

## About This Manual

This chapter provides a high-level overview of the *JUNOS Internet Software Command Reference*:

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## Objectives

This manual provides an overview of the JUNOS Internet software commands that you use to monitor and troubleshoot the router.

This manual documents Release 4.2 of the JUNOS Internet software. For information about configuring the router, refer to the following manuals:

*JUNOS Internet Software Configuration Guide: Installation and System*

*JUNOS Internet Software Configuration Guide: Interfaces and Chassis*

*JUNOS Internet Software Configuration Guide: MPLS Applications*

*JUNOS Internet Software Configuration Guide: Routing and Routing Protocols*

To obtain additional information about the JUNOS software—either corrections to information in this manual or information that might have been omitted from this manual—refer to the printed software release notes that accompany your router.

To obtain the most current version of this manual and the most current version of the software release notes, refer to the product documentation page on the Juniper Networks Web site, which is located at <http://www.juniper.net/>.

To order printed copies of this manual or to order a documentation CD-ROM, which contains this manual, please contact your sales representative.

## Audience

This manual is designed for network administrators who are monitoring a Juniper Networks router. It assumes that you have a broad understanding of networks in general, the Internet in particular, networking principles, and network configuration. This manual assumes that you are familiar with one or more of the following Internet routing protocols: Border Gateway Protocol (BGP), Routing Information Protocol (RIP), Intermediate System-to-Intermediate System (IS-IS), Open Shortest Path First (OSPF), Internet Control Message Protocol (ICMP) router discovery, Internet Group Management Protocol (IGMP), Distance Vector Multicast Routing Protocol (DVMRP), Protocol-Independent Multicast (PIM), Multiprotocol Label Switching (MPLS), Resource Reservation Protocol (RSVP), and Simple Network Management Protocol (SNMP).

## Document Organization

This manual is divided into several parts. Each part describes a major functional area of the JUNOS software, and the individual chapters within a part describe the software commands of that functional area.

This manual contains the following parts and chapters:

Preface, “About This Manual” (this chapter) provides a brief description of the contents and organization of this manual and describes how to contact customer support.

Part 1, “Overview,” provides an overview of the *JUNOS Command Reference*, describes the user command-line interface, and provides basic strategies for monitoring and troubleshooting the router:

Chapter 1, “Command-Line Interface Overview,” describes the basics of the interface that you use to monitor the JUNOS software. The CLI is the interface that you use whenever you access the router. For information about configuring the router, or for additional information about the CLI, see the *JUNOS Internet Software Configuration Guide*.

Chapter 2, “Strategies for Monitoring and Troubleshooting the Router,” describes basic strategies for monitoring and troubleshooting the network and lists the commands most commonly used for monitoring and troubleshooting.

Part 2, “System Management,” describes the CLI commands used to manage the router:

Chapter 3, “Monitor and Perform System Management Functions,” describes the commands for monitoring user access and performing system management.

Chapter 4, “SNMP Monitoring and Troubleshooting,” describes the commands for monitoring user access and performing SNMP management.

Part 3, “Interfaces and Hardware,” describes how to monitor the router interfaces and chassis:

Chapter 5, “Router Interfaces Monitoring and Troubleshooting,” describes the commands for monitoring router interfaces and troubleshooting interface problems.

Chapter 6, “About This Manual,” describes the commands for monitoring firewall filters and troubleshooting filter problems.

Chapter 7, “About This Manual,” describes the commands for monitoring the router chassis and troubleshooting chassis problems.

Part 4, “Routing and Protocols,” describes the CLI commands used to monitor the JUNOS software routing policy, unicast routing protocols, and multicast protocols:

Chapter 8, “About This Manual,” describes the commands for monitoring routing policy and troubleshooting routing policy problems.

Chapter 9, “Protocol-Independent Routing Monitoring and Troubleshooting,” describes the commands for monitoring and troubleshooting protocol-independent routing properties.

Chapter 10, “IS-IS Monitoring and Troubleshooting,” describes the commands for monitoring IS-IS and troubleshooting IS-IS problems.

Chapter 11, “OSPF Monitoring and Troubleshooting,” describes the commands for monitoring OSPF and troubleshooting OSPF problems.

Chapter 12, “BGP Monitoring and Troubleshooting,” describes the commands for monitoring BGP and troubleshooting BGP problems.

Chapter 13, “RIP Monitoring and Troubleshooting,” describes the commands for monitoring RIP and troubleshooting RIP problems.

Chapter 14, “IP Multicast Monitoring and Troubleshooting,” describes the CLI commands for monitoring multicast protocols and troubleshooting multicast problems.

Part 5, “Traffic Engineering,” describes the commands used to configure and monitor traffic engineering:

Chapter 15, “MPLS Monitoring and Troubleshooting,” describes the commands for monitoring MPLS and troubleshooting MPLS problems.

Chapter 16, “RSVP Monitoring and Troubleshooting,” describes the commands for monitoring RSVP and troubleshooting RSVP problems.

Chapter 17, “LDP Monitoring and Troubleshooting,” describes the commands for monitoring LDP and troubleshooting LDP problems.

This manual also contains a glossary and an index.

## Chapter Organization

Most chapters in this manual consist of a brief description of a specific software component followed by the commands that you use for monitoring and troubleshooting that component. A table at the beginning of the chapter lists commands available for monitoring and troubleshooting the software components. Then, the commands are explained alphabetically.

Some commands have several options available. To help you choose the appropriate option, a table summarizing command output from the various options precedes the specific explanations for those commands.

## Documentation Conventions

### General Conventions

This manual uses the following text conventions:

Statements, commands, filenames, directory names, IP addresses, and configuration hierarchy levels are shown in a sans serif font. In the following example, *stub* is a statement name and [edit protocols ospf area *area-id*] is a configuration hierarchy level:

To configure a stub area, include the stub statement at the [edit protocols ospf area *area-id*] hierarchy level:

In examples, text that you type literally is shown in bold. In the following example, you type the word *show*:

```
[edit protocols ospf area area-id]  
cli# show  
stub <default-metric metric>
```

Examples of command output are generally shown in a fixed-width font to preserve the column alignment. For example:

```
> show interfaces terse  
Interface      Admin Link Proto Local          Remote  
at-1/3/0       up    up  
at-1/3/0.0     up    up    inet  1.0.0.1        --> 1.0.0.2  
                iso  
fxp0           up    up  
fxp0.0         up    up    inet  192.168.5.59/24
```

### Conventions for Software Commands and Statements

When describing the JUNOS software, this manual uses the following type and presentation conventions:

Statement or command names that you type literally are shown nonitalicized. In the following example, the statement name is *area*:

You configure all these routers by including the following area statement at the [edit protocols ospf] hierarchy level:

Options, which are variable terms for which you substitute appropriate values, are shown in italics. In the following example, *area-id* is an option. When you type the area statement, you substitute a value for *area-id*.

```
area area-id;
```

Optional portions of a configuration statement are enclosed in angle brackets. In the following example, the “default-metric *metric*” portion of the statement is optional:

```
stub <default-metric metric>;
```

For text strings separated by a pipe ( | ), you must specify either *string1* or *string2*, but you cannot specify both or neither of them. Parentheses are sometimes used to group the strings.

```
string1 | string2
(string1 | string2)
```

In the following example, you must specify either broadcast or multicast, but you cannot specify both:

```
broadcast | multicast
```

For some statements, you can specify a set of values. The set must be enclosed in square brackets. For example:

```
community name members [community-id]
```

The configuration examples in this manual are generally formatted in the way that they appear when you issue a show command. This format includes braces ( { } ) and semicolons. When you type configuration statements in the CLI, you do not type the braces and semicolons. However, when you type configuration statements in an ASCII file, you must include the braces and semicolons. For example:

```
[edit]
cli# set routing-options static route default nexthop address retain
[edit]
cli# show
routing-options {
  static {
    route default {
      nexthop address;
      retain;
    }
  }
}
```

Comments in the configuration examples are shown either preceding the lines that the comments apply to, or more often, they appear on the same line. When comments appear on the same line, they are preceded by a pound sign (#) to indicate where the comment starts. In an actual configuration, comments can only precede a line; they cannot be on the same line as a configuration statement. For example:

```
protocols {
  mpls {
    interface (interface-name | all); # Required to enable MPLS on the interface
  }
  rsvp { # Required for dynamic MPLS only
    interface interface-name;
  }
}
```

The general syntax descriptions provide no indication of the number of times you can specify a statement, option, or keyword. This information is provided in the text of the statement summary.

