statistics

---

<b>Syntax</b>	clear ripng general-statistics <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	clear ripng general-statistics
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Clear Routing Information Protocol next generation (RIPng) general statistics.
<b>Options</b>	none—Clear RIPng general statistics.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show ripng general-statistics on page 602</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear ripng general-statistics on page 600</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

### Sample Output

clear ripng general-statistics	user@host> clear ripng general-statistics
-----------------------------------	---



## clear ripng statistics

---

<b>Syntax</b>	clear ripng statistics <instance   name> <logical-system (all   logical-system-name)>
<b>Syntax (EX Series Switch)</b>	clear ripng statistics <instance   name>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Clear Routing Information Protocol next-generation (RIPng) statistics.
<b>Options</b>	none—Reset RIPng counters for all neighbors for all routing instances.  instance—(Optional) Reset RIPng counters for the specified instance.  name—(Optional) Reset RIPng counters for the specified neighbor.  logical-system (all   logical-system-name)—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show ripng statistics on page 605</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear ripng statistics on page 601</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

```
clear ripng statistics  user@host> clear ripng statistics
```



## show ripng general-statistics

<b>Syntax</b>	show ripng general-statistics <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show ripng general-statistics
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display general Routing Information Protocol next-generation (RIPng) statistics.
<b>Options</b>	none—Display general RIPng statistics.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">clear ripng general-statistics on page 600</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show ripng general-statistics on page 602</a>
<b>Output Fields</b>	<a href="#">Table 140 on page 602</a> lists the output fields for the <b>show ripng general-statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 140: show ripng general-statistics Output Fields**

Field Name	Field Description
bad msgs	Number of invalid messages received.
no rcv intf	Number of packets received with no matching interface.
curr memory	Amount of memory currently used by RIPng.
max memory	Most memory used by RIPng.

## Sample Output

```

show ripng general-statistics user@host> show ripng general-statistics
RIPng I/O info:
  bad msgs      :      0
  no rcv intf   :      0
  curr memory   :      0
  max memory    :      0

```



## show ripng neighbor

<b>Syntax</b>	show ripng neighbor <logical-system (all   <i>logical-system-name</i> )> < <i>name</i> >
<b>Syntax (EX Series Switch)</b>	show ripng neighbor < <i>name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display information about Routing Information Protocol next-generation (RIPng) neighbors.
<b>Options</b>	<p>none—Display information about all RIPng neighbors.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>name</i>—(Optional) Display detailed information about a specific RIPng neighbor.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show ripng neighbor on page 604</a>
<b>Output Fields</b>	<a href="#">Table 141 on page 603</a> lists the output fields for the <b>show ripng neighbor</b> command. Output fields are listed in the approximate order in which they appear.

**Table 141: show ripng neighbor Output Fields**

Field Name	Field Description
<b>Neighbor</b>	Name of RIPng neighbor.
<b>State</b>	State of the connection: <b>Up</b> or <b>Dn</b> (Down).
<b>Source Address</b>	Source address.
<b>Destination Address</b>	Destination address.
<b>Send Mode</b>	Send options: <b>broadcast</b> , <b>multicast</b> , <b>none</b> , <b>version 1</b> , or <b>yes</b> .
<b>Receive Mode</b>	Type of packets to accept: <b>both</b> , <b>none</b> , <b>version 1</b> , or <b>yes</b> .
<b>In Met</b>	Metric added to incoming routes when advertising into RIPng routes that were learned from other protocols.



## Sample Output

```
show ripng neighbor  user@host> show ripng neighbor
```

Neighbor	State	Source Address	Dest Address	Send	Recv	In Met
-----	-----	-----	-----	-----	-----	-----
fe-0/0/2.0	Up	fe80::290:69ff:fe68:b002	ff02::9	yes	yes	1



## show ripng statistics

<b>Syntax</b>	show ripng statistics <logical-system (all   <i>logical-system-name</i> )> < <i>name</i> >
<b>Syntax (EX Series Switch)</b>	show ripng statistics < <i>name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display Routing Information Protocol next generation (RIPng) statistics about messages sent and received on an interface, as well as information received from advertisements from other routing devices.
<b>Options</b>	<p>none—Display RIPng statistics for all neighbors.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>name</i>—(Optional) Display detailed information about a specific RIPng neighbor.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear ripng statistics on page 601</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show ripng statistics on page 606</a>
<b>Output Fields</b>	<a href="#">Table 142 on page 605</a> lists the output fields for the <b>show ripng statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 142: show ripng statistics Output Fields**

Field Name	Field Description
RIPng info	<p>Information about RIPng on the specified interface:</p> <ul style="list-style-type: none"> <li>• <b>port</b>—UDP port number used for RIP.</li> <li>• <b>holddown</b>—Hold-down interval, in seconds.</li> <li>• <b>rts learned</b>—Number of routes learned through RIP.</li> <li>• <b>rts held down</b>—Number of routes held down by RIP.</li> <li>• <b>rqsts dropped</b>—Number of received request packets that were dropped.</li> <li>• <b>resps dropped</b>—Number of received response packets that were dropped.</li> <li>• <b>restart</b>—Graceful restart status. Displayed when RIPng is or has been in the process of graceful restart.</li> </ul>



Table 142: show ripng statistics Output Fields (*continued*)

Field Name	Field Description
<i>logical-interface</i>	Name of the logical interface and its statistics: <ul style="list-style-type: none"> <li><b>routes learned</b>—Number of routes learned on the logical interface.</li> <li><b>routes advertised</b>—Number of routes advertised by the logical interface.</li> <li><b>timeout</b>—Timeout interval, in seconds.</li> <li><b>update interval</b>—Number of seconds since last update.</li> </ul>
<b>Counter</b>	List of counter types: <ul style="list-style-type: none"> <li><b>Updates Sent</b>—Number of update messages sent.</li> <li><b>Triggered Updates Sent</b>—Number of triggered update messages sent.</li> <li><b>Responses Sent</b>—Number of response messages sent.</li> <li><b>Bad Messages</b>—Number of invalid messages received.</li> <li><b>Updates Received</b>—Number of RIPng update messages received.</li> <li><b>Bad Route Entries</b>—Number of RIPng invalid route entry messages received.</li> <li><b>Updates Ignored</b>—Number of RIPng update messages ignored.</li> <li><b>RIPng Requests Received</b>—Number of RIPng request messages received.</li> <li><b>RIPng Requests Ignored</b>—Number of RIPng request messages ignored.</li> </ul>
<b>Total</b>	Total number of packets for the selected counter.
<b>Last 5 min</b>	Number of packets for the selected counter in the most recent 5-minute period.
<b>Last minute</b>	Number of packets for the selected counter in the most recent 1-minute period.

## Sample Output

```

show ripng statistics  user@host> show ripng statistics
RIPng info: port 521; holddown 120s;
      rts learned  rts held down  rqsts dropped  resps dropped
              0              0              0              0

so-0/1/3.0: 0 routes learned; 1 routes advertised; timeout 180s; update interval
20s
Counter              Total    Last 5 min  Last minute
-----
Updates Sent          934         16         4
Triggered Updates Sent    1          0          0
Responses Sent         0          0          0
Bad Messages          0          0          0
Updates Received       0          0          0
Bad Route Entries      0          0          0
Updates Ignored        0          0          0
RIPng Requests Received 0          0          0
RIPng Requests Ignored  0          0          0

```



## PART 2

# Policy Framework

- [Firewall Filter Operational Mode Commands on page 609](#)
- [Forwarding Operational Mode Commands on page 621](#)
- [Routing Policy Operational Mode Commands on page 639](#)







# Firewall Filter Operational Mode Commands

Table 143 on page 609 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot firewall filters. Commands are listed in alphabetical order.

**Table 143: Firewall Filter Operational Mode Commands**

Task	Command
Clear firewall filter counters.	<code>clear firewall</code>
Operational statistics for firewall filters.	<code>show firewall</code>
Version number of installed firewall filters.	<code>show firewall filter version</code>
Firewall filter log information.	<code>show firewall log</code>
Prefix-action statistics for firewall filters.	<code>show firewall prefix-action-stats</code>
Counters for policers.	<code>show policer</code>




**NOTE:** For information about how to configure firewall filters, see the *Junos Policy Framework Configuration Guide*.

For information about the related operational mode commands, `show interfaces filters` and `show interfaces policers`, see the *Junos Interfaces Command Reference*.



## clear firewall

<b>Syntax</b>	clear firewall (all   counter <i>counter-name</i>   filter <i>filter-name</i>   logical-system <i>logical-system-name</i> )
<b>Syntax (EX Series Switch)</b>	clear firewall (all   counter <i>counter-name</i>   filter <i>filter-name</i> )
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>logical-system</b> option introduced in Junos OS Release 9.3.
<b>Description</b>	Clear statistics about configured firewall filters.
<div>  <p><b>NOTE:</b> The <b>clear firewall</b> command cannot be used to clear the Routing Engine filter counters on a backup Routing Engine that is enabled for GRES.</p> </div> <p>If you clear statistics for firewall filters that are applied to Trio-based DPCs and that also use the <b>prefix-action</b> action on matched packets, wait at least 5 seconds before you enter the <b>show firewall prefix-action-stats</b> command. A 5-second pause between issuing the <b>clear firewall</b> and <b>show firewall prefix-action-stats</b> commands avoids a possible timeout of the <b>show firewall prefix-action-stats</b> command.</p>	
<b>Options</b>	<p>all—Clear the packet and byte counts for all filters.</p> <p>counter <i>counter-name</i>—Clear the packet and byte counts for a filter counter that has been configured with the counter firewall filter action.</p> <p>filter <i>filter-name</i>—Clear the packet and byte counts for the specified firewall filter.</p> <p>logical-system <i>logical-system-name</i>—Clear the packet and byte counts for the specified logical system.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show firewall on page 611</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear firewall all on page 610</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

```
clear firewall all  user@host> clear firewall all
```



## show firewall

---

<b>Syntax</b>	<pre>show firewall &lt;filter <i>filter-name</i>&gt; &lt;counter <i>counter-name</i>&gt; &lt;log&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;terse&gt;</pre>
<b>Syntax (EX Series Switch)</b>	<pre>show firewall &lt;filter <i>filter-name</i>&gt; &lt;counter <i>counter-name</i>&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p> <p><b>logical-system</b> option introduced in Junos OS Release 9.3.</p> <p><b>terse</b> option introduced in Junos OS Release 9.4.</p>
<b>Description</b>	Display statistics about configured firewall filters.
<b>Options</b>	<p><b>none</b>—(Optional) Display statistics about configured firewall filters.</p> <p><b>filter <i>filter-name</i></b>—(Optional) Name of a configured filter.</p> <p><b>counter <i>counter-name</i></b>—(Optional) Name of a filter counter.</p> <p><b>logical-system (all   <i>logical-system-name</i>)</b>—(Optional) Perform this operation on all logical systems or on a particular system.</p> <p><b>log</b>—(Optional) Display log entries for firewall filters.</p> <p><b>terse</b>—(Optional) Display firewall filter names only.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear firewall on page 610</a></li> </ul>
<b>List of Sample Output</b>	<p><a href="#">show firewall filter on page 613</a></p> <p><a href="#">show firewall filter (Dynamic Input Filter) on page 613</a></p> <p><a href="#">show firewall (Logical Systems) on page 613</a></p>
<b>Output Fields</b>	<p><a href="#">Table 144 on page 612</a> lists the output fields for the <b>show firewall</b> command. Output fields are listed in the approximate order in which they appear.</p>



Table 144: show firewall Output Fields

Field Name	Field Description
<b>Filter</b>	<p>Name of a filter that has been configured with the <b>filter</b> statement at the <b>[edit firewall]</b> hierarchy level.</p> <p>When an interface-specific filter is displayed, the name of the filter is followed by the full interface name and by either <b>-i</b> for an input filter or <b>-o</b> for an output filter.</p> <p>When dynamic filters are displayed, the name of the filter is followed by the full interface name and by either <b>-in</b> for an input filter or <b>-out</b> for an output filter. When a logical system-specific filter is displayed, the name of the filter is prefixed with two underscore (__) characters and the name of the logical system (for example, __ls1/filter1).</p>
<b>Counters</b>	<p>Display filter counter information:</p> <ul style="list-style-type: none"><li>• <b>Name</b>—Name of a filter counter that has been configured with the <b>counter</b> firewall filter action.</li><li>• <b>Bytes</b>—Number of bytes that match the filter term under which the <b>counter</b> action is specified.</li><li>• <b>Packets</b>—Number of packets that matched the filter term under which the <b>counter</b> action is specified.</li></ul>
<b>Policers</b>	<p>Display policer information:</p> <ul style="list-style-type: none"><li>• <b>Name</b>—Name of policer.</li><li>• <b>Bytes</b>—(I-chip DPCs only) Number of bytes that match the filter term under which the policer action is specified. This is only the number out-of-specification (out-of-spec) byte counts, not all the bytes in all packets policed by the policer.</li><li>• <b>Packets</b>—Number of packets that matched the filter term under which the policer action is specified. This is only the number of out-of-specification (out-of-spec) packet counts, not all packets policed by the policer.</li></ul>



## Sample Output

```

show firewall filter user@host> show firewall filter test
Filter: test
Counters:
Name                               Bytes          Packets
Counter-1                          0              0
Counter-2                          0              0
Policers:
Name                               Bytes          Packets
Policer-1                         2770           70

show firewall filter user@host> show firewall filter dfwd-ge-5/0/0.1-in
(Dynamic Input Filter) Filter: dfwd-ge-5/0/0.1-in
Counters:
Name                               Bytes          Packets
c1-ge-5/0/0.1-in                  0              0

show firewall (Logical user@host>show firewall
Systems)
Filter: __lr1/test
Counters:
Name                               Bytes          Packets
icmp                               420            5
Filter: __default_bpdu_filter__
Filter: __lr1/inet_filter1
Counters:
Name                               Bytes          Packets
inet_tcp_count                     0              0
inet_udp_count                     0              0
Filter: __lr1/inet_filter2
Counters:
Name                               Bytes          Packets
inet_icmp_count                    0              0
inet_pim_count                     0              0
Filter: __lr2/inet_filter1
Counters:
Name                               Bytes          Packets
inet_tcp_count                     0              0
inet_udp_count                     0              0

```



## show firewall filter version

<b>Syntax</b>	show firewall filter version <filter-name>
<b>Release Information</b>	Command introduced in Junos OS Release 10.2R2.
<b>Description</b>	Display the version number of the installed firewall filter in the Routing Engine.
<b>Options</b>	<p>none—(Optional) Display the version number of all installed firewall filters.</p> <p>filter-name—(Optional) Name of a configured filter. If you specify the name of a filter, only the version number of that filter is displayed.</p>
<b>Additional Information</b>	The initial version number is 1. This number increments by one when you modify the firewall filter settings or an associated prefix action. The maximum version number is 4,294,967,295. When the version number reaches 4,294,967,295, this number is reset to 1.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show firewall filter version on page 614</a>
<b>Output Fields</b>	<a href="#">Table 145 on page 614</a> lists the output fields for the <b>show firewall filter version</b> command. Output fields are listed in the approximate order in which they appear.

Table 145: show firewall filter version Output Fields

Field Name	Field Description
Filter	Name of a filter that has been configured with the <b>filter</b> statement at the <b>[edit firewall]</b> hierarchy level.
Version	Display the version number of the firewall filter.

### Sample Output

```

show firewall filter  user@host> show firewall filter version
version              Filter version information :
                    Filter
                    test                               Version
                                                         10

```



## show firewall log

<b>Syntax</b>	show firewall log <detail> <interface <i>interface-name</i> > <logical-system ( <i>logical-system-name</i>   all)>
<b>Syntax (EX Series Switch)</b>	show firewall log <detail> <interface <i>interface-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches. <b>logical-system</b> option introduced in Junos OS Release 9.3.
<b>Description</b>	Display log information about firewall filters.
<b>Options</b>	none—Display log information about firewall filters.  detail—(Optional) Display detailed information.  interface <i>interface-name</i> —(Optional) Display log information about a specific interface.  logical-system ( <i>logical-system-name</i>   all)—(Optional) Perform this operation on all logical systems or on a particular system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show firewall log on page 616</a> <a href="#">show firewall log detail on page 616</a>
<b>Output Fields</b>	Table 146 on page 615 lists the output fields for the <b>show firewall log</b> command. Output fields are listed in the approximate order in which they appear.

**Table 146: show firewall log Output Fields**

Field Name	Field Description
<b>Time of Log</b>	Time that the event occurred.
<b>Filter</b>	<p>Name of a filter that has been configured with the <b>filter</b> statement at the <b>[edit firewall]</b> hierarchy level.</p> <ul style="list-style-type: none"> <li>A hyphen (-) indicates that the packet was handled by the Packet Forwarding Engine.</li> <li>A space (no hyphen) indicates the packet was handled by the Routing Engine.</li> <li>The notation <b>pfe</b> indicates packets logged by the Packet Forwarding Engine hardware filters.</li> </ul>



Table 146: show firewall log Output Fields (*continued*)

Field Name	Field Description
Filter Action	Filter action: <ul style="list-style-type: none"> <li>• A—Accept</li> <li>• D—Discard</li> <li>• R—Reject</li> </ul>
Name of Interface	Ingress interface for the packet.
Name of protocol	Packet's protocol name: <b>egp, gre, icmp, ipip, ospf, pim, rsvp, tcp, or udp</b> .
Packet length	Length of the packet.
Source address	Packet's source address.
Destination address	Packet's destination address and port.

## Sample Output

### show firewall log

```

user@host>show firewall log
Time      Filter  Action Interface    Protocol  Src Addr    Dest Addr
13:10:12  pfe      D      rlsq0.902     ICMP     180.1.177.2 180.1.177.1
13:10:11  pfe      D      rlsq0.902     ICMP     180.1.177.2 180.1.177.1

```

### show firewall log detail

```

user@host> show firewall log detail
Time of Log: 2004-10-13 10:37:17 PDT, Filter: f, Filter action: accept, Name of
interface: fxp0.0Name of protocol: TCP, Packet Length: 50824, Source address:
172.17.22.108:829,
Destination address: 192.168.70.66:513
Time of Log: 2004-10-13 10:37:17 PDT, Filter: f, Filter action: accept, Name of
interface: fxp0.0
Name of protocol: TCP, Packet Length: 1020, Source address: 172.17.22.108:829,
Destination address: 192.168.70.66:513
Time of Log: 2004-10-13 10:37:17 PDT, Filter: f, Filter action: accept, Name of
interface: fxp0.0
Name of protocol: TCP, Packet Length: 49245, Source address: 172.17.22.108:829,
Destination address: 192.168.70.66:513
Time of Log: 2004-10-13 10:37:17 PDT, Filter: f, Filter action: accept, Name of
interface: fxp0.0
Name of protocol: TCP, Packet Length: 49245, Source address: 172.17.22.108:829,
Destination address: 192.168.70.66:513
Time of Log: 2004-10-13 10:37:17 PDT, Filter: f, Filter action: accept, Name of
interface: fxp0.0
Name of protocol: TCP, Packet Length: 49245, Source address: 172.17.22.108:829,
Destination address: 192.168.70.66:513
Time of Log: 2004-10-13 10:37:17 PDT, Filter: f, Filter action: accept, Name of
interface: fxp0.0
Name of protocol: TCP, Packet Length: 49245, Source address: 172.17.22.108:829,
Destination address: 192.168.70.66:513

```



Destination address: 192.168.70.66:513  
....



## show firewall prefix-action-stats

<b>Syntax</b>	show firewall prefix-action-stats filter <i>filter-name</i> prefix-action <i>prefix-action-name</i> <from <i>number</i> to <i>number</i> > <logical-system ( <i>logical-system-name</i>   all)>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. <b>logical-system</b> option introduced in Junos OS Release 9.3.
<b>Description</b>	Display prefix action statistics about configured firewall filters.  If you clear statistics for firewall filters that are applied to Trio-based DPCs and that also use the <b>prefix-action</b> action on matched packets, wait at least 5 seconds before you enter the <b>show firewall prefix-action-stats</b> command. A 5-second pause between issuing the <b>clear firewall</b> and <b>show firewall prefix-action-stats</b> commands avoids a possible timeout of the <b>show firewall prefix-action-stats</b> command.
<b>Options</b>	filter <i>filter-name</i> —Name of a filter.  prefix-action <i>prefix-action-name</i> —Name of a prefix action.  from <i>number</i> to <i>number</i> —(Optional) Starting and ending counter or policer.  logical-system ( <i>logical-system-name</i>   all)—(Optional) Perform this operation on all logical systems or on a particular system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear firewall on page 610</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show firewall prefix-action-stats on page 618</a>
<b>Output Fields</b>	<a href="#">Table 147 on page 618</a> lists the output fields for the <b>show firewall prefix-action-stats</b> command. Output fields are listed in the approximate order in which they appear.

**Table 147: show firewall prefix-action-stats Output Fields**

Field Name	Field Description
<b>Filter</b>	Filter name.  Filters configured for logical systems include the name of the filter prefixed with the two underscore characters (__) and the name of the logical system (for example, __ls1/filter1).

## Sample Output

```
show firewall prefix-action-stats user@host> show firewall prefix-action-stats filter test prefix-action act1
Filter: __ls2/test
```



## show policer

<b>Syntax</b>	show policer < <i>policer-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display the number of policed packets for a given policer or an aggregate policer. An aggregate policer is an aggregate of different policers on the same logical interface.
<b>Options</b>	none—Display the number of policed packets for all configured policers.  <i>policer-name</i> —(Optional) Display the number of policed packets for the specified policer.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show policer on page 619</a> <a href="#">show policer (Aggregate Policar) on page 619</a>
<b>Output Fields</b>	<a href="#">Table 148 on page 619</a> lists the output fields for the <b>show policer</b> command. Output fields are listed in the approximate order in which they appear.

**Table 148: show policer Output Fields**

Field Name	Field Description
<b>Name</b>	Name of the policer.
<b>Bytes</b>	(For policers applied to logical interfaces on I-chip DPCs only) Total number of bytes policed by the specified policer.
<b>Packets</b>	Total number of packets policed by the specified policer.

## Sample Output

```

user@host> show policer
Policers:
Name                               Bytes      Packets
__default_arp_policer__            314520      5242
pol-2M-ge-1/2/0.1-inet-i           10372300    103723
pol-2M-ge-1/2/0.1-inet6-i           7727800     77278
pol-2M-ge-1/2/0.1-mp1s-i            7070336     67984
pol-2M-ge-1/2/0.1001-vpls-i         65153700    651537
pol-2M-ge-1/2/0.2001-vpls-i         65180900    651809
pol-2M-ge-1/2/0.3001-ccc-i          62202144    647939

```

```

user@host> show policer
Policers:
Name                               Packets
__default_arp_policer__            0
P1-ae0.0-log_int-o                 0
P2-ge-7/0/2.0-inet-o               0

```



P2-ge-7/0/2.0-inet6-o	0
__policer_tmpl__-term	0
__policer_tmpl__-fc0	0
__policer_tmpl__-fc0	0
__policer_tmpl__-fc1	0
__policer_tmpl__-fc0	0
__policer_tmpl__-fc1	0
__policer_tmpl__-fc2	0
__policer_tmpl__-fc0	0
__policer_tmpl__-fc1	0
__policer_tmpl__-fc2	0
__policer_tmpl__-fc3	0



## Forwarding Operational Mode Commands

Table 149 on page 621 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot forwarding options. Commands are listed in alphabetical order.

**Table 149: Forwarding Operational Mode Commands**

Task	Command
Clear the binding state of a Dynamic Host Configuration Protocol (DHCP) client from the client table.	<a href="#">clear dhcp relay binding</a>
Clear all DHCP relay statistics.	<a href="#">clear dhcp relay statistics</a>
Clear statistic counters in the User Datagram Protocol (UDP) forwarding process.	<a href="#">clear helper statistics</a>
Display the address bindings in the DHCP client table.	<a href="#">show dhcp relay binding</a>
Display DHCP relay statistics.	<a href="#">show dhcp relay statistics</a>
Display statistics collected by the UDP forwarding process.	<a href="#">show helper statistics</a>



## clear dhcp relay binding

---

<b>Syntax</b>	<code>clear dhcp relay binding</code> <code>&lt;(all   <i>ip-address</i>   <i>mac-address</i>)&gt;</code> <code>&lt;interface <i>interface-name</i>&gt;</code> <code>&lt;logical-system <i>logical-system-name</i>&gt;</code> <code>&lt;routing-instance <i>routing-instance-name</i>&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 8.3. <b>all</b> and <b>interface</b> options added in Junos OS Release 8.4.
<b>Description</b>	Clear the binding state of a Dynamic Host Configuration Protocol (DHCP) client from the client table.
<b>Options</b>	<b>all</b> —(Optional) Clear the binding state for all DHCP clients.  <b>interface <i>interface-name</i></b> —(Optional) Clear the binding state for DHCP clients on the specified interface.  <b><i>ip-address</i></b> —(Optional) IP address of the DHCP client.  <b><i>mac-address</i></b> —(Optional) MAC address of the DHCP client.  <b>logical-system <i>logical-system-name</i></b> —(Optional) Clear the binding state for DHCP clients on the specified logical system.  <b>routing-instance <i>routing-instance-name</i></b> —(Optional) Clear the binding state for DHCP clients on the specified routing instance.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">clear dhcp relay binding on page 622</a> <a href="#">clear dhcp relay binding all on page 623</a> <a href="#">clear dhcp relay binding interface on page 623</a>
<b>Output Fields</b>	See <a href="#">show dhcp relay binding</a> for an explanation of output fields.

## Sample Output

**clear dhcp relay binding** The following sample output displays the address bindings in the DHCP client table before and after the **clear dhcp relay binding** command is issued.

```
user@host> show dhcp relay binding
IP address      Hardware address  Type    Lease expires at
100.20.32.1     90:00:00:01:00:01 active           2007-02-08 16:41:17 EST

user@host> clear dhcp relay binding 100.20.32.1

user@host> show dhcp relay binding
```



**clear dhcp relay binding all**     user@host> clear dhcp relay binding all

**clear dhcp relay binding interface**     user@host> clear dhcp relay binding interface fe-0/0/2



## clear dhcp relay statistics

<b>Syntax</b>	<b>clear dhcp relay statistics</b> <code>&lt;logical-system <i>logical-system-name</i>&gt;</code> <code>&lt;routing-instance <i>routing-instance-name</i>&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 8.3.
<b>Description</b>	Clear all Dynamic Host Configuration Protocol (DHCP) relay statistics.
<b>Options</b>	<p><code>logical-system <i>logical-system-name</i></code>—(Optional) Perform this operation on the specified logical system. If you do not specify a logical system name, statistics are cleared for the default logical system.</p> <p><code>routing-instance <i>routing-instance-name</i></code>—(Optional) Perform this operation on the specified routing instance. If you do not specify a routing instance name, statistics are cleared for the default routing instance.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">clear dhcp relay statistics on page 625</a>
<b>Output Fields</b>	<a href="#">Table 150 on page 624</a> lists the output fields for the <b>clear dhcp relay statistics</b> command.

**Table 150: clear dhcp relay statistics Output Fields**

Field Name	Field Description
<b>Packets dropped</b>	<p>Number of packets discarded by the extended DHCP relay agent application due to errors. Only nonzero statistics appear in the <b>Packets dropped</b> output. When all of the Packets dropped statistics are 0 (zero), only the <b>Total</b> field appears.</p> <ul style="list-style-type: none"> <li><b>Total</b>—Total number of packets discarded by the extended DHCP relay agent application.</li> <li><b>Bad hardware address</b>—Number of packets discarded because an invalid hardware address was specified.</li> <li><b>Bad opcode</b>—Number of packets discarded because an invalid operation code was specified.</li> <li><b>Bad options</b>—Number of packets discarded because invalid options were specified.</li> <li><b>Invalid server address</b>—Number of packets discarded because an invalid server address was specified.</li> <li><b>No available addresses</b>—Number of packets discarded because there were no addresses available for assignment.</li> <li><b>No interface match</b>—Number of packets discarded because they did not belong to a configured interface.</li> <li><b>No routing instance match</b>—Number of packets discarded because they did not belong to a configured routing instance.</li> <li><b>No valid local address</b>—Number of packets discarded because there was no valid local address.</li> <li><b>Packet too short</b>—Number of packets discarded because they were too short.</li> <li><b>Read error</b>—Number of packets discarded because of a system read error.</li> <li><b>Send error</b>—Number of packets that the extended DHCP relay application could not send.</li> <li><b>Option 60</b>—Number of packets discarded containing DHCP option 60 vendor-specific information.</li> <li><b>Option 82</b>—Number of packets discarded because DHCP option 82 information could not be added.</li> </ul>



Table 150: clear dhcp relay statistics Output Fields (*continued*)

Field Name	Field Description
<b>Messages received</b>	<p>Number of DHCP messages received.</p> <ul style="list-style-type: none"> <li><b>BOOTREQUEST</b>—Number of BOOTP protocol data units (PDUs) received</li> <li><b>DHCPDECLINE</b>—Number of DHCP PDUs of type DECLINE received</li> <li><b>DHCPDISCOVER</b>—Number of DHCP PDUs of type DISCOVER received</li> <li><b>DHCPINFORM</b>—Number of DHCP PDUs of type INFORM received</li> <li><b>DHCPRELEASE</b>—Number of DHCP PDUs of type RELEASE received</li> <li><b>DHCPREQUEST</b>—Number of DHCP PDUs of type REQUEST received</li> </ul>
<b>Messages sent</b>	<p>Number of DHCP messages sent.</p> <ul style="list-style-type: none"> <li><b>BOOTREPLY</b>—Number of BOOTP PDUs transmitted</li> <li><b>DHCPOFFER</b>—Number of DHCP OFFER PDUs transmitted</li> <li><b>DHCPACK</b>—Number of DHCP ACK PDUs transmitted</li> <li><b>DHCPNACK</b>—Number of DHCP NACK PDUs transmitted</li> </ul>

## Sample Output

**clear dhcp relay statistics** The following sample output displays the DHCP relay statistics before and after the **clear dhcp relay statistics** command is issued.

```
user@host> show dhcp relay statistics
Packets dropped:
  Total                0
```

```
Messages received:
  BOOTREQUEST          116
  DHCPDECLINE           0
  DHCPDISCOVER         11
  DHCPINFORM            0
  DHCPRELEASE           0
  DHCPREQUEST         105
```

```
Messages sent:
  BOOTREPLY             44
  DHCPOFFER             11
  DHCPACK               11
  DHCPNAK               11
```

```
user@host> clear dhcp relay statistics
```

```
user@host> show dhcp relay statistics
Packets dropped:
  Total                0
```

```
Messages received:
  BOOTREQUEST          0
  DHCPDECLINE           0
  DHCPDISCOVER         0
  DHCPINFORM            0
  DHCPRELEASE           0
```



DHCPREQUEST	0
Messages sent:	
BOOTREPLY	0
DHCPOFFER	0
DHCPACK	0
DHCPNAK	0



## clear helper statistics

<b>Syntax</b>	clear helper statistics
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Clear statistic counters in the User Datagram Protocol (UDP) forwarding process.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show helper statistics on page 636</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear helper statistics on page 627</a>
<b>Output Fields</b>	See <a href="#">show helper statistics</a> for an explanation of output fields.

## Sample Output

**clear helper statistics** The following sample output displays statistics counters before and after the **clear helper statistics** command is issued:

```

user@host> show helper statistics
domain:
  Received packets: 63
  Forwarded packets: 61
  Dropped packets: 2
    Due to no interface in fud database: 0
    Due to an error during packet read: 1
    Due to an error during packet send: 1
tftp:
  Received packets: 5
  Forwarded packets: 5
  Dropped packets: 0
    Due to no interface in fud database: 0
    Due to an error during packet read: 0
    Due to an error during packet send: 0

user@host> clear helper statistics

user@host> show helper statistics
domain:
  Received packets: 0
  Forwarded packets: 0
  Dropped packets: 0
    Due to no interface in fud database: 0
    Due to an error during packet read: 0
    Due to an error during packet send: 0
tftp:
  Received packets: 0
  Forwarded packets: 0
  Dropped packets: 0

```



```
Due to no interface in fud database: 0
Due to an error during packet read: 0
Due to an error during packet send: 0
```



## show dhcp relay binding

<b>Syntax</b>	<pre>show dhcp relay binding &lt;brief&gt; &lt;detail&gt; &lt;interface <i>interface-name</i>&gt; &lt;<i>ip-address</i>   <i>mac-address</i>&gt; &lt;logical-system <i>logical-system-name</i>&gt; &lt;routing-instance <i>routing-instance-name</i>&gt; &lt;summary&gt;</pre>
<b>Release Information</b>	<p>Command introduced in Junos OS Release 8.3.</p> <p><b>interface</b> and <b>mac-address</b> options added in Junos OS Release 8.4.</p>
<b>Description</b>	Display the address bindings in the Dynamic Host Configuration Protocol (DHCP) client table.
<b>Options</b>	<p><b>brief</b>—(Optional) Display brief information about the active client bindings. This is the default, and produces the same output as <b>show dhcp relay binding</b>.</p> <p><b>detail</b>—(Optional) Display detailed client binding information.</p> <p><b>interface <i>interface-name</i></b>—(Optional) Perform this operation on the specified interface. You can optionally filter on VLAN ID and SVLAN ID.</p> <p><b><i>ip-address</i></b>—(Optional) IP address of the DHCP client.</p> <p><b><i>mac-address</i></b>—(Optional) MAC address of the DHCP client.</p> <p><b>logical-system <i>logical-system-name</i></b>—(Optional) Perform this operation on the specified logical system.</p> <p><b>routing-instance <i>routing-instance-name</i></b>—(Optional) Perform this operation on the specified routing instance.</p> <p><b>summary</b>—(Optional) Display a summary of DHCP client information.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear dhcp relay binding on page 622</a></li> </ul>
<b>List of Sample Output</b>	<p><a href="#">show dhcp relay binding on page 631</a></p> <p><a href="#">show dhcp relay binding detail on page 631</a></p> <p><a href="#">show dhcp relay binding interface on page 632</a></p> <p><a href="#">show dhcp relay binding interface vlan-id on page 632</a></p> <p><a href="#">show dhcp relay binding interface svlan-id on page 632</a></p> <p><a href="#">show dhcp relay binding ip-address on page 632</a></p> <p><a href="#">show dhcp relay binding mac-address on page 632</a></p> <p><a href="#">show dhcp relay binding session-id on page 632</a></p> <p><a href="#">show dhcp relay binding summary on page 632</a></p>



**Output Fields** Table 151 on page 630 lists the output fields for the **show dhcp relay binding** command. Output fields are listed in the approximate order in which they appear.

**Table 151: show dhcp relay binding Output Fields**

Field Name	Field Description	Level of Output
<i>number clients,</i> ( <i>number init,</i> <i>number bound,</i> <i>number selecting,</i> <i>number requesting,</i> <i>number renewing,</i> <i>number rebinding,</i> <i>number releasing</i> )	Summary counts of the total number of DHCP clients and the number of DHCP clients in each state.	<b>summary</b>
IP address	IP address of the DHCP client.	<b>brief</b> <b>detail</b>
Session Id	Session ID of the subscriber session.	<b>brief</b> <b>detail</b>
Hardware address	Hardware address of the DHCP client.	<b>brief</b> <b>detail</b>
Expires	Number of seconds in which the lease expires.	<b>brief</b> <b>detail</b>
State	State of the DHCP relay address binding table on the DHCP client: <ul style="list-style-type: none"> <li>• <b>BOUND</b>—Client has an active IP address lease.</li> <li>• <b>INIT</b>—Initial state.</li> <li>• <b>REBINDING</b>—Client is broadcasting a request to renew the IP address lease.</li> <li>• <b>RELEASE</b>—Client is releasing the IP address lease.</li> <li>• <b>RENEWING</b>—Client is sending a request to renew the IP address lease.</li> <li>• <b>REQUESTING</b>—Client is requesting a DHCP server.</li> <li>• <b>SELECTING</b>—Client is receiving offers from DHCP servers.</li> </ul>	<b>brief</b> <b>detail</b>
Interface	Incoming client interface.	<b>brief</b>
Lease Expires	Date and time at which the client's IP address lease expires.	<b>detail</b>
Lease Expires in	Number of seconds in which the lease expires.	<b>detail</b>
Lease Start	Date and time at which the client's IP address lease started.	<b>detail</b>
Incoming Client Interface	Client's incoming interface.	<b>detail</b>
Server IP Address	IP address of the DHCP server.	<b>detail</b>



Table 151: show dhcp relay binding Output Fields (*continued*)

Field Name	Field Description	Level of Output
Server Interface	Interface of the DHCP server.	detail
Bootp Relay Address	IP address of BOOTP relay.	detail
Type	Type of DHCP packet processing performed on the router: <ul style="list-style-type: none"> <li><b>active</b>—Router actively processes and relays DHCP packets.</li> <li><b>passive</b>—Router passively snoops DHCP packets passing through the router.</li> </ul>	All levels
Lease expires at	Date and time at which the client's IP address lease expires.	All levels

### Sample Output

```

show dhcp relay binding user@host> show dhcp relay binding
IP address      Session Id  Hardware address  Expires  State  Interface
100.20.32.11    41         00:10:94:00:00:01 86371    BOUND  ge-1/0/0.0
100.20.32.12    42         00:10:94:00:00:02 86371    BOUND  ge-1/0/0.0
100.20.32.13    43         00:10:94:00:00:03 86371    BOUND  ge-1/0/0.0
100.20.32.14    44         00:10:94:00:00:04 86371    BOUND  ge-1/0/0.0
100.20.32.15    45         00:10:94:00:00:05 86371    BOUND  ge-1/0/0.0

```

```

show dhcp relay binding detail user@host> show dhcp relay binding detail

Client IP Address: 100.20.32.11
  Hardware Address: 00:10:94:00:00:01
  State: BOUND(DHCP_RELAY_STATE_BOUND_ON_INTF_DELETE)
  Lease Expires: 2009-07-21 11:00:06 PDT
  Lease Expires in: 86361 seconds
  Lease Start: 2009-07-20 11:00:06 PDT
  Last Packet Received: 2009-07-20 11:00:06 PDT
  Incoming Client Interface: ge-1/0/0.0
  Server Ip Address: 100.20.22.2
  Server Interface: none
  Bootp Relay Address: 100.20.32.2
  Session Id: 41

Client IP Address: 100.20.32.12
  Hardware Address: 00:10:94:00:00:02
  State: BOUND(DHCP_RELAY_STATE_BOUND_ON_INTF_DELETE)
  Lease Expires: 2009-07-21 11:00:06 PDT
  Lease Expires in: 86361 seconds
  Lease Start: 2009-07-20 11:00:06 PDT
  Last Packet Received: 2009-07-20 11:00:06 PDT
  Incoming Client Interface: ge-1/0/0.0
  Server Ip Address: 100.20.22.2

```



```

Server Interface:      none
Bootp Relay Address:  100.20.32.2
Session Id:           42

```

```

show dhcp relay binding interface
user@host> show dhcp relay binding interface fe-0/0/2

```

```

IP address      Hardware address  Type      Lease expires at
100.20.32.1     90:00:00:01:00:01  active    2007-03-27 15:06:20 EDT

```

```

show dhcp relay binding interface
user@host> show dhcp relay binding interface ge-1/1/0:100

```

```

IP address      Session Id  Hardware address  Expires  State  Interface
200.20.20.15    6          00:10:94:00:00:01  86124    BOUND  ge-1/1/0:100

```

```

show dhcp relay binding interface
user@host> show dhcp relay binding interface ge-1/1/0:10-100

```

```

IP address      Session Id  Hardware address  Expires  State  Interface
200.20.20.16    7          00:10:94:00:00:02  86124    BOUND  ge-1/1/0:10-100

```

```

show dhcp relay binding ip-address
user@host> show dhcp relay binding 100.20.32.13

```

```

IP address      Session Id  Hardware address  Expires  State  Interface
100.20.32.13    43          00:10:94:00:00:03  86293    BOUND  ge-1/0/0.0

```

```

show dhcp relay binding mac-address
user@host> show dhcp relay binding 00:10:94:00:00:05

```

```

IP address      Session Id  Hardware address  Expires  State  Interface
100.20.32.15    45          00:10:94:00:00:05  86279    BOUND  ge-1/0/0.0

```

```

show dhcp relay binding session-id
user@host> show dhcp relay binding 41

```

```

IP address      Session Id  Hardware address  Expires  State  Interface
100.20.32.11    41          00:10:94:00:00:01  86305    BOUND  ge-1/0/0.0

```

```

show dhcp relay binding summary
user@host> show dhcp relay binding summary

```

```

3 clients, (2 init, 1 bound, 0 selecting, 0 requesting, 0 renewing, 0 rebinding,
0 releasing)

```



---

## show dhcp relay statistics

---

<b>Syntax</b>	<code>show dhcp relay statistics</code> <code>&lt;logical-system <i>logical-system-name</i>&gt;</code> <code>&lt;routing-instance <i>routing-instance-name</i>&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 8.3.
<b>Description</b>	Display Dynamic Host Configuration Protocol (DHCP) relay statistics.
<b>Options</b>	<p><code>logical-system <i>logical-system-name</i></code>—(Optional) Perform this operation on the specified logical system. If you do not specify a logical system name, statistics are displayed for the default logical system.</p> <p><code>routing-instance <i>routing-instance-name</i></code>—(Optional) Perform this operation on the specified routing instance. If you do not specify a routing instance name, statistics are displayed for the default routing instance.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">clear dhcp relay statistics on page 624</a></li></ul>
<b>List of Sample Output</b>	<a href="#">show dhcp relay statistics on page 634</a>
<b>Output Fields</b>	<a href="#">Table 152 on page 634</a> lists the output fields for the <code>show dhcp relay statistics</code> command. Output fields are listed in the approximate order in which they appear.



Table 152: show dhcp relay statistics Output Fields

Field Name	Field Description
<b>Packets dropped</b>	<p>Number of packets discarded by the extended DHCP relay agent application due to errors. Only nonzero statistics appear in the <b>Packets dropped</b> output. When all of the Packets dropped statistics are 0 (zero), only the <b>Total</b> field appears.</p> <ul style="list-style-type: none"> <li>• <b>Total</b>—Total number of packets discarded by the extended DHCP relay agent application.</li> <li>• <b>Bad hardware address</b>—Number of packets discarded because an invalid hardware address was specified.</li> <li>• <b>Bad opcode</b>—Number of packets discarded because an invalid operation code was specified.</li> <li>• <b>Bad options</b>—Number of packets discarded because invalid options were specified.</li> <li>• <b>Invalid server address</b>—Number of packets discarded because an invalid server address was specified.</li> <li>• <b>No available addresses</b>—Number of packets discarded because there were no addresses available for assignment.</li> <li>• <b>No interface match</b>—Number of packets discarded because they did not belong to a configured interface.</li> <li>• <b>No routing instance match</b>—Number of packets discarded because they did not belong to a configured routing instance.</li> <li>• <b>No valid local address</b>—Number of packets discarded because there was no valid local address.</li> <li>• <b>Packet too short</b>—Number of packets discarded because they were too short.</li> <li>• <b>Read error</b>—Number of packets discarded because of a system read error.</li> <li>• <b>Send error</b>—Number of packets that the extended DHCP relay application could not send.</li> <li>• <b>Option 60</b>—Number of packets discarded containing DHCP option 60 vendor-specific information.</li> <li>• <b>Option 82</b>—Number of packets discarded because DHCP option 82 information could not be added.</li> </ul>
<b>Messages received</b>	<p>Number of DHCP messages received.</p> <ul style="list-style-type: none"> <li>• <b>BOOTREQUEST</b>—Number of BOOTP protocol data units (PDUs) received</li> <li>• <b>DHCPDECLINE</b>—Number of DHCP PDUs of type DECLINE received</li> <li>• <b>DHCPDISCOVER</b>—Number of DHCP PDUs of type DISCOVER received</li> <li>• <b>DHCPINFORM</b>—Number of DHCP PDUs of type INFORM received</li> <li>• <b>DHCPRELEASE</b>—Number of DHCP PDUs of type RELEASE received</li> <li>• <b>DHCPREQUEST</b>—Number of DHCP PDUs of type REQUEST received</li> </ul>
<b>Messages sent</b>	<p>Number of DHCP messages sent.</p> <ul style="list-style-type: none"> <li>• <b>BOOTREPLY</b>—Number of BOOTP PDUs transmitted</li> <li>• <b>DHCPOFFER</b>—Number of DHCP OFFER PDUs transmitted</li> <li>• <b>DHCPACK</b>—Number of DHCP ACK PDUs transmitted</li> <li>• <b>DHCPNACK</b>—Number of DHCP NACK PDUs transmitted</li> </ul>

### Sample Output

```

show dhcp relay statistics user@host> show dhcp relay statistics
Packets dropped:
  Total                30
  Bad hardware address  1
  Bad opcode           1
  Bad options          3
  Invalid server address 5

```



No available addresses	1
No interface match	2
No routing instance match	9
No valid local address	4
Packet too short	2
Read error	1
Send error	1
Option 60	1
Option 82	2

Messages received:

BOOTREQUEST	116
DHCPDECLINE	0
DHCPDISCOVER	11
DHCPINFORM	0
DHCPRELEASE	0
DHCPREQUEST	105

Messages sent:

BOOTREPLY	44
DHCPOFFER	11
DHCPACK	11
DHCPNAK	11



## show helper statistics

<b>Syntax</b>	show helper statistics
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Show statistics collected by the UDP forwarding process.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">clear helper statistics on page 627</a></li></ul>
<b>List of Sample Output</b>	<a href="#">show helper statistics on page 637</a>
<b>Output Fields</b>	<a href="#">Table 153 on page 636</a> lists the output fields for the <b>show helper statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 153: show helper statistics Output Fields**

Field Name	Field Description
domain	Statistics for Domain Name System (DNS) forwarding: <ul style="list-style-type: none"><li>• <b>Received packets</b>—Packets received for this service.</li><li>• <b>Forwarded packets</b>—Packets forwarded for this service.</li><li>• <b>Dropped packets</b>—Total number of packets dropped for this service.</li><li>• <b>Due to no interface in fud database</b>—Number of packets dropped because the packet came in on an interface that the UDP forwarding process did not identify as active.</li><li>• <b>Due to an error during packet read</b>—Number of packets dropped because an error occurred when the packet was read from the wire.</li><li>• <b>Due to an error during packet send</b>—Number of packets dropped because an error occurred when the packet was sent to the wire.</li></ul>



Table 153: show helper statistics Output Fields (*continued*)

Field Name	Field Description
tftp	<p>Statistics for Trivial File Transfer Protocol (TFTP) forwarding:</p> <ul style="list-style-type: none"> <li>• <b>Received packets</b>—Packets received for this service.</li> <li>• <b>Forwarded packets</b>—Packets forwarded for this service.</li> <li>• <b>Dropped packets</b>—Total number of packets dropped for this service.</li> </ul> <p>Reasons for dropped packets include:</p> <ul style="list-style-type: none"> <li>• <b>Due to no interface in fud database</b>—Number of packets dropped because the packet came in on an interface that the UDP forwarding process did not identify as active.</li> <li>• <b>Due to no matching routing instance</b>—Number of packets dropped because the packet had no matching routing instance.</li> <li>• <b>Due to an error during packet read</b>—Number of packets dropped because an error occurred when the packet was read from the wire.</li> <li>• <b>Due to an error during packet send</b>—Number of packets dropped because an error occurred when the packet was sent to the wire.</li> <li>• <b>Due to invalid server address</b>—Number of packets dropped because the packet contained an invalid server address.</li> <li>• <b>Due to no valid local address</b>—Number of packets dropped because the packet contained no local address.</li> <li>• <b>Due to no route to server/client</b>—Number of packets dropped because the packet contained no route to the server or the client.</li> </ul>

## Sample Output

```

show helper statistics  user@host> show helper statistics
                        domain: Received packets: 0
                        Forwarded packets: 0
                        Dropped packets: 0
                        Due to no interface in fud database: 0
                        Due to an error during packet read: 0
                        Due to an error during packet send: 0
tftp: Received packets: 0
      Forwarded packets: 0
      Dropped packets: 0
      Due to no interface in fud database: 0
      Due to no matching routing instance: 0
      Due to an error during packet read: 0
      Due to an error during packet send: 0
      Due to invalid server address: 0
      Due to no valid local address: 0
      Due to no route to server/client: 0

```







# Routing Policy Operational Mode Commands

Table 154 on page 639 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot routing policy filters. Commands are listed in alphabetical order.

**Table 154: Routing Policy Operational Mode Commands**

Task	Command
Display configured routing policies.	<a href="#">show policy</a>
Display configured policy conditions and associated routes.	<a href="#">show policy conditions</a>
Test import and export policies.	<a href="#">test policy</a>



**NOTE:** For information about how to configure routing policy filters, see the *Junos Policy Framework Configuration Guide*.



## show policy

<b>Syntax</b>	show policy <logical-system (all   <i>logical-system-name</i> )> < <i>policy-name</i> >
<b>Syntax (EX Series Switch)</b>	show policy < <i>policy-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Display information about configured routing policies.
<b>Options</b>	<p>none—List the names of all configured routing policies.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>policy-name</i>—(Optional) Show the contents of the specified policy.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show policy damping on page 71</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show policy on page 640</a> <a href="#">show policy policy-name on page 641</a> <a href="#">show policy (Multicast Scoping) on page 641</a>
<b>Output Fields</b>	Table 155 on page 640 lists the output fields for the <b>show policy</b> command. Output fields are listed in the approximate order in which they appear.

**Table 155: show policy Output Fields**

Field Name	Field Description
<i>policy-name</i>	Name of the policy listed.
<i>term</i>	Policy term listed.
<i>from</i>	Match condition for the policy.
<i>then</i>	Action for the policy.

## Sample Output

```

show policy user@host> show policy
Configured policies:
__vrf-export-red-internal__
__vrf-import-red-internal__

```



```
red-export
all_routes

show policy user@host> show policy test-statics
policy-name Policy test-statics:
              from
                3.0.0.0/8  accept
                3.1.0.0/16 accept
              then reject

show policy (Multicast user@host> show policy test-statics
Scoping)              Policy test-statics:
                      from
                        multicast-scoping == 8
```



## show policy conditions

<b>Syntax</b>	<pre>show policy conditions &lt;condition-name&gt; &lt;detail&gt; &lt;dynamic&gt; &lt;logical-system (all   logical-system-name)&gt;</pre>
<b>Syntax (EX Series Switch)</b>	<pre>show policy conditions &lt;condition-name&gt; &lt;detail&gt; &lt;dynamic&gt;</pre>
<b>Release Information</b>	<p>Command introduced in Junos OS Release 9.0.</p> <p>Command introduced in Junos OS Release 9.0 for EX Series switches.</p>
<b>Description</b>	Display all the configured conditions as well as the routing tables with which the configuration manager is interacting. If the <b>detail</b> keyword is included, the output also displays dependent routes for each condition.
<b>Options</b>	<p><b>none</b>—Display all configured conditions and associated routing tables.</p> <p><b>condition-name</b>—(Optional) Display information about the specified condition only.</p> <p><b>detail</b>—(Optional) Display the specified level of output.</p> <p><b>dynamic</b>—(Optional) Display information about the conditions in the dynamic database.</p> <p><b>logical-system (all   logical-system-name)</b>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show policy conditions detail on page 643</a>
<b>Output Fields</b>	<p><a href="#">Table 156 on page 642</a> lists the output fields for the <b>show policy conditions</b> command. Output fields are listed in the approximate order in which they appear.</p>

**Table 156: show policy conditions Output Fields**

Field Name	Field Description	Level of Output
<b>Condition</b>	Name of configured condition.	All levels
<b>event</b>	Condition type. If the <b>if-route-exists</b> option is configured, the event type is: <b>Existence of a route in a specific routing table.</b>	All levels
<b>Dependent routes</b>	List of routes dependent on the condition, along with the latest generation number.	<b>detail</b>
<b>Condition tables</b>	List of routing tables associated with the condition, along with the latest generation number and number of dependencies.	All levels



Table 156: show policy conditions Output Fields (*continued*)

Field Name	Field Description	Level of Output
If-route-exists conditions	List of conditions configured to look for a route in the specified table.	All levels

## Sample Output

```

show policy conditions detail user@host> show policy conditions detail
                             Configured conditions:
                             Condition cond1, event: Existence of a route in a specific routing table
                             Dependent routes:
                             4.4.4.4/32, generation 3
                             6.6.6.6/32, generation 3
                             10.10.10.10/32, generation 3

                             Condition cond2, event: Existence of a route in a specific routing table
                             Dependent routes:
                             None

                             Condition tables:
                             Table inet.0, generation 4, dependencies 3, If-route-exists conditions: cond1
                             cond2

```



## test policy

<b>Syntax</b>	<code>test policy <i>policy-name</i> <i>prefix</i></code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.0 for EX Series switches.
<b>Description</b>	Test a policy configuration to determine which prefixes match routes in the routing table.
<b>Options</b>	<i>policy-name</i> —Name of a policy. <i>prefix</i> —Destination prefix to match.
<b>Additional Information</b>	All prefixes in the default unicast routing table ( <b>inet.0</b> ) that match prefixes that are the same as or longer than the specific prefix are processed by the <b>from</b> clause in the specified policy. All prefixes accepted by the policy are displayed. The <b>test policy</b> command evaluates a policy differently from the Border Gateway Protocol (BGP) import process. When testing a policy that contains an <b>interface</b> match condition in the <b>from</b> clause, the <b>test policy</b> command uses the match condition. In contrast, BGP does not use the <b>interface</b> match condition when evaluating the policy against routes learned from internal BGP (IBGP) or external BGP (EBGP) multihop peers.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li><a href="#">show policy damping on page 71</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">test policy on page 644</a>
<b>Output Fields</b>	For information about output fields, see the output field tables for the <a href="#">show route</a> command, the <a href="#">show route detail</a> command, the <a href="#">show route extensive</a> command, or the <a href="#">show route terse</a> command.

## Sample Output

```

test policy user@host> test policy test-statics 3.0.0.1/8
inet.0: 44 destinations, 44 routes (44 active, 0 holddown, 0 hidden)
Prefixes passing policy:

3.0.0.0/8      *[BGP/170] 16:22:46, localpref 100, from 10.255.255.41
               AS Path: 50888 I
               > to 10.11.4.32 via en0.2, label-switched-path 12
3.3.3.1/32    *[IS-IS/18] 2d 00:21:46, metric 0, tag 2
               > to 10.0.4.7 via fxp0.0
3.3.3.2/32    *[IS-IS/18] 2d 00:21:46, metric 0, tag 2
               > to 10.0.4.7 via fxp0.0
3.3.3.3/32    *[IS-IS/18] 2d 00:21:46, metric 0, tag 2
               > to 10.0.4.7 via fxp0.0
3.3.3.4/32    *[IS-IS/18] 2d 00:21:46, metric 0, tag 2

```



```
> to 10.0.4.7 via fxp0.0  
Policy test-statics: 5 prefixes accepted, 0 prefixes rejected
```







## PART 3

# MPLS

- [LDP Operational Mode Commands on page 649](#)
- [MPLS Operational Mode Commands on page 677](#)
- [RSVP Operational Mode Commands on page 729](#)







## LDP Operational Mode Commands

Table 157 on page 649 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot the Label Distribution Protocol (LDP). Commands are listed in alphabetical order.

**Table 157: LDP Operational Mode Commands**

Task	Command
Clear LDP neighbors.	<code>clear ldp neighbor</code>
Clear LDP sessions.	<code>clear ldp session</code>
Clear LDP statistics.	<code>clear ldp statistics</code>
Display entries in the LDP database.	<code>show ldp database</code>
Display forwarding equivalence class filters.	<code>show ldp fec-filters</code>
Display the status of interfaces on which LDP is running.	<code>show ldp interface</code>
Display LDP neighbors.	<code>show ldp neighbor</code>
Display the configured named paths that are used by LDP.	<code>show ldp path</code>
Display LDP routing table entries.	<code>show ldp route</code>
Display currently active LDP sessions.	<code>show ldp session</code>
Display LDP statistics.	<code>show ldp statistics</code>
Display LDP traffic statistics.	<code>show ldp traffic-statistics</code>





.....

**NOTE:** For more LDP-related commands, such as `show route protocol`, `show route instance`, and `show route table`, see Protocol-Independent Routing Operational Mode Commands.

For information about how to configure LDP, see the *Junos MPLS Applications Configuration Guide*.

.....



## clear ldp neighbor

---

<b>Syntax</b>	clear ldp neighbor <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )> < <i>neighbor</i> >
<b>Description</b>	Tear down Label Distribution Protocol (LDP) neighbor connections.
<b>Options</b>	<p>none—Tear down connections with all LDP neighbors for all routing instances.</p> <p>instance <i>instance name</i>—(Optional) Clear the LDP session for the specified routing instance only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>neighbor</i>—(Optional) Clear an LDP session for the specified neighbor (IP address) only.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show ldp neighbor on page 661</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear ldp neighbor on page 651</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

```
clear ldp neighbor  user@host> clear ldp neighbor
```



## clear ldp session

---

<b>Syntax</b>	clear ldp session <destination> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Clear Label Distribution Protocol (LDP) sessions.
<b>Options</b>	none—Clear LDP sessions for all destinations for all routing instances.  <i>destination</i> —(Optional) Clear an LDP session for the specified destination (IP address).  instance <i>instance-name</i> —(Optional) Clear the LDP session for the specified routing instance only.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show ldp session on page 667</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear ldp session on page 652</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

clear ldp session     user@host> clear ldp session



## clear ldp statistics

---

<b>Syntax</b>	clear ldp statistics <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Set all Label Distribution Protocol (LDP) statistics to zero.
<b>Options</b>	<p>none—Set all LDP statistics to zero for all routing instances.</p> <p>instance <i>instance-name</i>—(Optional) Clear the LDP session for the specified routing instance only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show ldp statistics on page 672</a></li> <li>• <a href="#">show ldp traffic-statistics on page 675</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear ldp statistics on page 653</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

clear ldp statistics     user@host> clear ldp statistics



## show ldp database

<b>Syntax</b>	<pre>show ldp database &lt;brief   detail   extensive&gt; &lt;inet   l2circuit&gt; &lt;instance <i>instance-name</i>&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;session <i>session</i>&gt;</pre>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display entries in the Label Distribution Protocol (LDP) database.
<b>Options</b>	<p>none—Display standard information about all entries in the LDP database for all routing instances.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p>inet   l2circuit—(Optional) Display only IPv4 or Layer 2 circuit bindings.</p> <p>instance <i>instance-name</i>—(Optional) Display routing instance information for the specified instance only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>session <i>session</i>—(Optional) Display database for the specified session only. <i>session</i> is the destination address of the LDP session.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show ldp database on page 656</a> <a href="#">show ldp database l2circuit detail on page 656</a> <a href="#">show ldp database session on page 657</a>
<b>Output Fields</b>	<p><a href="#">Table 158 on page 654</a> describes the output fields for the <b>show ldp database</b> command. Output fields are listed in the approximate order in which they appear.</p>

**Table 158: show ldp database Output Fields**

Field Name	Field Description	Level of Output
Input label database	Label received from the other router.	All levels
Output label database	Label advertised to the other router.	All levels
<i>session-identifier</i>	Session identifier, which includes the local and remote label space identifiers.	All levels
Label	Label binding to a route prefix.	All levels



Table 158: show ldp database Output Fields (*continued*)

Field Name	Field Description	Level of Output
Prefix	<p>Route prefix. It can be either the IP prefix or the Layer 2 encapsulation type in the format <b>L2CKT control word status encapsulation-type vc-number</b>, for example, <b>L2CKT CtlfWord FRAME RELAY VC 2</b></p> <ul style="list-style-type: none"> <li>• <b>control-word-status</b>—Displays whether the use of the control word has been negotiated for this virtual circuit: <ul style="list-style-type: none"> <li>• NoCtrlWord</li> <li>• CtrlWord</li> </ul> </li> <li>• <b>encapsulation-type</b>—Encapsulation type: <ul style="list-style-type: none"> <li>• FRAME RELAY</li> <li>• ATM AAL5</li> <li>• ATM CELL</li> <li>• VLAN</li> <li>• ETHERNET</li> <li>• CISCO_HDLC</li> <li>• PPP</li> </ul> </li> <li>• <b>VC number</b>—Virtual circuit number. It can have any numeric value.</li> <li>• <b>(Stale)</b>—When you display the LDP database for the neighbor of a restarting router, the bindings learned from the restarting neighbor are displayed as (Stale). Stale bindings are deleted if they are not refreshed within the recovery time.</li> </ul>	All levels
MTU	MTU of the Layer 2 circuit. MTU is displayed for all encapsulation types except ATM cell encapsulations.	detail
VCCV Control Channel types	<p>Virtual Circuit Connection Verification (VCCV) control channel types</p> <ul style="list-style-type: none"> <li>• MPLS router alert label</li> <li>• MPLS PW label with TTL=1</li> </ul>	extensive
VCCV Control Verification types	The only valid VCCV control verification type is <b>LSP ping</b> .	extensive
TDM payload size	Size of the Time Division Multiplex (TDM) payload.	All levels
TDM bitrate	Bit rate for the TDM traffic.	All levels
Requested VLAN ID	(VLANs) VLAN identifier of the Layer 2 circuit.	detail
Cell bundle size	(ATM cell encapsulations) Maximum number of cells that the Layer 2 circuit can receive in a packet.	detail



Table 158: show ldp database Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>State</b>	State of the label binding: <ul style="list-style-type: none"> <li><b>Active</b>—Label binding has been installed and distributed appropriately. A label binding is almost always in this state.</li> <li><b>New</b>—New label that has not yet been distributed. <ul style="list-style-type: none"> <li><b>MapRcv</b>—Waiting to receive a label mapping message.</li> <li><b>MapSend</b>—Waiting to send a label mapping message.</li> <li><b>RelRcv</b>—Waiting to receive a label release message.</li> <li><b>RelRsnd</b>—Waiting to receive a label release message before resending label mapping message.</li> <li><b>RelSend</b>—Waiting to send a label release message.</li> <li><b>ReqSend</b>—Waiting to send a label request message.</li> <li><b>W/dSend</b>—Waiting to send a label withdrawal message.</li> </ul> </li> </ul>	<b>detail</b>
<b>Age</b>	Time elapsed since the binding was created.	<b>detail</b>

### Sample Output

```

show ldp database user@host> show ldp database
Input label database, 10.255.245.222:0--10.255.245.221:0
Label Prefix
3 10.255.245.221/32 (Stale)
100018 10.255.245.222/32
100011 L2CKT FRAME RELAY VC 11
Output label database, 10.255.245.222:0--10.255.245.221:0
Label Prefix
3 10.255.245.221/32
100018 10.255.245.222/32
100011 L2CKT FRAME RELAY VC 1

```

```

show ldp database user@host> show ldp database l2circuit detail
l2circuit detail Input label database, 10.255.245.44:0--10.255.245.45:0
Label Prefix
100176 L2CKT CtrlWord ATM CELL (VC Mode) VC 100
Cell bundle size: 80
State: Active
Age: 9:48
100256 L2CKT CtrlWord FRAME RELAY VC 101
MTU: 4470
State: Active
Age: 9:48

Output label database, 10.255.245.44:0--10.255.245.45:0
Label Prefix
100048 L2CKT CtrlWord ATM CELL (VC Mode) VC 100
Cell bundle size: 80
State: Active
Age: 9:48
100112 L2CKT CtrlWord FRAME RELAY VC 101
MTU: 4470

```



State: Active  
Age: 9:48

```
show ldp database session user@host> show ldp database session 10.1.1.195
Input label database, 10.0.0.194:0--10.1.1.195:0
Label Prefix
100002 10.255.245.197/32
100003 10.255.245.196/32
100004 10.0.0.194/32
3 10.1.1.195/32
100000 L2CKT NoCtrlWord FRAME RELAY VC 1
100001 L2CKT CtrlWord FRAME RELAY VC 2
Output label database, 10.0.0.194:0--10.1.1.195:0
Label Prefix
100003 10.255.245.197/32
100004 10.1.1.195/32
100002 10.255.245.196/32
3 10.0.0.194/32
100000 L2CKT CtrlWord FRAME RELAY VC 2
100001 L2CKT NoCtrlWord FRAME RELAY VC 1
```



## show ldp fec-filters

<b>Syntax</b>	show ldp fec-filters <fec> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display information about configured Label Distribution Protocol (LDP) forwarding equivalence class (FEC) filters.
<b>Options</b>	<p>fec—(Optional) Display FEC filter information for the specified FEC.</p> <p>instance <i>instance-name</i>—(Optional) Display FEC filter information for the specified instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show ldp fec-filters on page 658</a>
<b>Output Fields</b>	<a href="#">Table 159 on page 658</a> lists the output fields for the <b>show ldp fec-filters</b> command. Output fields are listed in the approximate order in which they appear.

**Table 159: show ldp fec-filters Output Fields**

Field Name	Field Description
Ingress	Names of the FEC filters on the ingress routers.
Transit	Names of the FEC filters on the transit routers.

## Sample Output

```

show ldp fec-filters user@host> show ldp fec-filters 10/8
10.22.1.2/32
  Ingress: f1-10.22.1.2/32 (index: 3)
  Transit: (null) (index: 0)

```



## show ldp interface

<b>Syntax</b>	show ldp interface <brief   detail   extensive> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display the status of Label Distribution Protocol (LDP)-enabled interfaces.
<b>Options</b>	<p>none—Display standard status information about all LDP-enabled interface for all routing instances.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p>instance <i>instance-name</i>—(Optional) Display information for the specified routing instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show ldp interface extensive on page 660</a>
<b>Output Fields</b>	<a href="#">Table 160 on page 659</a> describes the output fields for the <b>show ldp interface</b> command. Output fields are listed in the approximate order in which they appear.

**Table 160: show ldp interface Output Fields**

Field Name	Field Description	Level of Output
Interface	Interface name.	All levels
Label space ID	Label space identifier that the router is advertising on the interface.	All levels
Nbr count	Number of neighbors on the interface.	All levels
Next hello	How long until the next hello packet is sent on this interface, in seconds.	All levels
Hello interval	One-third of the negotiated hold time (in seconds). If the user-configured value for the hello interval is smaller than the computed value, the user-configured value is used.	detail extensive
Hold time	Configured hold time, in seconds.	detail extensive
Transport address	Address to which the neighbor wants the local route to establish the LDP session.	extensive



Table 160: show ldp interface Output Fields (*continued*)

Field Name	Field Description	Level of Output
Local hello interval	Locally configured hello interval.	extensive

### Sample Output

```
show ldp interface extensive user@host> show ldp interface extensive
Interface          Label space ID      Nbr count  Next hello
fe-0/0/3.0         10.255.245.6:0      2          0
Hello interval: 1, Hold time: 15, Transport address: 10.255.245.6
Local hello interval: 2, Index: 69
```



## show ldp neighbor

<b>Syntax</b>	show ldp neighbor <brief   detail   extensive> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )> <neighbor-address>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. <b>neighbor-address</b> option added in Junos OS Release 8.5.
<b>Description</b>	Display Label Distribution Protocol (LDP) neighbor information.
<b>Options</b>	<p>none—Display standard information about LDP neighbors for all routing instances.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p>instance <i>instance-name</i>—(Optional) Display information for the specified routing instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>neighbor-address</i>—(Optional) Display information about the specified LDP neighbor.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear ldp neighbor on page 651</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show ldp neighbor extensive on page 662</a>
<b>Output Fields</b>	<a href="#">Table 161 on page 661</a> describes the output fields for the <b>show ldp neighbor</b> command. Output fields are listed in the approximate order in which they appear.

**Table 161: show ldp neighbor Output Fields**

Field Name	Field Description	Level of Output
Address	IP address of the neighbor.	All levels
Interface	Interface over which the neighbor was discovered.	All levels
Label space ID	Label space identifier advertised by the neighbor.	All levels
Hold time	Remaining hold time before the neighbor expires, in seconds.	All levels
Transport address	Address to which the neighbor wants the local route to establish the LDP session.	<b>detail</b>
Configuration sequence	Counter that increments whenever the neighbor changes its configuration.	<b>detail</b>



Table 161: show ldp neighbor Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Up for</b>	Length of time the LDP neighbor has been in operation.	<b>detail extensive</b>
<b>Reference count</b>	Reference count for the LDP neighbor.	<b>extensive</b>
<b>Hold time</b>	Displays the neighbor's hold time. The hold time is the proposed hold times for the local and peer routers.	<b>extensive</b>
<b>Proposed local/peer</b>	Hold time value proposed by the local router and the peer router.	<b>extensive</b>

### Sample Output

```

show ldp neighbor extensive user@host> show ldp neighbor extensive
Address          Interface      Label space ID      Hold Time
192.168.37.23    so-1/0/0.0    10.255.245.5:0      44
Transport address: 10.255.245.5, Configuration sequence: 6
Up for 00:03:37
Reference count: 1
Hold time: 45, Proposed local/peer: 15/45

```



## show ldp path

<b>Syntax</b>	<pre>show ldp path &lt;brief   detail   extensive&gt; &lt;destination&gt; &lt;instance instance-name&gt; &lt;logical-system (all   logical-system-name)&gt;</pre>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display Label Distribution Protocol (LDP) label-switched paths (LSPs).
<b>Options</b>	<p>none—Display standard information about all LDP LSPs for all routing instances.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p>destination—(Optional) Restrict the output to entries that match the specified destination prefix.</p> <p>instance <i>instance-name</i>—(Optional) Display information for the specified routing instance only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show ldp path extensive on page 664</a>
<b>Output Fields</b>	Table 162 on page 663 describes the output fields for the <b>show ldp path</b> command. Output fields are listed in the approximate order in which they appear.

**Table 162: show ldp path Output Fields**

Field Name	Field Description
<b>Output Session (label)</b>	Session ID and labels that this system has sent using LDP. These correspond to MPLS packets received.
<b>Input Session (label)</b>	Session ID and labels that this system has received using LDP. These correspond to MPLS packets transmitted.
<b>route</b>	MPLS route.
<b>Attached route</b>	Route corresponding to the LSP.
<b>Ingress route</b>	The router acts as the ingress for the LSP.
<b>Reference count</b>	Reference count for the LDP neighbor.
<b>Transit route</b>	Names of the forwarding equivalence class (FEC) filters on the transit routers.



Table 162: show ldp path Output Fields (*continued*)

Field Name	Field Description
Global label	MPLS label that is used globally.

## Sample Output

```
show ldp path extensive user@host> show ldp path extensive
extensive               Output Session (label)      Input Session (label)
10.255.14.220:0(3)      ( )
    Attached route: 10.255.14.221/32
    Reference count: 3, Global label: 3
10.255.14.220:0(100000) 10.255.14.220:0(3)
    Attached route: 10.255.14.220/32, Ingress route
    Reference count: 2, Transit route, Global label: 100000
10.255.14.220:0(100001) 10.255.14.220:0(100001)
    Attached route: 10.255.14.214/32, Ingress route
    Reference count: 2, Transit route, Global label: 100001
```



## show ldp route

<b>Syntax</b>	show ldp route <brief   detail   extensive> <destination> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display the entries in the Label Distribution Protocol (LDP) internal topology table. The internal topology table contains routes from <b>inet.0</b> and <b>inet.3</b> and is used when binding a label to a forwarding equivalence class (FEC).
<b>Options</b>	<p>none—Display standard information about all entries in the LDP internal topology table for all routing instances.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p><i>destination</i>—(Optional) Restrict the output to entries that are longer than the specified destination prefix and prefix length.</p> <p>instance <i>instance-name</i>—(Optional) Display entries for the specified routing instance only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show ldp route detail on page 666</a>
<b>Output Fields</b>	<a href="#">Table 163 on page 665</a> describes the output fields for the <b>show ldp route</b> command. Output fields are listed in the approximate order in which they appear.

**Table 163: show ldp route Output Fields**

Field Name	Field Description
<b>Destination</b>	Destination prefix.
<b>Next-hop intf</b>	Interface that is the next hop to the destination prefix.
<b>Next-hop address</b>	IP address of the next hop.
<b>Bound to outgoing label</b>	The route has been bound to LSPs with the label being distributed for that LSP.



## Sample Output

```
show ldp route detail  user@host> show ldp route detail
Destination            Next-hop intf  Next-hop address
10.10.255.1/32         so-2/3/0
*10.10.255.3/32        so-1/0/0       10.10.1.3
    Bound to outgoing label 100001
*10.10.255.1/32        so-2/3/0
10.10.255.4/32         so-0/0/0       192.168.1.213
*10.10.255.4/32        so-0/0/0       192.168.1.213
    Bound to outgoing label 100002
10.10.255.6/32         so-0/0/0       192.168.1.215
*10.10.255.6/32        so-0/0/0       192.168.1.215
    Bound to outgoing label 100000
*10.10.255.2/32
    Bound to outgoing label 3
0.0.0.0/0              so-0/0/0       192.168.1.254
10.10.255.3/32         so-1/0/0       10.10.1.3
```



## show ldp session

<b>Syntax</b>	show ldp session <brief   detail   extensive> <destination> <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display information about Label Distribution Protocol (LDP) sessions.
<b>Options</b>	<p>none—Display standard information about all LDP sessions for all routing instances.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p>destination—(Optional) Restrict LDP session display to the specified address.</p> <p>instance <i>instance-name</i>—(Optional) Display routing instance information for the specified instance. If <b><i>instance-name</i></b> is omitted, information is displayed for the master instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear ldp session on page 652</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show ldp session brief on page 670</a> <a href="#">show ldp session detail on page 670</a> <a href="#">show ldp session extensive on page 670</a>
<b>Output Fields</b>	Table 164 on page 667 describes the output fields for the <b>show ldp session</b> command. Output fields are listed in the approximate order in which they appear.

Table 164: show ldp session Output Fields

Field Name	Field Description	Level of Output
Address	Transport address of the session.	to be provided
State	State of the session: <b>Nonexistent</b> , <b>Connecting</b> , <b>Initialized</b> , <b>OpenRec</b> , <b>OpenSent</b> , <b>Operational</b> , or <b>Closing</b> . The states correspond to the state diagram specified in Internet Draft LDP Specification draft-ietf-mpls-rfc3036bis-01.txt.	to be provided
Connection	TCP connection state: <b>Closed</b> , <b>Opening</b> , or <b>Open</b> .	to be provided
Hold time	Time remaining until the session will be closed, in seconds.	to be provided
Session ID	LDP identifiers of the peers of this session.	to be provided



Table 164: show ldp session Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Next keepalive</b>	Time until next keepalive is sent, in seconds.	detail extensive
<b>Active</b>	Whether the local router is playing the active role in the session and during session establishment.	detail extensive
<b>Maximum PDU</b>	Maximum PDU size for the session.	detail extensive
<b>Hold time</b>	Time remaining until the session will be closed, in seconds. This value corresponds to the one configured using the <b>keepalive-timeout</b> statement configured at the <b>[edit protocols ldp]</b> hierarchy level.	detail extensive
<b>Neighbor count</b>	Number of neighbors that are contributing to the session.	detail extensive
<b>Keepalive interval</b>	Keepalive interval, in seconds.	detail extensive
<b>Connect retry interval</b>	TCP connection retry interval, in seconds.	detail extensive
<b>Local address</b>	Local transport address.	detail extensive
<b>Remote address</b>	Remote transport address.	detail extensive
<b>Up for</b>	Time that this session has been up.	detail extensive
<b>Last down</b>	Time since the session last went down.	detail extensive
<b>Reason</b>	Reason the session went down: <ul style="list-style-type: none"> <li>• Aborted graceful restart</li> <li>• Authentication key was changed</li> <li>• Bad type length value (TLV)</li> <li>• Bad protocol data unit (PDU) packets</li> <li>• Command-line interface (CLI) command</li> <li>• Connect time expired</li> <li>• Connection error</li> <li>• Connection reset</li> <li>• Error during initialization</li> <li>• Hold time expired</li> <li>• No adjacency or all adjacencies down</li> <li>• Notification received</li> <li>• Received notification from peer</li> <li>• Unexpected End of File (EOF)</li> <li>• Unknown reason</li> </ul>	detail extensive
<b>Number of session flaps</b>	Number of times the session changes from up to down.	detail extensive



Table 164: show ldp session Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Restarting</b>	LDP is in the process of gracefully restarting.	<b>detail extensive</b>
<b>Capabilities advertised</b>	LDP capabilities advertised to a peer.	<b>detail extensive</b>
<b>Capabilities received</b>	LDP capabilities received from a peer.	<b>detail extensive</b>
<b>Protection</b>	Information about the status of MPLS LDP session protection.	<b>detail extensive</b>
<b>restart complete in nnn msec</b>	Amount of time (in milliseconds) remaining until graceful restart is declared complete.	<b>detail extensive</b>
<b>Local</b>	<p>Information about graceful restart for the local end of an LDP session. Graceful restart and helper mode are independent.</p> <ul style="list-style-type: none"> <li>• <b>Restart</b>—Status of the graceful restart feature at the local end of the LDP session: <b>enabled</b> or <b>disabled</b>.</li> <li>• <b>Helper mode</b>—Status of the helper mode feature at the local end of the LDP session: <b>enabled</b> or <b>disabled</b>. When this feature is enabled, the local end of the LDP session can help the restarting router with its LDP restart procedures.</li> <li>• <b>Reconnect time</b>—Amount of time to wait from when a restart is initiated until the router can exchange LDP messages with its neighbors. The default is <b>60000 msec</b> and is not configurable. (<b>Reconnect timeout</b> refers to "FT Reconnect timeout" in draft-ietf-mpls-ldp-restart-06, <i>Internet Draft Graceful Restart Mechanism for LDP</i>.)</li> </ul>	<b>detail extensive</b>
<b>Remote</b>	<p>Information about graceful restart at the remote end of an LDP session. Graceful restart and helper mode are independent.</p> <ul style="list-style-type: none"> <li>• <b>Restart</b>—Status of the graceful restart feature at the remote end of the LDP session: <b>enabled</b> or <b>disabled</b>.</li> <li>• <b>Helper mode</b>—Status of the helper mode feature at the remote end of the LDP session: <b>enabled</b> or <b>disabled</b>. When this feature is enabled, the remote end of the LDP session can help the restarting router with its LDP restart procedures.</li> <li>• <b>Reconnect time</b>—Amount of time in milliseconds from when a restart is initiated until the remote router can exchange LDP messages with its neighbors.</li> </ul>	<b>detail extensive</b>
<b>Local maximum recovery time</b>	Amount of time during which the restarting node attempts to recover its lost states with help from its neighbors (in milliseconds).	<b>detail extensive</b>
<b>Next-hop addresses received</b>	Next-hop addresses received on the session.	<b>detail extensive</b>
<b>Queue depth</b>	Number of messages that are queued for sending to the peers in the group.	<b>extensive</b>



Table 164: show ldp session Output Fields (*continued*)

Field Name	Field Description	Level of Output
Message type	Type of message being sent.	extensive
	<ul style="list-style-type: none"> <li>• <b>Total</b>—Messages sent and received during the lifetime of the session.</li> <li>• <b>Last 5 seconds</b>—Messages sent and received during the current session.</li> </ul>	

## Sample Output

```

show ldp session brief  user@host> show ldp session brief
                        Address      State      Connection  Hold time
                        10.255.72.160 Operational Open         21
                        10.255.72.164 Operational Open         20
                        10.255.72.172 Operational Open         21

show ldp session detail user@host> show ldp session detail
Address: 10.255.72.160, State: Operational, Connection: Open, Hold time: 22
Session ID: 10.255.72.162:0--10.255.72.160:0
Next keepalive in 2 seconds
Active, Maximum PDU: 4096, Hold time: 30, Neighbor count: 1
Neighbor types: discovered
Keepalive interval: 10, Connect retry interval: 1
Local address: 10.255.72.162, Remote address: 10.255.72.160
Up for 21:35:59
Last down 21:36:01 ago; Reason: received notification from peer
Number of session flaps: 7
Capabilities advertised: p2mp
Capabilities received: p2mp
Protection: disabled
Local - Restart: disabled, Helper mode: enabled
Remote - Restart: disabled, Helper mode: enabled
Local maximum neighbor reconnect time: 120000 msec
Local maximum neighbor recovery time: 240000 msec
Nonstop routing state: Not in sync
Next-hop addresses received:
    192.168.8.51
    192.168.8.97

show ldp session      user@host> show ldp session extensive
extensive             Address: 10.255.72.160, State: Operational, Connection: Open, Hold time: 20
                        Session ID: 10.255.72.162:0--10.255.72.160:0
                        Next keepalive in 0 seconds
                        Active, Maximum PDU: 4096, Hold time: 30, Neighbor count: 1
                        Neighbor types: discovered
                        Keepalive interval: 10, Connect retry interval: 1
                        Local address: 10.255.72.162, Remote address: 10.255.72.160
                        Up for 21:54:21
                        Last down 21:54:23 ago; Reason: received notification from peer
                        Number of session flaps: 7
                        Capabilities advertised: p2mp
                        Capabilities received: p2mp
                        Protection: disabled
                        Local - Restart: disabled, Helper mode: enabled
                        Remote - Restart: disabled, Helper mode: enabled
                        Local maximum neighbor reconnect time: 120000 msec
                        Local maximum neighbor recovery time: 240000 msec

```



Nonstop routing state: Not in sync

Next-hop addresses received:

192.168.8.51

192.168.8.97

Queue depth: 0

Message type	Total		Last 5 seconds	
	Sent	Received	Sent	Received
Initialization	18	8	0	0
Keepalive	7890	7893	0	0
Notification	0	10	0	0
Address	8	8	0	0
Address withdraw	0	0	0	0
Label mapping	68	57	0	0
Label request	0	0	0	0
Label withdraw	16	8	0	0
Label release	8	13	0	0
Label abort	0	0	0	0



## show ldp statistics

<b>Syntax</b>	show ldp statistics <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display Label Distribution Protocol (LDP) statistics.
<b>Options</b>	<p>none—Display LDP statistics for all routing instances.</p> <p>instance <i>instance-name</i>—(Optional) Display information for the specified routing instance only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear ldp statistics on page 653</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show ldp statistics on page 673</a>
<b>Output Fields</b>	<a href="#">Table 165 on page 672</a> lists the output fields for the <b>show ldp statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 165: show ldp statistics Output Fields**

Field Name	Field Description
Total Sent, Received	Total number of each message type sent and received.
Last 5 seconds Sent, Received	Number of each message type sent and received in the last 5 seconds.



Table 165: show ldp statistics Output Fields (*continued*)

Field Name	Field Description
Message type	<p>LDP message types:</p> <ul style="list-style-type: none"> <li>• <b>Hello</b>—Messages that enable LDP nodes to discover one another and to detect the failure of a neighbor or of the link to the neighbor.</li> <li>• <b>Initialization</b>—Messages that indicate an LDP session has started.</li> <li>• <b>Keepalive</b>—Messages that ensure that the keepalive timeout is not exceeded.</li> <li>• <b>Notification</b>—Advisory information and signal error information.</li> <li>• <b>Address</b>—Messages with address information.</li> <li>• <b>Address withdrawal</b>—Messages regarding address withdrawal.</li> <li>• <b>Label mapping</b>—Messages with label mapping information.</li> <li>• <b>Label request</b>—Request for a label mapping from a neighboring router.</li> <li>• <b>Label withdrawal</b>—Withdrawal message sent by the downstream LSR to recall a label that it previously mapped. If an LSR that has received a label mapping subsequently determines that it no longer needs that label, it can send a label release message that frees the label for use.</li> <li>• <b>Label release</b>—Message sent by the downstream LSR to recall a label that it previously mapped. If an LSR that has received a label mapping subsequently determines that it no longer needs that label, it can send a label release message that frees the label for use.</li> <li>• <b>Label abort</b>—Messages about label interruptions.</li> <li>• <b>All UDP</b>—All hello messages sent by LSRs to the well-known UDP port, 646.</li> <li>• <b>All TCP</b>—All LDP session messages.</li> </ul>
Event type	LDP events and errors.
Total	Total number of each event or error.
Last 5 seconds	Number of each event or error in the last 5 seconds.

## Sample Output

```

show ldp statistics user@host> show ldp statistics
Message type          Total
                        Sent      Received
Hello                 265        263
Initialization         2          2
Keepalive             112       111
Notification           0          0
Address                2          2
Address withdraw       0          0
Label mapping          7          6
Label request          0          0
Label withdraw         2          0
Label release          0          2
Label abort            0          0
All UDP                265       263
All TCP                123       121

Event type            Total      Last 5 seconds
Sessions opened        2          0
Sessions closed        0          0

```



Topology changes	11	0
No interface	0	0
No session	0	0
No adjacency	0	0
Unknown version	0	0
Malformed PDU	0	0
Malformed message	0	0
Unknown message type	0	0
Inappropriate message	0	0
Malformed TLV	0	0
Bad TLV value	0	0
Missing TLV	0	0
PDU too large	0	0



## show ldp traffic-statistics

<b>Syntax</b>	show ldp traffic-statistics <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )> <p2mp>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. p2mp option added in Junos OS Release 11.2.
<b>Description</b>	Display Label Distribution Protocol (LDP) traffic statistics.
<b>Options</b>	<p>none—Display LDP traffic statistics for all routing instances.</p> <p>instance <i>instance-name</i>—(Optional) Display LDP traffic statistics for the specified routing instance only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>p2mp—(Optional) Display the data traffic statistics for a point-to-multipoint LSP.</p>
<b>Additional Information</b>	To obtain output from this command, you must configure the <b>traffic-statistics</b> statement for the LDP protocol. For more information, see the <i>Junos MPLS Applications Configuration Guide</i> .
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear ldp statistics on page 653</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show ldp traffic-statistics on page 676</a> <a href="#">show ldp traffic-statistics p2mp on page 676</a>
<b>Output Fields</b>	Table 166 on page 675 lists the output fields for the <b>show ldp traffic-statistics</b> command. Output fields are listed in the approximate order in which they appear.

Table 166: show ldp traffic-statistics Output Fields

Field Name	Field Description
Message type	LDP message types.
FEC	Forwarding equivalence class (FEC) for which LDP traffic statistics are collected.
Type	Type of traffic originating from a router, either <b>Ingress</b> (originating from this router) or <b>Transit</b> (forwarded through this router).
Packets	Number of packets passed by the FEC since its LSP came up.
Bytes	Number of bytes of data passed by the FEC since its LSP came up.



Table 166: show ldp traffic-statistics Output Fields (*continued*)

Field Name	Field Description
Shared	Whether a label is shared by prefixes: <b>Yes</b> or <b>No</b> . A <b>Yes</b> value indicates that several prefixes are bound to the same label (for example, when several prefixes are advertised with an egress policy). The LDP traffic statistics for this case apply to all the prefixes and should be treated as such.

### Sample Output

```

show ldp user@host> show ldp traffic-statistics
traffic-statistics
FEC                                Type      Packets      Bytes      Shared
10.35.3.0/30                       Transit    0            0          Yes
                                Ingress    0            0          No
10.35.10.1/32                      Transit    0            0          Yes
                                Ingress    0            0          No
10.255.245.214/32                 Transit    0            0          No
                                Ingress    11           752        No
192.168.37.36/30                  Transit    0            0          Yes
                                Ingress    0            0          No

show ldp user@host> show ldp traffic-statistics p2mp
traffic-statistics p2mp
FEC(root_addr:lsp_id) Nexthop      Packets      Bytes      Shared
10.255.72.160:16777217 192.168.8.81 152056      14597376   No
                                192.168.8.1 152056      14597376   No
                                192.168.8.65 152056      14597376   No

```



## CHAPTER 18

# MPLS Operational Mode Commands

Table 167 on page 677 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot Multiprotocol Label Switching (MPLS). Commands are listed in alphabetical order.

**Table 167: MPLS Operational Mode Commands**

Task	Command
Disconnect and restart dynamic LSPs that originate from this router.	<code>clear mpls lsp</code>
Manually trigger a bandwidth allocation adjustment for active LSP paths.	<code>request mpls lsp adjust-autobandwidth</code>
Display information about configured cross-connects.	<code>show connections</code>
Display peer and traffic engineering link information.	<code>show link-management</code>
Display peer link information.	<code>show link-management peer</code>
Display peer and traffic engineering link information (routing process).	<code>show link-management routing</code>
Display link management statistics.	<code>show link-management statistics</code>
Display traffic engineering link information.	<code>show link-management te-link</code>
Display MPLS administrative groups.	<code>show mpls admin-groups</code>
Display MPLS LSP call admission control (CAC) related information.	<code>show mpls call-admission-control</code>
Display CSPF statistics.	<code>show mpls cspf</code>
Display DiffServ traffic engineering classes.	<code>show mpls diffserv-te</code>
Display the status of interfaces on which MPLS is running.	<code>show mpls interface</code>



Table 167: MPLS Operational Mode Commands (*continued*)

Task	Command
Display configured LSPs on this router, as well as all ingress, transit, and egress LSPs.	<a href="#">show mpls lsp</a>
Display configured named paths that are used in dynamic MPLS.	<a href="#">show mpls path</a>
Display Shared Risk Link Group (SRLG) cost and value configuration information.	<a href="#">show mpls srlg</a>
Display configured static LSPs on this router, as well as all ingress, transit, and egress static LSPs.	<a href="#">show mpls static-lsp</a>
Display entries in the traffic engineering database.	<a href="#">show ted database</a>
Display current traffic engineering database links.	<a href="#">show ted link</a>
Display protocols contributing to the traffic engineering database.	<a href="#">show ted protocol</a>



**NOTE:** For more MPLS-related commands, such as `show route ccc`, `show route protocol`, `show route instance`, and `show route table`, see Protocol-Independent Routing Operational Mode Commands.

For information about how to configure MPLS, see the *Junos MPLS Applications Configuration Guide*.



## clear mpls lsp

<b>Syntax</b>	clear mpls lsp <autobandwidth> <logical-system (all   <i>logical-system-name</i> )> <name <i>name</i> > <optimize   optimize-aggressive> <path <i>regular-expression</i> > <statistics>
<b>Syntax (EX Series Switch)</b>	clear mpls lsp <autobandwidth> <name <i>name</i> > <optimize   optimize-aggressive> <path <i>regular-expression</i> > <statistics>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Release the routes and states associated with MPLS label-switched paths (LSPs), and start new LSPs.



**CAUTION:** This command disconnects existing Resource Reservation Protocol (RSVP) sessions on the ingress routing device. If there is a time lag between the old path being torn down and the new path being set up, this command might impact traffic traveling along the LSPs.

<b>Options</b>	<p>none—Reset and restart all LSPs that originated from this routing device; that is, all LSPs for which this routing device is the ingress routing device. Depending on the number of LSPs involved, it might take a while to restart all the LSPs.</p> <p>autobandwidth—(Optional) Clear LSP autobandwidth counters.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>name <i>name</i>—(Optional) Reset and restart the specified LSP or group of LSPs. You can include wildcard characters in the interface name, as described in the <i>Junos Network Interfaces Configuration Guide</i>.</p> <p>optimize   optimize-aggressive—(Optional) Run nonpreemptive optimization or aggressive optimization computation now.</p> <p>path <i>regular-expression</i>—(Optional) Clear the specific LSP path matching the specified regular expression.</p> <p>statistics—(Optional) Clear LSP statistics.</p>
----------------	---



**Required Privilege Level**    clear

**Related Documentation**

- [show mpls lsp on page 706](#)
- [show rsvp session on page 743](#)

**List of Sample Output**    [clear mpls lsp on page 680](#)

**Output Fields**    When you enter this command, you are provided feedback on the status of your request.

## Sample Output

**clear mpls lsp**    user@host> clear mpls lsp



## request mpls lsp adjust-autobandwidth

<b>Syntax</b>	request mpls lsp adjust-autobandwidth <logical-system (all   <i>logical-system-name</i> )> <name <i>lsp-name</i> >
<b>Syntax (EX Series Switch)</b>	request mpls lsp adjust-autobandwidth <name <i>lsp-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Manually trigger a bandwidth allocation adjustment for active label-switched paths (LSPs).
<b>Options</b>	<p>none—Manually trigger a bandwidth allocation adjustment for all active LSP paths.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>name <i>lsp-name</i>—(Optional) Manually trigger a bandwidth allocation adjustment on the specified LSP only.</p>
<b>Additional Information</b>	<p>For this command to work properly, the following conditions must exist:</p> <ul style="list-style-type: none"> <li>Automatic bandwidth allocation must be enabled on the LSP. The parameters for adjustment interval and maximum average bandwidth are not reset after you issue the <b>request mpls lsp adjust-autobandwidth</b> command.</li> <li>The difference between the adjusted bandwidth and the current LSP path bandwidth must be greater than the threshold limit.</li> </ul>
<b>Required Privilege Level</b>	maintenance
<b>List of Sample Output</b>	<a href="#">request mpls lsp adjust-auto-bandwidth on page 681</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

### Sample Output

```
request mpls lsp user@host> request mpls lsp adjust-auto-bandwidth
adjust-auto-bandwidth
```



## show connections

<b>Syntax</b>	<pre>show connections &lt;brief   extensive&gt; &lt;all   interface-switch   lsp-switch   p2mp-receive-switch   p2mp-transmit-switch     remote-interface-switch&gt; &lt;down   up   up-down&gt; &lt;history&gt; &lt;labels&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;name&gt; &lt;status&gt;</pre>
<b>Syntax (EX Series Switch)</b>	<pre>show connections &lt;brief   extensive&gt; &lt;all   interface-switch   lsp-switch   p2mp-receive-switch   p2mp-transmit-switch     remote-interface-switch&gt; &lt;down   up   up-down&gt; &lt;history&gt; &lt;labels&gt; &lt;name&gt; &lt;status&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.5 for EX Series switches.</p>
<b>Description</b>	Display information about the configured circuit cross-connect (CCC) connections.
<b>Options</b>	<p>none—Display the standard level of output for all configured CCC connections.</p> <p>all—(Optional) Display all connections.</p> <p>brief   extensive—(Optional) Display the specified level of output. Use history to display information about connection history. Use labels to display labels used for transmit and receive LSPs. Use status to display information about the connection and interface status.</p> <p>interface-switch—(Optional) Display interface switch connections only.</p> <p>lsp-switch—(Optional) Display LSP switch connections only.</p> <p>p2mp-receive-switch—(Optional) Display point-to-multipoint LSP to local interfaces switch connections only.</p> <p>p2mp-transmit-switch—(Optional) Display local interface to point-to-multipoint LSP switch connections only.</p> <p>remote-interface-switch—(Optional) Display remote interface switch connections only.</p> <p>down   up   up-down—(Optional) Display nonoperational, operational, or both kinds of connections.</p> <p>history—(Optional) Display information about connection history.</p>



labels—(Optional) Display labels used for transmit and receive.

logical-system (all | *logical-system-name*)—(Optional) Perform this operation on all logical systems or on a particular logical system.

name—(Optional) Display information about the specified connection only.

status—(Optional) Display information about the connection and interface status.

**Required Privilege Level** view

**Output Fields** [Table 168 on page 683](#) describes the output fields for the **show connections** command. Output fields are listed in the approximate order in which they appear.

**Table 168: show connections Output Fields**

Field Name	Field Description
CCC and TCC connections [Link Monitoring On   Off]	Whether link monitoring is enabled: <b>On</b> or <b>Off</b> .
Legend for Status (St)	Connection or circuit status. See the output's legend for an explanation of the status field values.
Legend for connection types	Type of connection: <ul style="list-style-type: none"> <li>• <b>if-sw</b>—Layer 2 switching cross-connect.</li> <li>• <b>rmt-if</b>—Remote interface switch. While graceful restart is in progress, <b>rmt-if</b> will display a state (<b>St</b>) of <b>Restart</b>.</li> <li>• <b>lsp-sw</b>—LSP stitching cross-connect. While graceful restart is in progress, <b>lsp-sw</b> will display a state (<b>St</b>) of <b>Restart</b>.</li> </ul>
Legend for circuit types	Type of circuits: <ul style="list-style-type: none"> <li>• <b>intf</b>—Interface circuit.</li> <li>• <b>tlsp</b>—Transmit LSP circuit.</li> <li>• <b>rlsp</b>—Receive LSP circuit.</li> </ul>
Connection/Circuit	Name of the configured CCC connection.
Type	Type of connection.
St	State of the connection.
Time last up	Time that the connection or circuit last transitioned to the <b>Up</b> (operational) state.
# Up trans	Number of times that the connection or circuit has transitioned to the <b>Up</b> (operational) state.



## Sample Output

```

show connections user@switch> show connections
CCC and TCC connections [Link Monitoring On]
Legend for status (St)
UN -- uninitialized
NP -- not present
WE -- wrong encapsulation
DS -- disabled
Dn -- down
-> -- only outbound conn is up
<- -- only inbound conn is up
Up -- operational
RmtDn -- remote CCC down
Restart -- restarting

Legend for connection types
if-sw: interface switching
rmt-if: remote interface switching
lsp-sw: LSP switching

Legend for circuit types
intf -- interface
tlsp -- transmit LSP
rlsp -- receive LSP

CCC Graceful restart : Restarting

Connection/Circuit      Type  St      Time last up    # Up trans
IFSW-ed                 if-sw Up      Aug 5 15:39:15    1
  so-1/0/2.0             intf Up
  t1-0/1/2.0             intf Up
SW-db                   rmt-if Restart
  so-1/0/3.0             intf Up
  pro4-ca                tlsp Dn
  pro4-ac                rlsp NP

```



## show link-management

<b>Syntax</b>	show link-management
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display Multiprotocol Label Switching (MPLS) peer and traffic engineering link information.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show link-management peer on page 689</a></li> <li>• <a href="#">show link-management routing on page 691</a></li> <li>• <a href="#">show link-management statistics on page 694</a></li> <li>• <a href="#">show link-management te-link on page 696</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show link-management on page 688</a>
<b>Output Fields</b>	<a href="#">Table 169 on page 685</a> describes the output fields for the <b>show link-management</b> command. Output fields are listed in the approximate order in which they appear.

**Table 169: show link-management Output Fields**

Field Name	Field Description
Peer Name	Name of the peer.
System identifier	Internal identifier for the peer. The range of values is 0 through 64,000.
State	State of the peer: <b>Up</b> or <b>Down</b> .
Control address	Address to which a control channel is established.
CC local ID	Identifier assigned to the control channel by the local peer. The range of values is 1 through 4,294,967,296.
CC remote ID	Identifier assigned to the control channel by the remote peer. The range of values is 1 through 4,294,967,296.
State	State of the control channel: <b>Up</b> or <b>Down</b> .
TxSeqNum	Sequence number of the hello message being sent to the peer. The range of values is 1 through 4,294,967,295.
RcvSeqNum	Sequence number of the last hello message received from the peer. The range of values is 0 through 4,294,967,295.



Table 169: show link-management Output Fields (*continued*)

Field Name	Field Description
<b>Flags</b>	Code that provides information about the control channel. Currently supports only code value <b>R</b> , which indicates that the control channel is restarting after a failure in the control plane, as when the Link Management Protocol (LMP) process starts or restarts.
<b>TE links</b>	Traffic-engineered links that are managed by their peer.
<b>TE link name</b>	Name of the traffic-engineered link.
<b>State</b>	State of the traffic-engineered link: <b>Up</b> , <b>Down</b> , or <b>Init</b> .
<b>Local identifier</b>	Identifier of the local side of the link.
<b>Remote identifier</b>	Identifier of the remote side of the link.
<b>Local address</b>	Address of the local side of the link.
<b>Remote address</b>	Address of the remote side of the link.
<b>Encoding</b>	Physical layer media type determined by the interfaces contained in the traffic-engineered link. Typical values include <b>SDH/SONET</b> , <b>Ethernet</b> , <b>Packet</b> , and <b>PDH</b> .
<b>Switching</b>	Type of switching that can be performed on the traffic-engineered link. Supported values are <b>PSC-1</b> and <b>Packet</b> .
<b>Minimum bandwidth</b>	Smallest single allocation of bandwidth possible on the traffic-engineered link. This number is equal to the smallest bandwidth interface that is a member of the traffic-engineered link (in bps).
<b>Maximum bandwidth</b>	Largest single allocation of bandwidth possible on the traffic-engineered link. This number is equal to the largest bandwidth interface that is a member of the link (in bps).
<b>Total bandwidth</b>	Sum of the bandwidth, in bits per second (bps) and megabits per second (Mbps), of all interfaces that are members of the link.
<b>Available bandwidth</b>	Sum of the bandwidths of all interfaces that are members of the link and that are not yet allocated (in bps).
<b>Name</b>	Name of the interface.
<b>State</b>	State of the interface: <b>Up</b> or <b>Down</b> .
<b>Local ID</b>	Identifier of the local side of the interface.
<b>Remote ID</b>	Identifier of the remote side of the interface.
<b>Bandwidth</b>	Bandwidth, in bps or Mbps, of the member interface.
<b>Used</b>	Whether the resource is allocated to an LSP: <b>Yes</b> or <b>No</b> .



Table 169: show link-management Output Fields (*continued*)

Field Name	Field Description
<b>LSP-name</b>	LSP name.



## Sample Output

```
show link-management user@host> show link-management
Peer name: PEER-A, System identifier: 11973
State: Up, Control address: 10.255.245.4
  CC local ID CC remote ID State      TxSeqNum  RcvSeqNum  Flags
    24547      24547 Up          1027      1026
TE links:
  pro4-ba

TE link name: pro4-ba, State: Init
Local identifier: 2662, Remote identifier: 0, Encoding: SDH/SONET, Switching:
PSC-1,
Minimum bandwidth: 155.52Mbps, Maximum bandwidth: 155.52Mbps, Total bandwidth:
155.52Mbps,
Available bandwidth: 155.52Mbps
  Name      State Local ID Remote ID      Bandwidth Used  LSP-name
  so-1/0/2   Up      21271      0      155.52Mbps     No
```



## show link-management peer

<b>Syntax</b>	show link-management peer <name <i>peer-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display Multiprotocol Label Switching (MPLS) peer link information.
<b>Options</b>	none—Display all peer link information.  name <i>peer-name</i> —(Optional) Display information for the specified peer only.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show link-management on page 685</a></li> <li>• <a href="#">show link-management routing on page 691</a></li> <li>• <a href="#">show link-management statistics on page 694</a></li> <li>• <a href="#">show link-management te-link on page 696</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show link-management peer on page 690</a>
<b>Output Fields</b>	Table 170 on page 689 describes the output fields for the <b>show link-management peer</b> command. Output fields are listed in the approximate order in which they appear.

Table 170: show link-management peer Output Fields

Field Name	Field Description
Peer Name	Name of the peer.
System identifier	Internal identifier for the peer. The range of values is 0 through 64,000.
State	State of the peer: Up or Down.
Control address	Address to which a control channel is established.
Hello interval	How often the routing device sends Link Management Protocol (LMP) hello packets.
Hello dead interval	How long LMP waits before declaring the control channel to be dead. This is an interval during which the routing device receives no LMP hello packets from the neighbor on a control that is active or up.
CC local ID	Identifier assigned to the control channel by the local peer. The range of values is 1 through 4,294,967,296.
CC remote ID	Identifier assigned to the control channel by the remote peer. The range of values is 1 through 4,294,967,296.



Table 170: show link-management peer Output Fields (*continued*)

Field Name	Field Description
<b>State</b>	State of the control channel: <b>Up</b> or <b>Down</b> .
<b>TxSeqNum</b>	Sequence number of the hello message being sent to the peer. The range of values is <b>1</b> through <b>4,294,967,295</b> .
<b>RcvSeqNum</b>	Sequence number of the last hello message received from the peer. The range of values is <b>0</b> through <b>4,294,967,295</b> .
<b>Flags</b>	Code that provides information about the control channel. Currently supports only code value <b>R</b> , which indicates that the control channel is restarting after a failure in the control plane, as when the Link Management Protocol (LMP) process starts or restarts.
<b>TE links</b>	Traffic-engineered links that are managed by their peer.

### Sample Output

```

show user@host> show link-management peer
link-management peer Peer name: sonet, System identifier: 41448
State: Up, Control address: 70.70.70.70
Hello interval: 10000, Hello dead interval: 30000
  CC local ID CC remote ID State      TxSeqNum  RcvSeqNum  Flags
    3265          0 ConfSnd         1          0 R
TE links:
to-sonet

```



## show link-management routing

<b>Syntax</b>	show link-management routing <peer <name <i>name</i> >   te-link <name <i>name</i> >> <resource <name <i>name</i> >>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display Multiprotocol Label Switching (MPLS) peer or traffic engineering link information from the routing process.
<b>Options</b>	<p>none—Display all peer and traffic-engineered link information.</p> <p>peer &lt;name <i>name</i>&gt;—(Optional) Display information for all peers or for the specified peer only.</p> <p>resource &lt;name <i>name</i>&gt;—(Optional) Display information for all resources or for the specified resource only.</p> <p>te-link &lt;name <i>name</i>&gt;—(Optional) Display information for all traffic-engineered forwarding paths or for the specified path only.</p>
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show link-management on page 685</a></li> <li>• <a href="#">show link-management peer on page 689</a></li> <li>• <a href="#">show link-management statistics on page 694</a></li> <li>• <a href="#">show link-management te-link on page 696</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show link-management routing on page 693</a>
<b>Output Fields</b>	Table 171 on page 691 describes the output fields for the <b>show link-management routing</b> command. Output fields are listed in the approximate order in which they appear.

**Table 171: show link-management routing Output Fields**

Field Name	Field Description
Peer Name	Name of the peer.
System identifier	Internal identifier for the peer. The range of values is 0 through 64,000.
State	State of the peer: Up or Down.
Control address	Address to which a control channel is established.
Control channel	Interface over which control packets are sent.



Table 171: show link-management routing Output Fields (*continued*)

Field Name	Field Description
<b>State</b>	State of the control channel.
<b>TE link name</b>	Traffic-engineered link name.
<b>State</b>	State of the traffic-engineered link: <b>Up</b> or <b>Down</b> .
<b>Local identifier</b>	Identifier of the local side of the link.
<b>Remote identifier</b>	Identifier of the remote side of the link.
<b>Local address</b>	Address of the local side of the link.
<b>Remote address</b>	Address of the remote side of the link.
<b>Encoding</b>	Physical layer media type determined by the interfaces contained in the traffic-engineered link. Typical values include <b>SDH/SONET</b> , <b>Ethernet</b> , and <b>Packet</b> .
<b>Minimum bandwidth</b>	Smallest single allocation of bandwidth, in bits per second (bps) or megabits per second (Mbps), possible on the traffic-engineered link. This number is equal to the smallest bandwidth interface that is a member of the traffic-engineered link.
<b>Maximum bandwidth</b>	Largest single allocation of bandwidth, in bps or Mbps, possible on the traffic-engineered link. This number is equal to the largest bandwidth interface that is a member of the link (in bps).
<b>Total bandwidth</b>	Sum of the bandwidth, in bps or Mbps, of all interfaces that are members of the link.
<b>Available bandwidth</b>	Sum of the bandwidth, in bps or Mbps, of all interfaces that are members of the link and that are not yet allocated.
<b>Resource</b>	Forwarding adjacency LSP information.
<b>Type</b>	Type of resource. The type is always a forwarding adjacency LSP.
<b>State</b>	State of the LSP: <b>Up</b> or <b>Down</b> .
<b>System Identifier</b>	Internal identifier for the peer. The range of values is <b>0</b> through <b>64,000</b> .
<b>Total bandwidth</b>	Bandwidth resource, in bps or Mbps, on the TE-link learned from the routing process.
<b>Traffic parameters</b>	<ul style="list-style-type: none"> <li>• <b>Encoding</b>—Physical layer media type determined by the interfaces contained in the traffic-engineered link. Typical values include <b>SDH/SONET</b>, <b>Ethernet</b>, and <b>Packet</b>.</li> <li>• <b>Switching</b>—Type of switching that can be performed on the traffic-engineered link: <b>PSC-1</b> and <b>Packet</b>.</li> <li>• <b>Granularity</b>—Layer 2 data for switching Layer 2 LSPs for this resource. Not supported. This value is always <b>unknown</b>.</li> </ul>



## Sample Output

```

user@host> show link-management routing
link-management routing
Peer name: __rpd:fe-0/1/0.0, System identifier: 2147483649
State: Up, Control address: (null)
Control-channel          State
fe-0/1/0.0               Active

Peer name: __rpd:fe-0/1/2.0, System identifier: 2147483650
State: Up, Control address: (null)
Control-channel          State
fe-0/1/2.0               Active

Peer name: __rpd:so-0/2/0.0, System identifier: 2147483651
State: Down, Control address: (null)
Control-channel          State
so-0/2/0.0               State

Peer name: __rpd:so-0/2/1.0, System identifier: 2147483652
State: Down, Control address: (null)
Control-channel          State
so-0/2/1.0               State

...

TE link name: __rpd:fe-0/1/0.0, State: Up
Local identifier: 2147483649, Remote identifier: 0,
Local address: 192.168.37.66, Remote address: 192.168.37.66,
Encoding: Ethernet, Minimum bandwidth: 0bps, Maximum bandwidth: 100Mbps,
Total bandwidth: 100Mbps, Available bandwidth: 100Mbps

TE link name: __rpd:fe-0/1/2.0, State: Up
Local identifier: 2147483650, Remote identifier: 0,
Local address: 192.168.37.73, Remote address: 192.168.37.73,
Encoding: Ethernet, Minimum bandwidth: 0bps, Maximum bandwidth: 100Mbps,
Total bandwidth: 100Mbps, Available bandwidth: 100Mbps

TE link name: __rpd:so-0/2/0.0, State: Down
Local identifier: 2147483651, Remote identifier: 0,
Local address: 192.168.37.82, Remote address: 192.168.37.95,
Encoding: Ethernet, Minimum bandwidth: 0bps, Maximum bandwidth: 155.52Mbps,
Total bandwidth: 155.52Mbps, Available bandwidth: 155.52Mbps

...

Resource: falsp-bd, Type: LSP, State: Dn System identifier: 2147483652,
Total bandwidth: 0bps, Traffic parameters: Encoding: Packet, Switching: Packet,
Granularity: Unknown

Resource: falsp-be, Type: LSP, State: Up System identifier: 2147483654,
Total bandwidth: bw[1]=10Mbps, Traffic parameters: Encoding: Packet,
Switching: Packet, Granularity: Unknown

```



## show link-management statistics

<b>Syntax</b>	show link-management statistics <peer <name <i>name</i> >>
<b>Release Information</b>	Command introduced in Junos OS Release 8.0. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display statistical information for Link Management Protocol (LMP) packets.
<b>Options</b>	none—Display information for all peers.  peer <name <i>name</i> >—(Optional) Display information for all peers or for the specified peer only.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show link-management on page 685</a></li> <li>• <a href="#">show link-management peer on page 689</a></li> <li>• <a href="#">show link-management routing on page 691</a></li> <li>• <a href="#">show link-management te-link on page 696</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show link-management statistics on page 695</a>
<b>Output Fields</b>	<a href="#">Table 172 on page 694</a> describes the output fields for the <b>show link-management statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 172: show link-management statistics Output Fields**

Field Name	Field Description
Received packets	Number of received packets by message type. If the count for a message type is zero, that message type is not displayed. If the count for all message types is zero, this field is not displayed.
Received bad packets	Number of received bad packets by message type. If the count for a message type is zero, that message type is not displayed. If the count for all message types is zero, this field is not displayed.
Small packets	Number of packets that are too small.
Wrong protocol version	Number of packets specifying the wrong LMP version.
Messages for unknown peer	Number of packets destined for an unknown peer.
Messages for bad state	Number of packets indicating a state that does not match the recipient.
Stale acknowledgments	Number of <b>configAck</b> and <b>LinkSummaryAck</b> packets received that have a stale message ID.



Table 172: show link-management statistics Output Fields (*continued*)

Field Name	Field Description
Stale negative acknowledgments	Number of <b>configNack</b> and <b>LinkSummaryNack</b> packets received that have a stale message ID.
Sent packets	Number of sent packets by message type. If the count for a message type is zero, that message type is not displayed. If the count for all message types is zero, this field is not displayed.
Retransmitted packets	Number of retransmitted packets by message type. If the count for a message type is zero, that message type is not displayed. If the count for all message types is zero, this field is not displayed.
Dropped packets	Number of packets sent, by message type, that have been dropped by the receiver after the LMP retransmission interval has been exceeded. If the count for a message type is zero, that message type is not displayed. If the count for all message types is zero, this field is not displayed.

### Sample Output

```

show link-management statistics user@host> show link-management statistics peer pro4-a
Statistics for peer pro4-a
  Received packets
    Config: 1
    Hello: 2572
  Small packets: 0
  Wrong protocol version: 0
  Messages for unknown peer: 0
  Messages for bad state: 0
  Stale acknowledgments: 0
  Stale negative acknowledgments: 0
  Sent packets
    Config: 2
    ConfigAck: 1
    Hello: 2572
  Retransmitted packets
    Config: 1

```



## show link-management te-link

<b>Syntax</b>	show link-management te-link <brief   detail> <name <i>name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display the resources used to set up Multiprotocol Label Switching (MPLS) traffic-engineered forwarding paths.
<b>Options</b>	none—Display information for all traffic-engineered links.  brief   detail—(Optional) Display the specified level of output.  name <i>name</i> —(Optional) Display information for the specified traffic-engineered link only.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show link-management on page 685</a></li> <li>• <a href="#">show link-management peer on page 689</a></li> <li>• <a href="#">show link-management routing on page 691</a></li> <li>• <a href="#">show link-management statistics on page 694</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show link-management te-link on page 697</a>
<b>Output Fields</b>	Table 173 on page 696 describes the output fields for the <b>show link-management te-link</b> command. Output fields are listed in the approximate order in which they appear.

**Table 173: show link-management te-link Output Fields**

Field Name	Field Description
TE link name	Traffic-engineered link name.
State	State of the traffic-engineered link: <b>Up</b> or <b>Down</b> .
Local identifier	Identifier of the local side of the link.
Remote identifier	Identifier of the remote side of the link.
Local address	Address of the local side of the link.
Remote address	Address of the remote side of the link.
Encoding	Physical layer media type determined by the interfaces contained in the traffic-engineered link. Typical values include <b>SDH/SONET</b> , <b>Ethernet</b> , <b>Packet</b> , and <b>PDH</b> .



Table 173: show link-management te-link Output Fields (*continued*)

Field Name	Field Description
<b>Switching</b>	Type of switching that can be performed on the traffic-engineered link. Supported values are <b>PSC-1</b> and <b>Packet</b> .
<b>Minimum bandwidth</b>	Smallest single allocation of bandwidth, in bits per second (bps) or megabits per second (Mbps), possible on the traffic-engineered link. This number is equal to the smallest bandwidth interface that is a member of the traffic-engineered link.
<b>Maximum bandwidth</b>	Largest single allocation of bandwidth, in bps or Mbps, possible on the traffic-engineered link. This number is equal to the largest bandwidth interface that is a member of the link.
<b>Total bandwidth</b>	Sum of the bandwidth, in bps or Mbps, of all interfaces that are members of the link (in bps).
<b>Available Bandwidth</b>	Sum of the bandwidth, in bps or Mbps, of all interfaces that are members of the link and that are not yet allocated.
<b>Name</b>	Name of the interface.
<b>State</b>	State of the interface: <b>Up</b> or <b>Down</b> .
<b>Local ID</b>	Identifier of the local side of the interface.
<b>Remote ID</b>	Identifier of the remote side of the interface.
<b>Bandwidth</b>	Bandwidth, in bps or Mbps, of the member interface.
<b>Used</b>	Whether the resource is allocated to an LSP: <b>Yes</b> or <b>No</b> .
<b>LSP-name</b>	LSP name.

## Sample Output

```

show user@host> show link-management te-link
link-management TE link name: FA-bd, State: Up
te-link      Local identifier: 4144, Remote identifier: 0, Local address: 2.2.2.1,
Remote address: 2.2.2.2, Encoding: Ethernet, Switching: Packet,
Minimum bandwidth: 0bps, Maximum bandwidth: 0bps, Total bandwidth: 0bps,
Available bandwidth: 0bps
      Name      State Local ID Remote ID      Bandwidth Used  LSP-name
      falsp-bd   Dn      43077         0          0bps No

TE link name: FA-be, State: Up
Local identifier: 4145, Remote identifier: 0, Local address: 1.1.1.1,
Remote address: 1.1.1.2, Encoding: Ethernet, Switching: Packet,
Minimum bandwidth: 0bps, Maximum bandwidth: 10Mbps, Total bandwidth: 10Mbps,
Available bandwidth: 8Mbps
      Name      State Local ID Remote ID      Bandwidth Used  LSP-name
      falsp-be   Up      43076         0        10Mbps Yes  e2elasp-bf

```



## show mpls admin-groups

<b>Syntax</b>	show mpls admin-groups <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show mpls admin-groups
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display information about configured Multiprotocol Label Switching (MPLS) administrative groups.
<b>Options</b>	none—Display information about the configured MPLS administrative groups.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show mpls admin-groups on page 698</a>
<b>Output Fields</b>	<a href="#">Table 174 on page 698</a> describes the output fields for the <b>show mpls admin-groups</b> command. Output fields are listed in the approximate order in which they appear.

**Table 174: show mpls admin-groups Output Fields**

Field Name	Field Description
Group	Name of the administrative group.
Bit index	Value assigned to the administrative group.

### Sample Output

```

show mpls admin-groups user@host> show mpls admin-groups
Group      Bit index
black      3
blue       2
gold       1
green      0

```



## show mpls call-admission-control

<b>Syntax</b>	show mpls call-admission-control <logical-system (all   <i>logical-system-name</i> )> < <i>lsp-name</i> >
<b>Syntax (EX Series Switch)</b>	show mpls call-admission-control < <i>lsp-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display Multiprotocol Label Switching (MPLS) label-switched path (LSP) call admission control (CAC) information.
<b>Options</b>	<p>none—Display CAC information for all LSPs.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>lsp-name</i>—(Optional) Display CAC information for the specified LSP only.</p>
<b>Additional Information</b>	The available bandwidth on an LSP path at a particular class type is the total path bandwidth at that class type minus the total bandwidth reserved by any Layer 2 connection at that class type.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show mpls call-admission-control on page 700</a>
<b>Output Fields</b>	<a href="#">Table 175 on page 699</a> describes the output fields for the <b>show mpls call-admission-control</b> command. Output fields are listed in the approximate order in which they appear.

**Table 175: show mpls call-admission-control Output Fields**

Field Name	Field Description
<b>Available bandwidth</b>	Current available bandwidth on each LSP path. Depending on whether the LSP is an E-LSP or a regular LSP, either per-class bandwidth or a single bandwidth value (corresponding to best-effort bandwidth at <b>ct0</b> ) is displayed. The available bandwidth on an LSP path at a particular class type is the total path bandwidth at that class type minus the total bandwidth reserved by some Layer 2 connections at that class type.
<b>Layer2 connections</b>	Different Layer 2 connections that had some bandwidth requirement and were admitted into an LSP path.
<b>LSP name</b>	LSP pathname.
<b>Neighbor address</b>	Neighbor address from which CAC and bandwidth booking are configured for Layer 2 circuits.
<b>Circuit</b>	Interface name and circuit information.



Table 175: show mpls call-admission-control Output Fields (*continued*)

Field Name	Field Description
Primary	LSP's primary standby path.
Standby	LSP's secondary standby path.
VC bandwidth	Bandwidth constraints associated with a Layer 2 circuit route.

## Sample Output

```

show mpls call-admission-control user@host# show mpls call-admission-control

LSP name: pro1-be
*Primary
  Available bandwidth: 0bps

LSP name: pro1-be-1
*Primary
  Available bandwidth: 60kbps

LSP name: pro1-be-gold
*Primary
  Available bandwidth: <ct0 50kbps> <ct1 20kbps> <ct2 30kbps> <ct3 0bps>
  Layer2 connections:
    Neighbor address: 10.255.245.215, Circuit: so-0/3/0.0(vc 5)
    VC bandwidth: <ct0 50kbps> <ct1 40kbps> <ct2 40kbps>

LSP name: pro1-be-gold-2
*Primary
  Available bandwidth: <ct0 0bps> <ct1 40kbps> <ct2 40kbps> <ct3 0bps>

LSP name: pro1-be-silver
*Primary  prim1
  Available bandwidth: <ct0 10kbps> <ct1 20kbps> <ct2 0bps> <ct3 40kbps>
  Layer2 connections:
    Neighbor address: 10.255.245.215, Circuit: so-0/3/0.1(vc 3)
    VC bandwidth: <ct0 20kbps> <ct1 20kbps>
  Standby  sec1
  Available bandwidth: <ct0 10kbps> <ct1 10kbps> <ct2 20kbps> <ct3 0bps>
  Layer2 connections:
    Neighbor address: 10.255.245.215, Circuit: so-0/3/0.1(vc 3)
    VC bandwidth: <ct0 20kbps> <ct1 20kbps>

```



## show mpls cspf

<b>Syntax</b>	show mpls cspf <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show mpls cspf
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display Multiprotocol Label Switching (MPLS) Constrained Shortest Path First (CSPF) statistics.
<b>Options</b>	none—Display MPLS CSFP statistics.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show mpls cspf on page 702</a>
<b>Output Fields</b>	<a href="#">Table 176 on page 701</a> describes the output fields for the <b>show mpls cspf</b> command. Output fields are listed in the approximate order in which they appear.

**Table 176: show mpls cspf Output Fields**

Field Name	Field Description
<b>Queue length</b>	Number of LSPs queued for automatic path computation.
<b>current</b>	Current queue length.
<b>maximum</b>	Maximum queue length (high-water mark).
<b>dequeued</b>	Number of aborted computation attempts.
<b>Paths</b>	Counters for label-switched path computations.
<b>total</b>	Sum of the next four fields.
<b>successful</b>	Number of path computations that were successfully completed.
<b>no route</b>	Number of path computations that failed because the destination is unreachable.
<b>Sys Error</b>	Number of path computations that failed because of lack of memory.



Table 176: show mpls cspf Output Fields (*continued*)

Field Name	Field Description
<b>CSPFs</b>	Total number of CSPF computations. A single path might require multiple CSPF computations.
<b>Time</b>	Time, in seconds, required to perform the label-switched path computation.
<b>Total</b>	Total amount of time consumed by the CSPF path computation algorithm.
<b>CSPFs</b>	Total number of CSPF computations.
<b>Avg per CSPF</b>	Average amount of time required for each CSPF computation.
<b>% of rpd</b>	Percentage of routing process CPU used in the CSPF computation.

### Sample Output

```

show mpls cspf user@host> show mpls cspf
CSPF statistics
Queue length  current      maximum      dequeued
              0            0            0
Paths          total    successful    no route    sys error    CSPFs
              0            0            0            0            0
Time (secs)    total    CSPFs    avg per CSPF    % of rpd
              0.000000    0.000000    0.000000    0.0000

```



## show mpls diffserv-te

<b>Syntax</b>	show mpls diffserve-te <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show mpls diffserve-te
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display Multiprotocol Label Switching (MPLS) label-switched path (LSP) Differentiated Services (DiffServ) class and preemption priority information.
<b>Options</b>	none—Display DiffServ classes and priorities used by MPLS LSPs.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show mpls diffserv-te on page 703</a>
<b>Output Fields</b>	<a href="#">Table 177 on page 703</a> describes the output fields for the <b>show mpls diffserv-te</b> command. Output fields are listed in the approximate order in which they appear.

**Table 177: show mpls diffserv-te Output Fields**

Field Name	Field Description
<b>Bandwidth model</b>	Bandwidth constraint model supported. The maximum allocation model (MAM) for EXP-inferred LSPs (E-LSPs) is currently supported.
<b>TE class</b>	DiffServ traffic engineering class.
<b>Traffic class</b>	MPLS class type that corresponds to the DiffServ traffic engineering class: <ul style="list-style-type: none"> <li>• <b>ct0</b>—Best effort</li> <li>• <b>ct1</b>—Assured forwarding</li> <li>• <b>ct2</b>—Expedited forwarding</li> <li>• <b>ct3</b>—Network control</li> </ul>
<b>Priority</b>	MPLS preemption priority for this class type, a value from 0 through 7. Interior gateway protocols (IGPs) distribute information about the available bandwidth for each traffic engineering class.

## Sample Output

```
show mpls diffserv-te  user@host> show mpls diffserv-te
```



Bandwidth model: Maximum Allocation Model with support for E-LSPs.

TE class	Traffic class	Priority
te0	ct0	3
te1	ct1	2



## show mpls interface

<b>Syntax</b>	show mpls interface <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show mpls interface
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display information about Multiprotocol Label Switching (MPLS)-enabled interfaces.
<b>Options</b>	none—Display information about MPLS-enabled interfaces.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Additional Information</b>	MPLS is enabled on an interface when the interface is configured with both the <b>set protocol mpls interface <i>interface-name</i></b> and <b>set interface <i>interface-name</i> unit 0 family mpls</b> statements.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show mpls interface on page 705</a>
<b>Output Fields</b>	<a href="#">Table 178 on page 705</a> describes the output fields for the <b>show mpls interface</b> command. Output fields are listed in the approximate order in which they appear.

**Table 178: show mpls interface Output Fields**

Field Name	Field Description
<b>Interface</b>	Name of the interface.
<b>State</b>	State of the interface: <b>Up</b> or <b>Dn</b> (down).
<b>Administrative groups</b>	Administratively assigned colors of the link.

## Sample Output

```

user@host> show mpls interface
Interface  State      Administrative groups
so-1/0/0.0  Up         Blue Yellow Red

```



## show mpls lsp

<b>Syntax</b>	<pre>show mpls lsp &lt;brief   detail   extensive   terse&gt; &lt;bidirectional   unidirectional&gt; &lt;bypass&gt; &lt;defaults&gt; &lt;descriptions&gt; &lt;down   up&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;lsp-type&gt; &lt;name <i>name</i>&gt; &lt;p2mp&gt; &lt;statistics&gt; &lt;transit&gt;</pre>
<b>Syntax (EX Series Switch)</b>	<pre>show mpls lsp &lt;brief   detail   extensive   terse&gt; &lt;bidirectional   unidirectional&gt; &lt;bypass&gt; &lt;descriptions&gt; &lt;down   up&gt; &lt;lsp-type&gt; &lt;name <i>name</i>&gt; &lt;p2mp&gt; &lt;statistics&gt; &lt;transit&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p><b>defaults</b> option added in Junos OS Release 8.5.</p> <p>Command introduced in Junos OS Release 9.5 for EX Series switches.</p>
<b>Description</b>	Display information about configured and active dynamic Multiprotocol Label Switching (MPLS) label-switched paths (LSPs).
<b>Options</b>	<p><b>none</b>—Display standard information about all configured and active dynamic MPLS LSPs.</p> <p><b>brief   detail   extensive   terse</b>—(Optional) Display the specified level of output. The <b>extensive</b> option displays the same information as the <b>detail</b> option, but covers the most recent 50 events.</p> <p><b>bidirectional   unidirectional</b>—(Optional) Display bidirectional or unidirectional LSP information, respectively.</p> <p><b>bypass</b>—(Optional) Display LSPs used for protecting other LSPs.</p> <p><b>defaults</b>—(Optional) Display the MPLS LSP default settings.</p> <p><b>descriptions</b>—(Optional) Display the MPLS label-switched path (LSP) descriptions. To view this information, you must configure the <b>description</b> statement at the <b>[edit protocol mpls lsp]</b> hierarchy level. Only LSPs with a description are displayed. This</p>



command is only valid for the ingress routing device, because the description is not propagated in RSVP messages.

down | up—(Optional) Display only LSPs that are inactive or active, respectively.

logical-system (all | *logical-system-name*)—(Optional) Perform this operation on all logical systems or on a particular logical system.

*lsp-type*—(Optional) Display information about a particular LSP type:

- **bypass**—Sessions for bypass LSPs.
- **egress**—Sessions that terminate on this routing device.
- **ingress**—Sessions that originate from this routing device.
- **transit**—Sessions that pass through this routing device.

name *name*—(Optional) Display information about the specified LSP or group of LSPs.

p2mp—(Optional) Display information about point-to-multipoint LSPs.

statistics—(Optional) (Egress and transit routers only) Display accounting information about LSPs. Statistics are not available for LSPs on the egress routing device, because the penultimate routing device in the LSP sets the label to 0. Also, as the packet arrives at the egress routing device, the hardware removes its MPLS header and the packet reverts to being an IPv4 packet. Therefore, it is counted as an IPv4 packet, not an MPLS packet.

transit—(Optional) Display LSPs transiting this routing device.

**Required Privilege Level** view

**Related Documentation** [• clear mpls lsp on page 679](#)

**List of Sample Output** [show mpls lsp defaults on page 712](#)  
[show mpls lsp descriptions on page 713](#)  
[show mpls lsp detail on page 713](#)  
[show mpls lsp extensive on page 713](#)  
[show mpls lsp ingress extensive on page 714](#)  
[show mpls lsp p2mp on page 714](#)  
[show mpls lsp p2mp detail on page 715](#)

**Output Fields** [Table 179 on page 707](#) describes the output fields for the **show mpls lsp** command. Output fields are listed in the approximate order in which they appear.

**Table 179: show mpls lsp Output Fields**

Field Name	Field Description	Level of Output
Ingress LSP	Information about LSPs on the ingress routing device. Each session has one line of output.	All levels



Table 179: show mpls lsp Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Egress LSP</b>	Information about the LSPs on the egress routing device. MPLS learns this information by querying RSVP, which holds all the transit and egress session information. Each session has one line of output.	All levels
<b>Transit LSP</b>	Number of LSPs on the transit routing devices and the state of these paths. MPLS learns this information by querying RSVP, which holds all the transit and egress session information.	All levels
<b>P2MP name</b>	Name of the point-to-multipoint LSP. Dynamically generated P2MP LSPs used for VPLS flooding use dynamically generated P2MP LSP names. The name uses the format <i>identifier:vpls:router-id:routing-instance-name</i> . The <i>identifier</i> is automatically generated by Junos OS.	All levels
<b>P2MP branch count</b>	Number of destination LSPs the point-to-multipoint LSP is transmitting to.	All levels
<b>P</b>	An asterisk (*) under this heading indicates that the LSP is a primary path.	All levels
<b>address</b>	( <b>detail</b> and <b>extensive</b> ) Destination (egress routing device) of the LSP.	<b>detail extensive</b>
<b>To</b>	Destination (egress routing device) of the session.	<b>brief</b>
<b>From</b>	Source (ingress routing device) of the session.	<b>brief detail</b>
<b>State</b>	State of the LSP handled by this RSVP session: <b>Up</b> , <b>Dn</b> (down), or <b>Restart</b> .	<b>brief detail</b>
<b>Active Route</b>	Number of active routes (prefixes) installed in the forwarding table. For ingress LSPs, the forwarding table is the primary IPv4 table ( <b>inet.0</b> ). For transit and egress RSVP sessions, the forwarding table is the primary MPLS table ( <b>mpls.0</b> ).	<b>detail extensive</b>
<b>P</b>	Path. An asterisk (*) underneath this column indicates that the LSP is a primary path.	<b>brief</b>
<b>LSPname</b>	Name of the LSP.	<b>brief detail</b>
<b>DiffServeInfo</b>	Type of LSP: multiclass LSP ( <b>multiclass diffServ-TE LSP</b> ) or Differentiated-Services-aware traffic engineering LSP ( <b>diffServ-TE LSP</b> ).	<b>detail</b>
<b>Bypass</b>	(Bypass LSP) Destination address (egress routing device) for the bypass LSP.	All levels
<b>LSPpath</b>	Indicates whether the RSVP session is for the primary or secondary LSP path. <b>LSPpath</b> can be either <b>primary</b> or <b>secondary</b> and can be displayed on the ingress, egress, and transit routing devices.	<b>detail</b>
<b>Bidir</b>	(GMPLS) The LSP allows data to travel in both directions between GMPLS devices.	All levels
<b>Bidirectional</b>	(GMPLS) The LSP allows data to travel both ways between GMPLS devices.	All levels



Table 179: show mpls lsp Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Rt</b>	Number of active routes (prefixes) installed in the routing table. For ingress RSVP sessions, the routing table is the primary IPv4 table ( <b>inet.0</b> ). For transit and egress RSVP sessions, the routing table is the primary MPLS table ( <b>mpls.0</b> ).	<b>brief</b>
<b>ActivePath</b>	(Ingress LSP) Name of the active path: <b>Primary</b> or <b>Secondary</b> .	<b>detail extensive</b>
<b>FastReroute desired</b>	Fast reroute has been requested by the ingress routing device.	<b>detail</b>
<b>Link protection desired</b>	Link protection has been requested by the ingress routing device.	<b>detail</b>
<b>LoadBalance</b>	(Ingress LSP) CSPF load-balancing rule that was configured to select the LSP's path among equal-cost paths: <b>Most-fill</b> , <b>Least-fill</b> , or <b>Random</b> .	<b>detail extensive</b>
<b>Signal type</b>	Signal type for GMPLS LSPs. The signal type determines the peak data rate for the LSP: <b>DS0</b> , <b>DS3</b> , <b>STS-1</b> , <b>STM-1</b> , or <b>STM-4</b> .	All levels
<b>Encoding type</b>	LSP encoding type: <b>Packet</b> , <b>Ethernet</b> , <b>PDH</b> , <b>SDH/SONET</b> , <b>Lambda</b> , or <b>Fiber</b> .	All levels
<b>Switching type</b>	Type of switching on the links needed for the LSP: <b>Fiber</b> , <b>Lambda</b> , <b>Packet</b> , <b>TDM</b> , or <b>PSC-1</b> .	All levels
<b>GPID</b>	Generalized Payload Identifier (identifier of the payload carried by an LSP): <b>HDLC</b> , <b>Ethernet</b> , <b>IPv4</b> , <b>PPP</b> , or <b>Unknown</b> .	All levels
<b>Protection</b>	Configured protection capability desired for the LSP: <b>Extra</b> , <b>Enhanced</b> , <b>none</b> , <b>One plus one</b> , <b>One to one</b> , or <b>Shared</b> .	All levels
<b>Upstream label in</b>	(Bidirectional LSPs) Incoming label for reverse direction traffic for this LSP.	All levels
<b>Upstream label out</b>	(Bidirectional LSPs) Outgoing label for reverse direction traffic for this LSP.	All levels
<b>Suggested label received</b>	(Bidirectional LSPs) Label the upstream node suggests to use in the Resv message that is sent.	All levels
<b>Suggested label sent</b>	(Bidirectional LSPs) Label the downstream node suggests to use in the Resv message that is returned.	All levels
<b>Autobandwidth</b>	(Ingress LSP) The LSP is performing autobandwidth allocation.	<b>detail extensive</b>
<b>MinBW</b>	(Ingress LSP) Configured minimum value of the LSP, in bps.	<b>detail extensive</b>
<b>MaxBW</b>	(Ingress LSP) Configured maximum value of the LSP, in bps.	<b>detail extensive</b>
<b>AdjustTimer</b>	(Ingress LSP) Configured value of the bandwidth adjustment timer, indicating the total amount of time allowed before bandwidth adjustment will take place, in seconds.	<b>detail extensive</b>



Table 179: show mpls lsp Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>MaxAvgBW util</b>	(Ingress LSP) Current value of the actual maximum average bandwidth utilization, in bps.	<b>detail extensive</b>
<b>Overflow limit</b>	(Ingress LSP) Configured value of the threshold overflow limit.	<b>detail extensive</b>
<b>Overflow sample count</b>	(Ingress LSP) Current value for the overflow sample count.	<b>detail extensive</b>
<b>Bandwidth Adjustment in <i>nnn</i> second(s)</b>	(Ingress LSP) Current value of the bandwidth adjustment timer, indicating the amount of time remaining until the bandwidth adjustment will take place, in seconds.	<b>detail extensive</b>
<b>Active path indicator</b>	(Ingress LSP) A value of * indicates that the path is active. The absence of * indicates that the path is not active. In the following example, "long" is the active path.  *Primary long Standby short	<b>detail extensive</b>
<b>Primary</b>	(Ingress LSP) Name of the primary path.	<b>detail extensive</b>
<b>Secondary</b>	(Ingress LSP) Name of the secondary path.	<b>detail extensive</b>
<b>Standby</b>	(Ingress LSP) Name of the path in standby mode.	<b>detail extensive</b>
<b>State</b>	(Ingress LSP) State of the path: <b>Up</b> or <b>Dn</b> (down).	<b>detail extensive</b>
<b>COS</b>	(Ingress LSP) Class-of-service value.	<b>detail extensive</b>
<b>Bandwidth per class</b>	(Ingress LSP) Active bandwidth for the LSP path for each MPLS class type, in bps.	<b>detail extensive</b>
<b>Priorities</b>	(Ingress LSP) Configured value of the setup priority and the reservation priority, where 0 is the highest priority and 7 is the lowest priority.	<b>extensive</b>
<b>OptimizeTimer</b>	(Ingress LSP) Configured value of the optimize timer, indicating the total amount of time allowed before path reoptimization, in seconds.	<b>detail extensive</b>
<b>SmartOptimizeTimer</b>	(Ingress LSP) Configured value of the smart optimize timer, indicating the total amount of time allowed before path reoptimization, in seconds.	<b>detail extensive</b>
<b>Reoptimization in xxx seconds</b>	(Ingress LSP) Current value of the optimize timer, indicating the amount of time remaining until the path will be reoptimized, in seconds.	<b>detail extensive</b>
<b>Computed ERO (S [L] denotes strict [loose] hops)</b>	(Ingress LSP) Computed explicit route. A series of hops, each with an address followed by a hop indicator. The value of the hop indicator can be strict (S) or loose (L).	<b>detail extensive</b>
<b>CSPF metric</b>	(Ingress LSP) Constrained Shortest Path First metric for this path.	<b>detail extensive</b>



Table 179: show mpls lsp Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Received RRO</b>	<p>(Ingress LSP) Received record route. A series of hops, each with an address followed by a flag. (In most cases, the received record route is the same as the computed explicit route. If <b>Received RRO</b> is different from <b>Computed ERO</b>, there is a topology change in the network, and the route is taking a detour.) The following flags identify the protection capability and status of the downstream node:</p> <ul style="list-style-type: none"> <li>• <b>0x01</b>—Local protection available. The link downstream from this node is protected by a local repair mechanism. This flag can be set only if the Local protection flag was set in the <b>SESSION_ATTRIBUTE</b> object of the corresponding Path message.</li> <li>• <b>0x02</b>—Local protection in use. A local repair mechanism is in use to maintain this tunnel (usually because of an outage of the link it was routed over previously).</li> <li>• <b>0x03</b>—Combination of <b>0x01</b> and <b>0x02</b>.</li> <li>• <b>0x04</b>—Bandwidth protection. The downstream routing device has a backup path providing the same bandwidth guarantee as the protected LSP for the protected section.</li> <li>• <b>0x08</b>—Node protection. The downstream routing device has a backup path providing protection against link and node failure on the corresponding path section. If the downstream routing device can set up only a link-protection backup path, the <b>Local protection available</b> bit is set but the <b>Node protection</b> bit is cleared.</li> <li>• <b>0x09</b>—Detour is established. Combination of <b>0x01</b> and <b>0x08</b>.</li> <li>• <b>0x10</b>—Preemption pending. The preempting node sets this flag if a pending preemption is in progress for the traffic engine LSP. This flag indicates to the ingress legacy edge router (LER) of this LSP that it should be rerouted.</li> <li>• <b>0xb</b>—Detour is in use. Combination of <b>0x01</b>, <b>0x02</b>, and <b>0x08</b>.</li> </ul>	<b>detail extensive</b>
<b>Index number</b>	(Ingress LSP) Log entry number of each LSP path event. The numbers are in chronological descending order, with a maximum of 50 index numbers displayed.	<b>extensive</b>
<b>Date</b>	(Ingress LSP) Date of the LSP event.	<b>extensive</b>
<b>Time</b>	(Ingress LSP) Time of the LSP event.	<b>extensive</b>
<b>Event</b>	(Ingress LSP) Description of the LSP event.	<b>extensive</b>
<b>Created</b>	(Ingress LSP) Date and time the LSP was created.	<b>extensive</b>
<b>Resv style</b>	(Bypass) RSVP reservation style. This field consists of two parts. The first is the number of active reservations. The second is the reservation style, which can be <b>FF</b> (fixed filter), <b>SE</b> (shared explicit), or <b>WF</b> (wildcard filter).	<b>brief detail extensive</b>
<b>Labelin</b>	Incoming label for this LSP.	<b>brief detail</b>
<b>Labelout</b>	Outgoing label for this LSP.	<b>brief detail</b>
<b>LSPname</b>	Name of the LSP.	<b>brief detail</b>



Table 179: show mpls lsp Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Time left</b>	Number of seconds remaining in the lifetime of the reservation.	<b>detail</b>
<b>Since</b>	Date and time when the RSVP session was initiated.	<b>detail</b>
<b>Tspec</b>	Sender's traffic specification, which describes the sender's traffic parameters.	<b>detail</b>
<b>Port number</b>	Protocol ID and sender or receiver port used in this RSVP session.	<b>detail</b>
<b>PATH rcvfrom</b>	Address of the previous-hop (upstream) routing device or client, interface the neighbor used to reach this router, and number of packets received from the upstream neighbor.	<b>detail</b>
<b>PATH sentto</b>	Address of the next-hop (downstream) routing device or client, interface used to reach this neighbor, and number of packets sent to the downstream routing device.	<b>detail</b>
<b>RESV rcvfrom</b>	Address of the previous-hop (upstream) routing device or client, interface the neighbor used to reach this routing device, and number of packets received from the upstream neighbor. The output in this field, which is consistent with that in the <b>PATH rcvfrom</b> field, indicates that the RSVP negotiation is complete.	<b>detail</b>
<b>Record route</b>	Recorded route for the session, taken from the record route object.	<b>detail</b>
<b>Soft preempt</b>	Number of soft preemptions that occurred on a path and when the last soft preemption occurred. Only successful soft preemptions are counted (those that actually resulted in a new path being used).	<b>detail</b>
<b>Soft preemption pending</b>	Path is in the process of being soft preempted. This display is removed once the ingress router has calculated a new path.	<b>detail</b>
<b>MPLS-TE LSP Defaults</b>	Default settings for MPLS traffic engineered LSPs: <ul style="list-style-type: none"> <li>• <b>LSP Holding Priority</b>—Determines the degree to which an LSP holds on to its session reservation after the LSP has been set up successfully.</li> <li>• <b>LSP Setup Priority</b>—Determines whether a new LSP that preempts an existing LSP can be established.</li> <li>• <b>Hop Limit</b>—Specifies the maximum number of routers the LSP can traverse (including the ingress and egress).</li> <li>• <b>Bandwidth</b>—Specifies the bandwidth in bits per second for the LSP.</li> <li>• <b>LSP Retry Timer</b>—Length of time in seconds that the ingress router waits between attempts to establish the primary path.</li> </ul>	<b>defaults</b>

## Sample Output

```

show mpls lsp defaults  user@host> show mpls lsp defaults
                        MPLS-TE LSP Defaults
                        LSP Holding Priority    0
                        LSP Setup Priority      7
                        Hop Limit              255

```



```

Bandwidth                                0
LSP Retry Timer                          30 seconds

show mpls lsp descriptions user@host> show mpls lsp descriptions
Ingress LSP: 3 sessions
To      LSP name      Description
10.0.0.195 to-sanjose    to-sanjose-desc
10.0.0.195 to-sanjose-other-desc other-desc
Total 2 displayed, Up 2, Down 0

show mpls lsp detail user@host> show mpls lsp detail
Ingress LSP: 1 sessions

10.255.245.3
  From: 10.255.245.5, State: Up, ActiveRoute: 1, LSPname: lsp-ec
  ActivePath: long-path (primary)
  LoadBalance: Random
  Autobandwidth
  MaxBW: 5Mbps
  AdjustTimer: 4800 secs AdjustThreshold: 1%
  Max AvgBW util: 0bps, Bandwidth Adjustment in 3383 second(s).
  Overflow limit: 5, Overflow sample count: 0
  Encoding type: Packet, Switching type: Packet, GPID: IPv4
  *Primary long-path State: Up
    SmartOptimizeTimer: 180
    Computed ERO (S [L] denotes strict [loose] hops): (CSPF metric: 5)
  192.168.37.89 S 192.168.37.87 S
    Received RRO (ProtectionFlag 1=Available 2=InUse 4=B/W 8=Node 10=SoftPreempt):
      192.168.37.89 192.168.37.87
Total 1 displayed, Up 1, Down 0

Egress LSP: 0 sessions
Total 0 displayed, Up 0, Down 0

show mpls lsp extensive user@host> show mpls lsp extensive
Ingress LSP: 1 sessions

50.0.0.1
  From: 10.0.0.1, State: Up, ActiveRoute: 0, LSPname: test
  ActivePath: (primary)
  LSPtype: Static Configured
  LoadBalance: Random
  Encoding type: Packet, Switching type: Packet, GPID: IPv4
  *Primary State: Up
    Priorities: 7 0
    OptimizeTimer: 300
    SmartOptimizeTimer: 180
    Reoptimization in 255 second(s).
    Computed ERO (S [L] denotes strict [loose] hops): (CSPF metric: 2)
  2.2.2.2 S 3.3.3.2 S
    Received RRO (ProtectionFlag 1=Available 2=InUse 4=B/W 8=Node 10=SoftPreempt
  20=Node-ID):
      2.2.2.2 3.3.3.2
  7 Aug 3 12:39:52.834 CSPF: computation result ignored, new path no benefit

  6 Aug 3 12:35:03.830 Selected as active path
  5 Aug 3 12:35:03.828 Record Route: 2.2.2.2 3.3.3.2
  4 Aug 3 12:35:03.827 Up
  3 Aug 3 12:35:03.814 Originate Call

```



```

    2 Aug 3 12:35:03.814 CSPF: computation result accepted 2.2.2.2 3.3.3.2
    1 Aug 3 12:34:34.921 CSPF failed: no route toward 50.0.0.1
Created: Tue Aug 3 12:34:34 2010
Total 1 displayed, Up 1, Down 0

```

```

Egress LSP: 0 sessions
Total 0 displayed, Up 0, Down 0

```

```

Transit LSP: 0 sessions
Total 0 displayed, Up 0, Down 0

```

**show mpls lsp ingress extensive**

```

user@host> show mpls lsp ingress extensive
Ingress LSP: 1 sessions

50.0.0.1
  From: 10.0.0.1, State: Up, ActiveRoute: 0, LSPname: test
  ActivePath: (primary)
  LSPtype: Static Configured
  LoadBalance: Random
  Encoding type: Packet, Switching type: Packet, GPID: IPv4
  *Primary State: Up
    Priorities: 7 0
    OptimizeTimer: 300
    SmartOptimizeTimer: 180
    Reoptimization in 240 second(s).
    Computed ERO (S [L] denotes strict [loose] hops): (CSPF metric: 3)
1.1.1.2 S 4.4.4.1 S 5.5.5.2 S
  Received RRO (ProtectionFlag 1=Available 2=InUse 4=B/W 8=Node 10=SoftPreempt
20=Node-ID):
    1.1.1.2 4.4.4.1 5.5.5.2
  17 Aug 3 13:17:33.601 CSPF: computation result ignored, new path less avail
bw[3 times]
  16 Aug 3 13:02:51.283 CSPF: computation result ignored, new path no benefit[2
times]
  15 Aug 3 12:54:36.678 Selected as active path
  14 Aug 3 12:54:36.676 Record Route: 1.1.1.2 4.4.4.1 5.5.5.2
  13 Aug 3 12:54:36.676 Up
  12 Aug 3 12:54:33.924 Deselected as active
  11 Aug 3 12:54:33.924 Originate Call
  10 Aug 3 12:54:33.923 Clear Call
  9 Aug 3 12:54:33.923 CSPF: computation result accepted 1.1.1.2 4.4.4.1
5.5.5.2
  8 Aug 3 12:54:33.922 2.2.2.2: No Route toward dest
  7 Aug 3 12:54:28.177 CSPF: computation result ignored, new path no benefit[4
times]
  6 Aug 3 12:35:03.830 Selected as active path
  5 Aug 3 12:35:03.828 Record Route: 2.2.2.2 3.3.3.2
  4 Aug 3 12:35:03.827 Up
  3 Aug 3 12:35:03.814 Originate Call
  2 Aug 3 12:35:03.814 CSPF: computation result accepted 2.2.2.2 3.3.3.2
  1 Aug 3 12:34:34.921 CSPF failed: no route toward 50.0.0.1
Created: Tue Aug 3 12:34:35 2010
Total 1 displayed, Up 1, Down 0

```

**show mpls lsp p2mp**

```

user@host> show mpls lsp p2mp
Ingress LSP: 2 sessions
P2MP name: p2mp-lsp1, P2MP branch count: 1
To      From      State Rt ActivePath      P      LSPname
10.255.245.51 10.255.245.50 Up    0 path1          *      p2mp-branch-1
P2MP name: p2mp-lsp2, P2MP branch count: 1
To      From      State Rt ActivePath      P      LSPname

```



```

10.255.245.51 10.255.245.50 Up 0 path1 * p2mp-st-br1
Total 2 displayed, Up 2, Down 0

```

```

Egress LSP: 0 sessions
Total 0 displayed, Up 0, Down 0

```

```

Transit LSP: 0 sessions
Total 0 displayed, Up 0, Down 0

```

### show mpls lsp p2mp detail

```
user@host> show mpls lsp p2mp detail
```

```
Ingress LSP: 2 sessions
```

```
P2MP name: p2mp-lsp1, P2MP branch count: 1
```

```
10.255.245.51
```

```
From: 10.255.245.50, State: Up, ActiveRoute: 0, LSPname: p2mp-branch-1
```

```
ActivePath: path1 (primary)
```

```
P2MP name: p2mp-lsp1
```

```
LoadBalance: Random
```

```
Encoding type: Packet, Switching type: Packet, GPID: IPv4
```

```
*Primary path1 State: Up
```

```
Computed ERO (S [L] denotes strict [loose] hops): (CSPF metric: 25)
```

```
192.168.208.17 S
```

```
Received RRO (ProtectionFlag 1=Available 2=InUse 4=B/W 8=Node 10=SoftPreempt):
```

```
192.168.208.17
```

```
P2MP name: p2mp-lsp2, P2MP branch count: 1
```

```
10.255.245.51
```

```
From: 10.255.245.50, State: Up, ActiveRoute: 0, LSPname: p2mp-st-br1
```

```
ActivePath: path1 (primary)
```

```
P2MP name: p2mp-lsp2
```

```
LoadBalance: Random
```

```
Encoding type: Packet, Switching type: Packet, GPID: IPv4
```

```
*Primary path1 State: Up
```

```
Computed ERO (S [L] denotes strict [loose] hops): (CSPF metric: 25)
```

```
192.168.208.17 S
```

```
Received RRO (ProtectionFlag 1=Available 2=InUse 4=B/W 8=Node 10=SoftPreempt):
```

```
192.168.208.17
```

```
Total 2 displayed, Up 2, Down 0
```



## show mpls path

<b>Syntax</b>	show mpls path <logical-system (all   <i>logical-system-name</i> )> < <i>path-name</i> >
<b>Syntax (EX Series Switch)</b>	show mpls path < <i>path-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display dynamic Multiprotocol Label Switching (MPLS) label-switched paths (LSPs).
<b>Options</b>	none—Display standard information about all MPLS LSPs.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.  <i>path-name</i> —(Optional) Display information about the specified LSP only.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show mpls path on page 716</a>
<b>Output Fields</b>	<a href="#">Table 180 on page 716</a> describes the output fields for the <b>show mpls path</b> command. Output fields are listed in the approximate order in which they appear.

**Table 180: show mpls path Output Fields**

Field Name	Field Description
Path name	Information about ingress LSPs. Each path has one line of output.
Address	Addresses of the routing devices that form the LSP.
Strict/loose address	Whether the address is configured as a strict or loose address.

## Sample Output

```

user@host> show mpls path
Path name      Address          Strict/loose address
p1             123.456.55.6    Strict
               123.456.1.6     Loose
p2             191.456.1.4     Strict

```



## show mpls srlg

<b>Syntax</b>	show mpls srlg <logical-systems (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 11.4.
<b>Description</b>	Display Shared Risk Link Group (SRLG) cost and value configuration information.
<b>Options</b>	logical-system (all   <i>logical-system-name</i> )—(Optional) View SRLG configuration information for all logical systems or a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>Example: Configuring SRLG</li> </ul>
<b>Output Fields</b>	<a href="#">Table 181 on page 717</a> lists the output fields for the <b>show mpls srlg</b> command. Output fields are listed in the approximate order in which they appear.

**Table 181: show mpls srlg Output Fields**

Field Name	Field Description
SRLG	Name of the SRLG.
Value	A group ID for the SRLG ranging from 1 through 4294967295.
Cost	A cost for the Shared Risk Link Group (SRLG) ranging from 1 through 65535.

## Sample Output

```
user@host> show mpls srlg
```

```
SRLG      Value      Cost
srlg-a    101        10
```



## show mpls static-lsp

**Syntax** show mpls static-lsp  
 <brief | detail | extensive | terse>  
 <bypass>  
 <descriptions>  
 <down | up>  
 <ingress>  
 <logical-system (all | *logical-system-name*)>  
 <lsp-type>  
 <name *name*>  
 <statistics>  
 <transit>

**Release Information** Command introduced in Junos OS Release 10.1.

**Description** Display information about configured and active static Multiprotocol Label Switching (MPLS) label-switched paths (LSPs).

**Options** none—Display standard information about all configured and active static MPLS LSPs.

brief | detail | extensive | terse—(Optional) Display the specified level of output. The **extensive** option displays the same information as the **detail** option, but covers the most recent 50 events.

bypass—(Optional) Display LSPs used for protecting other static LSPs.

descriptions—(Optional) Display the MPLS static LSP descriptions. To view this information, you must configure the description statement at the **[edit protocols mpls static-label-switched-path *path-name* bypass]**, **[edit protocols mpls static-label-switched-path *path-name* ingress]**, or **[edit protocols mpls static-label-switched-path *path-name* transit *incoming-label*]** hierarchy levels. Only static LSPs with a description are displayed.

down | up—(Optional) Display only static LSPs that are inactive or active, respectively.

logical-system (all | *logical-system-name*)—(Optional) Perform this operation on all logical systems or on a particular logical system.

*lsp-type*—(Optional) Display information about a particular LSP type:

- **bypass**—Sessions for bypass LSPs.
- **ingress**—Sessions that originate from this routing device.
- **transit**—Sessions that pass through this routing device.

name *name*—(Optional) Display information about the specified static LSP or group of LSPs.

statistics—(Optional) Display accounting information about static LSPs.

transit—(Optional) Display static LSPs transiting this routing device.



**Required Privilege Level** view

**List of Sample Output** [show mpls static-lsp extensive on page 720](#)  
[show mpls static-lsp statistics ingress on page 720](#)

**Output Fields** [Table 182 on page 719](#) describes the output fields for the **show mpls static-lsp** command. Output fields are listed in the approximate order in which they appear.

**Table 182: show mpls static-lsp Output Fields**

Field Name	Field Description	Level of Output
<b>Ingress LSPs</b>	Information about the static LSPs on the ingress routing device. Each session has one line of output.	All levels
<b>Transit LSPs</b>	Number of static LSPs on the transit routing devices and the state of these paths. MPLS learns this information by querying RSVP, which holds all the transit and egress session information.	All levels
<b>Bypass LSPs</b>	Information about the bypass LSPs configured on the routing device. Each session has one line of output.	All levels
<b>LSPname</b>	Name of the static LSP.	All levels
<b>To</b>	Destination (egress routing device) of the session.	All levels
<b>State</b>	State of the static LSP handled by this RSVP session: <b>Up</b> , <b>Dn</b> (down), or <b>Restart</b> .	All levels
<b>Packets</b>	Number of packet transiting the static LSP ( <b>statistics</b> option only).	All levels
<b>Bytes</b>	Number of bytes transiting the static LSP ( <b>statistics</b> option only).	All levels
<b>Nexthop</b>	IP address for the next-hop router for the static LSP.	<b>detail, extensive</b>
<b>Bypass</b>	(Bypass LSP) Destination address (egress routing device) for the bypass LSP.	All levels
<b>Link protection desired</b>	Link protection has been requested by the ingress routing device.	<b>detail, extensive</b>
<b>LabelOperation</b>	Label operation to perform: <b>Push</b> , <b>Pop</b> , <b>Swap</b> .	<b>detail, extensive</b>
<b>Outgoing-label</b>	Outgoing label to use for the MPLS packet in either push or swap label operations.	<b>detail, extensive</b>
<b>Created</b>	(Ingress LSP) Date and time the static LSP was created.	<b>extensive</b>
<b>Bandwidth</b>	Bandwidth configured for the static LSP.	<b>detail, extensive</b>
<b>Resv style</b>	(Bypass) RSVP reservation style. This field consists of two parts: the number of active reservations and the reservation style, which can be <b>FF</b> (fixed filter), <b>SE</b> (shared explicit), or <b>WF</b> (wildcard filter).	All levels



## Sample Output

```
show mpls static-lsp extensive  user@host> show mpls static-lsp extensive
                                Ingress LSPs:
                                LSPname: alpha-to-beta, To: 192.168.14.1
                                State: Dn
                                Nexthop: 192.168.10.1
                                LabelOperation: Push, Outgoing-label: 1000001
                                Created: Thu Jan 14 16:44:43 2010
                                Bandwidth: 0 bps
                                Total 1, displayed 1, Up 0, Down 1

                                Transit LSPs:
                                Total 0, displayed 0, Up 0, Down 0

                                Bypass LSPs:
                                Total 0, displayed 0, Up 0, Down 0

show mpls static-lsp statistics ingress  user@host> show mpls static-lsp statistics ingress
                                         Ingress LSPs:
                                         LSPname                To                State    Packets    Bytes
                                         alpha-to-beta      192.168.14.1    Dn        NA         NA
                                         Total 1, displayed 1, Up 0, Down 1
```



## show ted database

<b>Syntax</b>	show ted database <brief   detail   extensive> <logical-system (all   <i>logical-system-name</i> )> < <i>system-name</i> >
<b>Syntax (EX Series Switch)</b>	show ted database <brief   detail   extensive> < <i>system-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display the entries in the Multiprotocol Label Switching (MPLS) traffic engineering database.
<b>Options</b>	<p>none—Display standard information about all entries in the traffic engineering database.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>system-name</i>—(Optional) Display traffic engineering database information for a particular system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show ted database brief on page 723</a> <a href="#">show ted database detail system-name on page 724</a> <a href="#">show ted database extensive on page 724</a>
<b>Output Fields</b>	Table 183 on page 721 describes the output fields for the <b>show ted database</b> command. Output fields are listed in the approximate order in which they appear.

**Table 183: show ted database Output Fields**

Field Name	Field Description	Level of Output
<b>TED database</b>	Number of nodes and pseudonodes participating in IS-IS and OSPF domain routing.	All levels
<b>ID</b>	Hostname and address of the node that the link is coming from. An address of .00 indicates that the node is the routing device itself. An address in the range 0.01 through 0.FF indicates that the node is a pseudonode. If the node contains a router ID, it is displayed in parentheses.	<b>brief</b>
<b>NodeID</b>	Hostname and address of the node that the link is coming from. An address of .00 indicates that the node is the routing device itself. An address in the range 0.01 through 0.FF indicates that the node is a pseudonode.	<b>extensive</b>



Table 183: show ted database Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Type</b>	Type of node. It can be either <b>Rtr</b> (router) or <b>Net</b> (pseudonode).	All levels
<b>Age(s)</b>	How long since the node was last refreshed, in seconds.	All levels
<b>LnkIn</b>	Number of nodes pointing toward this node.	All levels
<b>LnkOut</b>	Number of nodes to which this node points.	All levels
<b>Protocol</b>	Protocol that reported the node information: <ul style="list-style-type: none"> <li>• <b>IS-IS(1)</b>—IS-IS Level 1.</li> <li>• <b>IS-IS(2)</b>—IS-IS Level 2.</li> <li>• <b>OSPF (area-number)</b>—OSPF from the specified area.</li> </ul>	All levels
<b>To</b>	Address on the far end of a link.	<b>detail extensive</b>
<b>Local</b>	Address of the local interface being used to reach the remote node.	<b>detail extensive</b>
<b>Remote</b>	Address of the interface on the remote node.	<b>detail extensive</b>
<b>Metric</b>	Configured traffic engineering metric.	<b>extensive</b>
<b>Static BW</b>	Total interface bandwidth in bps.	<b>extensive</b>
<b>Reservable bandwidth</b>	Subscription factor for the interface, which is the percentage of the link bandwidth that can be used for the RSVP reservation process. You configure this by including the <b>subscription</b> statement when configuring RSVP.	<b>extensive</b>
<b>Available BW [priority]</b>	(Must include <b>diffserv-te</b> statement when configuring LSPs) Amount of bandwidth actually reserved by RSVP for each priority level. The bandwidth shown is for the entire interface, not for each individual LSP.	<b>extensive</b>
<b>Diffserv-TE BW Model</b>	Bandwidth constraint model used by the LSPs.	<b>extensive</b>
<b>Available BW [TE-class]</b>	(Must include the <b>diffserv-te</b> statement when configuring LSPs) Amount of bandwidth actually reserved by RSVP for each traffic engineering class.	<b>extensive</b>
<b>Static BW [CT-class]</b>	Total interface bandwidth used by an MPLS traffic class, in bps.	<b>extensive</b>



Table 183: show ted database Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Interface Switching Capability Descriptor (n)</b>	<p>Information about the interface switching capability descriptor, which is a subtype length value (TLV) of the link TLV. <i>n</i> is the index number.</p> <ul style="list-style-type: none"> <li>• <b>Switching type</b>—Type of switching to be performed on a particular link: <ul style="list-style-type: none"> <li>• PSC-1—Packet switch-capable 1</li> <li>• PSC-2—Packet switch-capable 2</li> <li>• PSC-3—Packet switch-capable 3</li> <li>• PSC-4—Packet switch-capable 4</li> <li>• L2SC—Layer-2-switch-capable</li> <li>• TDM—Time-division-multiplexing-capable</li> <li>• LSC—Lambda switch-capable</li> <li>• FSC—Fiber switch-capable</li> </ul> </li> <li>• <b>Encoding type</b>—Encoding of the LSP being requested: <ul style="list-style-type: none"> <li>• Packet</li> <li>• Ethernet</li> <li>• ANSI/ETSI PDH</li> <li>• Reserved</li> <li>• SDH /SONET</li> <li>• Digital Wrapper</li> <li>• Lambda (photonic)</li> <li>• Fiber</li> <li>• FiberSDH/SONET</li> </ul> </li> <li>• <b>Maximum LSP BW [priority] bps</b>—Maximum LSP bandwidth information. Amount of bandwidth actually reserved for each priority level. The bandwidth shown is for the entire interface. <ul style="list-style-type: none"> <li>• [<i>n</i>]—Priority level. The range is from 0 (high) through 7 (low).</li> <li>• <i>n</i> Mbps—Amount of the maximum bandwidth.</li> </ul> </li> <li>• <b>Minimum LSP BW</b>—Minimum LSP bandwidth in Mbps. Amount of bandwidth actually reserved for each priority level. The bandwidth shown is for the entire interface. <b>Minimum LSP BW</b> is displayed only when <b>switching type</b> is PSC-1 or TDM.</li> <li>• <b>Interface MTU</b>—Displayed only when <b>switching type</b> is TDM.</li> <li>• <b>Interface supports standard SONET/SDH</b>—Displayed only when <b>switching type</b> is TDM.</li> </ul>	extensive

## Sample Output

```

show ted database user@host> show ted database brief
brief            TED database: 6 ISIS nodes 6 INET nodes
ID               Type Age(s) LnkIn LnkOut Protocol
cheviot.00(123.456.1.10) Rtr 383 1 1 IS-IS(2) IS-IS(1)
corriedale.00(123.456.1.11) Rtr 36 2 0 IS-IS(2) IS-IS(1)
wolff.00(123.456.1.12) Rtr 399 0 0 IS-IS(2) IS-IS(1)
perendale.00(123.456.1.13) Rtr 385 2 0 IS-IS(2) IS-IS(1)

```



```
merino.00(123.456.1.14)      Rtr    379    1    3 IS-IS(2) IS-IS(1)
romney.00(123.456.1.15)     Rtr    427    0    2 IS-IS(2) IS-IS(1)
```

**show ted database  
detail system-name**

```
user@host> show ted database detail merino
TED database: 6 ISIS nodes 6 INET nodes
NodeID: merino.00(123.456.1.14)
Type: Rtr, Age: 507 secs, LinkIn: 1, LinkOut: 3
Protocol: IS-IS(2)
  To: corriedale.00(123.456.1.11), Local: 123.456.8.206, Remote: 123.456.8.207

  To: perendale.00(123.456.1.13), Local: 123.456.8.204, Remote: 123.456.8.205
  To: cheviot.00(123.456.1.10), Local: 123.456.10.65, Remote: 123.456.10.66
Protocol: IS-IS(1)
  To: corriedale.00(123.456.1.11), Local: 123.456.8.206, Remote: 123.456.8.207

  To: perendale.00(123.456.1.13), Local: 123.456.8.204, Remote: 123.456.8.205
  To: cheviot.00(123.456.1.10), Local: 123.456.10.65, Remote: 123.456.10.66
```

**show ted database  
extensive**

```
user@host> show ted database extensive
TED database: 0 ISIS nodes 2 INET nodes
NodeID: 10.255.245.196
Type: Rtr, Age: 46 secs, LinkIn: 1, LinkOut: 1
Protocol: OSPF(0.0.0.0)
  To: 10.255.245.24, Local: 4.4.4.4, Remote: 5.5.5.5
  Metric: 1
  Static BW: 155.52Mbps
  Reservable BW: 155.52Mbps
  Available BW [TE-class] bps:
    [te0] 155.52Mbps    [te1] 155.52Mbps    [te2] 155.52Mbps    [te3] 155.52Mbps
    [te4] 155.52Mbps    [te5] 155.52Mbps    [te6] 155.52Mbps    [te7] 155.52Mbps

  Diffserv-TE BW model: Maximum allocation model
  Static BW [CT-class] bps:
    [ct0] 155.52Mbps    [ct1] 155.52Mbps    [ct2] 155.52Mbps    [ct3] 155.52Mbps

  Interface Switching Capability Descriptor(1):
    Switching type: PSC-1
    Encoding type: SDH/SONET
    Maximum LSP BW [priority] bps:
      [0] 155.52Mbps    [1] 155.52Mbps    [2] 155.52Mbps    [3] 155.52Mbps
      [4] 155.52Mbps    [5] 155.52Mbps    [6] 155.52Mbps    [7] 155.52Mbps
    Minimum LSP BW: 155.52Mbps
    Interface MTU: 1285
  Interface Switching Capability Descriptor(2):
    Switching type: TDM
    Encoding type: SDH/SONET
    Maximum LSP BW [priority] bps:
      [0] 155.52Mbps    [1] 155.52Mbps    [2] 155.52Mbps    [3] 155.52Mbps
      [4] 155.52Mbps    [5] 155.52Mbps    [6] 155.52Mbps    [7] 155.52Mbps
    Minimum LSP BW: 155.52Mbps
    Interface supports standard SONET/SDH
```



## show ted link

<b>Syntax</b>	show ted link <brief   detail> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show ted link <brief   detail>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display Multiprotocol Label Switching (MPLS) traffic engineering database link information.
<b>Options</b>	none—Display standard information about traffic engineering database link information.  brief   detail—(Optional) Display the specified level of output.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show ted link brief on page 726</a> <a href="#">show ted link detail on page 726</a>
<b>Output Fields</b>	<a href="#">Table 184 on page 725</a> describes the output fields for the <b>show ted link</b> command. Output fields are listed in the approximate order in which they appear.

**Table 184: show ted link Output Fields**

Field Name	Field Description	Level of Output
ID	Hostname and address of the node that the link is coming from. An address of .00 indicates that the node is the routing device itself. An address in the range 0.01 through 0.FF indicates that the node is a pseudonode.	brief
-->ID	Hostname and address of the node that the link is going to. An address of .00 indicates that the node is the routing device itself. An address in the range 0.01 through 0.FF indicates that the node is a pseudonode.	brief
hostname	Hostname and address of the node that the link is coming from. An address of .00 indicates that the node is the routing device itself. An address in the range 0.01 through 0.FF indicates that the node is a pseudonode.	detail
hostname	Hostname and address of the node that the link is going to. An address of .00 indicates that the node is the routing device itself. An address in the range 0.01 through 0.FF indicates that the node is a pseudonode.	detail
Local Path	Number of paths CSPF on the local routing device has placed on the link.	All levels



Table 184: show ted link Output Fields (*continued*)

Field Name	Field Description	Level of Output
Local BW	Amount of bandwidth the local routing device has placed on the link.	All levels

## Sample Output

```

show ted link brief  user@host> show ted link brief
TED link:
ID                                     ->ID                                     LocalPath LocalBW
cheviot.00(123.456.1.10)             merino.00(123.456.1.14)                 0 0bps
merino.00(123.456.1.14)             corriedale.00(123.456.1.11)             0 0bps
merino.00(123.456.1.14)             perendale.00(123.456.1.13)             0 0bps
merino.00(123.456.1.14)             cheviot.00(123.456.1.10)               0 0bps
romney.00(123.456.1.15)             corriedale.00(123.456.1.11)             0 0bps
romney.00(123.456.1.15)             perendale.00(123.456.1.13)             0 0bps

```

```

show ted link detail user@host> show ted link detail
TED link:
cheviot.00(123.456.1.10)->merino.00(123.456.1.14), LocalPath 0
  localBW [0] 0bps      [1] 0bps      [2] 0bps      [3] 0bps
  localBW [4] 0bps      [5] 0bps      [6] 0bps      [7] 0bps
merino.00(123.456.1.14)->corriedale.00(123.456.1.11), LocalPath 0
  localBW [0] 0bps      [1] 0bps      [2] 0bps      [3] 0bps
  localBW [4] 0bps      [5] 0bps      [6] 0bps      [7] 0bps
merino.00(123.456.1.14)->perendale.00(123.456.1.13), LocalPath 0
  localBW [0] 0bps      [1] 0bps      [2] 0bps      [3] 0bps
  localBW [4] 0bps      [5] 0bps      [6] 0bps      [7] 0bps
merino.00(123.456.1.14)->cheviot.00(123.456.1.10), LocalPath 0
  localBW [0] 0bps      [1] 0bps      [2] 0bps      [3] 0bps
  localBW [4] 0bps      [5] 0bps      [6] 0bps      [7] 0bps
romney.00(123.456.1.15)->corriedale.00(123.456.1.11), LocalPath 0
  localBW [0] 0bps      [1] 0bps      [2] 0bps      [3] 0bps
  localBW [4] 0bps      [5] 0bps      [6] 0bps      [7] 0bps
romney.00(123.456.1.15)->perendale.00(123.456.1.13), LocalPath 0
  localBW [0] 0bps      [1] 0bps      [2] 0bps      [3] 0bps
  localBW [4] 0bps      [5] 0bps      [6] 0bps      [7] 0bps

```



## show ted protocol

<b>Syntax</b>	show ted protocol <brief   detail> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show ted protocol <brief   detail>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display information about the protocols from which the Multiprotocol Label Switching (MPLS) traffic engineering database learned about its nodes.
<b>Options</b>	none—Display standard information about the protocols from which the traffic engineering database learned about its nodes.  brief   detail—(Optional) Display the specified level of output.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show ted protocol on page 727</a>
<b>Output Fields</b>	<a href="#">Table 185 on page 727</a> describes the output fields for the <b>show ted protocol</b> command. Output fields are listed in the approximate order in which they appear.

**Table 185: show ted protocol Output Fields**

Field Name	Field Description
<b>Protocol name</b>	Protocol that reported the node information: <ul style="list-style-type: none"> <li>IS-IS(1)—IS-IS Level 1.</li> <li>IS-IS(2)—IS-IS Level 2.</li> <li>OSPF (<i>area-number</i>)—OSPF from the specified area.</li> </ul>
<b>Credibility</b>	If the protocols provide conflicting information about a node, the protocol with the highest credibility value is the one that the traffic engineering database uses.
<b>Self node</b>	Address the protocol uses as the local address.

## Sample Output

```
show ted protocol  user@host> show ted protocol
```



Protocol name	Credibility	Self node
IS-IS(2)	2 (highest)	corriedale.00(123.456.1.11)
IS-IS(1)	1	corriedale.00(123.456.1.11)



## RSVP Operational Mode Commands

Table 186 on page 729 summarizes the command-line interface (CLI) commands you can use to monitor Resource Reservation Protocol (RSVP) sessions. Commands are listed in alphabetical order.

**Table 186: RSVP Operational Mode Commands**

Task	Command
Clear RSVP sessions and trigger fast reroute optimization.	<code>clear rsvp session</code>
Clear RSVP packet and error counters.	<code>clear ripng statistics</code>
Display the status of interfaces on which RSVP is running.	<code>show rsvp interface</code>
Display RSVP neighbors.	<code>show rsvp neighbor</code>
Display currently active RSVP sessions.	<code>show rsvp session</code>
Display RSVP packet and error counters.	<code>show rsvp statistics</code>
Display RSVP version and configuration information.	<code>show rsvp version</code>



**NOTE:** For more RSVP-related commands, such as `show route protocol`, `show route instance`, and `show route table`, see Protocol-Independent Routing Operational Mode Commands.

For information about the `monitor label-switched path` command, used to monitor an RSVP LSP in real time, see the *Junos System Basics and Services Command Reference*.

For information about how to configure RSVP, see the *Junos MPLS Applications Configuration Guide*.



## clear rsvp session

---

<b>Syntax</b>	<pre>clear rsvp session &lt;connection-source address&gt; &lt;connection-destination address&gt; &lt;gracefully&gt; &lt;logical-system (all   logical-system-name)&gt; &lt;lsp-id identifier&gt; &lt;name name&gt; &lt;optimize-fast-reroute&gt; &lt;tunnel-id identifier&gt;</pre>
<b>Syntax (EX Series Switch)</b>	<pre>clear rsvp session &lt;connection-source address&gt; &lt;connection-destination address&gt; &lt;gracefully&gt; &lt;lsp-id identifier&gt; &lt;name name&gt; &lt;optimize-fast-reroute&gt; &lt;tunnel-id identifier&gt;</pre>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Reset and restart Resource Reservation Protocol (RSVP) sessions.
<b>Options</b>	<p>none—Reset and restart all RSVP sessions for which this routing device is the ingress, transit, or egress routing device.</p> <p>connection-source <i>address</i>—(Optional) Source address for GMPLS and MPLS LSPs from the RSVP sender template.</p> <p>connection-destination <i>address</i>—(Optional) Destination address for GMPLS and MPLS LSPs from the RSVP sender template.</p> <p>gracefully—(Optional) Gracefully reset an RSVP session for a nonpacket LSP in two passes. In the first pass, the Admin-Status object is signaled along the path to the other endpoint of the RSVP session. In the second pass, the path used by the RSVP session is torn down. This option can only be used on the ingress or egress routing device of the RSVP session and is only valid for nonpacket LSPs.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>lsp-id <i>identifier</i>—(Optional) LSP identifier (source port) for the RSVP sender template.</p> <p>name <i>name</i>—(Optional) Reset and restart the specified RSVP session.</p> <p>optimize-fast-reroute—(Optional) Begin fast reroute optimization.</p> <p>tunnel-id <i>identifier</i>—(Optional) Tunnel identifier (destination port) for the RSVP session.</p>



**Required Privilege Level**    clear

**Related Documentation**

- [clear mpls lsp on page 679](#)
- [show rsvp session on page 743](#)

**List of Sample Output**    [clear rsvp session on page 731](#)

**Output Fields**    When you enter this command, you are provided feedback on the status of your request.

### Sample Output

**clear rsvp session**    user@host> clear rsvp session



## clear rsvp statistics

---

<b>Syntax</b>	clear rsvp statistics <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	clear rsvp statistics
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Clear Resource Reservation Protocol (RSVP) packet and error statistics.
<b>Options</b>	none—Clear RSVP packet and error statistics.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"><li>• <a href="#">show rsvp statistics on page 751</a></li></ul>
<b>List of Sample Output</b>	<a href="#">clear rsvp statistics on page 732</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

```
clear rsvp statistics  user@host> clear rsvp statistics
```



## show rsvp interface

<b>Syntax</b>	show rsvp interface <brief   detail   extensive> <link-management> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show rsvp interface <brief   detail   extensive> <link-management>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display the status of Resource Reservation Protocol (RSVP)-enabled interfaces and packet statistics.
<b>Options</b>	<p>none—Display standard information about the status of RSVP-enabled interfaces and packet statistics.</p> <p>brief   detail   extensive   link-management—(Optional) Display the specified level of output.</p> <p>link-management—(Optional) Use the link-management option to display the control peers and corresponding TE-link information created by the Link Management Protocol (LMP).</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show rsvp interface brief on page 736</a> <a href="#">show rsvp interface detail on page 736</a> <a href="#">show rsvp interface extensive on page 736</a> <a href="#">show rsvp interface link-management on page 737</a>
<b>Output Fields</b>	<a href="#">Table 187 on page 733</a> lists the output fields for the <b>show rsvp interface</b> command. Output fields are listed in the approximate order in which they appear.

**Table 187: show rsvp interface Output Fields**

Field Name	Field Description	Level of Output
<b>RSVP interface</b>	Number of interfaces on which RSVP is active. Each interface has one line of output.	All levels
<b>Interface</b>	Name of the interface.	All levels
<b>Index</b>	Index of the interface.	<b>detail</b>



Table 187: show rsvp interface Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>State</b>	State of the interface. <ul style="list-style-type: none"> <li>• <b>Disabled</b>—No traffic engineering information is displayed.</li> <li>• <b>Down</b>—Interface is not operational.</li> <li>• <b>Enabled</b>—Displays traffic engineering information.</li> <li>• <b>Up</b>—Interface is operational.</li> </ul>	All levels
<b>NoAuthentication</b>	Interface does not support RSVP authentication.	<b>detail</b>
<b>NoAggregate</b>	Interface does not support refresh reduction.	<b>detail</b>
<b>NoReliable</b>	Interface does not support refresh reduction message ID extension.	<b>detail</b>
<b>NoLinkProtection</b>	Interface does not support link protection.	<b>detail</b>
<b>HelloInterval</b>	Frequency at which RSVP hellos are sent on this interface (in seconds).	<b>detail</b>
<b>Address</b>	IP address of the local interface.	<b>detail</b>
<b>Active control channel</b>	Next-hop link address to transmit messages.	None specified
<b>TELink</b>	Traffic-engineered links that are managed by the peer they are associated with.	None specified
<b>Active resv</b>	Number of reservations that are actively reserving bandwidth on the interface.	All levels
<b>PreemptionCnt</b>	Number of times an RSVP session was preempted on this interface.	<b>detail</b>
<b>Update threshold</b>	Percentage change in reserved bandwidth to trigger an IGP update.	<b>detail</b>
<b>Subscription</b>	User-configured subscription factor.	All levels
<b>bc number</b>	Bandwidth allocated for the specified bandwidth constraint.	<b>extensive</b>
<b>ct number</b>	Bandwidth allocated for the specified class type.	<b>extensive</b>
<b>Static BW</b>	Total interface bandwidth, in bps.	All levels
<b>Available BW</b>	Amount of bandwidth that RSVP is allowed to reserve, in bps. It is equal to (static bandwidth * subscription factor).	all levels
<b>Reserved BW</b>	Currently reserved bandwidth, in bps.	All levels
<b>SoftPreemptionCnt</b>	Number of times a soft preemption occurred on this interface. This number is not included in the <b>PreemptionCnt</b> value.	<b>detail</b>
<b>Overbooked BW</b>	Currently overbooked bandwidth, in bps, by class type (ct0 through ct3).	<b>detail</b>



Table 187: show rsvp interface Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Highwater mark</b>	Highest bandwidth that has ever been reserved on this interface, in bps.	<b>brief</b>
<b>PacketType</b>	Type of RSVP packet.	<b>detail</b>
<b>Total Sent</b>	Total number of packets sent.	<b>detail</b>
<b>Total Received</b>	Total number of packets received since RSVP was enabled.	<b>detail</b>
<b>Last 5 seconds Sent</b>	Number of packets sent in the last 5 seconds.	<b>detail</b>
<b>Last 5 seconds Received</b>	Number of packets received in the last 5 seconds.	<b>detail</b>
<b>Path</b>	Statistics about Path messages, which are sent from the RSVP sender along the data paths and store path state information in each node along the path.	<b>detail</b>
<b>PathErr</b>	Statistics about PathErr messages, which are advisory messages that are sent upstream to the sender.	<b>detail</b>
<b>PathTear</b>	Statistics about PathTear messages, which remove path states and dependent reservation states in any routers along a path.	<b>detail</b>
<b>Resv</b>	Statistics about Resv messages, which are sent from the RSVP receiver along the data paths and store reservation state information in each node along the path.	<b>detail</b>
<b>ResvErr</b>	Statistics about ResvErr messages, which are advisory messages that are sent when an attempt to establish a reservation fails.	<b>detail</b>
<b>ResvTear</b>	Statistics about ResvTear messages, which remove reservation states along a path.	<b>detail</b>
<b>Hello</b>	Number of RSVP hello packets that have been sent to and received from the neighbor.	<b>detail</b>
<b>Ack</b>	Acknowledge message for refresh reductions.	<b>detail</b>
<b>Srefresh</b>	Summary refresh messages.	<b>detail</b>
<b>EndtoEnd RSVP</b>	Statistics for the number of end-to-end RSVP messages sent.	<b>detail</b>
<b>Queue</b>	CoS transmit queue number and its associated forwarding class designation.	<b>extensive</b>
<b>TxRate</b>	Configured bandwidth in Mbps and configured bandwidth as a percentage of the specified queue.	<b>extensive</b>
<b>Priority</b>	Weight of the queue relative to other configured queues, in percentage.	<b>extensive</b>



Table 187: show rsvp interface Output Fields (*continued*)

Field Name	Field Description	Level of Output
<i>queue-priority-value</i>	Low, High, None, or Exact. None indicates no rate limiting. Exact indicates the queue transmits at the configured rate only.	extensive

## Sample Output

```

show rsvp interface brief user@host> show rsvp interface brief
RSVP interface: 1 active
      Active Subscr- Static   Available   Reserved   Highwater
Interface State resv  iption  BW         BW         BW         mark
de0.0      Up      1    23%   10Mbps    989.992kbps 1.31Mbps    1.31Mbps

show rsvp interface detail user@host> show rsvp interface detail
so-0/1/1.0 Index 6, State: Ena/Up
  NoAuthentication, NoAggregate, NoReliable, NoLinkProtection
  HelloInterval 3(second)
  Address 192.168.207.29, 10.255.245.194
  ActiveResv 0, PreemptionCnt 0, Update threshold 10%
  Subscription 100%, StaticBW 155.52Mbps, AvailableBW 155.52Mbps
  ReservedBW [0] 155Mbps[1] 0bps[2] 0bps[3] 0bps[4] 0bps[5] 0bps[6] 0bps[7] 0bps
  SoftPreemptionCnt1
  OverbookedBW [0] 0bps[1] 0bps[2] 0bps[3] 0bps[4] 155Mbps[5] 0bps[6] 0bps[7] 0bps
  PacketType          Total          Last 5 seconds
                        Sent      Received      Sent      Received
  Path                16          0          1          0
  PathErr              0          0          0          0
  PathTear             1          0          0          0
  Resv                 0          11         0          1
  ResvErr              0          0          0          0
  ResvTear             0          0          0          0
  Hello               66          67         1          1
  Ack                  0          0          0          0
  Srefresh             0          0          0          0
  EndtoEnd RSVP       0          0          0          0
  ...

show rsvp interface extensive user@host> show rsvp interface extensive
so-1/0/0.0 Index 72, State Ena/Up
  NoAuthentication, NoAggregate, NoReliable, NoLinkProtection
  HelloInterval 9(second)
  Address 192.168.213.22, 10.255.240.175
  ActiveResv 1, PreemptionCnt 0, Update threshold 10%
  Subscription 100%,
  bc0 = (ct0+ct1+ct2+ct3), StaticBW 622.08Mbps
  bc1 = (ct1+ct2+ct3), StaticBW 466.56Mbps
  bc2 = (ct2+ct3), StaticBW 311.04Mbps
  bc3 = ct3, StaticBW 155.52Mbps
  ct0: StaticBW 155.52Mbps, AvailableBW 522.08Mbps
  ReservedBW [0] 0bps[1] 0bps[2] 0bps[3] 0bps[4] 0bps[5] 0bps[6] 0bps[7] 0bps
  ct1: StaticBW 155.52Mbps, AvailableBW 366.56Mbps
  ReservedBW [0] 100Mbps[1] 0bps[2] 0bps[3] 0bps[4] 0bps[5] 0bps[6] 0bps[7] 0bps

  ct2: StaticBW 155.52Mbps, AvailableBW 311.04Mbps
  ReservedBW [0] 0bps[1] 0bps[2] 0bps[3] 0bps[4] 0bps[5] 0bps[6] 0bps[7] 0bps
  ct3: StaticBW 155.52Mbps, AvailableBW 155.52Mbps

```



ReservedBW [0]	Obps[1]	Obps[2]	Obps[3]	Obps[4]	Obps[5]	Obps[6]	Obps[7]	Obps
Queue	TxRate		Priority	Exact				
0	155.52Mbps		25%	Low				
1	155.52Mbps		25%	Low				
2	155.52Mbps		25%	Low				
3	155.52Mbps		25%	Low				

**show rsvp interface** user@host> **show rsvp interface link-management**

**link-management**

RSVP interface: 2 active

PEER-C State: Up

Active Control Channel: so-0/1/0.0

TElink: TElnk1, Link ID: 37811

ActiveResv 0, PreemptionCnt 0

StaticBW 155.52Mbps, ReservedBW: 0bps, AvailableBW: 155.52Mbps

TElink: TElnk2, Link ID: 37808

ActiveResv 1, PreemptionCnt 0

StaticBW 155.52Mbps, ReservedBW: 0bps, AvailableBW: 155.52Mbps

PEER-B State: Up

Active Control Channel: so-1/0/0.0

TElink: TElnkAB1, Link ID: 1598

ActiveResv 0, PreemptionCnt 0

StaticBW 622.08Mbps, ReservedBW: 0bps, AvailableBW: 622.08Mbps

TElink: TElnkAB2, Link ID: 1597

ActiveResv 0, PreemptionCnt 0

StaticBW 622.08Mbps, ReservedBW: 0bps, AvailableBW: 622.08Mbps



## show rsvp neighbor

<b>Syntax</b>	show rsvp neighbor <brief   detail> <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show rsvp neighbor <brief   detail>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display Resource Reservation Protocol (RSVP) neighbors that were discovered dynamically during the exchange of RSVP packets.
<b>Options</b>	none—Display standard information about RSVP neighbors.  brief   detail—(Optional) Display the specified level of output.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show rsvp neighbor on page 742</a> <a href="#">show rsvp neighbor detail on page 742</a>
<b>Output Fields</b>	<a href="#">Table 188 on page 738</a> lists the output fields for the <b>show rsvp neighbor</b> command. Output fields are listed in the approximate order in which they appear.

**Table 188: show rsvp neighbor Output Fields**

Field Name	Field Description	Level of Output
<b>RSVP neighbor</b>	Number of neighbors that the routing device has learned of. Each neighbor has one line of output.	All levels
<b>via</b>	Name of the interface where the neighbor has been detected. In the case of generalized MPLS (GMPLS) LSPs, the name of the peer where the neighbor has been detected.	<b>detail</b>
<b>Address</b>	Address of a learned neighbor.	All levels
<b>Idle</b>	Length of time the neighbor has been idle, in seconds.	All levels
<b>Up/Dn</b>	Number of neighbor up or down transitions detected by RSVP hello packets. If the up count is 1 greater than the down count, the neighbor is currently up. Otherwise, the neighbor is down. Neighbors that do not support RSVP hello packets, such as routers running Junos OS Release 3.2 or earlier, are not reported as up or down.	All levels



Table 188: show rsvp neighbor Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Up cnt and Down cnt</b>	Number of neighbor up or down transitions detected by RSVP hello packets. If the up count is 1 greater than the down count, the neighbor is currently up. Otherwise, the neighbor is down. Neighbors that do not support RSVP hello packets, such as routers running Junos OS Release 3.2 or earlier, are not reported as up or down.	<b>detail</b>
<b>status</b>	State of the RSVP neighbor: <ul style="list-style-type: none"> <li>• <b>Up</b>—Routing device can detect RSVP Hello messages from the neighbor.</li> <li>• <b>Down</b>—Routing device has received one of the following indications:               <ul style="list-style-type: none"> <li>• Communication failure from the neighbor.</li> <li>• Communication from IGP that the neighbor is unavailable.</li> <li>• Change in the sequence numbers in the RSVP Hello messages sent by the neighbor.</li> </ul> </li> <li>• <b>Restarting</b>—RSVP neighbor is unavailable and might be restarting. The neighbor remains in this state until it has restarted or is declared dead. This state is possible only when graceful restart is enabled.</li> <li>• <b>Restarted</b>—RSVP neighbor has restarted and is undergoing state recovery (graceful restart) procedures.</li> <li>• <b>Dead</b>—Routing device has lost all communication with the RSVP neighbor. Any RSVP sessions with that neighbor are torn down.</li> </ul>	<b>detail</b>
<b>LastChange</b>	Time elapsed since the neighbor state changed either from up to down or from down to up. The format is <i>hh:mm:ss</i> .	All levels
<b>Last changed time</b>	Time elapsed since the neighbor state changed either from up to down or from down to up.	<b>detail</b>
<b>HelloInt</b>	Frequency at which RSVP hellos are sent on this interface (in seconds).	All levels
<b>HelloTx/Rx</b>	Number of hello packets sent to and received from the neighbor.	All levels
<b>Hello</b>	Number of RSVP hello packets that have been sent to and received from the neighbor.	<b>detail</b>
<b>Message received</b>	Number of Path and Resv messages that this routing device has received from the neighbor.	<b>detail</b>
<b>Remote Instance</b>	Identification provided by the remote routing device during Hello message exchange.	<b>detail</b>
<b>Local Instance</b>	Identification sent to the remote routing device during Hello message exchange.	<b>detail</b>



Table 188: show rsvp neighbor Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Refresh reduction</b>	<p>Measure of processing overhead requests of refresh messages. Refresh reduction extensions improve routing device performance by reducing the process overhead, thus increasing the number of LSPs a routing device can support. <b>Refresh reduction</b> can have the following values:</p> <ul style="list-style-type: none"> <li>• <b>operational</b>—All four RSVP refresh reduction extensions—message ack, bundling, summary refresh, and staged refresh timer—are functional between the two neighboring routing devices. For a detailed explanation of these extensions, see RFC 2961.</li> <li>• <b>incomplete</b>—Some RSVP refresh reduction extensions are functional between the two neighboring routing devices.</li> <li>• <b>no operational</b>—Either the refresh reduction feature has been turned off, or the remote routing device cannot support the refresh reduction extensions.</li> </ul>	<b>detail</b>
<b>Remote end</b>	<p>Neighboring routing device's status with regard to refresh reduction:</p> <ul style="list-style-type: none"> <li>• <b>enabled</b>—Remote routing device has requested refresh reduction during RSVP message exchanges.</li> <li>• <b>disabled</b>—Remote routing device does not require refresh reduction.</li> </ul>	<b>detail</b>
<b>Ack-extension</b>	<p>An RSVP refresh reduction extension:</p> <ul style="list-style-type: none"> <li>• <b>enabled</b>—Both local and remote routing devices support the ack-extension (RFC 2961).</li> <li>• <b>disabled</b>—Remote routing device does not support the ack-extension.</li> </ul>	<b>detail</b>
<b>Link protection</b>	<p>Status of the MPLS fast reroute mechanism that protects traffic from link failure:</p> <ul style="list-style-type: none"> <li>• <b>enabled</b>—Link protection feature has been turned on, protecting the neighbor with a bypass LSP.</li> <li>• <b>disabled</b>—No link protection feature has been enabled for this neighbor.</li> </ul>	<b>detail</b>
<b>LSP name</b>	Name of the bypass LSP.	<b>detail</b>
<b>Bypass LSP</b>	<p>Status of the bypass LSP. It can have the following values:</p> <ul style="list-style-type: none"> <li>• <b>does not exist</b>—Bypass LSP is not available.</li> <li>• <b>connecting</b>—Routing device is in the process of establishing a bypass LSP, and the LSP is not available for link protection at the moment.</li> <li>• <b>operational</b>—Bypass LSP is up and running.</li> <li>• <b>down</b>—Bypass LSP has gone down, with the most probable cause a node or a link failure on the bypass path.</li> </ul>	<b>detail</b>
<b>Backup routes</b>	Number of user LSPs (or routes) that are being protected by a bypass LSP (before link failure).	<b>detail</b>
<b>Backup LSPs</b>	Number of LSPs that have been temporarily established to maintain traffic by refreshing the downstream LSPs during link failure (not a one-to-one correspondence).	<b>detail</b>
<b>Bypass explicit route</b>	Explicit route object's (ERO) path that is taken by the bypass LSP.	<b>detail</b>



Table 188: show rsvp neighbor Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Restart time</b>	Length of time a neighbor waits to receive a Hello from the restarting node before declaring the node dead and deleting the states (in milliseconds).	<b>detail</b>
<b>Recovery time</b>	Length of time during which the restarting node attempts to recover its lost states with help from its neighbors (in milliseconds). Recovery time is advertised by the restarting node to its neighbors, and applies to nodal faults. The restarting node considers its graceful restart complete after this time has elapsed.	<b>detail</b>



## Sample Output

```
show rsvp neighbor user@host> show rsvp neighbor
                    RSVP neighbor: 2 learned
                    Address      Idle Up/Dn LastChange HelloInt HelloTx/Rx
                    192.168.207.203 0 3/2 13:01 3 366/349
                    192.168.207.207 0 1/0 22:49 3 448/448

show rsvp neighbor user@host> show rsvp neighbor detail
detail             RSVP neighbor: 2 learned
                    Address: 192.168.207.203 via: ecstasy1 status: Up
                    Last changed time: 28:47, Idle: 0 sec, Up cnt: 3, Down cnt: 2
                    Message received: 632
                    Hello: sent 673, received 656, interval 3 sec
                    Remote instance: 0x6432838a, Local instance: 0x74b72e36
                    Refresh reduction: operational
                    Remote end: enabled, Ack-extension: enabled
                    Link protection: enabled
                    LSP name: Bypass_to_192.168.207.203
                    Bypass LSP: operational, Backup routes: 1, Backup LSPs: 0
                    Bypass explicit route: 192.168.207.207 192.168.207.224
                    Restart time: 60000 msec, Recovery time: 0 msec
```



## show rsvp session

<b>Syntax</b>	<pre>show rsvp session &lt;brief   detail   extensive   terse&gt; &lt;bidirectional   unidirectional&gt; &lt;bypass&gt; &lt;down   up&gt; &lt;interface <i>interface-name</i>&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;lsp-type&gt; &lt;name <i>session-name</i>&gt; &lt;p2mp&gt; &lt;session-type&gt; &lt;statistics&gt; &lt;te-link <i>te-link</i>&gt;</pre>
<b>Syntax (EX Series Switch)</b>	<pre>show rsvp session &lt;brief   detail   extensive   terse&gt; &lt;bidirectional   unidirectional&gt; &lt;bypass&gt; &lt;down   up&gt; &lt;interface <i>interface-name</i>&gt; &lt;lsp-type&gt; &lt;name <i>session-name</i>&gt; &lt;p2mp&gt; &lt;session-type&gt; &lt;statistics&gt; &lt;te-link <i>te-link</i>&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Command introduced in Junos OS Release 9.5 for EX Series switches.</p>
<b>Description</b>	Display information about Resource Reservation Protocol (RSVP) sessions.
<b>Options</b>	<p>none—Display standard information about all RSVP sessions.</p> <p>brief   detail   extensive   terse—(Optional) Display the specified level of output.</p> <p>bidirectional   unidirectional—(Optional) Display information about bidirectional or unidirectional RSVP sessions only, respectively.</p> <p>bypass—(Optional) Display RSVP sessions for bypass LSPs.</p> <p>down   up—(Optional) Display only LSPs that are inactive or active, respectively.</p> <p>interface <i>interface-name</i>—(Optional) Display RSVP sessions for the specified interface only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>lsp-type</i>—(Optional) Display information about RSVP sessions with regard to LSPs:</p> <ul style="list-style-type: none"> <li>• <b>bypass</b>—Sessions used for bypass LSPs.</li> </ul>



- **lsp**—Sessions used to set up LSPs.
- **nolsp**—Sessions not used to set up LSPs.

**name** *session-name*—(Optional) Display information about the named session.

**p2mp**—(Optional) Display point-to-multipoint information.

**session-type**—(Optional) Display information about a particular session type:

- **egress**—Sessions that terminate on this routing device.
- **ingress**—Sessions that originate from this routing device.
- **transit**—Sessions that transit through this routing device.

**statistics**—(Optional) Display packet statistics.

**te-link** *te-link*—(Optional) Display sessions with reservations on the specified TE link.

**Required Privilege Level** view

**Related Documentation**

- [clear rsvp session on page 730](#)

**List of Sample Output** [show rsvp session on page 748](#)  
[show rsvp session statistics on page 748](#)  
[show rsvp session detail on page 748](#)  
[show rsvp session detail \(Path MTU Output Field\) on page 749](#)  
[show rsvp session detail \(GMPLS\) on page 749](#)  
[show rsvp session extensive on page 749](#)  
[show rsvp session p2mp \(Ingress Router\) on page 750](#)  
[show rsvp session p2mp \(Transit Router\) on page 750](#)

**Output Fields** [Table 189 on page 744](#) describes the output fields for the **show rsvp session** command. Output fields are listed in the approximate order in which they appear.

**Table 189: show rsvp session Output Fields**

Field Name	Field Description	Level of Output
Ingress RSVP	Information about ingress RSVP sessions.	detail
Ingress RSVP	Information about ingress RSVP sessions. Each session has one line of output.	All levels
Egress RSVP	Information about egress RSVP sessions.	All levels
Transit RSVP	Information about the transit RSVP sessions.	All levels
P2MP name	(Appears only when the <b>p2mp</b> option is specified). Name of the point-to-multipoint LSP path.	All levels



Table 189: show rsvp session Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>P2MP branch count</b>	(Appears only when the <b>p2mp</b> option is specified). Number of LSPs receiving packets from the point-to-multipoint LSP.	All levels
<b>To</b>	Destination (egress routing device) of the session.	All levels
<b>From</b>	Source (ingress routing device) of the session.	All levels
<b>State</b>	State of the path: <b>Up</b> , <b>Down</b> , or <b>AdminDn</b> . <b>AdminDn</b> indicates that the LSP is being taken down gracefully.	All levels
<b>Address</b>	Destination (egress routing device) of the LSP.	<b>detail</b>
<b>From</b>	Source (ingress routing device) of the session.	<b>detail</b>
<b>LSPstate</b>	State of the LSP that is being handled by this RSVP session. It can be either <b>Up</b> , <b>Dn</b> (down), or <b>AdminDn</b> . <b>AdminDn</b> indicates that the LSP is being taken down gracefully.	<b>brief detail</b>
<b>Rt</b>	Number of active routes (prefixes) that have been installed in the routing table. For ingress RSVP sessions, the routing table is the primary IPv4 table ( <b>inet.0</b> ). For transit and egress RSVP sessions, the routing table is the primary MPLS table ( <b>mpls.0</b> ).	<b>brief</b>
<b>Active Route</b>	Number of active routes (prefixes) that have been installed in the forwarding table. For ingress RSVP sessions, the forwarding table is the primary IPv4 table ( <b>inet.0</b> ). For transit and egress RSVP sessions, the forwarding table is the primary MPLS table ( <b>mpls.0</b> ).	<b>detail</b>
<b>LSPname</b>	Name of the LSP.	<b>brief detail</b>
<b>LSPpath</b>	Indicates whether the RSVP session is for the primary or secondary LSP path. <b>LSPpath</b> can be either <b>primary</b> or <b>secondary</b> and can be displayed on the ingress, egress, and transit routing devices. <b>LSPpath</b> can also indicate when a graceful LSP deletion has been triggered.	<b>detail</b>
<b>Bypass</b>	(Egress routing device) Destination address for the bypass LSP.	<b>detail</b>
<b>Bidir</b>	(When LSP is bidirectional) LSP will allow data to travel in both directions between GMPLS devices.	<b>detail</b>
<b>Bidirectional</b>	(When LSP is bidirectional) LSP will allow data to travel both ways between GMPLS devices.	<b>detail</b>
<b>Upstream label in</b>	(When LSP is bidirectional) Incoming label for reverse direction traffic for this LSP.	<b>detail</b>
<b>Upstream label out</b>	(When LSP is bidirectional) Outgoing label for reverse direction traffic for this LSP.	<b>detail</b>



Table 189: show rsvp session Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Recovery label received</b>	(When LSP is bidirectional) Label the upstream node suggests for use in the Resv message that is sent.	<b>detail</b>
<b>Recovery label sent</b>	(When LSP is bidirectional) Label the downstream node suggests for use in its Resv messages that is returned.	<b>detail</b>
<b>Suggested label received</b>	(When LSP is bidirectional) Label the upstream node suggests for use in the Resv message that is sent.	<b>detail</b>
<b>Suggested label sent</b>	(When LSP is bidirectional) Label the downstream node suggests for use in its Resv message that is returned.	<b>detail</b>
<b>Resv style or Style</b>	RSVP reservation style. This field consists of two parts. The first is the number of active reservations. The second is the reservation style, which can be <b>FF</b> (fixed filter), <b>SE</b> (shared explicit), or <b>WF</b> (wildcard filter).	<b>brief detail</b>
<b>Label in</b>	Incoming label for this LSP.	<b>brief detail</b>
<b>Label out</b>	Outgoing label for this LSP.	<b>brief detail</b>
<b>Time left</b>	Number of seconds remaining in the lifetime of the reservation.	<b>brief detail</b>
<b>Since</b>	Date and time when the RSVP session was initiated.	<b>detail</b>
<b>Tspec</b>	Sender's traffic specification, which describes the sender's traffic parameters.	<b>detail</b>
<b>DiffServ info</b>	Indicates whether the LSP is a multiclass LSP ( <b>multiclass diffServ-TE LSP</b> ) or a Differentiated-Services-aware traffic engineering LSP ( <b>diffServ-TE LSP</b> ).	<b>detail</b>
<b>bandwidth</b>	Bandwidth for each class type ( <b>ct0</b> , <b>ct1</b> , <b>ct2</b> , or <b>ct3</b> ).	<b>detail</b>
<b>Port number</b>	Protocol ID and sender/receiver port used in this RSVP session.	<b>detail</b>
<b>FastReroute desired</b>	Fast reroute has been requested by the ingress routing device.	<b>detail</b>
<b>Soft preemption desired</b>	Soft preemption has been requested by the ingress routing device.	<b>detail</b>
<b>FastReroute desired</b>	(Data [not a bypass or backup] LSP when the protection scheme has been requested) Fast reroute (one-to-one backup) has been requested by the ingress routing device.	<b>detail extensive</b>
<b>Link protection desired</b>	(Data [not a bypass or backup] LSP when the protection scheme has been requested) Link protection (many-to-one backup) has been requested by the ingress routing device.	<b>detail extensive</b>



Table 189: show rsvp session Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Node/Link protection desired</b>	(Data [not a bypass or backup] LSP when the protection scheme has been requested) Node and link protection (many-to-one backup) has been requested by the ingress routing device.	<b>detail extensive</b>
<b>Type</b>	<p>LSP type:</p> <ul style="list-style-type: none"> <li>• <b>Link protected LSP</b>—LSP has been protected by link protection at the outgoing interface. The name of the bypass used is also listed here (<b>extensive</b>).</li> <li>• <b>Node/Link protected LSP</b>—LSP has been protected by node and link protection at the outgoing interface. The name of the bypass used is also listed here (<b>extensive</b>).</li> <li>• <b>Protection down</b>—LSP is not currently protected.</li> <li>• <b>Bypass LSP</b>—LSP that is used to protect one or more user LSPs in case of link failure.</li> <li>• <b>Backup LSP at Point-of-Local-Repair (PLR)</b>—LSP that has been temporarily established to protect a user LSP at the ingress of a failed link.</li> <li>• <b>Backup LSP at Merge Point (MP)</b>—LSP that has been temporarily established to protect a user LSP at the egress of a failed link.</li> </ul>	<b>detail extensive</b>
<b>New bypass</b>	New bypass (the bypass name is also displayed) has been activated to protect the LSP.	<b>extensive</b>
<b>Link protection up, using <i>bypass-name</i></b>	Link protection (the bypass name is also displayed) has been activated for the LSP.	<b>extensive</b>
<b>Creating backup LSP, link down</b>	A <b>link down</b> event occurred, and traffic is being switched over to the bypass LSP.	<b>extensive</b>
<b>Deleting backup LSP, protected LSP restored</b>	Link has come back up and the LSP has been restored. Because the backup LSP is no longer needed, it is deleted.	<b>extensive</b>
<b>Path mtu</b>	Displays the value of the path MTU received from the network (through signaling) and the value used for forwarding. This value is only displayed on ingress routing devices with the <b>allow-fragmentation</b> statement configured at the <b>[edit protocols mpls path-mtu]</b> hierarchy level. If there is a detour LSP, the path MTU for the detour is also displayed.	<b>detail</b>
<b>PATH rcvfrom</b>	Address of the previous-hop (upstream) routing device or client, interface the neighbor used to reach this routing device, and number of packets received from the upstream neighbor.	<b>detail</b>
<b>Adspec</b>	MTU signaled from the ingress routing device to the egress routing device by means of the adspec object.	<b>detail</b>
<b>PATH sentto</b>	Address of the next-hop (downstream) routing device or client, interface used to reach this neighbor (or peer-name in the GMPLS LSP case), and number of packets sent to the downstream routing device.	<b>detail</b>



Table 189: show rsvp session Output Fields (*continued*)

Field Name	Field Description	Level of Output
<b>Explot route</b>	Explicit route for the session. Normally this value will be the same as that of record route. Differences indicate that path rerouting has occurred, typically during fast reroute.	<b>detail</b>
<b>Record route</b>	Recorded route for the session, taken from the record route object. Normally this value will be the same as that of explot route. Differences indicate that path rerouting has occurred, typically during fast reroute.	<b>detail</b>

## Sample Output

```

user@host> show rsvp session
Ingress RSVP: 1 sessions
  To          From          State  Rt  Style  Labelin  Labelout  LSPname
  10.255.245.214 10.255.245.212 AdminDn 0 1 FF      -      22293 LSP Bidir
Total 1 displayed, Up 1, Down 0

Egress RSVP: 2 sessions
  To          From          State  Rt  Style  Labelin  Labelout  LSPname
  10.255.245.194 10.255.245.195 Up      0 1 FF    39811    -  Gpro3-ba Bidir
  10.255.245.194 10.255.245.195 Up      0 1 FF      3      -  pro3-ba
Total 2 displayed, Up 2, Down 0

Transit RSVP: 1 sessions
  To          From          State  Rt  Style  Labelin  Labelout  LSPname
  10.255.245.198 10.255.245.197 Up      0 1 SE   100000    3  pro3-de
Total 1 displayed, Up 1, Down 0

user@host> show rsvp session statistics
Ingress RSVP: 2 sessions
  To          From          State  Packets  Bytes  LSPname
  10.255.245.24 10.255.245.22 Up        0        0  pro3-bd
  10.255.245.24 10.255.245.22 Up    44868  2333136  pro3-bd-2
Total 2 displayed, Up 2, Down 0
Egress RSVP: 2 sessions
  To          From          State  Packets  Bytes  LSPname
  10.255.245.22 10.255.245.24 Up        0        0  pro3-db
  10.255.245.22 10.255.245.24 Up        0        0  pro3-db-2
Total 2 displayed, Up 2, Down 0
Transit RSVP: 0 sessions
Total 0 displayed, Up 0, Down 0

user@host> show rsvp session detail
Ingress RSVP: 1 sessions
1.1.1.1
  From: 2.2.2.2, LSPstate: Up, ActiveRoute: 0
  LSPname: to-a, LSPpath: Primary
  Suggested label received: -, Suggested label sent: -
  Recovery label received: -, Recovery label sent: 3
  Resv style: 1 FF, Label in: -, Label out: 3
  Time left: -, Since: Fri Mar 26 18:42:42 2004
  Tspec: rate 300kbps size 300kbps peak Infbps m 20 M 1500
  DiffServ info: diffServ-TE LSP, bandwidth: <ct1 300kbps>
  Port number: sender 1 receiver 15876 protocol 0
  PATH rcvfrom: localclient

```



```

Adspec: sent MTU 1500
PATH sentto: 192.168.37.16 (t1-0/2/1.0) 1 pkt

show rsvp session detail (Path MTU Output Field) user@host> show rsvp session detail
Ingress RSVP: 1 sessions
10.255.245.3
  From: 10.255.245.5, LSPstate: Up, ActiveRoute: 3
  LSPname: to-c, LSPpath: Primary
  Suggested label received: -, Suggested label sent: -
  Recovery label received: -, Recovery label sent: 100432
  Resv style: 1 FF, Label in: -, Label out: 100432
  Time left: -, Since: Mon Aug 16 17:54:40 2006
  Tspec: rate 0bps size 0bps peak Infbps m 20 M 9192
  Port number: sender 1 receiver 57843 protocol 0
  FastReroute desired
  PATH rcvfrom: localclient
  Adspec: sent MTU 4470
  Path mtu: received 4470, using 4458 for forwarding
  PATH sentto: 192.168.37.89 (so-0/2/3.0) 11 pkts
  RESV rcvfrom: 192.168.37.89 (so-0/2/3.0) 10 pkts
  Explct route: 192.168.37.89
  Record route: <self> 192.168.37.89 192.168.37.87
  Detour is Up
  Detour Tspec: rate 0bps size 0bps peak Infbps m 20 M 9192
  Detour adspec: sent MTU 1512
  Path mtu: received 1512, using 1500 for forwarding

show rsvp session detail (GMPLS) user@host> show rsvp session detail
Ingress RSVP: 1 sessions
192.168.4.1
  From: 192.168.1.1, LSPstate: Dn, ActiveRoute: 0
  LSPname: gmpls-r1-to-r3, LSPpath: Primary
  Bidirectional, Upstream label in: 21253, Upstream label out: -
  Suggested label received: -, Suggested label sent: 21253
  Recovery label received: -, Recovery label sent: -
  Resv style: 0 -, Label in: -, Label out: -
  Time left: -, Since: Mon Aug 16 17:54:40 2006
  Tspec: rate 0bps size 0bps peak 155.52Mbps m 20 M 1500
  Port number: sender 2 receiver 46115 protocol 0
  PATH rcvfrom: localclient
  Adspec: sent MTU 1500
  PATH MTU: received 0
  PATH sentto: 10.35.1.5 (so-0/2/3.0) 11 pkts
  Explct route: 100.100.100.100 93.93.93.93
  Record route: <self> 100.100.100.100 93.93.93.93
  Total 1 displayed, Up 0, Down 1
  Egress RSVP: 0 sessions
  Total 0 displayed, Up 0, Down 0
  Transit RSVP: 0 sessions
  Total 0 displayed, Up 0, Down 0

show rsvp session extensive user@host> show rsvp session extensive
10.255.245.13
  From: 10.255.245.48, LSPstate: Up, ActiveRoute: 0
  ....
  Link protection desired
  Type: Link protected LSP, using p2
  11 Feb 6 15:24:16 Backup LSP: Call was cleared by RSVP
  10 Feb 6 15:24:16 Backup LSP: Session preempted
  9 Feb 6 15:24:16 Deleting backup LSP, protected LSP restored

```



```

8 Feb 6 15:23:22 Backup LSP: Up 192.168.208.117(Label=3)
7 Feb 6 15:23:22 Backup LSP: Record Route: 192.168.208.117(Label=3)
6 Feb 6 15:23:19 Backup LSP: Explicit Route: wrong delivery
5 Feb 6 15:23:19 Creating backup LSP, link down
4 Feb 6 12:36:03 Link protection up, using p2
3 Feb 6 12:35:56 New bypass p2
2 Feb 6 12:35:47 Bypass state down, p1[2 times]
1 Feb 6 12:35:39 New bypass p1

```

**show rsvp session  
p2mp (Ingress Router)**

```

user@host> show rsvp session p2mp
Ingress RSVP: 3 sessions
P2MP name: test, P2MP branch count: 1
To          From          State   Rt Style Labelin Labelout LSPname
10.255.10.95 10.255.10.2   Up      0  1 SE  -         3 to-pe1
P2MP name: test2, P2MP branch count: 2
To          From          State   Rt Style Labelin Labelout LSPname
10.255.10.23 10.255.10.2   Up      0  1 SE  -         299776 to-pe3
10.255.10.16 10.255.10.2   Up      0  1 SE  -         299776 to-pe4
Total 3 displayed, Up 3, Down 0

Egress RSVP: 0 sessions
Total 0 displayed, Up 0, Down 0

Transit RSVP: 0 sessions
Total 0 displayed, Up 0, Down 0

```

**show rsvp session  
p2mp (Transit Router)**

```

user@host> show rsvp session p2mp
Ingress RSVP: 1 sessions
P2MP name: test, P2MP branch count: 1
To          From          State   Rt Style Labelin Labelout LSPname
10.255.10.23 10.255.10.95   Up      0  1 SE  -         299792 to-pe2
Total 1 displayed, Up 1, Down 0

Egress RSVP: 1 sessions
P2MP name: test, P2MP branch count: 1
To          From          State   Rt Style Labelin Labelout LSPname
10.255.10.95 10.255.10.2   Up      0  1 SE  3         - to-pe1
Total 1 displayed, Up 1, Down 0

Transit RSVP: 2 sessions
P2MP name: test2, P2MP branch count: 2
To          From          State   Rt Style Labelin Labelout LSPname
10.255.10.23 10.255.10.2   Up      0  1 SE  299776 299808 to-pe3
10.255.10.16 10.255.10.2   Up      0  1 SE  299776 299856 to-pe4
Total 2 displayed, Up 2, Down 0

```



## show rsvp statistics

<b>Syntax</b>	show rsvp statistics <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show rsvp statistics
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display Resource Reservation Protocol (RSVP) packet and error statistics.
<b>Options</b>	none—Display RSVP packet and error statistics.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">clear rsvp statistics on page 732</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">show rsvp statistics on page 753</a>
<b>Output Fields</b>	<a href="#">Table 190 on page 751</a> describes the output fields for the <b>show rsvp statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 190: show rsvp statistics Output Fields**

Field Name	Field Description
<b>Packet Type</b>	Statistics about different RSVP messages.
<b>Total Sent</b>	Total number of packets sent since RSVP was enabled.
<b>Total Received</b>	Total number of packets received since RSVP was enabled.
<b>Last 5 seconds Sent</b>	Total number of packets sent in the last 5 seconds.
<b>Last 5 seconds Received</b>	Number of packets received in the last 5 seconds.
<b>Path</b>	Statistics about Path messages, which are sent from the RSVP sender along the data paths and which store path state information in each node along the path.
<b>PathErr</b>	Statistics about PathErr messages, which are advisory messages that are sent upstream to the sender.
<b>PathTear</b>	Statistics about PathTear messages, which remove path states and dependent reservation states in any routing devices along a path.



Table 190: show rsvp statistics Output Fields (*continued*)

Field Name	Field Description
<b>Resv FF</b>	Statistics about fixed-filter reservation style messages, which consist of distinct reservations among explicit senders.
<b>Resv WF</b>	Statistics about wildcard-filter reservation style messages, which consist of shared reservations among wildcard senders.
<b>Res SE</b>	Statistics about shared-explicit reservation style messages, which consist of shared reservations among explicit senders.
<b>ResvErr</b>	Statistics about ResvErr messages, which are advisory messages that are sent when an attempt to establish a reservation fails.
<b>ResvTear</b>	Statistics about ResvTear messages, which remove reservation states along a path.
<b>ResvConf</b>	Statistics about ResvConfirm messages, which are responses to confirm a reservation request.
<b>Ack</b>	Acknowledge message for refresh reductions.
<b>SRefresh</b>	Summary refresh messages.
<b>Hello</b>	Number of RSVP hello packets that have been sent to and received from the neighbor.
<b>EndtoEnd RSVP</b>	Statistics for the number of End-to-end RSVP messages.
<b>Errors</b>	Statistics about errored RSVP packets.
<b>Rcv pkt bad length</b>	The packet was not processed because its length is inappropriate.
<b>Rcv pkt unknown type</b>	The packet is not one of the well-known RSVP types, as defined in RFC 2205, <i>Resource ReSerVation Protocol (RSVP)</i> .
<b>Rcv pkt bad version</b>	The packet is not an RSVP version 1 packet.
<b>Rcv pkt auth fail</b>	The packet failed authentication checks.
<b>Rcv pkt bad checksum</b>	The RSVP checksum check failed.
<b>Rcv pkt bad format</b>	General packet processing failed because the packet was badly formed.
<b>Memory allocation fail</b>	An internal resource failure occurred.
<b>No path information</b>	A reservation was received, but no sender is active.
<b>Resv style conflict</b>	The same session contains inconsistent reservation styles.
<b>Port conflict</b>	There were inconsistent port numbers for the same session.
<b>Resv no interface</b>	An interface for the receive reservation packets cannot be located.



Table 190: show rsvp statistics Output Fields (*continued*)

Field Name	Field Description
<b>PathErr to client</b>	Number of PathErr packets delivered to the local client.
<b>ResvErr to client</b>	Number of ResvErr packets delivered to the local client.
<b>Path timeout</b>	Number of times the sender timed out because the path was removed.
<b>Resv timeout</b>	Number of times the receiver timed out because the reservation was removed.
<b>Message out-of-order</b>	Records the number of RSVP incoming messages that are considered out of order. This is detected from the message ID object's sequence number.
<b>Unknown ack msg</b>	A neighboring routing device replies with an ACK object that contains an unknown message ID. This can indicate a message ID handshake problem. For example, a router receives an ACK for message IDs 1, 2, and 3. However, it only has state for message IDs 1 and 3. The router increments the unknown ack counter by 1.
<b>Recv nack</b>	If a neighboring router receives an unknown message ID in an RSVP refresh message, the router sends a Resv nack message back to the sender. This can happen if that neighbor has been rebooted. For this case, the router sends a regular RSVP refresh message to recover the state and start the message-ID handshake process again.
<b>Recv duplicated msg-id</b>	Number of times the same message ID is used by two different RSVP messages. This duplication is usually caused when a neighboring routing device restarts.
<b>No TE-link to recv Hop</b>	Counter of packets discarded because a TE link was not found.
<b>Rcv pkt disabled interface</b>	Number of RSVP packets received on an interface that is not enabled for RSVP.
<b>Transmit buffer full</b>	Number of times the buffer for assembling an outgoing RSVP message was not large enough.
<b>Transmit failure</b>	Number of times the RSVP task failed to send out a packet.
<b>Receive failure</b>	Number of times the RSVP task failed to read an incoming packet.
<b>P2MP RESV discarded by appl</b>	Number of Resv messages discarded because the MPLS label is not valid for the P2MP LSP application.
<b>Rate limit</b>	Number of RSVP packets dropped due to rate limiting.
<b>Err msg loop detected</b>	Number of RSVP error messages that have looped back to their originator. This is detected by checking the error node address in the ERROR_SPEC object.

## Sample Output

```

show rsvp statistics  user@host> show rsvp statistics
                        PacketType          Total          Last 5 seconds
                        Sent      Received      Sent      Received
                        Path          355          408          0          0

```



PathErr	2	13	0	0
PathTear	101	139	0	0
Resv FF	0	0	0	0
Resv WF	0	0	0	0
Resv SE	419	225	0	0
ResvErr	0	0	0	0
ResvTear	0	13	0	0
ResvConf	0	0	0	0
Ack	682	1414	0	0
SRefresh	395198	236030	5	2
Hello	578809	578221	4	4
EndtoEnd RSVP	0	0	0	0
Errors	Total		Last 5 seconds	
Rcv pkt bad length	0		0	
Rcv pkt unknown type	0		0	
Rcv pkt bad version	0		0	
Rcv pkt auth fail	0		0	
Rcv pkt bad checksum	0		0	
Rcv pkt bad format	0		0	
Memory allocation fail	0		0	
No path information	10		0	
Resv style conflict	0		0	
Port conflict	0		0	
Resv no interface	0		0	
PathErr to client	38		0	
ResvErr to client	0		0	
Path timeout	8		0	
Resv timeout	57		0	
Message out-of-order	0		0	
Unknown ack msg	2978		0	
Recv nack	86		0	
Recv duplicated msg-id	5		0	
No TE-link to recv Hop	0		0	
Rcv pkt disabled interface	0		0	
Transmit buffer full	0		0	
Transmit failure	0		0	
Receive failure	0		0	
P2MP RESV discarded by appl	0		0	
Rate limit	306		0	
Err msg loop detected	0		0	



## show rsvp version

<b>Syntax</b>	show rsvp version <logical-system (all   <i>logical-system-name</i> )>
<b>Syntax (EX Series Switch)</b>	show rsvp version
<b>Release Information</b>	Command introduced before Junos OS Release 7.4. Command introduced in Junos OS Release 9.5 for EX Series switches.
<b>Description</b>	Display information about the Resource Reservation Protocol (RSVP) protocol settings, such as the version of the RSVP software, the refresh timer and keep multiplier, and local RSVP graceful restart capabilities on a routing device.
<b>Options</b>	none—Display RSVP protocol settings.  logical-system (all   <i>logical-system-name</i> )—(Optional) Perform this operation on all logical systems or on a particular logical system.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show rsvp version on page 756</a>
<b>Output Fields</b>	<a href="#">Table 191 on page 755</a> describes the output fields for the <b>show rsvp version</b> command. Output fields are listed in the approximate order in which they appear.

**Table 191: show rsvp version Output Fields**

Field Name	Field Description
Resource ReSerVation Protocol, version	RSVP software version.
RSVP protocol	Status of RSVP: <b>Enabled</b> or <b>Disabled</b> .
R(refresh timer)	Configured time interval used to generate periodic RSVP messages.
K(keep multiplier)	Number of RSVP messages that can be lost before an RSVP state is declared stale.
Preemption	Currently configured preemption capability: <b>Aggressive</b> , <b>Disabled</b> , or <b>Normal</b> . The default is <b>Normal</b> .
Soft-preemption cleanup	Time, in seconds, that an LSP is kept after it has been soft preempted. This is a global property of the RSVP protocol.
Graceful deleting timeout	Currently configured value for the <b>graceful-deletion-timeout</b> statement. The router that initiates the graceful deletion procedure for an RSVP session waits for the graceful deletion timeout interval to ensure that all routers along the path (especially the ingress and egress routers) have prepared for the LSP to be taken down.
NSR Mode	Status of the nonstop active routing feature for RSVP on the restarting device: <b>Enabled</b> or <b>Disabled</b> .



Table 191: show rsvp version Output Fields (*continued*)

Field Name	Field Description
<b>NSR State</b>	<p>State of the nonstop active routing feature for RSVP on the restarting device.</p> <p>Possible values are:</p> <ul style="list-style-type: none"> <li>• <b>Idle</b></li> <li>• <b>TE-link sync complete</b></li> <li>• <b>Neighbor sync complete</b></li> <li>• <b>Path state sync complete</b></li> <li>• <b>Resv state sync complete</b></li> <li>• <b>Bypass sync complete</b></li> <li>• <b>Init sync complete</b></li> </ul>
<b>Graceful restart</b>	Status of the graceful restart feature for RSVP on the restarting routing device: <b>Enabled</b> or <b>Disabled</b> .
<b>Restart helper mode</b>	Status of the helper mode feature: <b>Enabled</b> or <b>Disabled</b> . When this feature is enabled, the restarting routing device can help the neighbor with its RSVP restart procedures.
<b>Maximum helper restart time</b>	Number of milliseconds (ms) configured for the maximum helper restart time. The maximum helper restart time is the length of time the routing device waits before declaring that an RSVP neighbor attempting to restart gracefully is down.
<b>Maximum helper recovery time</b>	Number of milliseconds configured for the maximum helper recovery time. The maximum helper recovery time is the amount of time the routing device maintains the state of an RSVP neighbor attempting to restart gracefully.
<b>Restart time</b>	Number of milliseconds that a neighbor waits to receive a Hello message from the restarting node before declaring the node dead and deleting the states.
<b>Recovery time</b>	Number of milliseconds during which the restarting node attempts to recover its lost states with help from its neighbors. Recovery time is advertised by the restarting node to its neighbors, and applies to nodal faults. The restarting node considers its graceful restart complete after this time has elapsed.

## Sample Output

```

show rsvp version user@host> show rsvp version
Resource ReSerVation Protocol, version 1. rfc2205
  RSVP protocol:           Enabled
  R(refresh timer):        30 seconds
  K(keep multiplier):      3
  Preemption:              Normal
  Soft-preemption cleanup:  30 seconds
  Graceful deletion timeout: 30 seconds
  Graceful restart:         Disabled
  Restart helper mode:      Enabled
  Maximum helper restart time: 20000 msec
  Maximum helper recovery time: 180000 msec
  Restart time:             0 msec

```



## PART 4

# Layer 2 Bridging and Switching Operational Mode Commands

- [Layer 2 Bridging and Switching Operational Mode Commands on page 759](#)
- [Spanning Tree Operational Mode Commands on page 787](#)







# Layer 2 Bridging and Switching

## Operational Mode Commands

Table 192 on page 759 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot Layer 2 bridging and switching. Commands are listed in alphabetical order.

**Table 192: Layer 2 Bridging and Switching Operational Mode Commands**

Task	Command
Clear learned Layer 2 address information from the media access control (MAC) address table.	<code>clear bridge mac-table</code>
Clear bridge protocol data unit (BPDU) error on interface due to possible bridge spanning tree protocol (STP) loop.	<code>clear error bpdu</code>
Clear a MAC rewrite error condition for Layer 2 protocol tunneling.	<code>clear error mac-rewrite</code>
Display bridge domain information.	<code>show bridge domain</code>
Display bridging flooding information.	<code>show bridge flood</code>
Display learned Layer 2 MAC address information.	<code>show bridge mac-table</code>
Display bridge statistics.	<code>show bridge statistics</code>
Display Layer 2 learning process-related information.	<code>show l2-learning global-information</code>
(MX Series routers only) Display the total number of dynamic and static MAC addresses learned for the entire router.	<code>show l2-learning global-mac-count</code>
Display configured Layer 2 routing instances.	<code>show l2-learning instance</code>
Display configured Layer 2 interfaces.	<code>show l2-learning interface</code>
Display Layer 2 interfaces.	<code>show mac-rewrite interface</code>



## clear bridge mac-table

---

<b>Syntax</b>	<code>clear bridge mac-table</code> <code>&lt;bridge-domain (all   <i>bridge-domain-name</i>)&gt;</code> <code>&lt;instance <i>instance-name</i>&gt;</code> <code>&lt;interface <i>interface-name</i>&gt;</code> <code>&lt;learning-vlan id (all-vlan   <i>learning-vlan-id</i>)&gt;</code> <code>&lt;mac-address&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 8.4.
<b>Description</b>	(MX Series routers only) Clear learned Layer 2 address information from the media access control (MAC) address table.
<b>Options</b>	<p><code>none</code>—Clear all learned Layer 2 address information from the MAC address table.</p> <p><code>bridge-domain (all   <i>bridge-domain-name</i>)</code>—(Optional) Clear learned Layer 2 MAC addresses for all bridging domains or for the specified bridging domain.</p> <p><code>instance <i>instance-name</i></code>—(Optional) Clear learned Layer 2 MAC addresses for the specified routing instance.</p> <p><code>interface <i>interface-name</i></code>—(Optional) Clear learned Layer 2 MAC addresses for the specified interface.</p> <p><code>learning-vlan-id (all-vlan   <i>learning-vlan-id</i>)</code>—(Optional) Clears learned Layer 2 MAC addresses for all VLANs or for the specified VLAN.</p> <p><code>mac-address</code>—(Optional) Clear the specified learned Layer 2 address from the MAC address table.</p>
<b>Required Privilege Level</b>	clear
<b>List of Sample Output</b>	<a href="#">clear bridge mac-table on page 760</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

**clear bridge mac-table**     user@host> clear bridge mac-table



## clear error bpdu

---

<b>Syntax</b>	<code>clear error bpdu</code> <code>&lt;interface <i>interface-name</i>&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 9.4.
<b>Description</b>	(MX Series routers only) Clear a bridge protocol data unit (BPDU) error condition caused by the detection of a possible bridging loop from Spanning Tree Protocol (STP) operation.
<b>Options</b>	<code>interface <i>interface-name</i></code> —(Optional) Clear the BPDU error condition for the specified interface.
<b>Required Privilege Level</b>	clear
<b>List of Sample Output</b>	<a href="#">clear error bpdu interface on page 761</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

<code>clear error bpdu</code> <code>interface</code>	<code>user@host&gt; clear error bpdu interface ge-1/1/1</code>
---	--



## clear error mac-rewrite

---

<b>Syntax</b>	<code>clear error mac-rewrite</code> <code>&lt;interface <i>interface-name</i>&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 9.1.
<b>Description</b>	(MX Series routers only) Clear a MAC rewrite error condition caused by the reception of tunneled Cisco Discovery Protocol (CDP), Spanning Tree Protocol (STP), or VLAN Trunk Protocol (VTP) packets on an interface with Layer 2 protocol tunneling enabled.
<b>Options</b>	<code>interface <i>interface-name</i></code> —(Optional) Clear the MAC rewrite error condition for the specified interface.
<b>Required Privilege Level</b>	clear
<b>List of Sample Output</b>	<a href="#">clear error mac-rewrite interface on page 762</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

### Sample Output

```
clear error mac-rewrite interface  user@host> clear error mac-rewrite interface ge-1/0/1
```



## show bridge domain

<b>Syntax</b>	<pre>show bridge domain &lt;brief   detail   extensive&gt; &lt;bridge-domain (all   domain-name)&gt; &lt;instance instance-name&gt; &lt;operational&gt;</pre>
<b>Release Information</b>	Command introduced in Junos OS Release 8.4.
<b>Description</b>	(MX Series routers only) Display bridge domain information.
<b>Options</b>	<p>none—Display information for all bridge domains.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p>bridge-domain (all   domain-name)— (Optional) Display information about all bridge domains or the specified bridge domain.</p> <p>instance instance-name—(Optional) Display information for the specified routing instance.</p> <p>operational—(Optional) Display information for the operational routing instances.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show bridge domain on page 763</a> <a href="#">show bridge domain brief on page 763</a> <a href="#">show bridge domain detail on page 763</a>

## Sample Output

```
show bridge domain user@host> show bridge domain
Instance           Bridging Domain      Type      Active
Primary Table
vs1                 vlan100              bridge    2
bridge.0
vs1                 vlan200              bridge    0
bridge.0

show bridge domain user@host> show bridge domain brief
Instance           Bridging Domain      Type      Active
Primary Table
vs1                 vlan100              bridge    2
bridge.0
vs1                 vlan200              bridge    0
bridge.0

show bridge domain user@host> show bridge domain detail
detail
Routing Instance:vs1
Bridging Domain:vlan100
Router ID: 0.0.0.0
Type: bridge          State: Active
Interfaces:
ge-11/0/3.0
```



```

    ge-11/1/4.100
    ge-11/1/1.100
    ge-11/1/0.100
    xe-10/2/0.100
    xe-10/0/0.100
  Tables:
    bridge.0                : 2 macs (2 active)
Routing Instance:vs1
  Bridging Domain:vlan200
  Router ID: 0.0.0.0
  Type: bridge              State: Active
  Interfaces:
    ge-11/1/0.200
    ge-11/1/1.200
    ge-11/1/4.200
    xe-10/0/0.200
    xe-10/2/0.200
  Tables:
    bridge.0                : 0 macs (0 active)

```



## show bridge flood

<b>Syntax</b>	<pre>show bridge flood &lt;brief   detail   extensive&gt; &lt;bridge-domain <i>domain-name</i>&gt; &lt;event-queue&gt; &lt;instance <i>instance-name</i>&gt; &lt;route (all-ce-flood   all ve-flood   alt-root-flood   bd-flood   mlp-flood   re-flood)&gt;</pre>
<b>Release Information</b>	Command introduced in Junos OS Release 8.4.
<b>Description</b>	(MX Series routers only) Display bridging flooding information.
<b>Options</b>	<p>none—Display all bridging flooding information for all bridging domains.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p>bridge-domain <i>domain-name</i>—(Optional) Display bridging flooding information for the specified bridge domain.</p> <p>event-queue—(Optional) Display the queue of pending bridge flood events.</p> <p>instance <i>instance-name</i>—(Optional) Display bridging flooding information for the specified routing instance.</p> <p>route (all-ce-flood   all ve-flood   alt-root-flood   bd-flood   mlp-flood   re-flood)—(Optional) Display the following:</p> <ul style="list-style-type: none"> <li>• <b>all-ce-flood</b>—Display the route for flooding traffic to all customer edge routers if <b>no-local-switching</b> is enabled.</li> <li>• <b>all-ve-flood</b>—Display the route for flooding traffic to all VPLS edge routers if <b>no-local-switching</b> is enabled.</li> <li>• <b>alt-root-flood</b>—Display the Spanning Tree Protocol (STP) alt-root flooding route used for the interface.</li> <li>• <b>bd-flood</b>—Display the route for flooding traffic of a bridge domain if <b>no-local-switching</b> is not enabled.</li> <li>• <b>mlp-flood</b>—Display the route for flooding traffic to MAC learning chips.</li> <li>• <b>re-flood</b>—Display the route for Routing Engine flooding to all interfaces.</li> </ul>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show bridge flood on page 766</a> <a href="#">show bridge flood brief on page 766</a> <a href="#">show bridge flood detail on page 766</a> <a href="#">show bridge flood extensive on page 767</a>
<b>Output Fields</b>	to be provided



## Sample Output

```

show bridge flood user@host> show bridge flood
Name: __juniper_private1__
CEs: 0
VEs: 0
Flood Routes:
  Prefix    Type      Owner                NhType    NhIndex
  0x36/16   MLP_FLOOD __vs1+vlan100__     flood     426
  0x3a/16   MLP_FLOOD __vs1+vlan200__     flood     428
Name: vs1::vlan100
CEs: 6
VEs: 0
Flood Routes:
  Prefix    Type      Owner                NhType    NhIndex
  0x35/16   ALL_FLOOD __vs1+vlan100__     flood     425
  0x35/16   RE_FLOOD  __vs1+vlan100__     flood     425
  0x3780/17 ALT_ROOT_RT ge-11/0/3.0        flood     425
  0x3b80/17 ALT_ROOT_RT ge-11/1/4.100      flood     425
  0x3c80/17 ALT_ROOT_RT ge-11/1/1.100      flood     425
  0x3d80/17 ALT_ROOT_RT ge-11/1/0.100      flood     425
  0x3e80/17 ALT_ROOT_RT xe-10/2/0.100      flood     425
  0x3f80/17 ALT_ROOT_RT xe-10/0/0.100      flood     425
Name: vs1::vlan200
CEs: 5
VEs: 0
Flood Routes:
  Prefix    Type      Owner                NhType    NhIndex
  0x39/16   ALL_FLOOD __vs1+vlan200__     flood     427
  0x39/16   RE_FLOOD  __vs1+vlan200__     flood     427
  0x4180/17 ALT_ROOT_RT ge-11/1/0.200      flood     427
  0x4080/17 ALT_ROOT_RT ge-11/1/1.200      flood     427
  0x4280/17 ALT_ROOT_RT ge-11/1/4.200      flood     427
  0x4480/17 ALT_ROOT_RT xe-10/0/0.200      flood     427
  0x4380/17 ALT_ROOT_RT xe-10/2/0.200      flood     427

show bridge flood brief user@host> show bridge flood brief
Name                Active CEs    Active VEs
__juniper_private1__ 0              0
vs1::vlan100         6              0
vs1::vlan200         5              0

show bridge flood detail user@host> show bridge flood detail
Name: __juniper_private1__
CEs: 0
VEs: 0
Flood Routes:
  Prefix    Type      Owner                NhType    NhIndex
  0x36/16   MLP_FLOOD __vs1+vlan100__     flood     426
  0x3a/16   MLP_FLOOD __vs1+vlan200__     flood     428
Name: vs1::vlan100
CEs: 6
VEs: 0
Flood Routes:
  Prefix    Type      Owner                NhType    NhIndex
  0x35/16   ALL_FLOOD __vs1+vlan100__     flood     425
  0x35/16   RE_FLOOD  __vs1+vlan100__     flood     425
  0x3780/17 ALT_ROOT_RT ge-11/0/3.0        flood     425
  0x3b80/17 ALT_ROOT_RT ge-11/1/4.100      flood     425
  0x3c80/17 ALT_ROOT_RT ge-11/1/1.100      flood     425

```



```

0x3d80/17 ALT_ROOT_RT ge-11/1/0.100 flood 425
0x3e80/17 ALT_ROOT_RT xe-10/2/0.100 flood 425
0x3f80/17 ALT_ROOT_RT xe-10/0/0.100 flood 425
Name: vs1::vlan200
CEs: 5
VEs: 0
Flood Routes:
  Prefix   Type      Owner          NhType      NhIndex
  0x39/16  ALL_FLOOD __vs1+vlan200__ flood        427
  0x39/16  RE_FLOOD  __vs1+vlan200__ flood        427
  0x4180/17 ALT_ROOT_RT ge-11/1/0.200 flood        427
  0x4080/17 ALT_ROOT_RT ge-11/1/1.200 flood        427
  0x4280/17 ALT_ROOT_RT ge-11/1/4.200 flood        427
  0x4480/17 ALT_ROOT_RT xe-10/0/0.200 flood        427
  0x4380/17 ALT_ROOT_RT xe-10/2/0.200 flood        427

```

**show bridge flood extensive**    user@host> **show bridge flood extensive**  
 Name: \_\_juniper\_private1\_\_

```

CEs: 0
VEs: 0
Flood route prefix: 0x36/16
Flood route type: MLP_FLOOD
Flood route owner: __vs1+vlan100__
Nexthop type: flood
Nexthop index: 426
  Interfaces Flooding to:
    Name          Type      NhType      Index
    1c-11/0/0.32769 LC
    1c-10/2/0.32769 LC
    1c-10/0/0.32769 LC
    1c-11/1/0.32769 LC

Flood route prefix: 0x3a/16
Flood route type: MLP_FLOOD
Flood route owner: __vs1+vlan200__
Nexthop type: flood
Nexthop index: 428
  Interfaces Flooding to:
    Name          Type      NhType      Index
    1c-10/0/0.32769 LC
    1c-10/2/0.32769 LC
    1c-11/1/0.32769 LC
Name: vs1::vlan100
CEs: 6
VEs: 0

```

```

Flood route prefix: 0x35/16
Flood route type: ALL_FLOOD
Flood route owner: __vs1+vlan100__
Nexthop type: flood
Nexthop index: 425
  Interfaces Flooding to:
    Name          Type      NhType      Index
    ge-11/0/3.0    CE
    ge-11/1/4.100 CE
    ge-11/1/1.100 CE
    ge-11/1/0.100 CE
    xe-10/2/0.100 CE
    xe-10/0/0.100 CE

```

Flood route prefix: 0x35/16



Flood route type: RE\_FLOOD  
 Flood route owner: \_\_vs1+vlan100\_\_  
 Nexthop type: flood  
 Nexthop index: 425

Interfaces Flooding to:

Name	Type	NhType	Index
ge-11/0/3.0	CE		
ge-11/1/4.100	CE		
ge-11/1/1.100	CE		
ge-11/1/0.100	CE		
xe-10/2/0.100	CE		
xe-10/0/0.100	CE		

Flood route prefix: 0x3780/17  
 Flood route type: ALT\_ROOT\_RT  
 Flood route owner: ge-11/0/3.0  
 Nexthop type: flood  
 Nexthop index: 425

Interfaces Flooding to:

Name	Type	NhType	Index
ge-11/0/3.0	CE		
ge-11/1/4.100	CE		
ge-11/1/1.100	CE		
ge-11/1/0.100	CE		
xe-10/2/0.100	CE		
xe-10/0/0.100	CE		

Flood route prefix: 0x3b80/17  
 Flood route type: ALT\_ROOT\_RT  
 Flood route owner: ge-11/1/4.100  
 Nexthop type: flood  
 Nexthop index: 425

Interfaces Flooding to:

Name	Type	NhType	Index
ge-11/0/3.0	CE		
ge-11/1/4.100	CE		
ge-11/1/1.100	CE		
ge-11/1/0.100	CE		
xe-10/2/0.100	CE		
xe-10/0/0.100	CE		

Flood route prefix: 0x3c80/17  
 Flood route type: ALT\_ROOT\_RT  
 Flood route owner: ge-11/1/1.100  
 Nexthop type: flood  
 Nexthop index: 425

Interfaces Flooding to:

Name	Type	NhType	Index
ge-11/0/3.0	CE		
ge-11/1/4.100	CE		
ge-11/1/1.100	CE		
ge-11/1/0.100	CE		
xe-10/2/0.100	CE		
xe-10/0/0.100	CE		

Flood route prefix: 0x3d80/17  
 Flood route type: ALT\_ROOT\_RT  
 Flood route owner: ge-11/1/0.100  
 Nexthop type: flood  
 Nexthop index: 425

Interfaces Flooding to:



Name	Type	NhType	Index
ge-11/0/3.0	CE		
ge-11/1/4.100	CE		
ge-11/1/1.100	CE		
ge-11/1/0.100	CE		
xe-10/2/0.100	CE		
xe-10/0/0.100	CE		

Flood route prefix: 0x3e80/17  
 Flood route type: ALT\_ROOT\_RT  
 Flood route owner: xe-10/2/0.100  
 Nexthop type: flood  
 Nexthop index: 425

Interfaces Flooding to:

Name	Type	NhType	Index
ge-11/0/3.0	CE		
ge-11/1/4.100	CE		
ge-11/1/1.100	CE		
ge-11/1/0.100	CE		
xe-10/2/0.100	CE		
xe-10/0/0.100	CE		

Flood route prefix: 0x3f80/17  
 Flood route type: ALT\_ROOT\_RT  
 Flood route owner: xe-10/0/0.100  
 Nexthop type: flood  
 Nexthop index: 425

Interfaces Flooding to:

Name	Type	NhType	Index
ge-11/0/3.0	CE		
ge-11/1/4.100	CE		
ge-11/1/1.100	CE		
ge-11/1/0.100	CE		
xe-10/2/0.100	CE		
xe-10/0/0.100	CE		

Name: vs1::vlan200  
 CEs: 5  
 VEs: 0

Flood route prefix: 0x39/16  
 Flood route type: ALL\_FLOOD  
 Flood route owner: \_\_vs1+vlan200\_\_  
 Nexthop type: flood  
 Nexthop index: 427

Interfaces Flooding to:

Name	Type	NhType	Index
ge-11/1/0.200	CE		
ge-11/1/1.200	CE		
ge-11/1/4.200	CE		
xe-10/0/0.200	CE		
xe-10/2/0.200	CE		

Flood route prefix: 0x39/16  
 Flood route type: RE\_FLOOD  
 Flood route owner: \_\_vs1+vlan200\_\_  
 Nexthop type: flood  
 Nexthop index: 427

Interfaces Flooding to:

Name	Type	NhType	Index
ge-11/1/0.200	CE		
ge-11/1/1.200	CE		



```

ge-11/1/4.200    CE
xe-10/0/0.200    CE
xe-10/2/0.200    CE

```

```

Flood route prefix: 0x4180/17
Flood route type: ALT_ROOT_RT
Flood route owner: ge-11/1/0.200
Nexthop type: flood
Nexthop index: 427

```

```

  Interfaces Flooding to:
  Name                Type      NhType      Index
  ge-11/1/0.200        CE
  ge-11/1/1.200        CE
  ge-11/1/4.200        CE
  xe-10/0/0.200        CE
  xe-10/2/0.200        CE

```

```

Flood route prefix: 0x4080/17
Flood route type: ALT_ROOT_RT
Flood route owner: ge-11/1/1.200
Nexthop type: flood
Nexthop index: 427

```

```

  Interfaces Flooding to:
  Name                Type      NhType      Index
  ge-11/1/0.200        CE
  ge-11/1/1.200        CE
  ge-11/1/4.200        CE
  xe-10/0/0.200        CE
  xe-10/2/0.200        CE

```

```

Flood route prefix: 0x4280/17
Flood route type: ALT_ROOT_RT
Flood route owner: ge-11/1/4.200
Nexthop type: flood
Nexthop index: 427

```

```

  Interfaces Flooding to:
  Name                Type      NhType      Index
  ge-11/1/0.200        CE
  ge-11/1/1.200        CE
  ge-11/1/4.200        CE
  xe-10/0/0.200        CE
  xe-10/2/0.200        CE

```

```

Flood route prefix: 0x4480/17
Flood route type: ALT_ROOT_RT
Flood route owner: xe-10/0/0.200
Nexthop type: flood
Nexthop index: 427

```

```

  Interfaces Flooding to:
  Name                Type      NhType      Index
  ge-11/1/0.200        CE
  ge-11/1/1.200        CE
  ge-11/1/4.200        CE
  xe-10/0/0.200        CE
  xe-10/2/0.200        CE

```

```

Flood route prefix: 0x4380/17
Flood route type: ALT_ROOT_RT
Flood route owner: xe-10/2/0.200
Nexthop type: flood
Nexthop index: 427

```



## Interfaces Flooding to:

Name	Type	NhType	Index
ge-11/1/0.200	CE		
ge-11/1/1.200	CE		
ge-11/1/4.200	CE		
xe-10/0/0.200	CE		
xe-10/2/0.200	CE		



## show bridge mac-table

---

<b>Syntax</b>	<code>show bridge mac-table</code> <code>&lt;brief   count   detail   extensive&gt;</code> <code>&lt;bridge-domain (all   <i>bridge-domain-name</i>)&gt;</code> <code>&lt;global-count&gt;</code> <code>&lt;interface <i>interface-name</i>&gt;</code> <code>&lt;mac-address&gt;</code> <code>&lt;vlan-id (all-vlan   <i>vlan-id</i>)&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 8.4.
<b>Description</b>	(MX Series routers only) Display Layer 2 MAC address information.
<b>Options</b>	<p>none—Display all learned Layer 2 MAC address information.</p> <p>brief   count   detail   extensive—(Optional) Display the specified level of output.</p> <p>bridge-domain (all   <i>bridge-domain-name</i>)—(Optional) Display learned Layer 2 MAC addresses for all bridging domains or for the specified bridging domain.</p> <p>global-count—(Optional) Display the total number of learned Layer 2 MAC addresses on the system.</p> <p>instance <i>instance-name</i>—(Optional) Display learned Layer 2 MAC addresses for the specified routing instance.</p> <p>interface <i>interface-name</i>—(Optional) Display learned Layer 2 MAC addresses for the specified interface.</p> <p>mac-address—(Optional) Display the specified learned Layer 2 MAC address information.</p> <p>vlan-id (all-vlan   <i>vlan-id</i>)—(Optional) Display learned Layer 2 MAC addresses for all VLANs or for the specified VLAN.</p>
<b>Additional Information</b>	When Layer 2 protocol tunneling is enabled, the tunneling MAC address 01:00:0c:cd:cd:d0 is installed in the MAC table. When the Cisco Discovery Protocol (CDP), Spanning Tree Protocol (STP), or VLAN Trunk Protocol (VTP) is configured for Layer 2 protocol tunneling on an interface, the corresponding protocol MAC address is installed in the MAC table.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show bridge mac-table on page 773</a> <a href="#">show bridge mac-table brief on page 774</a> <a href="#">show brief mac-table count on page 774</a> <a href="#">show bridge mac-table detail on page 774</a>
<b>Output Fields</b>	<a href="#">Table 193 on page 773</a> describes the output fields for the <b>show bridge mac-table</b> command. Output fields are listed in the approximate order in which they appear.



Table 193: show bridge mac-table Output fields

Field Name	Field Description
Routing instance	Name of the routing instance.
Bridging domain	Name of the bridging domain.
MAC address	MAC address or addresses learned on a logical interface.
MAC flags	Status of MAC address learning properties for each interface: <ul style="list-style-type: none"> <li>• <b>S</b>—Static MAC address is configured.</li> <li>• <b>D</b>—Dynamic MAC address is configured.</li> <li>• <b>SE</b>—MAC accounting is enabled.</li> <li>• <b>NM</b>—Non-configured MAC.</li> </ul>
Logical interface	Name of the logical interface.
MAC count	Number of MAC addresses learned on the specific routing instance or interface.
Learning interface	Name of the logical interface on which the MAC address was learned.
Learning VLAN	VLAN ID of the routing instance or bridge domain in which the MAC address was learned.
Layer 2 flags	Debugging flags signifying that the MAC address is present in various lists.
Epoch	Spanning Tree Protocol epoch number identifying when the MAC address was learned. Used for debugging.
Sequence number	Sequence number assigned to this MAC address. Used for debugging.
Learning mask	Mask of the Packet Forwarding Engines where this MAC address was learned. Used for debugging.
IPC generation	Creation time of the logical interface when this MAC address was learned. Used for debugging.

## Sample Output

```

show bridge mac-table user@host> show bridge mac-table
MAC flags (S -static MAC, D -dynamic MAC,
           SE -Statistics enabled, NM -Non configured MAC)

Routing instance : vs1
Bridging domain : vlan100, VLAN : 100
  Learning MAC          MAC          Logical
  VLAN      address      flags      interface
           00:00:00:19:1c:db D         ge-11/0/3.0
           00:00:00:59:3a:2f D         xe-10/2/0.100

```



```

show bridge mac-table brief user@host> show bridge mac-table brief
brief MAC flags (S -static MAC, D -dynamic MAC,
SE -Statistics enabled, NM -Non configured MAC)

Routing instance : vs1
Bridging domain : vlan100, VLAN : 100
  Learning MAC      MAC      Logical
  VLAN      address    flags   interface
    00:00:00:19:1c:db D      ge-11/0/3.0
    00:00:00:59:3a:2f D      xe-10/2/0.100

show brief mac-table count user@host> show bridge mac-table count
count 2 MAC address learned in routing instance vs1 bridge domain vlan100

MAC address count per interface within routing instance:
Logical interface      MAC count
ge-11/0/3.0            1
ge-11/1/4.100          0
ge-11/1/1.100          0
ge-11/1/0.100          0
xe-10/2/0.100          1
xe-10/0/0.100          0

MAC address count per learn VLAN within routing instance:
Learn VLAN ID      MAC count
0                  2

0 MAC address learned in routing instance vs1 bridge domain vlan200

MAC address count per interface within routing instance:
Logical interface      MAC count
ge-11/1/0.200          0
ge-11/1/1.200          0
ge-11/1/4.200          0
xe-10/0/0.200          0
xe-10/2/0.200          0

MAC address count per learn VLAN within routing instance:
Learn VLAN ID      MAC count
0                  0

show bridge mac-table detail user@host> show bridge mac-table detail
detail MAC address: 00:00:00:19:1c:db
Routing instance: vs1
Bridging domain: vlan100
Learning interface: ge-11/0/3.0 Learning VLAN: 0
Layer 2 flags: in_ifd, in_ifl, in_vlan, kernel
Epoch: 4 Sequence number: 0
Learning mask: 0x800 IPC generation: 0

MAC address: 00:00:00:59:3a:2f
Routing instance: vs1
Bridging domain: vlan100
Learning interface: xe-10/2/0.100 Learning VLAN: 0
Layer 2 flags: in_ifd, in_ifl, in_vlan, kernel
Epoch: 7 Sequence number: 0
Learning mask: 0x400 IPC generation: 0

```



## show bridge statistics

<b>Syntax</b>	<code>show bridge statistics</code> <code>&lt;bridge-domain <i>domain-name</i>&gt;</code> <code>&lt;instance <i>instance-name</i>&gt;</code>
<b>Release Information</b>	Command introduced in Junos OS Release 8.4.
<b>Description</b>	(MX Series routers only) Display bridge statistics.
<b>Options</b>	<p><code>none</code>—Display bridge statistics for all bridge domains in all routing instances.</p> <p><code>bridge-domain <i>domain-name</i></code>—(Optional) Display statistics for the specified bridge domain.</p> <p><code>instance <i>instance-name</i></code>—(Optional) Display statistics for the specified routing instance.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show bridge statistics on page 775</a>

## Sample Output

```

user@host> show bridge statistics
Information for routing instance:

Routing instance : __juniper_private1__
  Index: 1                      Sequence number: 0
  MAC limit: 5000                MACs learned: 0
  Static MACs learned: 0         Non config Static MACs learned: 0
  Handle: 0x829e800

Information for routing instance:

Routing instance : vs1
  Bridging domain : vlan100
  Index: 3                      Sequence number: 0
  MAC limit: 5120                MACs learned: 2
  Static MACs learned: 0         Non config Static MACs learned: 0
  Handle: 0x829e400
  Flags: Bridge instance, Config defined, VLAN : 100
  Local interface: ge-11/0/3.0, Index: 79
    Broadcast packets:          1
    Broadcast bytes :           65
    Multicast packets:          0
    Multicast bytes :           0
    Flooded packets :           0
    Flooded bytes :             0
    Unicast packets :           358624489
    Unicast bytes :             23310592305
    Current MAC count:          1 (Limit 1024)
  Local interface: ge-11/1/4.100, Index: 84
    Broadcast packets:          0
    Broadcast bytes :           0
    Multicast packets:          0
    Multicast bytes :           0
    Flooded packets :           0

```



```

    Flooded bytes      : 0
    Unicast packets    : 0
    Unicast bytes      : 0
    Current MAC count: 0 (Limit 1024)
Local interface: ge-11/1/1.100, Index: 86
    Broadcast packets: 0
    Broadcast bytes   : 0
    Multicast packets: 0
    Multicast bytes   : 0
    Flooded packets   : 0
    Flooded bytes     : 0
    Unicast packets   : 0
    Unicast bytes     : 0
    Current MAC count: 0 (Limit 1024)
Local interface: ge-11/1/0.100, Index: 87
    Broadcast packets: 0
    Broadcast bytes   : 0
    Multicast packets: 0
    Multicast bytes   : 0
    Flooded packets   : 0
    Flooded bytes     : 0
    Unicast packets   : 0
    Unicast bytes     : 0
    Current MAC count: 0 (Limit 1024)
Local interface: xe-10/2/0.100, Index: 88
    Broadcast packets: 0
    Broadcast bytes   : 0
    Multicast packets: 0
    Multicast bytes   : 0
    Flooded packets   : 0
    Flooded bytes     : 0
    Unicast packets   : 358627393
    Unicast bytes     : 23310781065
    Current MAC count: 1 (Limit 1024)
Local interface: xe-10/0/0.100, Index: 89
    Broadcast packets: 0
    Broadcast bytes   : 0
    Multicast packets: 0
    Multicast bytes   : 0
    Flooded packets   : 0
    Flooded bytes     : 0
    Unicast packets   : 0
    Unicast bytes     : 0
    Current MAC count: 0 (Limit 1024)

```

Information for routing instance:

```

Routing instance : vs1
Bridging domain : vlan200
Index: 4                      Sequence number: 0
MAC limit: 5120              MACs learned: 0
Static MACs learned: 0       Non config Static MACs learned: 0
Handle: 0x829e600
Flags: Bridge instance, Config defined, VLAN : 200
Local interface: ge-11/1/0.200, Index: 90
    Broadcast packets: 0
    Broadcast bytes   : 0
    Multicast packets: 0
    Multicast bytes   : 0
    Flooded packets   : 0
    Flooded bytes     : 0

```



```
Unicast packets : 0
Unicast bytes : 0
Current MAC count: 0 (Limit 1024)
Local interface: ge-11/1/1.200, Index: 91
Broadcast packets: 0
Broadcast bytes : 0
Multicast packets: 0
Multicast bytes : 0
Flooded packets : 0
Flooded bytes : 0
Unicast packets : 0
Unicast bytes : 0
Current MAC count: 0 (Limit 1024)
Local interface: ge-11/1/4.200, Index: 92
Broadcast packets: 0
Broadcast bytes : 0
Multicast packets: 0
Multicast bytes : 0
Flooded packets : 0
Flooded bytes : 0
Unicast packets : 0
Unicast bytes : 0
Current MAC count: 0 (Limit 1024)
Local interface: xe-10/0/0.200, Index: 93
Broadcast packets: 0
Broadcast bytes : 0
Multicast packets: 0
Multicast bytes : 0
Flooded packets : 0
Flooded bytes : 0
Unicast packets : 0
Unicast bytes : 0
Current MAC count: 0 (Limit 1024)
Local interface: xe-10/2/0.200, Index: 94
Broadcast packets: 4
Broadcast bytes : 260
Multicast packets: 0
Multicast bytes : 0
Flooded packets : 0
Flooded bytes : 0
Unicast packets : 0
Unicast bytes : 0
Current MAC count: 0 (Limit 1024)
```



## show l2-learning global-information

<b>Syntax</b>	<b>show l2-learning global-information</b>
<b>Release Information</b>	Command introduced in Junos OS Release 8.4.
<b>Description</b>	(MX Series routers only) Display Layer 2 learning process-related information for the entire router.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show l2-learning global-information on page 778</a>
<b>Output Fields</b>	<a href="#">Table 194 on page 778</a> describes the output fields for the <b>show l2-learning global-information</b> command. Output fields are listed in the approximate order in which they appear.

**Table 194: show l2-learning global-information Output Fields**

Field Name	Field Description
<b>MAC aging interval</b>	Configured timeout interval, in seconds, for all MAC table entries.
<b>MAC learning</b>	Status of MAC learning: <b>Enabled</b> or <b>Disabled</b> .
<b>MAC statistics</b>	Status of MAC accounting: <b>Enabled</b> or <b>Disabled</b> .
<b>MAC limit Count</b>	Configured maximum limit on the number of MAC addresses that can be learned.
<b>MAC limit hit flag</b>	Status of the learned MAC limit hit flag: <b>Enabled</b> (the learned MAC exceeds the global MAC limit) or <b>Disabled</b> (the learned MAC does not exceed the global MAC limit).
<b>MAC packet action drop</b>	Status of action to drop packets after the configured MAC address limit is reached: <b>Enabled</b> (packets are dropped) or <b>Disabled</b> (packets are forwarded).

### Sample Output

```

show l2-learning global-information user@host> show l2-learning global-information
Global Configuration:

MAC aging interval      : 300
MAC learning            : Enabled
MAC statistics          : Disabled
MAC limit Count         : 393215

```



MAC limit hit flag : Disabled  
MAC packet action drop: Disabled



## show l2-learning global-mac-count

---

<b>Syntax</b>	<code>show l2-learning global-mac-count</code>
<b>Release Information</b>	Command introduced in Junos OS Release 9.3.
<b>Description</b>	(MX Series routers only) Display the total number of dynamic and static MAC addresses learned for the entire router.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show l2-learning global-mac-count on page 780</a>
<b>Output Fields</b>	Displays the total number of dynamic and static MAC addresses learned for the entire router.

### Sample Output

<code>show l2-learning</code>	<code>user@host&gt; show l2-learning global-mac-count</code>
<code>global-mac-count</code>	100 dynamic and static MAC addresses learned globally



## show l2-learning instance

<b>Syntax</b>	<b>show l2-learning instance</b>
<b>Release Information</b>	(MX Series routers only) Command introduced in Junos OS Release 8.4.
<b>Description</b>	Display Layer 2 learning properties for all the configured routing instances.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show l2-learning instance on page 781</a>
<b>Output Fields</b>	<a href="#">Table 195 on page 781</a> describes the output fields for the <b>show l2-learning instance</b> command. Output fields are listed in the approximate order in which they appear.

Table 195: show l2-learning instance Output Fields

Field Name	Field Description
<b>Routing Instance</b>	Name of routing instance.
<b>Bridging Domain</b>	Name of bridging domain.  On MX Series routers you can use the <b>show l2-learning instance &lt;extensive&gt;</b> command option to display the Bridge Service-id information which includes the Config Service ID and the Active Service ID.
<b>Index</b>	Number associated with the routing instance or bridging domain.
<b>Logical System</b>	Name of logical system or <b>Default</b> if no logical system is configured.
<b>Routing instance flags</b>	Status of Layer 2 learning properties for each routing instance: <ul style="list-style-type: none"> <li>• <b>DL</b>—MAC learning is disabled.</li> <li>• <b>SE</b>—MAC accounting is enabled.</li> <li>• <b>AD</b>—Packets are dropped after MAC address limit is reached.</li> <li>• <b>LH</b>—The maximum number of MAC addresses has been learned on the routing instance. The routing instance is not able to learn any additional MAC addresses.</li> </ul>
<b>MAC limit</b>	Maximum number of MAC addresses that can be learned from each interface in the routing instance or bridging domain.

## Sample Output

```

show l2-learning instance  user@host> show l2-learning instance
                           Information for routing instance:

                           Routing Instance flags (DL -disable learning, SE -stats enabled,
                           AD -packet action drop, LH -mac limit hit)

```



Routing Instance	Bridging Domain	Index	Logical System	Routing flags	MAC limit
__juniper_private1__		1	Default		5000
vs1	vlan100	3	Default		5120
vs1	vlan200	4	Default		5120



## show l2-learning interface

<b>Syntax</b>	<b>show l2-learning interface</b>
<b>Release Information</b>	Command introduced in Junos OS Release 8.4.
<b>Description</b>	(MX Series routers only) Display Layer 2 learning information for all the interfaces.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show l2-learning interface on page 783</a>
<b>Output Fields</b>	<a href="#">Table 196 on page 783</a> describes the output fields for the <b>show l2-learning interface</b> command. Output fields are listed in the approximate order in which they appear.

**Table 196: show l2-learning interface Output Fields**

Field Name	Field Description
<b>Logical interface</b>	Name of the logical interface.
<b>Index</b>	Index of the interface.
<b>Routing Instance</b>	Number of the routing instance to which the interface belongs.
<b>Interface device</b>	Value of the order in which the Junos OS finds and initializes the interface.
<b>Logical interface flags</b>	Status of Layer 2 learning properties for each interface: <ul style="list-style-type: none"> <li>• <b>DL</b>—MAC learning is disabled.</li> <li>• <b>SE</b>—MAC accounting is enabled.</li> <li>• <b>AD</b>—Packets are dropped after the MAC interface limit is reached.</li> <li>• <b>MAC limit</b>—Maximum number of MAC addresses that can be learned from the interface.</li> </ul>

## Sample Output

```

user@host> show l2-learning interface
Information for interface family:

Logical Interface flags (DL -disable learning, SE -stats enabled,
                        AD -packet action drop, LH -mac limit hit)

Logical interface      Index  Routing  Interface  Logical      MAC
interface              instance device      Interface flags  limit
ge-11/0/3.0            79      3        136
ge-11/1/4.100          84      3        150
ge-11/1/1.100          86      3        147
ge-11/1/0.100          87      3        146
xe-10/2/0.100          88      3        144

```



xe-10/0/0.100	89	3	129	1024
ge-11/1/0.200	90	4	146	1024
ge-11/1/1.200	91	4	147	1024
ge-11/1/4.200	92	4	150	1024
xe-10/0/0.200	93	4	129	1024
xe-10/2/0.200	94	4	144	1024



## show mac-rewrite interface

<b>Syntax</b>	<b>show mac-rewrite interface</b> <b>&lt;brief   detail&gt;</b> <b>&lt;interface-name&gt;</b>
<b>Release Information</b>	Command introduced in Junos OS Release 9.1.
<b>Description</b>	(MX Series routers only) Display Layer 2 protocol tunneling information.
<b>Options</b>	brief   detail—(Optional) Display the specified level of output.  interface <i>interface-name</i> —(Optional) Display Layer 2 protocol tunneling information for the specified interface.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show mac-rewrite interface on page 785</a>
<b>Output Fields</b>	<a href="#">Table 197 on page 785</a> lists the output fields for the <b>show mac-rewrite interface</b> command. Output fields are listed in the approximate order in which they appear.

**Table 197: show mac-rewrite interface Output Fields**

Field Name	Field Description	Level of Output
<b>Interface</b>	Name of the interface that has Layer 2 protocol tunneling configured on it.	<b>brief detail</b>
<b>Protocols</b>	Layer 2 protocols being tunneled on this interface: Cisco Discovery Protocol (CDP), Spanning Tree Protocol (STP), or VLAN Trunk Protocol (VTP)	<b>brief detail</b>

## Sample Output

```

show mac-rewrite user@host> show mac-rewrite interface
interface        Interface        Protocols
                  ge-1/0/1        STP VTP CDP

```







# Spanning Tree Operational Mode Commands

Table 198 on page 787 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot the Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP), and Multiple Spanning Tree Protocol (MSTP). Commands are listed in alphabetical order.

**Table 198: STP Operational Mode Commands**

Task	Command
Clear STP protocol.	<code>clear spanning-tree protocol-migration</code>
Clear STP statistics.	<code>clear spanning-tree statistics</code>
Display STP bridge domain configuration and status.	<code>show spanning-tree bridge</code>
Display STP interface configuration and status.	<code>show spanning-tree interface</code>
Display MSTP configuration and status.	<code>show spanning-tree mstp configuration</code>
Display STP statistics.	<code>show spanning-tree statistics</code>



**NOTE:** For more STP-related interface commands, such as `show interface`, see the *Junos Interfaces Command Reference*.

For more STP-related bridging commands, such as `clear bridge`, `show bridge`, and `show l2-learning`, see Layer 2 Bridging and Switching Operational Mode Commands.

For information about how to configure STP, see the *Junos Routing Protocols Configuration Guide*.



## clear spanning-tree protocol-migration

---


<b>Syntax</b>	clear spanning-tree protocol-migration <interface <i>interface-name</i> > <routing-instance <i>routing-instance-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 9.0.
<b>Description</b>	Revert from the original IEEE 802.1D Spanning Tree Protocol (STP) back to the Rapid Spanning Tree Protocol after the <b>force-version</b> statement has been removed from the configuration.
<b>Options</b>	none—Reset the STP protocol for all interfaces and all routing instances.  interface <i>interface-name</i> —(Optional) Reset the STP protocol for the specified interface only.  routing-instance <i>routing-instance-name</i> —(Optional) Reset the STP protocol for a particular routing instance.
<b>Additional Information</b>	For information about the <b>force-version</b> statement, see the <i>Junos Routing Protocols Configuration Guide</i> .
<b>Required Privilege Level</b>	clear

### Sample Output

```
clear spanning-tree protocol-migration  user@host> clear spanning-tree protocol-migration
```



## clear spanning-tree statistics

<b>Syntax</b>	clear spanning-tree statistics <interface <i>interface-name</i> > <logical-system <i>logical-system-name</i> >
<b>Syntax (EX Series Switches and the QFX Series)</b>	clear spanning-tree statistics <interface <i>interface-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 8.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series.
<b>Description</b>	Clear Spanning Tree Protocol statistics.
<b>Options</b>	none—Reset STP counters for all interfaces for all routing instances.  interface <i>interface-name</i> —(Optional) Clear STP statistics for the specified interface only.  logical-system <i>logical-system-name</i> —(Optional) Clear STP statistics on a particular logical system.
<div>  <p><b>NOTE:</b> The <code>logical-system</code> option is not available on QFabric switches.</p> </div>	
<b>Required Privilege Level</b>	clear
<b>Related Documentation</b>	<ul style="list-style-type: none"> <li>• <a href="#">show spanning-tree statistics on page 804</a></li> </ul>
<b>List of Sample Output</b>	<a href="#">clear stp statistics on page 789</a>

### Sample Output

clear stp statistics    user@host> clear stp statistics



## show spanning-tree bridge

<b>Syntax</b>	show spanning-tree bridge <brief   detail> <msti <i>msti-id</i> > <routing-instance <i>routing-instance-name</i> > <vlan-id <i>vlan-id</i> >
<b>Syntax (QFX Series)</b>	show spanning-tree bridge <brief   detail> <msti <i>msti-id</i> > <vlan-id <i>vlan-id</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 8.4. Command introduced in Junos OS Release 11.1 for the QFX Series.
<b>Description</b>	Display the configured or calculated Spanning Tree Protocol (STP) parameters.
<b>Options</b>	<p>none—(Optional) Display brief STP bridge information for all multiple spanning-tree instances (MSTIs).</p> <p>brief   detail—(Optional) Display the specified level of output.</p> <p>msti <i>msti-id</i>—(Optional) Display STP bridge information for the specified MSTI.</p> <p>routing-instance <i>routing-instance-name</i>—(Optional) Display STP bridge information for the specified routing instance.</p> <p>vlan-id <i>vlan-id</i>—(Optional) Display STP bridge information for the specified VLAN.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show spanning-tree bridge routing-instance on page 791</a> <a href="#">show spanning-tree bridge routing-instance detail (QFX Series) on page 792</a> <a href="#">show spanning-tree bridge msti on page 793</a> <a href="#">show spanning-tree bridge vlan-id (MSTP) on page 793</a> <a href="#">show spanning-tree bridge (RSTP) on page 794</a> <a href="#">show spanning-tree bridge vlan-id (RSTP) on page 794</a>
<b>Output Fields</b>	Table 199 on page 790 lists the output fields for the <b>show spanning-tree bridge</b> command. Output fields are listed in the approximate order in which they appear.

**Table 199: show spanning-tree bridge Output Fields**

Field Name	Field Description
Routing instance name	Name of the routing instance under which the bridge is configured.
Enabled protocol	Spanning Tree Protocol type enabled.



Table 199: show spanning-tree bridge Output Fields (*continued*)

Field Name	Field Description
Root ID	Bridge ID of the elected spanning-tree root bridge. The bridge ID consists of a configurable bridge priority and the MAC address of the bridge.
Root cost	Calculated cost to reach the root bridge from the bridge where the command is entered.
Root port	Interface that is the current elected root port for this bridge.
CIST regional root	Bridge ID of the elected MSTP regional root bridge.
CIST internal root cost	Calculated cost to reach the regional root bridge from the bridge where the command is entered.
Hello time	Configured number of seconds between transmissions of configuration bridge protocol data units (BPDUs).
Maximum age	Configured maximum expected arrival time of hello bridge protocol data units (BPDUs).
Forward delay	How long an STP bridge port remains in the listening and learning states before transitioning to the forwarding state.
Hop count	Configured maximum number of hops a BPDU can be forwarded in the MSTP region.
Message age	Number of elapsed seconds since the most recent BPDU was received.
Number of topology changes	Total number of STP topology changes detected since the routing device last booted.
Time since last topology change	Number of elapsed seconds since the most recent topology change.
Bridge ID (Local)	Locally configured bridge ID. The bridge ID consists of a configurable bridge priority and the MAC address of the bridge.
Extended system ID	System identifier.
MSTI regional root	Bridge ID of the elected MSTP regional root bridge.

## Sample Output

```

show spanning-tree bridge routing-instance
user@host> show spanning-tree bridge routing-instance vs1 detail
STP bridge parameters
Routing instance name      : vs1
Enabled protocol           : MSTP

```



```

STP bridge parameters for CIST
  Root ID          : 32768.00:13:c3:9e:c8:80
  Root cost        : 0
  Root port        : ge-10/2/0
  CIST regional root : 32768.00:13:c3:9e:c8:80
  CIST internal root cost : 22000
  Hello time       : 2 seconds
  Maximum age      : 20 seconds
  Forward delay    : 15 seconds
  Hop count        : 18
  Message age      : 0
  Number of topology changes : 1
  Time since last topology change : 1191 seconds
  Local parameters
    Bridge ID      : 32768.00:90:69:0b:7f:d1
    Extended system ID : 1

STP bridge parameters for MSTI 1
  MSTI regional root : 32769.00:13:c3:9e:c8:80
  Root cost          : 22000
  Root port          : ge-10/2/0
  Hello time         : 2 seconds
  Maximum age        : 20 seconds
  Forward delay      : 15 seconds
  Hop count          : 18
  Number of topology changes : 1
  Time since last topology change : 1191 seconds
  Local parameters
    Bridge ID      : 32769.00:90:69:0b:7f:d1
    Extended system ID : 1

STP bridge parameters for MSTI 2
  MSTI regional root : 32770.00:13:c3:9e:c8:80
  Root cost          : 22000
  Root port          : ge-10/2/0
  Hello time         : 2 seconds
  Maximum age        : 20 seconds
  Forward delay      : 15 seconds
  Hop count          : 18
  Number of topology changes : 1
  Time since last topology change : 1191 seconds
  Local parameters
    Bridge ID      : 32770.00:90:69:0b:7f:d1
    Extended system ID : 1

```

**show spanning-tree  
bridgerouting-instance  
detail (QFX Series)**

```

user@1f0> show spanning-tree bridge routing-instance vs1 detail
STP bridge parameters
Routing instance name : vs1
Enabled protocol      : MSTP

STP bridge parameters for CIST
  Root ID          : 32768.00:13:c3:9e:c8:80
  Root cost        : 0
  Root port        : xe-10/2/0
  CIST regional root : 32768.00:13:c3:9e:c8:80
  CIST internal root cost : 22000
  Hello time       : 2 seconds
  Maximum age      : 20 seconds
  Forward delay    : 15 seconds
  Hop count        : 18
  Message age      : 0

```



```

Number of topology changes      : 1
Time since last topology change : 1191 seconds
Local parameters
  Bridge ID                     : 32768.00:90:69:0b:7f:d1
  Extended system ID            : 1

```

```

STP bridge parameters for MSTI 1
MSTI regional root              : 32769.00:13:c3:9e:c8:80
Root cost                       : 22000
Root port                       : xe-10/2/0
Hello time                      : 2 seconds
Maximum age                     : 20 seconds
Forward delay                   : 15 seconds
Hop count                       : 18
Number of topology changes      : 1
Time since last topology change : 1191 seconds
Local parameters
  Bridge ID                     : 32769.00:90:69:0b:7f:d1
  Extended system ID            : 1

```

```

STP bridge parameters for MSTI 2
MSTI regional root              : 32770.00:13:c3:9e:c8:80
Root cost                       : 22000
Root port                       : xe-10/2/0
Hello time                      : 2 seconds
Maximum age                     : 20 seconds
Forward delay                   : 15 seconds
Hop count                       : 18
Number of topology changes      : 1
Time since last topology change : 1191 seconds
Local parameters
  Bridge ID                     : 32770.00:90:69:0b:7f:d1
  Extended system ID            : 1

```

**show spanning-tree bridge msti**     user@host> **show spanning-tree bridge msti 1 routing-instance vs1 detail**

```

STP bridge parameters
Routing instance name           : vs1
Enabled protocol                : MSTP

STP bridge parameters for MSTI 1
MSTI regional root              : 32769.00:13:c3:9e:c8:80
Root cost                       : 22000
Root port                       : xe-10/2/0
Hello time                      : 2 seconds
Maximum age                     : 20 seconds
Forward delay                   : 15 seconds
Hop count                       : 18
Number of topology changes      : 1
Time since last topology change : 1191 seconds
Local parameters
  Bridge ID                     : 32769.00:90:69:0b:7f:d1
  Extended system ID            : 1

```

**show spanning-tree bridge vlan-id (MSTP)**     user@host> **show spanning-tree bridge vlan-id 1101 routing-instance vs1 detail**

```

STP bridge parameters
Routing instance name           : vs1
Enabled protocol                : MSTP

STP bridge parameters for CIST
Root ID                         : 32768.00:13:c3:9e:c8:80
Root cost                       : 0

```



```

Root port                : xe-10/2/0
CIST regional root       : 32768.00:13:c3:9e:c8:80
CIST internal root cost  : 22000
Hello time               : 2 seconds
Maximum age              : 20 seconds
Forward delay            : 15 seconds
Hop count                : 18
Message age              : 0
Number of topology changes : 0
Local parameters
  Bridge ID              : 32768.00:90:69:0b:7f:d1
  Extended system ID     : 1
  Hello time             : 2 seconds
  Maximum age            : 20 seconds
  Forward delay          : 15 seconds
  Path cost method       : 32 bit
  Maximum hop count      : 20

```

**show spanning-tree bridge (RSTP)**     user@host> show spanning-tree bridge

```

STP bridge parameters
Routing instance name    : GLOBAL
Enabled protocol        : RSTP
Root ID                 : 28672.00:90:69:0b:3f:d0
Hello time              : 2 seconds
Maximum age             : 20 seconds
Forward delay           : 15 seconds
Message age             : 0
Number of topology changes : 58
Time since last topology change : 14127 seconds
Local parameters
  Bridge ID             : 28672.00:90:69:0b:3f:d0
  Extended system ID    : 0

```

```

STP bridge parameters for bridge VLAN 10
Root ID                 : 28672.00:90:69:0b:3f:d0
Hello time              : 2 seconds
Maximum age             : 20 seconds
Forward delay           : 15 seconds
Message age             : 0
Number of topology changes : 58
Time since last topology change : 14127 seconds
Local parameters
  Bridge ID             : 28672.00:90:69:0b:3f:d0
  Extended system ID    : 0

```

```

STP bridge parameters for bridge VLAN 20
Root ID                 : 28672.00:90:69:0b:3f:d0
Hello time              : 2 seconds
Maximum age             : 20 seconds
Forward delay           : 15 seconds
Message age             : 0
Number of topology changes : 58
Time since last topology change : 14127 seconds
Local parameters
  Bridge ID             : 28672.00:90:69:0b:3f:d0
  Extended system ID    : 0

```

**show spanning-tree bridge vlan-id (RSTP)**     user@host> show spanning-tree bridge vlan-id 10

```

STP bridge parameters
Routing instance name    : GLOBAL
Enabled protocol        : RSTP

```



```
STP bridge parameters for VLAN 10
  Root ID                : 28672.00:90:69:0b:3f:d0
  Hello time              : 2 seconds
  Maximum age             : 20 seconds
  Forward delay           : 15 seconds
  Message age             : 0
  Number of topology changes : 58
  Time since last topology change : 14127 seconds
  Local parameters
    Bridge ID              : 28672.00:90:69:0b:3f:d0
    Extended system ID     : 0
```



## show spanning-tree interface

<b>Syntax</b>	show spanning-tree interface <brief   detail> <msti <i>msti-id</i> > <routing-instance <i>routing-instance-name</i> > <vlan-id <i>vlan-id</i> >
<b>Syntax (EX Series Switches and the QFX Series)</b>	show spanning-tree interface <brief   detail> <msti <i>msti-id</i> > <vlan-id <i>vlan-id</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 8.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series.
<b>Description</b>	Display the configured or calculated interface-level STP parameters.
<b>Options</b>	none—Display brief STP interface information.  brief   detail—(Optional) Display the specified level of output.  msti <i>msti-id</i> —(Optional) Display STP interface information for the specified MST instance.  routing-instance <i>routing-instance-name</i> —(Optional) Display STP interface information for the specified routing instance.  vlan-id <i>vlan-id</i> —(Optional) Display STP interface information for the specified VLAN.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show spanning-tree interface on page 797</a> <a href="#">show spanning-tree interface (QFX Series) on page 798</a> <a href="#">show spanning-tree interface detail on page 798</a> <a href="#">show spanning-tree interface msti on page 800</a> <a href="#">show spanning-tree interface vlan-id on page 800</a> <a href="#">show spanning-tree interface (VSTP) on page 800</a> <a href="#">show spanning-tree interface vlan-id (VSTP) on page 801</a>
<b>Output Fields</b>	Table 200 on page 796 lists the output fields for the <b>show spanning-tree interface</b> command. Output fields are listed in the approximate order in which they appear.

**Table 200: show spanning-tree Interface Output Fields**

Field Name	Field Description
<b>Interface name</b>	Interface configured to participate in the STP, RSTP, VSTP, or MSTP instance.



Table 200: show spanning-tree Interface Output Fields (*continued*)

Field Name	Field Description
<b>Port ID</b>	Logical interface identifier configured to participate in the MSTP or VSTP instance.
<b>Designated port ID</b>	Port ID of the designated port for the LAN segment to which this interface is attached.
<b>Designated bridge ID</b>	Bridge ID of the designated bridge for the LAN segment to which this interface is attached.
<b>Port Cost</b>	Configured cost for the interface.
<b>Port State</b>	STP port state: forwarding ( <b>FWD</b> ), blocking ( <b>BLK</b> ), listening, learning, or disabled.
<b>Port Role</b>	MSTP, VSTP, or RSTP port role: designated ( <b>DESG</b> ), backup ( <b>BKUP</b> ), alternate ( <b>ALT</b> ), ( <b>ROOT</b> ), or Root Prevented ( <b>Root-Prev</b> ).
<b>Link type</b>	MSTP, VSTP, or RSTP link type. Shared or point-to-point (pt-pt) and edge or nonedge.
<b>Alternate</b>	Identifies the interface as an MSTP, VSTP, or RSTP alternate root port ( <b>Yes</b> ) or nonalternate root port ( <b>No</b> ).
<b>Boundary Port</b>	Identifies the interface as an MSTP regional boundary port ( <b>Yes</b> ) or nonboundary port ( <b>No</b> ).

## Sample Output

**show spanning-tree  
interface**

```
user@host> show spanning-tree interface routing-instance vs1 detail
Spanning tree interface parameters for instance 0
```

Interface	Port ID	Designated port ID	Designated bridge ID	Port Cost	State	Role
ae1	128:1	128:1	32768.0090690b47d1	1000	FWD	DESG
ge-2/1/2	128:2	128:2	32768.0090690b47d1	20000	FWD	DESG
ge-2/1/5	128:3	128:3	32768.0090690b47d1	29999	FWD	DESG
ge-2/2/1	128:4	128:26	32768.0013c39ec880	20000	FWD	ROOT
xe-9/2/0	128:5	128:5	32768.0090690b47d1	2000	FWD	DESG
xe-9/3/0	128:6	128:6	32768.0090690b47d1	2000	FWD	DESG

```
Spanning tree interface parameters for instance 1
```

Interface	Port ID	Designated port ID	Designated bridge ID	Port Cost	State	Role
ae1	128:1	128:1	32769.0090690b47d1	1000	FWD	DESG
ge-2/1/2	128:2	128:2	32769.0090690b47d1	20000	FWD	DESG
ge-2/1/5	128:3	128:3	32769.0090690b47d1	29999	FWD	DESG
ge-2/2/1	128:4	128:26	32769.0013c39ec880	20000	FWD	ROOT
xe-9/2/0	128:5	128:5	32769.0090690b47d1	2000	FWD	DESG
xe-9/3/0	128:6	128:6	32769.0090690b47d1	2000	FWD	DESG

```
Spanning tree interface parameters for instance 2
```



Interface	Port ID	Designated port ID	Designated bridge ID	Port Cost	State	Role
ae1	128:1	128:1	32770.0090690b47d1	1000	FWD	DESG
ge-2/1/2	128:2	128:2	32770.0090690b47d1	20000	FWD	DESG
ge-2/1/5	128:3	128:3	32770.0090690b47d1	29999	FWD	DESG
ge-2/2/1	128:4	128:26	32770.0013c39ec880	20000	FWD	ROOT
xe-9/2/0	128:5	128:5	32770.0090690b47d1	2000	FWD	DESG
xe-9/3/0	128:6	128:6	32770.0090690b47d1	2000	FWD	DESG

**show spanning-tree interface (QFX Series)** user@1f0> show spanning-tree interface routing-instance vs1 detail  
Spanning tree interface parameters for instance 0

Interface	Port ID	Designated port ID	Designated bridge ID	Port Cost	State	Role
ae1	128:1	128:1	32768.0090690b47d1	1000	FWD	DESG
ge-2/1/2	128:2	128:2	32768.0090690b47d1	20000	FWD	DESG
ge-2/1/5	128:3	128:3	32768.0090690b47d1	29999	FWD	DESG
ge-2/2/1	128:4	128:26	32768.0013c39ec880	20000	FWD	ROOT
xe-9/2/0	128:5	128:5	32768.0090690b47d1	2000	FWD	DESG
xe-9/3/0	128:6	128:6	32768.0090690b47d1	2000	FWD	DESG

Spanning tree interface parameters for instance 1

Interface	Port ID	Designated port ID	Designated bridge ID	Port Cost	State	Role
ae1	128:1	128:1	32769.0090690b47d1	1000	FWD	DESG
ge-2/1/2	128:2	128:2	32769.0090690b47d1	20000	FWD	DESG
ge-2/1/5	128:3	128:3	32769.0090690b47d1	29999	FWD	DESG
ge-2/2/1	128:4	128:26	32769.0013c39ec880	20000	FWD	ROOT
xe-9/2/0	128:5	128:5	32769.0090690b47d1	2000	FWD	DESG
xe-9/3/0	128:6	128:6	32769.0090690b47d1	2000	FWD	DESG

Spanning tree interface parameters for instance 2

Interface	Port ID	Designated port ID	Designated bridge ID	Port Cost	State	Role
ae1	128:1	128:1	32770.0090690b47d1	1000	FWD	DESG
ge-2/1/2	128:2	128:2	32770.0090690b47d1	20000	FWD	DESG
ge-2/1/5	128:3	128:3	32770.0090690b47d1	29999	FWD	DESG
ge-2/2/1	128:4	128:26	32770.0013c39ec880	20000	FWD	ROOT
xe-9/2/0	128:5	128:5	32770.0090690b47d1	2000	FWD	DESG
xe-9/3/0	128:6	128:6	32770.0090690b47d1	2000	FWD	DESG

**show spanning-tree interface detail** user@host> show spanning-tree interface routing-instance vs1 detail  
Spanning tree interface parameters for instance 0

```

Interface name           : ae1
Port identifier          : 128.1
Designated port ID      : 128.1
Port cost                : 1000
Port state               : Forwarding
Designated bridge ID    : 32768.00:90:69:0b:47:d1
Port role                : Designated
Link type               : Pt-Pt/NONEDGE
Boundary port           : No

Interface name           : ge-2/1/2
Port identifier          : 128.2
Designated port ID      : 128.2
Port cost                : 20000

```



```

Port state                : Forwarding
Designated bridge ID     : 32768.00:90:69:0b:47:d1
Port role                 : Designated
Link type                 : Pt-Pt/NONEDGE
Boundary port            : No

```

```

Interface name           : ge-2/1/5
Port identifier          : 128.3
Designated port ID      : 128.3
Port cost                : 29999
Port state               : Forwarding
Designated bridge ID     : 32768.00:90:69:0b:47:d1
Port role                 : Designated
Link type                 : Pt-Pt/NONEDGE
Boundary port            : No

```

```

Interface name           : ge-2/2/1
Port identifier          : 128.4
Designated port ID      : 128.26
Port cost                : 20000
Port state               : Forwarding
Designated bridge ID     : 32768.00:13:c3:9e:c8:80
Port role                 : Root
Link type                 : Pt-Pt/NONEDGE
Boundary port            : No

```

```

Interface name           : xe-9/2/0
Port identifier          : 128.5
Designated port ID      : 128.5
Port cost                : 2000
Port state               : Forwarding
Designated bridge ID     : 32768.00:90:69:0b:47:d1
Port role                 : Designated
Link type                 : Pt-Pt/NONEDGE
Boundary port            : No

```

```

Interface name           : xe-9/3/0
Port identifier          : 128.6
Designated port ID      : 128.6
Port cost                : 2000
Port state               : Forwarding
Designated bridge ID     : 32768.00:90:69:0b:47:d1
Port role                 : Designated
Link type                 : Pt-Pt/NONEDGE
Boundary port            : No

```

#### Spanning tree interface parameters for instance 1

```

Interface name           : ae1
Port identifier          : 128.1
Designated port ID      : 128.1
Port cost                : 1000
Port state               : Forwarding
Designated bridge ID     : 32768.00:90:69:0b:47:d1
Port role                 : Designated
Link type                 : Pt-Pt/NONEDGE
Boundary port            : No

```

```

Interface name           : ge-2/1/2
Port identifier          : 128.2

```



```

Designated port ID      : 128.2
Port cost               : 20000
Port state              : Forwarding
Designated bridge ID   : 32768.00:90:69:0b:47:d1
Port role               : Designated
Link type               : Pt-Pt/NONEDGE
Boundary port           : No

```

```

Interface name          : ge-2/1/5
Port identifier         : 128.3
Designated port ID     : 128.3
Port cost               : 29999
Port state              : Forwarding
Designated bridge ID   : 32768.00:90:69:0b:47:d1
Port role               : Designated
Link type               : Pt-Pt/NONEDGE
Boundary port           : No

```

```

Interface name          : ge-2/2/1
Port identifier         : 128.4
Designated port ID     : 128.26
Port cost               : 20000
Port state              : Forwarding
Designated bridge ID   : 32768.00:13:c3:9e:c8:80
Port role               : Root
Link type               : Pt-Pt/NONEDGE
Boundary port           : No

```

...

**show spanning-tree interface msti** user@host> show spanning-tree interface msti 1 routing-instance vs1 detail  
Spanning tree interface parameters for instance 1

Interface	Port ID	Designated port ID	Designated bridge ID	Port Cost	State	Role
xe-7/0/0	128:1	128:1	32769.0090690b4fd1	2000	FWD	DESG
ge-5/1/0	128:2	128:2	32769.0090690b4fd1	20000	FWD	DESG
ge-5/1/1	128:3	128:3	32769.0090690b4fd1	20000	FWD	DESG
ae1	128:4	128:1	32769.0090690b47d1	10000	BLK	ALT
ge-5/1/4	128:5	128:3	32769.0090690b47d1	20000	BLK	ALT
xe-7/2/0	128:6	128:6	32769.0090690b47d1	2000	FWD	ROOT

**show spanning-tree interface vlan-id** user@host> show spanning-tree interface vlan-id 101 routing-instance vs1 detail  
Spanning tree interface parameters for instance 0

Interface	Port ID	Designated port ID	Designated bridge ID	Port Cost	State	Role
ge-11/0/5	128:1	128:1	32768.0090690b7fd1	20000	FWD	DESG
ge-11/0/6	128:2	128:1	32768.0090690b7fd1	20000	BLK	BKUP
ge-11/1/0	128:3	128:2	32768.0090690b4fd1	20000	BLK	ALT
ge-11/1/1	128:4	128:3	32768.0090690b4fd1	20000	BLK	ALT
ge-11/1/4	128:5	128:1	32768.0090690b47d1	20000	BLK	ALT
xe-10/0/0	128:6	128:5	32768.0090690b4fd1	2000	BLK	ALT
xe-10/2/0	128:7	128:4	32768.0090690b47d1	2000	FWD	ROOT

**show spanning-tree interface (VSTP)** user@host> show spanning-tree interface  
Spanning tree interface parameters for instance 0

Interface	Port ID	Designated port ID	Designated bridge ID	Cost	State	Role
-----------	---------	-----------------------	-------------------------	------	-------	------



ge-1/0/1	128:1	128:1	28672.0090690b3fe0	20000	FWD	DESG
ge-1/0/2	128:2	128:2	28672.0090690b3fe0	20000	FWD	DESG

Spanning tree interface parameters for VLAN 10

Interface	Port ID	Designated port ID	Designated bridge ID	Cost	State	Role
ge-1/0/1	128:1	128:1	28672.0090690b3fe0	20000	FWD	DESG
ge-1/0/2	128:2	128:2	28672.0090690b3fe0	20000	FWD	DESG

Spanning tree interface parameters for VLAN 20

Interface	Port ID	Designated port ID	Designated bridge ID	Cost	State	Role
ge-1/0/1	128:1	128:1	28672.0090690b3fe0	20000	FWD	DESG
ge-1/0/2	128:2	128:2	28672.0090690b3fe0	20000	FWD	DESG

**show spanning-tree  
interface vlan-id  
(VSTP)**

user@host> **show spanning-tree interface vlan-id 10**  
Spanning tree interface parameters for VLAN 10

Interface	Port ID	Designated port ID	Designated bridge ID	Cost	State	Role
ge-1/0/1	128:1	128:1	28672.0090690b3fe0	20000	FWD	DESG
ge-1/0/2	128:2	128:2	28672.0090690b3fe0	20000	FWD	DESG



## show spanning-tree mstp configuration

<b>Syntax</b>	show spanning-tree mstp configuration <brief   detail> <routing-instance <i>routing-instance-name</i> >
<b>Syntax (EX Series Switch and the QFX Series)</b>	show spanning-tree mstp configuration <brief   detail>
<b>Release Information</b>	Command introduced in Junos OS Release 8.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for the QFX Series.
<b>Description</b>	Display the MSTP configuration.
<b>Options</b>	none—Display MSTP configuration information.  brief   detail—(Optional) Display the specified level of output.  routing-instance <i>routing-instance-name</i> —(Optional) Display MSTP configuration information for the specified routing instance.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show spanning-tree mstp configuration detail on page 803</a> <a href="#">show spanning-tree mstp configuration detail (QFX Series) on page 803</a>
<b>Output Fields</b>	<a href="#">Table 201 on page 802</a> lists the output fields for the <b>show spanning-tree mstp configuration</b> command. Output fields are listed in the approximate order in which they appear.

**Table 201: show spanning-tree mstp configuration Output Fields**

Field Name	Field Description
<b>Context id</b>	Internally generated identifier.
<b>Region name</b>	MSTP region name carried in the MSTP BPDUs.
<b>Revision</b>	Revision number of the MSTP configuration.
<b>Configuration digest</b>	Numerical value derived from the VLAN-to-instance mapping table.
<b>MSTI</b>	MST instance identifier.
<b>Member VLANs</b>	VLAN identifiers associated with the MSTI.



## Sample Output

```
show spanning-tree user@host> show spanning-tree mstp configuration routing-instance vs1 detail
mstp configuration MSTP configuration information
detail             Context identifier   : 1
                   Region name      : henry
                   Revision          : 3
                   Configuration digest : 0x6da4b5c4fd587757eef35675365e1
```

```
MSTI      Member VLANs
  0 0-99,101-199,201-4094
  1 100
  2 200
```

```
show spanning-tree user@1f0> show spanning-tree mstp configuration routing-instance vs1 detail
mstp configuration MSTP configuration information
detail (QFX Series) Context identifier   : 1
                   Region name      : henry
                   Revision          : 3
                   Configuration digest : 0x6da4b5c4fd587757eef35675365e1
```

```
MSTI      Member VLANs
  0 0-99,101-199,201-4094
  1 100
  2 200
```



## show spanning-tree statistics

<b>Syntax</b>	show spanning-tree statistics <brief   detail> <interface <i>interface-name</i> > <routing-instance <i>routing-instance-name</i> >
<b>Syntax (EX Series Switch and the QFX Series)</b>	show spanning-tree statistics <brief   detail> <interface <i>interface-name</i> > <brief   detail> <vlan <i>vlan-id</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 8.4. Command introduced in Junos OS Release 9.0 for EX Series switches. Command introduced in Junos OS Release 11.1 for QFX Series switches.
<b>Description</b>	Display STP statistics.
<b>Options</b>	none—Display brief STP statistics.  brief   detail—(Optional) Display the specified level of output.  interface <i>interface-name</i> —(Optional) Display STP statistics for the specified interface.  routing-instance <i>routing-instance-name</i> —(Optional) Display STP statistics for the specified routing instance.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show spanning-tree statistics routing-instance on page 805</a> <a href="#">show spanning-tree statistics interface routing-instance detail on page 805</a> <a href="#">show spanning-tree statistics interface routing-instance detail (QFX Series) on page 805</a>
<b>Output Fields</b>	Table 202 on page 804 lists the output fields for the <b>show spanning-tree statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 202: show spanning-tree statistics Output Fields**

Field Name	Field Description
Message type	Type of message being counted.
BPDUs sent	Total number of BPDUs sent.
BPDUs received	Total number of BPDUs received.
BPDUs sent in last 5 secs	Number of BPDUs sent in the most recent 5-second period.
BPDUs received in last 5 secs	Number of BPDUs received in the most recent 5-second period.



Table 202: show spanning-tree statistics Output Fields (*continued*)

Field Name	Field Description
<b>Interface</b>	Interface for which the statistics are being displayed.
<b>Next BPDU transmission</b>	Number of seconds until the next BPDU is scheduled to be sent.

## Sample Output

```

show spanning-tree statistics routing-instance user@host> show spanning-tree statistics routing-instance vs1 detail
statistics Routing instance level STP statistics
routing-instance Message type : bpdus
                  BPDUs sent   : 121
                  BPDUs received : 537
                  BPDUs sent in last 5 secs : 5
                  BPDUs received in last 5 secs : 27

show spanning-tree statistics interface user@host> show spanning-tree statistics interface ge-11/1/4 routing-instance vs1 detail
statistics interface Interface BPDUs sent BPDUs received Next BPDU
routing-instance detail ge-11/1/4 7 190 transmission
                        0

show spanning-tree statistics interface user@1f0> show spanning-tree statistics interface xe-1/1/1 routing-instance vs1 detail
statistics interface Interface BPDUs sent BPDUs received Next BPDU
routing-instance detail xe-1/1/1 7 190 transmission
(QFX Series)           0

```







## PART 5

# VPNs

- [VPN Operational Mode Commands on page 809](#)







# VPN Operational Mode Commands

Table 203 on page 809 summarizes the command-line interface (CLI) commands you can use to monitor and troubleshoot Layer 2 circuits, Layer 2 virtual private networks (VPNs), virtual private LAN service (VPLS), and Layer 3 VPNs. Commands are listed in alphabetical order.

**Table 203: Layer 2 Circuit, Layer 2 VPN, and VPLS Operational Mode Commands**

Task	Command
Clear MAC address entries from the VPLS table.	<code>clear vpls mac-address</code>
Clear MAC addresses from the VPLS table.	<code>clear vpls mac-table</code>
Manually trigger a switch from the active pseudowire to the redundant pseudowire.	<code>request l2circuit-switchover</code>
Display Layer 3 dynamic tunnel database information.	<code>show dynamic-tunnels database</code>
Display ingress replication provider tunnel information.	<code>show ingress-replication mvpn</code>
Display Layer 2 circuit information.	<code>show l2circuit connections</code>
Display Layer 2 VPN information.	<code>show l2vpn connections</code>
Display multicast VPN c-multicast route information.	<code>show mvpn c-multicast</code>
Display multicast VPN instance information.	<code>show mvpn instance</code>
Display multicast VPN neighbor information.	<code>show mvpn neighbor</code>
Display virtual private LAN service (VPLS) information.	<code>show vpls connections</code>
Display the pending events in the level 2 address learning process (l2ald) routing socket code (rtsock) update queue.	<code>show vpls flood event-queue</code>
Display VPLS information related to the level 2 address learning process for the specified routing instance.	<code>show vpls flood instance</code>



**Table 203: Layer 2 Circuit, Layer 2 VPN, and VPLS Operational Mode Commands (*continued*)**

Task	Command
Display VPLS route information related to the level 2 address learning process.	<a href="#">show vpls flood route</a>
Display learned VPLS MAC address information.	<a href="#">show vpls mac-table</a>
Display VPLS statistics.	<a href="#">show vpls statistics</a>



**NOTE:** For information about how to configure Layer 2 circuits, Layer 2 VPNs, VPLS, and Layer 3 VPNs, see the *Junos VPNs Configuration Guide*.



## clear vpls mac-address

---

<b>Syntax</b>	clear vpls mac-address <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )> < <i>mac-address</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	(T Series and M Series routers, except for the M160 router) Clear media access control (MAC) address entries from the virtual private LAN service (VPLS) table.
<b>Options</b>	<p>none—Clear all MAC address entries from the VPLS table for all routing instances.</p> <p>instance <i>instance-name</i>—(Optional) Clear all MAC address entries for a VPLS instance from the VPLS table.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><i>mac-address</i>—(Optional) Clear a specific MAC address in a VPLS instance from the VPLS table.</p>
<b>Required Privilege Level</b>	maintenance
<b>List of Sample Output</b>	<a href="#">clear vpls mac-address on page 811</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

### Sample Output

```
clear vpls mac-address  user@host> clear vpls mac-address
```



## clear vpls mac-table

---

<b>Syntax</b>	<code>clear vpls mac-table</code> <code>&lt;instance <i>instance-name</i>&gt;</code> <code>&lt;interface <i>interface-name</i>&gt;</code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code> <code>&lt;mac-address&gt;</code> <code>&lt;vlan-id&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 9.5.
<b>Description</b>	(MX Series routers) Clear media access control (MAC) addresses from the virtual private LAN service (VPLS) MAC table.
<b>Options</b>	<p><code>none</code>—Clear all MAC addresses from the VPLS table for all routing instances.</p> <p><code>instance <i>instance-name</i></code>—(Optional) Clear all MAC addresses for a VPLS instance from the VPLS table.</p> <p><code>interface <i>interface-name</i></code>—(Optional) Clear all MAC addresses for a VPLS interface from the VPLS table.</p> <p><code>logical-system (all   <i>logical-system-name</i>)</code>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><code>mac-address</code>—(Optional) Clear a specific MAC address in a VPLS instance from the VPLS table.</p> <p><code>vlan-id</code>—(Optional) Clear MAC addresses on a specified VLAN (0 through 4095).</p>
<b>Required Privilege Level</b>	maintenance
<b>List of Sample Output</b>	<a href="#">clear vpls mac-table on page 812</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

**clear vpls mac-table**     `user@host> clear vpls mac-table`



## request l2circuit-switchover

<b>Syntax</b>	request l2circuit-switchover <logical-system (all   logical-system-name) > <neighbor <i>address</i> > <virtual-circuit-id <i>identifier</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 9.2.
<b>Description</b>	Manually trigger a switch from the active pseudowire to the redundant pseudowire. This command can be useful when performing network maintenance.
<b>Options</b>	<p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>neighbor <i>address</i>—(Optional) Trigger a switch of all of the active pseudowire connections with the specified neighbor to their respective redundant pseudowires.</p> <p>virtual-circuit-id <i>identifier</i>—(Optional) Trigger a switch from the active pseudowire connection of the specified Layer 2 circuit to its redundant pseudowire.</p>
<b>Required Privilege Level</b>	maintenance
<b>List of Sample Output</b>	<a href="#">request l2circuit-switchover virtual-circuit-id on page 813</a>
<b>Output Fields</b>	When you enter this command, you are provided feedback on the status of your request.

## Sample Output

```

request user@host>request l2circuit-switchover virtual-circuit-id 12
l2circuit-switchover
virtual-circuit-id

```



## show dynamic-tunnels database

<b>Syntax</b>	show dynamic-tunnels database <destination> <logical-system (all   <i>logical-system-name</i> )> <table <i>routing-table-name</i> >
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display dynamic tunnel database information.
<b>Options</b>	<p>none—Display dynamic tunnel database information for all destinations and routing tables.</p> <p><i>destination</i>—(Optional) Display database entries for the specified IP address (with optional destination prefix length) only.</p> <p><i>logical-system</i> (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>table <i>routing-table-name</i>—(Optional) Display database entries for the specified table only.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show dynamic-tunnels database (Tunnel Is Up) on page 815</a> <a href="#">show dynamic-tunnels database (No Tunnel PIC) on page 815</a> <a href="#">show dynamic-tunnels database (Tunnel Is Expiring) on page 815</a> <a href="#">show dynamic-tunnels database (Destination Specified) on page 815</a>
<b>Output Fields</b>	Table 204 on page 814 lists the output fields for the <b>show dynamic-tunnels database</b> command. Output fields are listed in the approximate order in which they appear.

**Table 204: show dynamic-tunnels database Output Fields**

Field Name	Field Description
<b>Table</b>	Name of the routing table (for example, <b>inet.0</b> ).
<b>Destination-network</b>	Destination IP address and subnet.
<b>Tunnel to</b>	Destination IP address and prefix of the tunnel.
<b>State</b>	State of the tunnel: <b>Up</b> , <b>Up (expires in <i>nn:nn:nn</i>seconds)</b> , or <b>Dn</b> (down).
<b>Reference count</b>	Number of routes across the dynamic tunnel that are currently being resolved.
<b>Next-hop type</b>	Type of tunnel: GRE.
<b>Source address</b>	Source IP address of the tunnel.



Table 204: show dynamic-tunnels database Output Fields (*continued*)

Field Name	Field Description
<b>Next-hop</b>	IP address of the destination interface.
<b>State</b>	State of the destination interface: Up, Dn, or Dn (no tunnel pic).

## Sample Output

```

show dynamic-tunnels database (Tunnel Is Up)
user@host> show dynamic-tunnels database
Table: inet.3
Destination-network: 10.255.120.94/32
Tunnel to: 10.255.120.94/32 State: Up
Reference count: 2
Next-hop type: gre
Source address: 10.255.120.92
Next hop: gr-4/3/0.32769
State: Up

show dynamic-tunnels database (No Tunnel PIC)
user@host> show dynamic-tunnels database
Table: inet.3
Destination-network: 10.255.120.94/32
Tunnel to: 10.255.120.94/32 State: Dn
Reference count: 2
Next-hop type: gre
Source address: 10.255.120.92
State: Dn (no tunnel pic)

show dynamic-tunnels database (Tunnel Is Expiring)
user@host> show dynamic-tunnels database
Table: inet.3
Destination-network: 10.255.120.94/32
Tunnel to: 10.255.120.94/32 State: Up (expires in 00:14:56 seconds)
Reference count: 0
Next-hop type: gre
Source address: 10.255.120.92
Next hop: gr-4/3/0.32769
State: Up

show dynamic-tunnels database (Destination Specified)
user@host> show dynamic-tunnels database 10.255.120.94
Table: inet.3
Destination-network: 10.255.120.94/32
Tunnel to: 10.255.120.94/32 State: Up
Reference count: 2
Next-hop type: gre
Source address: 10.255.120.92
Next hop: gr-4/3/0.32769
State: Up

```



## show ingress-replication mvpn

<b>Syntax</b>	show ingress-replication mvpn
<b>Release Information</b>	Command introduced in Junos OS Release 10.4.
<b>Description</b>	Display the state and configuration of the ingress replication tunnels created for the MVPN application when using the <b>mpls-internet-multicast</b> routing instance type.
<b>Required Privilege Level</b>	View
<b>List of Sample Output</b>	<a href="#">show ingress-replication mvpn on page 816</a>
<b>Output Fields</b>	<a href="#">Table 205 on page 816</a> lists the output fields for the <b>show ingress-replication mvpn</b> command. Output fields are listed in the approximate order in which they appear.

**Table 205: show ingress-replication mvpn**

Field Name	Field Description
<b>Ingress tunnel</b>	Identifies the MVPN ingress replication tunnel.
<b>Application</b>	Identifies the application (MVPN).
<b>Unicast tunnels</b>	List of unicast tunnels in use.
<b>Leaf address</b>	Address of the tunnel.
<b>Tunnel type</b>	Identifies the unicast tunnel type.
<b>Mode</b>	Indicates whether the tunnel was created as a new tunnel for the ingress replication, or if an existing tunnel was used.
<b>State</b>	Indicates whether the tunnel is Up or Down.

## Sample Output

```

user@host> show ingress-replication mvpn
show ingress-replication mvpn
Ingress Tunnel: mvpn:1
  Application: MVPN
  Unicast tunnels
    Leaf Address      Tunnel-type    Mode    State
    10.255.245.2      P2P LSP       New     Up
    10.255.245.4      P2P LSP       New     Up
Ingress Tunnel: mvpn:2
  Application: MVPN
  Unicast tunnels
    Leaf Address      Tunnel-type    Mode    State
    10.255.245.2      P2P LSP       Existing Up

```



## show l2circuit connections

<b>Syntax</b>	<pre>show l2circuit connections &lt;brief   extensive   summary&gt; &lt;down   up   up-down&gt; &lt;history&gt; &lt;interface <i>interface-name</i>&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;neighbor <i>neighbor</i>&gt; &lt;status&gt;</pre>
<b>Release Information</b>	<p>Command introduced before Junos OS Release 7.4.</p> <p>Display enhancements in Junos OS Release 9.6.</p> <p>Display enhancements in Junos OS Release 10.2.</p>
<b>Description</b>	Display status information about Layer 2 virtual circuits from the local provider edge (PE) router to its neighbors.
<b>Options</b>	<p>none—Display standard information about Layer 2 virtual circuits on all interfaces for all neighbors.</p> <p>brief   extensive   summary—(Optional) Display the specified level of output. Use history to display information about connection history. Use status to display information about the connection and interface status.</p> <p>down   up   up-down—(Optional) Display nonoperational, operational, or both kinds of connections.</p> <p>history—(Optional) Display information about connection history.</p> <p>interface <i>interface-name</i>—(Optional) Show all Layer 2 virtual circuits on an interface.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>neighbor <i>neighbor</i>—(Optional) IP address of a specific neighbor.</p> <p>status—(Optional) Display information about the connection and interface status.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<p><a href="#">show l2circuit connections on page 820</a></p> <p><a href="#">show l2circuit connections extensive on page 821</a></p>
<b>Output Fields</b>	<p><a href="#">Table 206 on page 818</a> lists the output fields for the <b>show l2circuit connections</b> command. Output fields are listed in the approximate order in which they appear.</p>



Table 206: show l2circuit connections Output Fields

Field Name	Field Description
<b>Layer-2 Circuit Connections</b>	Displays the legends for connection and interface status.
<b>Neighbor</b>	Remote PE neighbor.
<b>Interface</b>	Logical PE-to-CE interface on which the virtual circuit is configured.
<b>Type</b>	VC type: <b>rmt</b> (remote) or <b>loc</b> (local).
<b>Legend for connection status (St)</b>	<p>Status of the virtual circuit connection:</p> <ul style="list-style-type: none"> <li>• <b>EI</b>—The local virtual circuit interface is configured with an encapsulation that is not supported.</li> <li>• <b>MM</b>—The two routers do not agree on an MTU value, which causes an MTU mismatch.</li> <li>• <b>EM</b>—The encapsulation type received on this virtual circuit from the neighbor does not match the local virtual circuit interface encapsulation type.</li> <li>• <b>CM</b>—The two routers do not agree on a control word, which causes a control word mismatch.</li> <li>• <b>VM</b>—The remote and local VLAN IDs do not match across the Layer 2 circuit.</li> <li>• <b>OL</b>—No advertisement has been received for this virtual circuit from the neighbor. There is no outgoing label available for use by this virtual circuit.</li> <li>• <b>NC</b>—The interface is not configured as a CCC or TCC interface.</li> <li>• <b>BK</b>—The virtual circuit has switched to a backup connection.</li> <li>• <b>CB</b>—The remote PE router is advertising a different cell bundle from that configured on the local PE router.</li> <li>• <b>LD</b>—The connection to the local site is signaled down, because the CE-facing interface to the local site is down.</li> <li>• <b>RD</b>—The remote neighbor is down. It has signaled a problem using the pseudowire status code.</li> <li>• <b>NP</b>—The router detects that interface hardware is not present. The hardware may be offline, a PIC may not be of the desired type, or the interface may be configured in a different routing instance.</li> <li>• <b>Dn</b>—The virtual circuit is down.</li> <li>• <b>VC-Dn</b>—The virtual circuit is down because there is no tunnel LSP from the local PE router to the neighbor.</li> <li>• <b>UP</b>—The virtual circuit is operational.</li> <li>• <b>CF</b>—The router cannot find enough bandwidth to the remote router to satisfy the Layer 2 circuit bandwidth requirement.</li> <li>• <b>IB</b>—The bit rate is incompatible for Time Division Multiplexing (TDM).</li> <li>• <b>TDM</b>—TDM is not configured correctly.</li> <li>• <b>ST</b>—The virtual circuit has been switched to a standby connection.</li> <li>• <b>SP</b>—The virtual circuit connection is using a static pseudowire.</li> <li>• <b>RS</b>—The remote site is in a standby state.</li> <li>• <b>XX</b>—The virtual circuit is down for an unknown reason. This is a programming error.</li> </ul>
<b>Time last up</b>	Date and time the virtual circuit was last operational.



Table 206: show l2circuit connections Output Fields (*continued*)

Field Name	Field Description
# Up trans	Number of times the virtual circuit came up.
<i>local-interface-name</i>	Name of the local PE-to-CE interface.
Status	Status of the local interface.
Up	Interface is operational.
Dn	Interface is not operational.
NP	Not present. Interface does not exist.
DS	Disabled. Interface has been administratively disabled.
WE	Wrong encapsulation. The interface is not configured as CCC.
UN	Interface status is initialized.
Encapsulation	Encapsulation of the local interface.
Remote PE	Prefix of the remote PE router.
Negotiated control-word	Whether the use of the control word has been negotiated for this virtual circuit: <b>Yes (Null)</b> or <b>No</b> .
Incoming label	Label used by the remote side of the virtual circuit to send packets destined to the local side. This label is routed to the local virtual circuit interface.
Outgoing label	Label used by the local side of the virtual circuit to send packets to the remote side of the virtual circuit. Packets originated on the local virtual circuit interface are encapsulated with this label before being placed on the tunnel LSP to the neighbor for this virtual circuit. This label is allocated by the neighbor and is used in demultiplexing incoming packets destined for this virtual circuit.
Negotiated PW status TLV	Displays the pseudowire status type, length, and value (TLV). TLVs are a method of encoding variable-length or optional information. If the pseudowire status TLV is used, the corresponding local or neighbor PE router status code is also displayed.
local PW status code	If the pseudowire status TLV is used, displays the local PE router status code.
Neighbor PW status code	If the pseudowire status TLV is used, displays the neighbor PE router status code.
Local interface	Name of the local interface used for the Layer 2 circuit connection.
Status	Status of the local interface ( <b>Up</b> or <b>Down</b> ).



Table 206: show l2circuit connections Output Fields (*continued*)

Field Name	Field Description
<b>Encapsulation</b>	Encapsulation configured for the local interface.
<b>Connection protection</b>	Whether or not connection protection is configured for the Layer 2 circuit to the neighbor: <b>Yes</b> or <b>No</b> .
<b>VC bandwidth</b>	Bandwidth requirement of the Layer 2 circuit.
<b>Time</b>	Time at which the event occurred.
<b>Connection History</b>	Event types logged in history. <ul style="list-style-type: none"> <li>• <b>loc intf up</b>—Local virtual circuit interface went up.</li> <li>• <b>loc intf down</b>—Local virtual circuit interface went down.</li> <li>• <b>In lbl Update</b>—Incoming label has been updated.</li> <li>• <b>Out lbl Update</b>—Outgoing label has been updated.</li> <li>• <b>PE route changed</b>—Route to PE router has been updated.</li> <li>• <b>PE route down</b>—Route to PE router is down.</li> <li>• <b>rmt side marked</b>—Remote side is marked.</li> <li>• <b>VC Dn</b>—Remote side indicated that its end of the virtual circuit is down (if the tunnel LSP from the remote side to the local side is down).</li> <li>• <b>status update timer</b>—Status update timer processing. It computes the state of the virtual circuit, and determines whether it should be advertised to or withdrawn from the remote side.</li> </ul>

## Sample Output

```

user@host> show l2circuit connections
Layer-2 Circuit Connections:

Legend for connection status (St)
EI -- encapsulation invalid      NP -- interface h/w not present
MM -- mtu mismatch              Dn -- down
EM -- encapsulation mismatch     VC-Dn -- Virtual circuit Down
CM -- control-word mismatch     Up -- operational
VM -- vlan id mismatch          CF -- Call admission control failure
OL -- no outgoing label         IB -- TDM incompatible bitrate
NC -- intf encaps not CCC/TCC   TM -- TDM misconfiguration
BK -- Backup Connection         ST -- Standby Connection
CB -- rcvd cell-bundle size bad SP -- Static Pseudowire
LD -- local site signaled down  RS -- remote site standby
RD -- remote site signaled down XX -- unknown

Legend for interface status
Up -- operational
Dn -- down
Neighbor: 10.255.245.51
  Interface      Type  St    Time last up      # Up trans
  ge-2/0/2.600(vc 5)  rmt  Up    Dec 7 18:11:18 2009      1
  Remote PE: 10.255.245.51, Negotiated control-word: No
  Incoming label: 299856, Outgoing label: 299808

```



Negotiated PW status TLV: No  
 Local interface: ge-2/0/2.600, Status: Up, Encapsulation: VLAN

## Sample Output

```

show l2circuit connections extensive
connections extensive
user@host>show l2circuit connections extensive
Layer-2 Circuit Connections:

Legend for connection status (St)
EI -- encapsulation invalid      NP -- interface h/w not present
MM -- mtu mismatch              Dn -- down
EM -- encapsulation mismatch     VC-Dn -- Virtual circuit Down
CM -- control-word mismatch     Up -- operational
VM -- vlan id mismatch          CF -- Call admission control failure
OL -- no outgoing label         IB -- TDM incompatible bitrate
NC -- intf encaps not CCC/TCC   TM -- TDM misconfiguration
BK -- Backup Connection         ST -- Standby Connection
CB -- rcvd cell-bundle size bad SP -- Static Pseudowire
LD -- local site signaled down  RS -- remote site standby
RD -- remote site signaled down XX -- unknown

Legend for interface status
Up -- operational
Dn -- down
Neighbor: 10.255.49.149
Interface          Type  St    Time last up      # Up trans
ae0.0(vc 100)      rmt   Up    Aug 31 09:36:12 2009      1
  Remote PE: 10.255.49.149, Negotiated control-word: Yes (Null)
  Incoming label: 299824, Outgoing label: 299776
  Negotiated PW status TLV: Yes
  local PW status code: 0x00000000, Neighbor PW status code: 0x00000000
  Local interface: ae0.0, Status: Up, Encapsulation: ETHERNET
  Connection protection: Yes
Connection History:
  Aug 31 09:36:12 2009  status update timer
  Aug 31 09:36:12 2009  PE route changed
  Aug 31 09:36:12 2009  Out lbl Update                299776
  Aug 31 09:36:12 2009  In lbl Update                  299824
  Aug 31 09:36:12 2009  loc intf up                    ae0.0

```



## show l2vpn connections

---

<b>Syntax</b>	<code>show l2vpn connections</code> <code>&lt;brief   extensive&gt;</code> <code>&lt;down   up   up-down&gt;</code> <code>&lt;history&gt;</code> <code>&lt;instance <i>instance</i>&gt;</code> <code>&lt;local-site <i>local-site</i>&gt;</code> <code>&lt;logical-system (all   <i>logical-system-name</i>)&gt;</code> <code>&lt;remote-site <i>remote-site</i>&gt;</code> <code>&lt;status&gt;</code> <code>&lt;summary&gt;</code>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	Display Layer 2 virtual private network (VPN) connections.
<b>Options</b>	<p><code>none</code>—Display all Layer 2 VPN connections for all routing instances.</p> <p><code>brief   extensive</code>—(Optional) Display the specified level of output.</p> <p><code>down   up   up-down</code>—(Optional) Display nonoperational, operational, or both kinds of connections.</p> <p><code>history</code>—(Optional) Display information about connection history.</p> <p><code>instance <i>instance</i></code>—(Optional) Display connections for the specified routing instance only.</p> <p><code>local-site <i>local-site</i></code>—(Optional) Display connections for the specified Layer 2 VPN local site name or ID only.</p> <p><code>logical-system (all   <i>logical-system-name</i>)</code>—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p><code>remote-site <i>remote-site</i></code>—(Optional) Display connection for the specified Layer 2 VPN remote site ID only.</p> <p><code>status</code>—(Optional) Display information about the connection and interface status.</p> <p><code>summary</code>—(Optional) Display summary of all Layer 2 VPN connections information.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show l2vpn connections on page 824</a> <a href="#">show l2vpn connections extensive on page 824</a>
<b>Output Fields</b>	<a href="#">Table 207 on page 823</a> lists the output fields for the <b>show l2vpn connections</b> command. Output fields are listed in the approximate order in which they appear.



Table 207: show l2vpn connections Output Fields

Field Name	Field Description
<b>Instance</b>	Name of Layer 2 VPN instance.
<b>Local site</b>	Name of local site.
<b>Interface name</b>	Name of interface.
<b>Remote Site ID</b>	Remote site ID.
<b>Label Offset</b>	Numbers within the label block that are skipped to find the next label base.
<b>Label-base</b>	Advertises the first label in a block of labels. A remote PE router uses this first label when sending traffic toward the advertising PE router.
<b>Range</b>	Advertises the label block size.
<b>status-vector</b>	Bit vector advertising the state of local PE-CE circuits to remote PE routers. A bit value of <b>0</b> indicates that the local circuit and LSP tunnel to the remote PE router are up, whereas a value of <b>1</b> indicates either one or both are down.
<b>connection-site</b>	Name of the connection site.
<b>Type</b>	Type of connection: <b>loc</b> (local) or <b>rmt</b> (remote).
<b>St</b>	Status of the connection. (For a list of possible values, see the <b>Legend for connection status (St)</b> field.)
<b>Time last up</b>	Time that the connection was last in the <b>Up</b> condition.
<b># Up trans</b>	Number of transitions from <b>Down</b> to <b>Up</b> condition.
<b>Local circuit</b>	Address and status of local circuit.
<b>Remote circuit</b>	Address and status of remote circuit.
<b>Status</b>	Status of local or remote circuit: <ul style="list-style-type: none"> <li>• <b>Up</b>—Operational</li> <li>• <b>Dn</b>—Down</li> <li>• <b>NP</b>—Not present</li> <li>• <b>DS</b>—Disabled</li> <li>• <b>WE</b>—Wrong encapsulation</li> <li>• <b>UN</b>—Uninitialized</li> </ul>
<b>Remote PE</b>	Address of the remote provider edge router.
<b>Incoming label</b>	Name of the incoming label.
<b>Outgoing label</b>	Name of the outgoing label.



Table 207: show l2vpn connections Output Fields (*continued*)

Field Name	Field Description
Time	Date and time of Layer 2 VPN connection event.
Event	Type of event.
Interface/Lbl/PE	Interface, label, or PE router.

## Sample Output

```

show l2vpn connections      user@host> show l2vpn connections
L2VPN Connections :
Instance : vpn-a
Local site: 2 (ce-2)
offset: 1, range: 3, label-base: 32768
  connection-site      Type St  Time last up      # Up trans
  3 (3)                loc  Up   Jul 18 20:45:46 2001      1
    Local circuit: fe-0/0/0.1, Status: Up
    Remote circuit: fe-0/0/3.0, Status: Up
  1                    rmt  Up   Jul 18 21:47:25 2001      1
    Local circuit: fe-0/0/0.0, Status: Up
    Remote PE: 192.168.16.1
    Incoming label: 32768, Outgoing label: 32769
Local site: 3 (ce-3)
offset: 1, range: 2, label-base: 33792
  connection-site      Type St  Time last up      # Up trans
  2 (ce-b)             loc  Up   Jul 18 20:45:46 2001      1
    Local circuit: fe-0/0/0.1, Status: Up
    Remote circuit: fe-0/0/3.0, Status: Up
  1                    rmt  Up   Jul 18 21:47:25 2001      1
    Local circuit: fe-0/0/3.1, Status: Up
    Remote PE: 192.168.16.1
    Incoming label: 33792, Outgoing label: 32770

show l2vpn connections extensive user@host> show l2vpn connections extensive
L2VPN Connections:

Legend for connection status (St)
EI -- encapsulation invalid      NC -- interface encapsulation not CCC/TCC/VPLS
EM -- encapsulation mismatch     WE -- interface and instance encaps not same
VC-Dn -- Virtual circuit down    NP -- interface hardware not present
CM -- control-word mismatch      -> -- only outbound connection is up
CN -- circuit not provisioned    <- -- only inbound connection is up
OR -- out of range              Up -- operational
OL -- no outgoing label         Dn -- down
LD -- local site signaled down   CF -- call admission control failure
RD -- remote site signaled down  SC -- local and remote site ID collision
LN -- local site not designated  LM -- local site ID not minimum designated
RN -- remote site not designated RM -- remote site ID not minimum designated
XX -- unknown connection status  IL -- no incoming label

Instance: vpn-a
Local site: ce-a (1)
  Interface name      Remote Site ID
  fe-0/0/0.0          2
  Label Offset        Offset      Range

```



```

32768          1          2
connection-site      Type St Time last up      # Up trans
2                  rmt  Up  Aug 3 00:08:14 2001      1
Local circuit: fe-0/0/0.0, Status: Up
Remote PE: 192.168.24.1
Incoming label: 32769, Outgoing label: 32768
Time              Event                      Interface/Lbl/PE
Aug 3 00:08:14 2001 PE route up
Aug 3 00:08:14 2001 Out lbl Update              32768
Aug 3 00:08:14 2001 In lbl Update              32769
Aug 3 00:08:14 2001 ckt0 up                  fe-0/0/0.0

```



## show mvpn c-multicast

<b>Syntax</b>	show mvpn c-multicast <extensive   summary> <instance-name <i>instance-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 8.4.
<b>Description</b>	Display the multicast VPN customer multicast route information.
<b>Options</b>	extensive   summary—(Optional) Display the specified level of output.  instance-name <i>instance-name</i> —(Optional) Display output for the specified routing instance.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show mvpn c-multicast on page 827</a> <a href="#">show mvpn c-multicast summary on page 827</a> <a href="#">show mvpn c-multicast extensive on page 827</a>
<b>Output Fields</b>	<a href="#">Table 208 on page 826</a> lists the output fields for the <b>show mvpn c-multicast</b> command. Output fields are listed in the approximate order in which they appear.

Table 208: show mvpn c-multicast Output Fields

Field Name	Field Description	Level of Output
Instance	Name of the VPN routing instance.	summary extensive none
C-mcast IPv4 (S:G)	Customer router IPv4 multicast address.	extensive none
Ptnl	Provider tunnel attributes, <i>tunnel type:tunnel source, tunnel destination group</i> .	extensive none
St	State: <ul style="list-style-type: none"> <li>DS—Represents (S,G) and is created due to (*,G)</li> <li>RM—Remote VPN route learned from the remote PE router</li> <li>St display blank—SSM group join</li> </ul>	extensive none
MVPN instance	Name of the multicast VPN routing instance	extensive none
C-multicast IPv4 route count	Number of customer multicast IPv4 routes associated with the multicast VPN routing instance.	summary
C-multicast IPv6 route count	Number of customer multicast IPv6 routes associated with the multicast VPN routing instance.	summary



## Sample Output

```

show mvpn      user@host> show mvpn c-multicast
c-multicast    MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g)          RM -- remote VPN route
Instance: VPN-A
  C-mcast IPv4 (S:G)          Ptnl          St
  192.168.195.78/32:225.5.5.5/32 PIM-SM:10.255.14.144, 239.1.1.1      RM
MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g)          RM -- remote VPN route
Instance: VPN-B
  C-mcast IPv4 (S:G)          Ptnl          St
  192.168.195.94/32:226.6.6.6/32 PIM-SM:10.255.14.144, 239.2.0.0      RM

show mvpn      user@host> show mvpn c-multicast summary
c-multicast summary MVPN Summary:
Instance: VPN-A
  C-multicast IPv4 route count: 1
Instance: VPN-B
  C-multicast IPv4 route count: 2

show mvpn      user@host> show mvpn c-multicast extensive
c-multicast extensive MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g)          RM -- remote VPN route
Instance: VPN-A
  C-mcast IPv4 (S:G)          Ptnl          St
  192.168.195.78/32:225.5.5.5/32 PIM-SM:10.255.14.144, 239.1.1.1      RM
MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g)          RM -- remote VPN route
Instance: VPN-B
  C-mcast IPv4 (S:G)          Ptnl          St
  192.168.195.94/32:226.6.6.6/32 PIM-SM:10.255.14.144, 239.2.0.0      RM

```



## show mvpn instance

<b>Syntax</b>	show mvpn instance <extensive   summary> <instance <i>instance-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 8.4.
<b>Description</b>	Display the multicast VPN routing instance information.
<b>Options</b>	extensive   summary—(Optional) Display the specified level of output.  instance <i>instance-name</i> —(Optional) Display statistics for the specified routing instance.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show mvpn instance on page 829</a> <a href="#">show mvpn instance on page 829</a> <a href="#">show mvpn instance summary on page 830</a> <a href="#">show mvpn instance extensive on page 830</a> <a href="#">show mvpn instance summary (IPv6) on page 830</a>
<b>Output Fields</b>	<a href="#">Table 209 on page 828</a> lists the output fields for the <b>show mvpn instance</b> command. Output fields are listed in the approximate order in which they appear.

**Table 209: show mvpn instance Output Fields**

Field Name	Field Description	Level of Output
<b>MVPN instance</b>	Name of the multicast VPN routing instance	extensive none
<b>Instance</b>	Name of the VPN routing instance.	summary extensive none
<b>Provider tunnel</b>	Provider tunnel attributes, <i>tunnel type:tunnel source, tunnel destination group</i> .	extensive none
<b>Neighbor</b>	Address, type of provider tunnel ( <b>I-P-tnl</b> , inclusive provider tunnel and <b>S-P-tnl</b> , selective provider tunnel) and provider tunnel for each neighbor.	extensive none
<b>C-mcast IPv4 (S:G)</b>	Customer IPv4 router multicast address.	extensive none
<b>C-mcast IPv6 (S:G)</b>	Customer IPv6 router multicast address.	extensive none
<b>Ptnl</b>	Provider tunnel attributes, <i>tunnel type:tunnel source, tunnel destination group</i> .	extensive none
<b>St</b>	State: <ul style="list-style-type: none"> <li><b>DS</b>—Represents (S,G) and is created due to (*,G)</li> <li><b>RM</b>—Remote VPN route learned from the remote PE router</li> <li><b>St</b> display blank—SSM group join</li> </ul>	extensive none



Table 209: show mvpn instance Output Fields (*continued*)

Field Name	Field Description	Level of Output
Neighbor count	Number of neighbors associated with the multicast VPN routing instance.	summary
C-multicast IPv4 route count	Number of customer multicast IPv4 routes associated with the multicast VPN routing instance.	summary
C-multicast IPv6 route count	Number of customer multicast IPv6 routes associated with the multicast VPN routing instance.	summary

## Sample Output

```

show mvpn instance user@host> show mvpn instance
MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g)          RM -- remote VPN route
Instance: VPN-A
  Provider tunnel: I-P-tnl:PIM-SM:10.255.14.144, 239.1.1.1
  Neighbor
    10.255.14.160          I-P-tnl PIM-SM:10.255.14.160, 239.1.1.1
    10.255.70.17          I-P-tnl PIM-SM:10.255.70.17, 239.1.1.1
  C-mcast IPv4 (S:G)      Ptnl      St
    192.168.195.78/32:225.5.5.5/32 PIM-SM:10.255.14.144, 239.1.1.1      RM
MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g)          RM -- remote VPN route
Instance: VPN-B
  Provider tunnel: I-P-tnl:PIM-SM:10.255.14.144, 239.2.0.0
  Neighbor
    10.255.14.160          I-P-tnl PIM-SM:10.255.14.160, 239.2.0.0
    10.255.70.17          I-P-tnl PIM-SM:10.255.70.17, 239.2.0.0
  C-mcast IPv4 (S:G)      Ptnl      St
    192.168.195.94/32:226.6.6.6/32 PIM-SM:10.255.14.144, 239.2.0.0      RM

show mvpn instance user@host> show mvpn instance
MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g)          RM -- remote VPN route
Instance : vpn-1
  MVPN Mode : SPT-ONLY
  Provider tunnel: I-P-tnl:LDP-P2MP:10.255.72.162, lsp-id 16777217
  Neighbor
    10.255.72.160          I-P-tnl LDP-P2MP:10.255.72.160, lsp-id 16777217
    10.255.72.166          I-P-tnl RSVP-TE P2MP:10.255.72.166,

```



```
13054,10.255.72.166
10.255.72.168
```

## Sample Output

```
show mvpn instance summary user@host> show mvpn instance summary
summary MVPN Summary:
Instance: VPN-A
Neighbor count: 2
C-multicast IPv4 route count: 1
Instance: VPN-B
Neighbor count: 4
C-multicast IPv4 route count: 2
```

## Sample Output

```
show mvpn instance extensive user@host> show mvpn instance extensive
extensive MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g) RM -- remote VPN route
Instance: VPN-A
Provider tunnel: I-P-tnl:PIM-SM:10.255.14.144, 239.1.1.1
Neighbor I-P-tnl
10.255.14.160 PIM-SM:10.255.14.160, 239.1.1.1
10.255.70.17 PIM-SM:10.255.70.17, 239.1.1.1
C-mcast IPv4 (S:G) Ptnl St
192.168.195.78/32:225.5.5.5/32 PIM-SM:10.255.14.144, 239.1.1.1 RM
MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g) RM -- remote VPN route
Instance: VPN-B
Provider tunnel: I-P-tnl:PIM-SM:10.255.14.144, 239.2.0.0
Neighbor I-P-tnl
10.255.14.160 PIM-SM:10.255.14.160, 239.2.0.0
10.255.70.17 PIM-SM:10.255.70.17, 239.2.0.0
C-mcast IPv4 (S:G) Ptnl St
192.168.195.94/32:226.6.6.6/32 PIM-SM:10.255.14.144, 239.2.0.0 RM

show mvpn instance summary user@host> show mvpn instance summary
summary (IPv6) MVPN Summary:
Instance: VPN-A
C-multicast IPv6 route count: 2
Instance: VPN-B
C-multicast IPv6 route count: 2
```



## show mvpn neighbor

<b>Syntax</b>	show mvpn neighbor <extensive   summary> <instance <i>instance-name</i>   neighbor-address <i>address</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 8.4.
<b>Description</b>	Display multicast VPN neighbor information.
<b>Options</b>	extensive   summary—(Optional) Display the specified level of output.  instance <i>instance-name</i>   neighbor-address <i>address</i> —(Optional) Display multicast VPN neighbor information for the specified instance or the specified neighbor.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show mvpn neighbor on page 831</a> <a href="#">show mvpn neighbor extensive on page 832</a> <a href="#">show mvpn neighbor extensive on page 832</a> <a href="#">show mvpn neighbor instance-name on page 833</a> <a href="#">show mvpn neighbor neighbor-address on page 833</a> <a href="#">show mvpn neighbor neighbor-address summary on page 833</a> <a href="#">show mvpn neighbor neighbor-address extensive on page 833</a> <a href="#">show mvpn neighbor neighbor-address instance-name on page 834</a>
<b>Output Fields</b>	<a href="#">Table 210 on page 831</a> lists the output fields for the <b>show mvpn neighbor</b> command. Output fields are listed in the approximate order in which they appear.

Table 210: show mvpn neighbor Output Fields

Field Name	Field Description	Level of Output
<b>MVPN instance</b>	Name of the multicast VPN routing instance	extensive none
<b>Instance</b>	Name of the VPN routing instance.	summary extensive none
<b>Neighbor</b>	Address, type of provider tunnel (I-P-tnl, inclusive provider tunnel and S-P-tnl, selective provider tunnel) and provider tunnel for each neighbor.	extensive none
<b>Provider tunnel</b>	Provider tunnel attributes, <i>tunnel type:tunnel source, tunnel destination group</i> .	extensive none

## Sample Output

```

show mvpn neighbor  user@host> show mvpn neighbor
                    MVPN instance:

                    Legend for provider tunnel
                    I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

```



```

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g)      RM -- remote VPN route
Instance: VPN-A
  Neighbor                        I-P-tnl
  10.255.14.160                  PIM-SM:10.255.14.160, 239.1.1.1
  10.255.70.17                   PIM-SM:10.255.70.17, 239.1.1.1
MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g)      RM -- remote VPN route
Instance: VPN-B
  Neighbor                        I-P-tnl
  10.255.14.160                  PIM-SM:10.255.14.160, 239.2.0.0
  10.255.70.17                   PIM-SM:10.255.70.17, 239.2.0.0

```

## Sample Output

```

show mvpn neighbor extensive user@host> show mvpn neighbor extensive
                             MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g)      RM -- remote VPN route
Instance: VPN-A
  Neighbor                        I-P-tnl
  10.255.14.160                  PIM-SM:10.255.14.160, 239.1.1.1
  10.255.70.17                   PIM-SM:10.255.70.17, 239.1.1.1
MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g)      RM -- remote VPN route
Instance: VPN-B
  Neighbor                        I-P-tnl
  10.255.14.160                  PIM-SM:10.255.14.160, 239.2.0.0
  10.255.70.17                   PIM-SM:10.255.70.17, 239.2.0.0

show mvpn neighbor extensive user@host> show mvpn neighbor extensive
                             MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g)      RM -- remote VPN route
Instance: mvpn-a
  Neighbor                        I-P-tnl
  10.255.72.45                    LDP P2MP:10.255.72.50, lsp-id 1
  10.255.72.50

```



## Sample Output

```

show mvpn neighbor instance-name user@host> show mvpn neighbor instance-name VPN-A
instance-name MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g) RM -- remote VPN route
Instance: VPN-A
Neighbor I-P-tnl
10.255.14.160 PIM-SM:10.255.14.160, 239.1.1.1
10.255.70.17 PIM-SM:10.255.70.17, 239.1.1.1

```

## Sample Output

```

show mvpn neighbor neighbor-address user@host> show mvpn neighbor neighbor-address 10.255.14.160
neighbor-address MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g) RM -- remote VPN route
Instance: VPN-A
Neighbor I-P-tnl
10.255.14.160 PIM-SM:10.255.14.160, 239.1.1.1
MPVN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g) RM -- remote VPN route
Instance: VPN-B
Neighbor I-P-tnl
10.255.14.160 PIM-SM:10.255.14.160, 239.2.0.0

```

## Sample Output

```

show mvpn neighbor neighbor-address user@host> show mvpn neighbor neighbor-address 10.255.70.17 summary
summary MVPN Summary:
Instance: VPN-A
Instance: VPN-B

```

## Sample Output

```

show mvpn neighbor neighbor-address user@host> show mvpn neighbor neighbor-address 10.255.70.17 extensive
extensive MVPN instance:

Legend for provider tunnel
I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)
DS -- derived from (*, c-g) RM -- remote VPN route
Instance: VPN-A
Neighbor I-P-tnl
10.255.70.17 PIM-SM:10.255.70.17, 239.1.1.1

```



MVPN instance:

Legend for provider tunnel

I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)

DS -- derived from (\*, c-g) RM -- remote VPN route

Instance: VPN-B

Neighbor

I-P-tnl

10.255.70.17

PIM-SM:10.255.70.17, 239.2.0.0

## Sample Output

**show mvpn neighbor**  
**neighbor-address**  
**instance-name**

user@host> show mvpn neighbor neighbor-address 10.255.70.17 instance-name VPN-A

MVPN instance:

Legend for provider tunnel

I-P-tnl -- inclusive provider tunnel S-P-tnl -- selective provider tunnel

Legend for c-multicast routes properties (Pr)

DS -- derived from (\*, c-g) RM -- remote VPN route

Instance: VPN-A

Neighbor

I-P-tnl

10.255.70.17

PIM-SM:10.255.70.17, 239.1.1.1



## show vpls connections

<b>Syntax</b>	<pre>show vpls connections &lt;brief   extensive&gt; &lt;down   up   up-down&gt; &lt;history&gt; &lt;instance <i>instance-name</i> local-site <i>local-site-name</i> remote-site <i>remote-site-name</i>&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;status&gt; &lt;summary&gt;</pre>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	(T Series and M Series routers, except for the M160 router) Display virtual private LAN service (VPLS) connection information.
<b>Options</b>	<p>none—Display information about all VPLS connections for all routing instances.</p> <p>brief   extensive—(Optional) Display the specified level of output.</p> <p>down   up   up-down—(Optional) Display nonoperational, operational, or both types of connections.</p> <p>history—(Optional) Display information about connection history.</p> <p>instance <i>instance-name</i>—(Optional) Display the VPLS connections for the specified routing instance only.</p> <p>local-site <i>local-site-name</i>—(Optional) Display the VPLS connections for the specified local site name or ID only.</p> <p>remote-site <i>remote-site-name</i>—(Optional) Display the VPLS connections for the specified remote site name or ID only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p> <p>status—(Optional) Display information about the connection and interface status.</p> <p>summary—(Optional) Display summary of all VPLS connections information.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<p><a href="#">show vpls connections on page 839</a></p> <p><a href="#">show vpls connections extensive (Static VPLS Neighbors) on page 841</a></p>
<b>Output Fields</b>	<p><a href="#">Table 211 on page 836</a> lists the output fields for the <b>show vpls connections</b> command. Output fields are listed in the approximate order in which they appear.</p>



Table 211: show vpls connections Output Fields

Field Name	Field Description
<b>Instance</b>	Name of the VPLS instance.
<b>Local site</b>	Name of the local site.
<b>VPLS-id</b>	Identifier for the VPLS site.
<b>Number of local interfaces</b>	Number of interfaces configured for the local site.
<b>Number of local interfaces up</b>	Number of interfaces configured for the local site that are currently up.
<b>IRB interface present</b>	Indicates whether or not an integrated routing and bridging (IRB) interface is present ( <b>yes</b> or <b>no</b> ).
<b>Intf</b>	<p>List of all of the interfaces configured for the local site. The types of interfaces can include VPLS virtual loopback tunnel interfaces and label-switched interfaces. Any interface that supports VPLS could be listed here.</p> <p>Virtual loopback tunnel interfaces are displayed using the <b>vt-fpc/pic/port.nnnnn</b> format. Label-switched interfaces are displayed using the <b>lsi.nnnnn</b> format. In both cases, <b>nnnnn</b> is a dynamically generated virtual port used to transport and receive packets from other provider edge (PE) routers in the VPLS domain.</p> <p>Each interface might include the following information:</p> <ul style="list-style-type: none"> <li>• Identification as a VPLS interface</li> <li>• Name of the associated VPLS routing instance</li> <li>• Local site number</li> <li>• Remote site number</li> <li>• VPLS neighbor address</li> <li>• VPLS identifier</li> </ul>
<b>Interface flags</b>	<p>Flag associated with the interface. Can include the following:</p> <ul style="list-style-type: none"> <li>• <b>VC-Down</b>—The virtual circuit associated with this interface is down.</li> </ul>
<b>Label-base</b>	First label in a block of labels. A remote PE router uses this first label when sending traffic toward the advertising PE router.
<b>Offset</b>	Displays the VPLS Edge (VE) block offset in the Layer 2 VPN NLRI. The VE block offset is used to identify a label block from which a particular label value is selected to setup a psduowire for a remote site. The block offset value itself indicates the starting VE ID that maps to the label base contained in the VPLS NLRI advertisement.
<b>Size</b>	Label block size.
<b>Range</b>	Label block range.



Table 211: show vpls connections Output Fields (*continued*)

Field Name	Field Description
<b>Preference</b>	Preference value advertised for a VPLS site. When multiple PE routers are assigned the same VE ID for multihoming, you might need to specify that a particular PE router acts as the designated forwarder by configuring the site preference value. The site preference indicates the degree of preference for a particular customer site. The site preference is one of the tie-breaking criteria used in a designated forwarder election.
<b>status-vector</b>	Bit vector advertising the state of local PE-CE circuits to remote PE routers. A bit value of 0 indicates that the local circuit and LSP tunnel to the remote PE router are up, whereas a value of 1 indicates either one or both are down.
<b>connection-site</b>	Name of the connection site.
<b>Neighbor</b>	IP address and VPLS identifier for the VPLS neighbor.
<b>Type</b>	Type of connection: <b>loc</b> (local) or <b>rmt</b> (remote).
<b>St</b>	<p>Status of the VPLS connection:</p> <ul style="list-style-type: none"> <li>• <b>EI</b>—The local VPLS interface is configured with an encapsulation that is not supported.</li> <li>• <b>EM</b>—The encapsulation type received on this VPLS connection from the neighbor does not match the local VPLS connection interface encapsulation type.</li> <li>• <b>VC-Dn</b>—The virtual circuit is currently down.</li> <li>• <b>CM</b>—The two routers do not agree on a control word, which causes a control word mismatch.</li> <li>• <b>CN</b>—The virtual circuit is not provisioned properly.</li> <li>• <b>OR</b>—The label associated with the virtual circuit is out of range.</li> <li>• <b>OL</b>—No advertisement has been received for this virtual circuit from the neighbor. There is no outgoing label available for use by this virtual circuit.</li> <li>• <b>LD</b>—All of the CE-facing interfaces to the local site are down. Therefore, the connection to the local site is signaled as down to the other PE routers. No pseudowires can be established.</li> <li>• <b>RD</b>—All the interfaces to the remote neighbor are down. Therefore, the remote site has been signaled as down to the other PE routers. No pseudowires can be established.</li> <li>• <b>LN</b>—The local site has lost path selection to the remote site and therefore no pseudowires can be established from this local site.</li> <li>• <b>RN</b>—The remote site has lost path selection to a local site or other remote site and therefore no pseudowires are established to this remote site.</li> <li>• <b>XX</b>—The VPLS connection is down for an unknown reason. This is a programming error.</li> <li>• <b>MM</b>—The MTU for the local site and the remote site do not match.</li> <li>• <b>BK</b>—The router is using a backup connection.</li> <li>• <b>PF</b>—Profile parse failure.</li> <li>• <b>RS</b>—The remote site is in a standby state.</li> <li>• <b>NC</b>—The interface encapsulation is not configured as an appropriate CCC, TCC, or VPLS encapsulation.</li> </ul>



Table 211: show vpls connections Output Fields (*continued*)

Field Name	Field Description
	<ul style="list-style-type: none"> <li>• <b>WE</b>—The encapsulation configured for the interface does not match the encapsulation configured for the associated connection within the VPLS routing instance.</li> <li>• <b>NP</b>—The router detects that interface hardware is not present. The hardware might be offline, a PIC might not be of the desired type, or the interface might be configured in a different routing instance.</li> <li>• <b>-&gt;</b>—Only the outbound connection is up.</li> <li>• <b>&lt;-</b>—Only the inbound connection is up.</li> <li>• <b>Up</b>—The VPLS connection is operational.</li> <li>• <b>Dn</b>—The VPLS connection is down.</li> <li>• <b>CF</b>—The router cannot find enough bandwidth to the remote router to satisfy the VPLS connection bandwidth requirement.</li> <li>• <b>SC</b>—The local site identifier matches the remote site identifier. No pseudowire can be established between these two sites. You should configure different values for the local and remote site identifiers.</li> <li>• <b>LM</b>—The local site identifier is not the minimum designated, meaning it is not the lowest. There is another local site with a lower site identifier. Pseudowires are not being established to this local site, and the associated local site identifier is not being used to distribute VPLS label blocks. However, this is not an error state. Traffic continues to be forwarded to the PE router interfaces connected to the local sites when the local sites are in this state.</li> <li>• <b>RM</b>—The remote site identifier is not the minimum designated, meaning it is not the lowest. There is another remote site connected to the same PE router which has lower site identifier. The PE router cannot establish a pseudowire to this remote site and the associated remote site identifier cannot be used to distribute VPLS label blocks. However, this is not an error state. Traffic can continue to be forwarded to the PE router interface connected to this remote site when the remote site is in this state.</li> <li>• <b>IL</b>—The incoming packets for the VPLS connection have no MPLS label.</li> <li>• <b>MI</b>—The configured mesh group identifier is in use by another system in the network.</li> <li>• <b>ST</b>—The router has switched to a standby connection.</li> <li>• <b>PB</b>—Profile busy.</li> <li>• <b>SN</b>—The VPLS neighbor is static.</li> </ul>
<b>Time last up</b>	Time connection was last in the <b>Up</b> condition.
<b># Up trans</b>	Number of transitions from <b>Down</b> to <b>Up</b> condition.
<b>Status</b>	Status of the (local or remote circuit) local interface: <ul style="list-style-type: none"> <li>• <b>Up</b>—Operational</li> <li>• <b>Dn</b>—Down</li> <li>• <b>NP</b>—Not present</li> <li>• <b>DS</b>—Disabled</li> <li>• <b>WE</b>—Wrong encapsulation</li> <li>• <b>UN</b>—Uninitialized</li> </ul>
<b>Encapsulation</b>	Type of encapsulation: <b>VPLS</b> .



Table 211: show vpls connections Output Fields (*continued*)

Field Name	Field Description
Remote PE	Address of the remote provider edge router.
Negotiated control-word	Whether a control word has been negotiated: <b>Yes</b> or <b>No</b> .
Incoming label	Name of the incoming label.
Outgoing label	Name of the outgoing label.
Negotiated PW status TLV	Indicates whether or not the pseudowire status TLV has been negotiated for the VPLS connection.
Local interface	Provides the following information about the local interface configured for the VPLS neighbor: <ul style="list-style-type: none"> <li>• Name of the local interface</li> <li>• <b>Status</b>—Interface status (<b>Up</b> or <b>Down</b>)</li> <li>• <b>Encapsulation</b>—Interface encapsulation (for example, <b>ETHERNET</b>)</li> <li>• <b>Description</b>—Includes the VPLS instance name, the VPLS neighbor address, and the VPLS identifier</li> </ul>
Time	Date and time of VPLS connection event.
Event	Type of event.
Interface/Lbl/PE	Interface, label, or PE router.
Connection History	Each entry can include the date, time, year, and the connection event. Connection events include any of a variety of events related to VPLS connections, such as route changes, label updates, and interfaces going down or coming up.

## Sample Output

### show vpls connections

```
user@host> show vpls connections
```

```
Layer-2 VPN connections:
```

```
Legend for connection status (St)
```

```

EI -- encapsulation invalid      NC -- interface encapsulation not CCC/TCC/VPLS
EM -- encapsulation mismatch    WE -- interface and instance encaps not same
VC-Dn -- Virtual circuit down  NP -- interface hardware not present
CM -- control-word mismatch     <- -- only outbound connection is up
CN -- circuit not provisioned   >- -- only inbound connection is up
OR -- out of range             Up -- operational
OL -- no outgoing label        Dn -- down
LD -- local site signaled down  CF -- call admission control failure
RD -- remote site signaled down SC -- local and remote site ID collision
LN -- local site not designated LM -- local site ID not minimum designated
RN -- remote site not designated RM -- remote site ID not minimum designated
XX -- unn connection status    IL -- no incoming label
MM -- MTU mismatch            MI -- Mesh-Group ID not availble
BK -- Backup connection        ST -- Standby connection

```



```

PF -- Profile parse failure      PB -- Profile busy

Legend for interface status
Up -- operational
Dn -- down

Instance: vpls-1
  Local site: 1 (11)
    Number of local interfaces: 1
    Number of local interfaces up: 1
    IRB interface present: no
    lt-1/3/0.10496
    vt-1/3/0.1048588      1      Intf - vpls vpls-1 local site 11 remote site 1
    vt-1/2/0.1048591      2      Intf - vpls vpls-1 local site 11 remote site 2
    vt-1/2/0.1048585      3      Intf - vpls vpls-1 local site 11 remote site 3
    vt-1/2/0.1048587      4      Intf - vpls vpls-1 local site 11 remote site 4
    vt-1/2/0.1048589      5      Intf - vpls vpls-1 local site 11 remote site 5
    vt-1/3/0.1048586      6      Intf - vpls vpls-1 local site 11 remote site 6
    vt-1/3/0.1048590      7      Intf - vpls vpls-1 local site 11 remote site 7
    vt-1/3/0.1048584      8      Intf - vpls vpls-1 local site 11 remote site 8

+ Label-base      Offset      Size      Range      Preference
  800256          1          16        16          100

Timer Values:
  Startup wait time: 120 seconds
  New site wait-time: 20 seconds
  Collision detect time: 30 seconds
  Reclaim wait time: 748 milliseconds

connection-site      Type      St      Time last up      # Up trans
1                    rmt      Up      Apr 28 13:28:24 2009      2
  Remote PE: 124.1.2.1, Negotiated control-word: No
  Incoming label: 800256, Outgoing label: 800026
  Local interface: vt-1/3/0.1048588, Status: Up, Encapsulation: VPLS
  Description: Intf - vpls vpls-1 local site 11 remote site 1
Connection History:
  Apr 28 13:28:24 2009 status update timer
  Apr 28 13:28:24 2009 PE route down
  Apr 28 13:24:27 2009 status update timer
  Apr 28 13:24:27 2009 loc intf up      vt-1/3/0.1048588
  Apr 28 13:24:27 2009 PE route changed
  Apr 28 13:24:27 2009 Out lbl Update      800026
  Apr 28 13:24:27 2009 In lbl Update      800256
  Apr 28 13:24:27 2009 loc intf down
2                    rmt      Up      Apr 28 13:28:24 2009      2
  Remote PE: 124.1.7.1, Negotiated control-word: No
  Incoming label: 800257, Outgoing label: 800034
  Local interface: vt-1/2/0.1048591, Status: Up, Encapsulation: VPLS
  Description: Intf - vpls vpls-1 local site 11 remote site 2
Connection History:
  Apr 28 13:28:24 2009 status update timer
  Apr 28 13:28:24 2009 PE route down
  Apr 28 13:24:28 2009 status update timer
  Apr 28 13:24:28 2009 loc intf up      vt-1/2/0.1048591
  Apr 28 13:24:28 2009 PE route changed

```



```

Apr 28 13:24:28 2009 Out lbl Update      800034
Apr 28 13:24:28 2009 In lbl Update      800257
Apr 28 13:24:28 2009 loc intf down
3      rmt Up      Apr 28 13:28:24 2009      2
Remote PE: 124.1.4.1, Negotiated control-word: No
Incoming label: 800258, Outgoing label: 800026
Local interface: vt-1/2/0.1048585, Status: Up, Encapsulation: VPLS
Description: Intf - vpls vpls-1 local site 11 remote site 3
Connection History:
Apr 28 13:28:24 2009 status update timer
Apr 28 13:28:24 2009 PE route down
Apr 28 13:24:26 2009 status update timer
Apr 28 13:24:26 2009 loc intf up      vt-1/2/0.1048585
Apr 28 13:24:26 2009 PE route changed
Apr 28 13:24:26 2009 Out lbl Update      800026
Apr 28 13:24:26 2009 In lbl Update      800258
Apr 28 13:24:26 2009 loc intf down
4      rmt Up      Apr 28 13:28:24 2009      2
Remote PE: 124.1.6.1, Negotiated control-word: No
Incoming label: 800259, Outgoing label: 800026
Local interface: vt-1/2/0.1048587, Status: Up, Encapsulation: VPLS
Description: Intf - vpls vpls-1 local site 11 remote site 4
Connection History:
Apr 28 13:28:24 2009 status update timer
Apr 28 13:28:24 2009 PE route down
Apr 28 13:24:27 2009 status update timer
Apr 28 13:24:27 2009 loc intf up      vt-1/2/0.1048587
Apr 28 13:24:27 2009 PE route changed
Apr 28 13:24:27 2009 Out lbl Update      800026
Apr 28 13:24:27 2009 In lbl Update      800259
Apr 28 13:24:27 2009 loc intf down
5      rmt Up      Apr 28 13:28:24 2009      2
Remote PE: 124.1.3.1, Negotiated control-word: No
Incoming label: 800260, Outgoing label: 800034
Local interface: vt-1/2/0.1048589, Status: Up, Encapsulation: VPLS
Description: Intf - vpls vpls-1 local site 11 remote site 5
Connection History:
Apr 28 13:28:24 2009 status update timer
Apr 28 13:28:24 2009 PE route down
Apr 28 13:24:28 2009 status update timer
Apr 28 13:24:28 2009 loc intf up      vt-1/2/0.1048589
Apr 28 13:24:28 2009 PE route changed
Apr 28 13:24:28 2009 Out lbl Update      800034
Apr 28 13:24:27 2009 In lbl Update      800260
Apr 28 13:24:27 2009 loc intf down

```

**show vpls connections  
extensive (Static VPLS  
Neighbors)**

user@host> show vpls connections extensive instance red  
Layer-2 VPN connections:

Legend for connection status (St)

EI -- encapsulation invalid	NC -- interface encapsulation not CCC/TCC/VPLS
EM -- encapsulation mismatch	WE -- interface and instance encaps not same
VC-Dn -- Virtual circuit down	NP -- interface hardware not present
CM -- control-word mismatch	-> -- only outbound connection is up
CN -- circuit not provisioned	<- -- only inbound connection is up
OR -- out of range	Up -- operational
OL -- no outgoing label	Dn -- down
LD -- local site signaled down	CF -- call admission control failure
RD -- remote site signaled down	SC -- local and remote site ID collision
LN -- local site not designated	LM -- local site ID not minimum designated
RN -- remote site not designated	RM -- remote site ID not minimum designated



```

XX -- unn connection status  IL -- no incoming label
MM -- MTU mismatch           MI -- Mesh-Group ID not availble
BK -- Backup connection      ST -- Standby connection
PF -- Profile parse failure   PB -- Profile busy
RS -- remote site standby    SN -- Static Neighbor

Legend for interface status
Up -- operational
Dn -- down

Instance: static
VPLS-id: 1
  Number of local interfaces: 1
  Number of local interfaces up: 1
  ge-0/0/5.0
  lsi.1049344          Intf - vpls static neighbor 10.255.114.3 vpls-id
1
Neighbor              Type  St    Time last up      # Up trans
10.255.114.3(vpls-id 1)(SN) rmt Up    Mar  4 08:48:41 2010      1
  Remote PE: 10.255.114.3, Negotiated control-word: No
  Incoming label: 29696, Outgoing label: 29697
  Negotiated PW status TLV: No
  Local interface: lsi.1049344, Status: Up, Encapsulation: ETHERNET
  Description: Intf - vpls static neighbor 10.255.114.3 vpls-id 1
Connection History:
  Mar  4 08:48:41 2010  status update timer
  Mar  4 08:48:41 2010  PE route changed
  Mar  4 08:48:41 2010  Out lbl Update                      29697
  Mar  4 08:48:41 2010  In lbl Update                        29696
  Mar  4 08:48:41 2010  loc intf up                          lsi.1049344

```



## show vpls flood event-queue

<b>Syntax</b>	show vpls flood event-queue
<b>Release Information</b>	Command introduced in Junos OS Release 8.0.
<b>Description</b>	Display the pending events in the VPLS flood queue.
<b>Options</b>	This command has no options.
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show vpls flood event-queue on page 843</a>
<b>Output Fields</b>	<a href="#">Table 212 on page 843</a> lists the output fields for the <b>show vpls flood event-queue</b> command. Output fields are listed in the approximate order in which they appear.

**Table 212: show vpls flood event-queue Output Fields**

Field Name	Field Description
<b>Current Pending Event</b>	Provides information on the current event in the VPLS flood event queue.
<b>Name</b>	Name of the event.
<b>Owner Name</b>	Name of the interface associated with the flood event.
<b>Pending Op</b>	Pending operation for the event.
<b>Last Error</b>	Name of the last error encountered.
<b>Number of Retries</b>	Number of attempts made to update the event queue.
<b>Pending Event List</b>	List of the events awaiting processing.
<b>Event Name</b>	Name of the event.
<b>Pending Op</b>	Pending operation for the event.
<b>Event Identifier</b>	Name of the interface associated with the flood event.

## Sample Output

```

show vpls flood event-queue user@host> show vpls flood event-queue
Current Pending Event
  Name:      Flood Nexthop
  Owner Name: ge-4/3/0.0
  Pending Op: ADD
  Last Error: ENOMEM
  Number of Retries: 3

```



## Pending Event List:

Event Name	Pending Op	Event Identifier
Flood Nexthop	ADD	ge-4/3/0.0
Flood Route	ADD	ge-4/3/0.0



## show vpls flood instance

<b>Syntax</b>	show vpls flood instance <brief   detail   extensive> <instance-name> <logical-system <i>logical-system-name</i> >
<b>Release Information</b>	Command introduced in Junos OS Release 8.0.
<b>Description</b>	Display VPLS information related to the flood process.
<b>Options</b>	<p>none—Display VPLS information related to the flood process for all routing instances.</p> <p>brief   detail   extensive—(Optional) Display the specified level of output.</p> <p><i>instance-name</i>—(Optional) Display VPLS information related to the flood process for the specified routing instance.</p> <p>logical-system <i>logical-system-name</i>—(Optional) Display VPLS information related to the flood process for the specified logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show vpls flood instance on page 846</a> <a href="#">show vpls flood instance logical-system-name on page 846</a> <a href="#">show vpls flood instance detail on page 846</a>
<b>Output Fields</b>	Table 213 on page 845 lists the output fields for the <b>show vpls flood instance</b> command. Output fields are listed in the approximate order in which they appear.

**Table 213: show vpls flood instance Output Fields**

Field Name	Field Description
<b>Logical system</b>	Name of the logical system.
<b>Name</b>	Name of the VPLS routing instance.
<b>CEs</b>	Number of CE routers connected to the VPLS instance.
<b>VEs</b>	Number of VE routers connected to the VPLS instance.
<b>Flood routes</b>	List of all flood routes associated with the VPLS instance.
<b>Prefix</b>	Prefix for the route.
<b>Type</b>	Type of route.
<b>Owner</b>	VPLS routing instance or interface associated with the route.
<b>Nhype</b>	Next-hop type. For example, <b>flood</b> for a flood route.



Table 213: show vpls flood instance Output Fields (*continued*)

Field Name	Field Description
Nhindex	Next-hop index number for the route.

## Sample Output

```

show vpls flood instance      user@host> show vpls flood instance
                                Logical system: __juniper_ls1__
                                Name: green
                                CEs: 1
                                VEs: 1
                                Flood Routes:
                                Prefix   Type      Owner      NhType      NhIndex
                                default  ALL_CE_FLOOD green      flood       383
                                0x47/16  CE_FLOOD fe-1/2/1.0 flood       388

show vpls flood instance logical-system-name
user@host:__juniper_ls1__> show vpls flood instance juniper_ls1
                                Logical system: __juniper_ls1__
                                Name: green
                                CEs: 1
                                VEs: 1
                                Flood Routes:
                                Prefix   Type      Owner      NhType      NhIndex
                                default  ALL_CE_FLOOD green      flood       383
                                0x47/16  CE_FLOOD fe-1/2/1.0 flood       388

show vpls flood instance detail
user@host:__juniper_ls1__> show vpls flood instance detail
                                Logical system: __juniper_ls1__
                                Name: green
                                CEs: 1
                                VEs: 1
                                Flood Routes:
                                Prefix   Type      Owner      NhType      NhIndex
                                default  ALL_CE_FLOOD green      flood       383
                                0x47/16  CE_FLOOD fe-1/2/1.0 flood       388

```



## show vpls flood route

<b>Syntax</b>	show vpls flood route (all-ce-flood instance-name <i>instance-name</i> <logical-system-name <i>logical-system-name</i> >   ce-flood interface <i>interface-name</i> )
<b>Release Information</b>	Command introduced in Junos OS Release 8.0.
<b>Description</b>	Display VPLS route information related to the flood process for either the specified routing instance or the specified interface.
<b>Options</b>	<p>all-ce-flood—Display the flood next-hop route for all customer edge routers for traffic coming from the core of the network.</p> <p>ce-flood interface <i>interface-name</i>—Display the flood next-hop route for traffic coming from the specified customer edge interface.</p> <p>instance-name <i>instance-name</i>—Display the flood routes for the specified instance.</p> <p>logical-system-name <i>logical-system-name</i>—(Optional) Specify the logical system whose flood routes you want to display. You can only specify the default logical system name for VPLS. The default logical system name is <code>__juniper_ls1__</code> (the name must be entered in the command with the underscore characters).</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show vpls flood route all-ce-flood on page 848</a> <a href="#">show vpls flood route ce-flood on page 848</a>
<b>Output Fields</b>	Table 214 on page 847 lists the output for the <b>show vpls flood route</b> command. Output fields are listed in the approximate order in which they appear.

**Table 214: show vpls flood route Output Fields**

Field Name	Field Description
Flood route prefix	Prefix for the flood route.
Flood route type	Type of flood route (either <b>CE_FLOOD</b> or <b>ALL_CE_FLOOD</b> ).
Flood route owner	VPLS routing instance or interface associated with the flood route.
Nexthop type	Next-hop type. For example, <b>flood</b> for a flood route.
Nexthop index	Next-hop index number for the route.
Interfaces flooding to	Interfaces to which VPLS routes are being flooded.
Name	Name of the interface.



Table 214: show vpls flood route Output Fields (*continued*)

Field Name	Field Description
Type	Type of VPLS router (CE or VE).
Nh type	Next-hop type.
Index	Index number for the flood route.

### Sample Output

```
show vpls flood route all-ce-flood user@host: __juniper_ls1__> show vpls flood route all-ce-flood logical-system-name
                                __juniper_ls1__instance-name green
```

```
Flood route prefix: default
Flood route type: ALL_CE_FLOOD
Flood route owner: green
Nexthop type: flood
Nexthop index: 383
  Interfaces Flooding to:
    Name          Type          NhType          Index
    fe-1/2/1.0    CE
```

```
show vpls flood route ce-flood user@host: __juniper_ls1__> show vpls flood route ce-flood interface fe-1/2/1.0
```

```
Flood route prefix: 0x47/16
Flood route type: CE_FLOOD
Flood route owner: fe-1/2/1.0
Nexthop type: flood
Nexthop index: 388
  Interfaces Flooding to:
    Name          Type          NhType          Index
    lsi.49152      VE            indr            262142
```



## show vpls mac-table

<b>Syntax</b>	<pre>show vpls mac-table &lt;brief   detail   extensive   summary&gt; &lt;bridge-domain <i>bridge-domain-name</i>&gt; &lt;instance <i>instance-name</i>&gt; &lt;interface <i>interface-name</i>&gt; &lt;logical-system (all   <i>logical-system-name</i>)&gt; &lt;mac-address&gt; &lt;vlan-id <i>vlan-id-number</i>&gt;</pre>
<b>Release Information</b>	Command introduced in Junos OS Release 8.5.
<b>Description</b>	(MX960 routers only) Display learned VPLS MAC address information.
<b>Options</b>	<p>none—Display all learned VPLS MAC address information.</p> <p>brief   detail   extensive   summary—(Optional) Display the specified level of output.</p> <p>bridge-domain <i>bridge-domain-name</i>—(Optional) Display learned VPLS MAC addresses for the specified bridge domain.</p> <p>instance <i>instance-name</i>—(Optional) Display learned VPLS MAC addresses for the specified instance.</p> <p>interface <i>interface-name</i>—(Optional) Display learned VPLS MAC addresses for the specified instance.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Display learned VPLS MAC addresses for all logical systems or for the specified logical system.</p> <p>mac-address—(Optional) Display the specified learned VPLS MAC address information..</p> <p>vlan-id <i>vlan-id-number</i>—(Optional) Display learned VPLS MAC addresses for the specified VLAN.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show vpls mac-table on page 850</a> <a href="#">show vpls mac-table count on page 851</a> <a href="#">show vpls mac-table detail on page 851</a> <a href="#">show vpls mac-table extensive on page 852</a>
<b>Output Fields</b>	<p><a href="#">Table 215 on page 849</a> describes the output fields for the <b>show bridge mac-table</b> command. Output fields are listed in the approximate order in which they appear.</p>

**Table 215: show vpls mac-table Output fields**

Field Name	Field Description
Routing instance	Name of the routing instance.



Table 215: show vpls mac-table Output fields (*continued*)

Field Name	Field Description
<b>Bridging domain</b>	Name of the bridging domain.
<b>MAC address</b>	MAC address or addresses learned on a logical interface.
<b>MAC flags</b>	Status of MAC address learning properties for each interface: <ul style="list-style-type: none"> <li>• <b>S</b>—Static MAC address configured.</li> <li>• <b>D</b>—Dynamic MAC address learned.</li> <li>• <b>SE</b>—MAC accounting is enabled.</li> <li>• <b>NM</b>—Nonconfigured MAC.</li> </ul>
<b>Logical interface</b>	Name of the logical interface.
<b>MAC count</b>	Number of MAC addresses learned on a specific routing instance or interface.
<b>Learning interface</b>	Logical interface or logical Label Switched Interface (LSI) the address is learned on.
<b>Learn VLAN ID/VLAN</b>	VLAN ID of the routing instance or bridge domain in which the MAC address was learned.
<b>Layer 2 flags</b>	Debugging flags signifying that the MAC address is present in various lists.
<b>Epoch</b>	Spanning Tree Protocol epoch number identifying when the MAC address was learned. Used for debugging.
<b>Sequence number</b>	Sequence number assigned to this MAC address. Used for debugging.
<b>Learning mask</b>	Mask of Packet Forwarding Engines where this MAC address was learned. Used for debugging.
<b>IPC generation</b>	Creation time of the logical interface when this MAC address was learned. Used for debugging.

## Sample Output

```

show vpls mac-table user@host> show vpls mac-table
MAC flags (S -static MAC, D -dynamic MAC,
              SE -Statistics enabled, NM -Non configured MAC)

Routing instance : vpls_ldp1
VLAN : 223
  MAC          MAC          Logical
  address      flags        interface
  00:90:69:9c:1c:5d  D          ge-0/2/5.400

MAC flags (S -static MAC, D -dynamic MAC,
              SE -Statistics enabled, NM -Non configured MAC)

Routing instance : vpls_red
VLAN : 401
  MAC          MAC          Logical
  address      flags        interface

```



```
00:00:aa:12:12:12 D lsi.1051138
00:05:85:74:9f:f0 D lsi.1051138
```

```
show vpls mac-table count user@host> show vpls mac-table count
count 0 MAC address learned in routing instance __juniper_private1__
```

MAC address count per interface within routing instance:

Logical interface	MAC count
lc-0/0/0.32769	0
lc-0/1/0.32769	0
lc-0/2/0.32769	0
lc-2/0/0.32769	0
lc-0/3/0.32769	0
lc-2/1/0.32769	0
lc-9/0/0.32769	0
lc-11/0/0.32769	0
lc-2/2/0.32769	0
lc-9/1/0.32769	0
lc-11/1/0.32769	0
lc-2/3/0.32769	0
lc-9/2/0.32769	0
lc-11/2/0.32769	0
lc-11/3/0.32769	0
lc-9/3/0.32769	0

MAC address count per learn VLAN within routing instance:

Learn VLAN ID	MAC count
0	0

1 MAC address learned in routing instance vpls\_ldp1

MAC address count per interface within routing instance:

Logical interface	MAC count
lsi.1051137	0
ge-0/2/5.400	1

MAC address count per learn VLAN within routing instance:

Learn VLAN ID	MAC count
0	1

1 MAC address learned in routing instance vpls\_red

MAC address count per interface within routing instance:

Logical interface	MAC count
ge-0/2/5.300	1

MAC address count per learn VLAN within routing instance:

Learn VLAN ID	MAC count
0	1

```
show vpls mac-table detail user@host> show vpls mac-table detail
detail MAC address: 00:90:69:9c:1c:5d
Routing instance: vpls_ldp1
Learning interface: ge-0/2/5.400
Layer 2 flags: in_ifd, in_ifl, in_vlan, kernel
Epoch: 0 Sequence number: 1
Learning mask: 0x1 IPC generation: 0

MAC address: 00:90:69:9c:1c:5d
Routing instance: vpls_red
Learning interface: ge-0/2/5.300
```



```

Layer 2 flags: in_ifd, in_ifl, in_vlan, kernel
Epoch: 0                               Sequence number: 1
Learning mask: 0x1                       IPC generation: 0

show vpls mac-table extensive user@host> show vpls mac-table extensive
extensive MAC address: 00:00:aa:12:12:12
Routing instance: vpls_ldp1
Learning interface: lsi.1051137
Layer 2 flags: in_ifd, in_ifl, in_vlan, kernel
Epoch: 0                               Sequence number: 1
Learning mask: 0x1                       IPC generation: 0

MAC address: 00:05:85:74:9f:f0
Routing instance: vpls_ldp1
Learning interface: lsi.1051137
Layer 2 flags: in_ifd, in_ifl, in_vlan, kernel
Epoch: 0                               Sequence number: 1
Learning mask: 0x1                       IPC generation: 0

MAC address: 00:90:69:9c:1c:5d
Routing instance: vpls_ldp1
Learning interface: ge-0/2/5.400
Layer 2 flags: in_ifd, in_ifl, in_vlan, kernel
Epoch: 0                               Sequence number: 1
Learning mask: 0x1                       IPC generation: 0

MAC address: 00:00:aa:12:12:12
Routing instance: vpls_red
Learning interface: lsi.1051138
Layer 2 flags: in_ifd, in_ifl, in_vlan, kernel
Epoch: 0                               Sequence number: 0
Learning mask: 0x1                       IPC generation: 0

MAC address: 00:05:85:74:9f:f0
Routing instance: vpls_red
Learning interface: lsi.1051138
Layer 2 flags: in_ifd, in_ifl, in_vlan, kernel
Epoch: 0                               Sequence number: 0
Learning mask: 0x1                       IPC generation: 0

```



## show vpls statistics

<b>Syntax</b>	show vpls statistics <instance <i>instance-name</i> > <logical-system (all   <i>logical-system-name</i> )>
<b>Release Information</b>	Command introduced before Junos OS Release 7.4.
<b>Description</b>	(T Series and M Series routers, except for the M160 router) Display virtual private LAN service (VPLS) statistics.
<b>Options</b>	<p>none—Display VPLS statistics for all routing instances.</p> <p>instance <i>instance-name</i>—(Optional) Display VPLS statistics for a specific VPLS routing instance only.</p> <p>logical-system (all   <i>logical-system-name</i>)—(Optional) Perform this operation on all logical systems or on a particular logical system.</p>
<b>Required Privilege Level</b>	view
<b>List of Sample Output</b>	<a href="#">show vpls statistics on page 854</a> <a href="#">show vpls statistics instance on page 854</a>
<b>Output Fields</b>	<a href="#">Table 216 on page 853</a> lists the output fields for the <b>show vpls statistics</b> command. Output fields are listed in the approximate order in which they appear.

**Table 216: show vpls statistics Output Fields**

Field Name	Field Description
<b>Instance</b>	Name of the VPLS instance.
<b>Local interface</b>	Name of the local VPLS virtual loopback tunnel interface, <i>vt-fpc/plc/port.nnnnn</i> , where <i>nnnnn</i> is a dynamically generated virtual port used to transport and receive packets from other provider edge (PE) routers in the VPLS domain.
<b>Index</b>	Number associated with the next hop.
<b>Remote provider edge router</b>	Address of the remote provider edge router.
<b>Multicast packets</b>	Number of multicast packets received.
<b>Multicast bytes</b>	Number of multicast bytes received.
<b>Flood packets</b>	Number of VPLS flood packets received.
<b>Flood bytes</b>	Number of VPLS flood bytes received.



Table 216: show vpls statistics Output Fields (*continued*)

Field Name	Field Description
Current MAC count	Number of MAC addresses learned by the interface and the configured maximum limit on the number of MAC addresses that can be learned.

## Sample Output

```

show vpls statistics user@host> show vpls statistics

VPLS statistics:

Instance: green

  Local interface: fe-2/2/1.0, Index: 69
    Multicast packets:      1
    Multicast bytes   :      60
    Flooded packets   :      18
    Flooded bytes    :    2556
    Current MAC count:      1

  Local interface: lt-0/3/0.2, Index: 72
    Multicast packets:      3
    Multicast bytes   :    153
    Flooded packets   :      1
    Flooded bytes    :     51
    Current MAC count:      1

  Local interface: lsi.32769, Index: 75
    Current MAC count:      0

  Local interface: lsi.32771, Index: 77
  Remote PE: 10.255.14.222
    Current MAC count:      2

Instance: red

  Local interface: vt-0/3/0.32768, Index: 74
    Multicast packets:      0
    Multicast bytes   :      0
    Flooded packets   :      0
    Flooded bytes    :      0
    Current MAC count:      0

  Local interface: vt-0/3/0.32770, Index: 76
    Multicast packets:      0
    Multicast bytes   :      0
    Flooded packets   :      0
    Flooded bytes    :      0
    Current MAC count:      0

show vpls statistics user@host> show vpls statistics instance red
instance

Layer-2 VPN Statistics:
Instance: red

```



```
Local interface: vt-3/2/0.32768, Index: 73
Remote provider edge router: 10.255.17.35
  Multicast packets:          0
  Multicast bytes   :          0
  Flood packets     :          0
  Flood bytes       :          0
  Current MAC count:          1 (Limit 20)
```







## PART 6

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