About This Guide

This preface provides the following guidelines for using *JUNOSe™ Software for E-series™ Routing Platforms BGP and MPLS Configuration Guide*:

Objectives

This guide provides the information you need to configure BGP, MPLS, BGP/MPLS VPNs, layer 2 services over MPLS, VPLS, and L2VPNs.

An E-series router is shipped with the latest system software installed. If you need to install a future release or reinstall the system software, refer to the procedures in *JUNOSe System Basics Configuration Guide, Chapter 3, Installing JUNOSe Software.*

NOTE: If the information in the latest *JUNOSe Release Notes* differs from the information in this guide, follow the *JUNOSe Release Notes*.

Audience

This guide is intended for experienced system and network specialists working with E-series routers in an Internet access environment.

E-series Routers

Seven models of E-series routers are available:

- E120 router
- E320 router
- ERX-1440 router
- ERX-1410 router
- ERX-710 router
- ERX-705 router
- ERX-310 router

All models use the same software. For information about all models except the E120 router and the E320 router, see *ERX Hardware Guide, Chapter 1, ERX Overview*. For information about the E120 router and the E320 router, see *E120 and E320 Hardware Guide*, *Chapter 1*, *E120 and E320 Overview*.

In the E-series documentation, the term ERX-14xx models refers to both the ERX-1440 router and the ERX-1410 router. Similarly, the term ERX-7xx models refers to both the ERX-710 router and the ERX-705 router. The terms ERX-1440 router, ERX-1410 router, ERX-710 router, ERX-705 router, ERX-310 router, E120 router, and E320 router refer to the specific models.

Documentation Conventions

Table 1 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.

Table 2 defines text conventions used in this guide and the syntax conventions used primarily in the *JUNOSe Command Reference Guide*. For more information about command syntax, see *JUNOSe System Basics Configuration Guide, Chapter 2, Command-Line Interface*.

Table 2: Text and Syntax Conventions

Convention	Description	Examples
Text Conventions		
Bold text like this	Represents commands and keywords in text.	■ Issue the **clock source** command. ■ Specify the keyword **exp-msg**.
Bold text like this	Represents text that the user must type.	host1(config)#**traffic class low-loss1**

`Fixed-width text like this`	Represents information as displayed on your terminal's screen.	`host1#show ip ospf 2`
		`Routing Process OSPF 2 with Router ID 5.5.0.250`
		`Router is an Area Border Router (ABR)`

Italic text like this	■ Emphasizes words. ■ Identifies variables. ■ Identifies chapter, appendix, and book names.	■ There are two levels of access, *user* and *privileged*. ■ *clusterId*, *ipAddress*. ■ *Appendix A*, *System Specifications*.
Plus sign (+) linking key names	Indicates that you must press two or more keys simultaneously.	Press Ctrl + b.
Syntax Conventions in the *Command Reference Guide*		
Plain text like this	Represents keywords.	terminal length
Italic text like this	Represents variables.	*mask*, *accessListName*
| (pipe symbol)	Represents a choice to select one keyword or variable to the left or right of this symbol. (The keyword or variable can be either optional or required.)	diagnostic | line
[ ] (brackets)	Represent optional keywords or variables.	[internal | external]
[ ]* (brackets and asterisk)	Represent optional keywords or variables that can be entered more than once.	[level1 | level2 | l1]*
{ } (braces)	Represent required keywords or variables.	{ permit | deny } { in | out } { *clusterId* | *ipAddress* }

Related E-series and JUNOSe Documentation

The E-series and JUNOSe documentation set consists of several hardware and software guides, which are available in electronic and printed formats.

E-series and JUNOSe Documents

Table 3 lists and describes the E-series and JUNOSe document set. For a complete list of abbreviations used in this document set, along with their spelled-out terms, see *JUNOSe System Basics Configuration Guide, Appendix A, Abbreviations and Acronyms*.

Table 3: Juniper Networks E-series and JUNOSe Technical Publications

Document	Description
E-series Hardware Documentation	
E120 and E320 Quick Start Guide	Shipped in the box with all new E120 and E320 routers. Provides the basic procedures to help you get the routers up and running quickly.
E120 and E320 Hardware Guide	Provides the necessary procedures for getting E120 routers and E320 routers operational, including information about: ■ Installing the chassis and modules ■ Connecting cables ■ Powering up the routers ■ Configuring the routers for management access ■ Troubleshooting common issues Describes switch route processor (SRP) modules, line modules, and I/O adapters (IOAs) available for E120 and E320 routers.
E120 and E320 Module Guide	Provides detailed specifications for line modules and IOAs in E120 and E320 routers, and information about the compatibility of these modules with JUNOSe software releases. Lists the layer 2 protocols, layer 3 protocols, and applications that line modules and their corresponding IOAs support. Provides module LED information.
E-series Installation Quick Start poster or *ERX Quick Start Guide*	Shipped in the box with all new ERX routers. Provides the basic procedures to help you get an ERX router up and running quickly.
ERX Hardware Guide	Provides the necessary procedures for getting ERX-14xx models, ERX-7xx models, and ERX-310 routers operational, including information about: ■ Installing the chassis and modules ■ Connecting cables ■ Powering up the routers ■ Configuring the routers for management access ■ Troubleshooting common issues Describes switch route processor (SRP) modules, line modules, and I/O modules available for the ERX routers.
ERX Module Guide	Provides detailed specifications for line modules and I/O modules in ERX-14xx models, ERX-7xx models, and ERX-310 routers, and information about the compatibility of these modules with JUNOSe software releases. Lists the layer 2 protocols, layer 3 protocols, and applications that line modules and their corresponding I/O modules support. Provides module LED information.
ERX End-of-Life Module Guide	Provides an overview and description of ERX modules that are end-of-life (EOL) and can no longer be ordered for the following routers: ■ ERX-7xx models ■ ERX-14xx models ■ ERX-310 router

Table 3: Juniper Networks E-series and JUNOSe Technical Publications (continued)

Document	Description
JUNOSe Software Guides	
JUNOSe System Basics Configuration Guide	Provides information about: ■ Planning and configuring your network ■ Using the command-line interface (CLI) ■ Installing JUNOSe software ■ Configuring the Simple Network Management Protocol (SNMP) ■ Managing the router and its modules, including the use of high availability (HA) for SRP redundancy ■ Configuring and running a unified in-service software upgrade (ISSU) ■ Configuring passwords and security ■ Configuring the router clock ■ Configuring virtual routers
JUNOSe Physical Layer Configuration Guide	Explains how to configure, test, and monitor physical layer interfaces.
JUNOSe Link Layer Configuration Guide	Explains how to configure and monitor static and dynamic link layer interfaces.
JUNOSe IP, IPv6, and IGP Configuration Guide	Explains how to configure and monitor IP, IPv6 and Neighbor Discovery, and interior gateway protocols (RIP, OSPF, and IS-IS).
JUNOSe IP Services Configuration Guide	Explains how to configure and monitor IP routing services. Topics include: ■ Routing policies ■ Firewalls ■ Network Address Translation (NAT) ■ J-Flow statistics ■ Bidirectional forwarding detection (BFD) ■ Internet Protocol Security (IPSec) ■ Access Node Control Protocol (ANCP), also known as Layer 2 Control (L2C) ■ Digital certificates ■ IP tunnels ■ Virtual Router Redundancy Protocol (VRRP) ■ Mobile IP home agent
JUNOSe Multicast Routing Configuration Guide	Explains how to configure and monitor IP multicast routing and IPv6 multicast routing. Topics include: ■ Internet Group Management Protocol (IGMP) ■ Protocol Independent Multicast (PIM) ■ Distance Vector Multicast Routing Protocol (DVMRP) ■ Multicast Listener Discovery (MLD)
JUNOSe BGP and MPLS Configuration Guide	Explains how to configure and monitor: ■ Border Gateway Protocol (BGP) routing ■ Multiprotocol Label Switching (MPLS) and related applications ■ Layer 2 services over MPLS ■ Virtual private LAN service (VPLS) ■ Layer 2 virtual private networks (L2VPNs)
JUNOSe Policy Management Configuration Guide	Explains how to configure, manage, and monitor customized policy rules for packet classification, forwarding, filtering, and flow rates. Also describes the packet mirroring feature, which uses secure policies.

Table 3: Juniper Networks E-series and JUNOSe Technical Publications (continued)

Document	Description
JUNOSe Quality of Service Configuration Guide	Explains how to configure quality of service (QoS) features to queue, schedule, and monitor traffic flow. These features include: ■ Traffic classes and traffic-class groups ■ Drop, queue, QoS, and scheduler profiles ■ QoS parameters ■ Statistics
JUNOSe Broadband Access Configuration Guide	Explains how to configure and monitor a remote access environment, which can include the following features: ■ Authentication, authorization, and accounting (AAA) ■ Dynamic Host Configuration Protocol (DHCP) ■ Remote Authentication Dial-In User Service (RADIUS) ■ Terminal Access Controller Access Control System (TACACS+) ■ Layer 2 Tunneling Protocol (L2TP) ■ Subscriber management
JUNOSe System Event Logging Reference Guide	Describes the JUNOSe system logging feature and describes how to use the CLI to monitor your system's log configuration and system events.
JUNOSe Command Reference Guide A to M; JUNOSe Command Reference Guide N to Z	Together constitute the *JUNOSe Command Reference Guide*. Contain important information about commands implemented in the system software. Use to look up: ■ Descriptions of commands and command parameters ■ Command syntax ■ A command's related mode ■ Starting with JUNOSe Release 7.1.0, a history of when a command, its keywords, and its variables were introduced or added Use with the JUNOSe configuration guides.
JUNOSe Comprehensive Index	Provides a complete index of the JUNOSe software documentation set.
JUNOSe Glossary	Provides definitions for terms used in JUNOSe technical documentation.
Release Notes	
JUNOSe Release Notes	Provide the latest information about features, changes, known problems, resolved problems, and system maximum values. If the information in the *Release Notes* differs from the information found in the documentation set, follow the *Release Notes*. Release notes are included on the corresponding software CD and are available on the Web.

JUNOSe Configuration Guides

JUNOSe software configuration guides use a bottom-up approach to describe the relationship of layers, protocols, and interfaces in the configuration process. For more information, see *Layered Approach* in *JUNOSe System Basics Configuration Guide, Chapter 1, Planning Your Network*.

The chapters in JUNOSe software configuration guides typically include the following topics:

- Conceptual and overview information
- Information you need to know or tasks you need to perform before you begin
- Platform-specific issues you need to take into consideration
- Applicable references, such as RFCs and IETF draft documents, about the protocols and features supported by the router
- Required and optional tasks, as step-by-step procedures
- Descriptions and examples of the commands you use
- Illustrations of network topologies
- Examples of command sequences for configuration, testing, and monitoring activities
- Sample displays that result when you issue the **show** command

Obtaining Documentation

To obtain the most current version of all Juniper Networks technical documentation, see the products documentation page on the Juniper Networks Web site at http://www.juniper.net/.

To order printed copies of this manual and other Juniper Networks technical documents or to order a documentation CD, which contains this manual, contact your sales representative.

Copies of the Management Information Bases (MIBs) available in a software release are included on the software CDs and at http://www.juniper.net/.

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation to better meet your needs. Send your comments to techpubs-comments@juniper.net, or fill out the documentation feedback form at http://www.juniper.net/techpubs/docbug/docbugreport.html. If you are using e-mail, be sure to include the following information with your comments:

- Document name
- Document part number
- Page number
- Software release version

Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or JNASC support contract, or are covered under warranty, and need post-sales 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/customers/support/downloads/710059.pdf
- **Product Warranties**—For product warranty information, visit http://www.juniper.net/support/warranty/
- **JTAC Hours of Operation**—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: http://www.juniper.net/customers/support/
- Search for known bugs: http://www2.juniper.net/kb/
- Find product documentation: http://www.juniper.net/techpubs/
- 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 Manager: http://www.juniper.net/cm/

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool located at 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 Manager 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 http://www.juniper.net/support/requesting-support.html