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JUNOS® Software J-series Services Routers Quick Start

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J-series Services Routers running JUNOS software provide flow-based security services, IP routing, WAN and LAN connectivity, and management services. Available in several models, Services Routers typically connect small, branch, or regional offices to a central site, and link Internet service provider (ISP) networks.

The *J-series Services Routers Quick Start* provides instructions to initially set up J2320, J2350, J4350, and J6350 Services Routers. You need no previous JUNOS software experience, but must have managed a network and configured other routers. For more information, see the documentation for JUNOS software at <http://www.juniper.net/techpubs>.

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What You Need To Know

Management IP Address

When you first connect a management PC or laptop to a built-in Ethernet port on a Services Router, the router acts as a DHCP client and attempts to perform an autoinstallation. If it does not find a DHCP server, the router assigns **192.168.1.1/24** as the IP address for port 0. (If you are connected to port 1, **192.168.2.1/24** is assigned as the IP address. Port 2 and port 3 are assigned **192.168.3.1/24** and **192.168.4.1/24**, respectively.)

Because this address is not part of any explicit configuration, it is removed when you change the configuration *in any way*. You must configure an IP address for this LAN port when you commit your initial configuration. (See “Step 2. Configuring Basic Settings with J-Web Quick Configuration” on page 10 or “Step 2. Configuring Basic Settings with the CLI” on page 13.)

J-Web Access

The Web interface to the router—called the J-Web interface—is enabled by default. To configure the router with the Web interface, you attach a PC or laptop to a built-in Ethernet port. The examples in this document use the first built-in Gigabit Ethernet port 0/0 (internally named **ge-0/0/0**).

See “Step 1. Connecting, Logging In, and Starting the J-Web Interface” on page 9.

CLI Console Access

Services Routers are shipped with a console cable and adapter. To configure a Services Router through the console port with the JUNOS command-line interface (CLI), you use a terminal emulation program such as Microsoft Windows HyperTerminal. (See “Step 1. Connecting, Logging In, and Starting the CLI” on page 12.)

Secure Context and Router Context

You can operate the router either in secure context or router context. These contexts are meant to be starting points from which you can customize the configuration for your network requirements. By default, the Services Router operates in secure context. For information describing how to change contexts, see the *JUNOS Software Administration Guide*.

The basic configuration for secure context binds the **ge-0/0/0** interface to a preconfigured zone called trust. All other interfaces are bound to a preconfigured untrust zone. The **ge-0/0/0** interface has SSH and HTTP services enabled for management access. These services as well as Telnet, HTTPS, and DHCP are configured as host-inbound services for the **ge-0/0/0** interface. For the trust zone, TCP Reset is also enabled. The default policy for the trust zone allows transmission of traffic from the trust zone to the untrust zone. All traffic within the trust zone is allowed.

To protect against attacks launched from within the zone, the following screens are enabled for the untrust zone: ICMP ping-of-death, IP source route options, IP teardrop, TCP land attack, and TCP SYN flood. The default policy for the untrust zone denies all traffic.

In router context, all transit traffic security checks are disabled. The default policy allows all transit traffic, and all interfaces are bound to the trust zone.

Required Licenses

To use the following features on a Services Router, you must purchase a license. (See “Step 4. Adding Licenses with the CLI” on page 14 or “Step 2. Configuring Basic Settings with J-Web Quick Configuration” on page 10.)

- Advanced Border Gateway Protocol (BGP) support for route reflectors
- J-Flow traffic analysis

For these features, the presence on the router of the appropriate software license keys (passwords) determines whether you can use the feature. You must install and properly configure the license. The router allows you to commit a configuration with a feature that requires a license even if the license is not present, but you are prohibited from actually using the feature.

Slot Numbers

The J-series Services Routers have the following slots for replaceable Physical Interface Modules (PIMs). PIM slots are numbered from top to bottom and left to right.

- J2320 Services Routers—Slots 1 through 3.
- J2350 Services Routers—Slots 1 through 5
- J4350 and J6350 Services Routers—Slots 1 through 6.

Interfaces and Ports

Interfaces are named by type, slot number, module number (always 0), and port number. Port numbering starts with 0. For example:

- The built-in Gigabit Ethernet LAN ports 0/0 through 0/3, which are in slot 0, are named `ge-0/0/0`, `ge-0/0/1`, `ge-0/0/2`, and `ge-0/0/3`.
- The first port on a T1 PIM in slot 1 is named `t1-1/0/0`.

Remote Access

Although HTTP and SSH are supported, they are *disabled* by default.

Before You Begin

Before installing and connecting a Services Router, read “Safety Warnings Summary” on page 17.

Then make sure you have the equipment listed in Table 1 on page 5.

Table 1: Equipment Required for Services Router Installation

Electrical Connection	Rack Installation	Management Access
<ul style="list-style-type: none">■ Electrostatic discharge (ESD) grounding strap (not provided)■ For AC power, an AC power cord with a plug appropriate for your geographical location (provided)■ For DC power, 14 AWG DC power cables with appropriate lugs (not provided)■ For grounding, 14 AWG grounding cable and lug for the router (not provided)■ Routers with redundant power supplies require an AC power cord (provided) or DC power cables (not provided) for each power supply.	<ul style="list-style-type: none">■ For rack installation, mounting screws appropriate for your rack and an appropriate screwdriver (not provided).■ Mounting brackets are preinstalled on J2320 and J2350 models, and must be installed on J4350 and J6350 models.	<p>For CLI access:</p> <ul style="list-style-type: none">■ Management device, such as a PC or laptop, with a serial port (not provided)■ RJ-45 console (Ethernet “rollover”) cable, with an RJ-45-to-DB-9 adapter (both provided) <p>For J-Web access:</p> <ul style="list-style-type: none">■ Management device, such as a PC or laptop, with an Ethernet port (not provided)■ Ethernet cable (not provided)

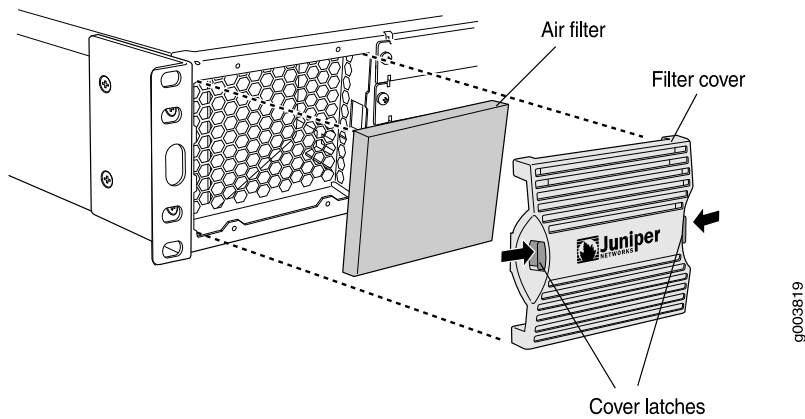


CAUTION: A licensed electrician must attach a cable lug to the grounding and power cables that you supply. A cable with an incorrectly attached lug can damage the router.

If you are installing a J4350 or J6350 Services Router, take the following steps:

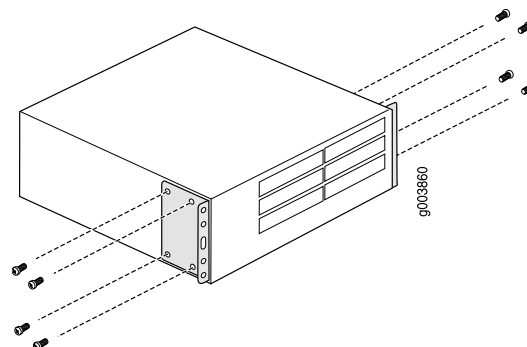
1. Attach the air filter and filter cover, as shown in Figure 1 on page 5.

Figure 1: Attaching Air Filter and Filter Cover



2. Attach the mounting brackets to either the center or front of the chassis, as shown in Figure 2 on page 6.

Figure 2: Attaching Mounting Brackets



Installing a Services Router



WARNING: DC-powered Services Routers are intended for installation in a restricted access location.

Installing J2320 and J2350 Services Routers

To install the J2320 and J2350 router into a rack:

1. Have one person grasp the sides of the router, lift the router, and position it in the rack.
2. Align the top hole in each mounting bracket with a hole in each rack rail as shown in Figure 3 on page 6 and Figure 4 on page 7, making sure the chassis is level.

Figure 3: Hanging a J2320 Router in a Rack

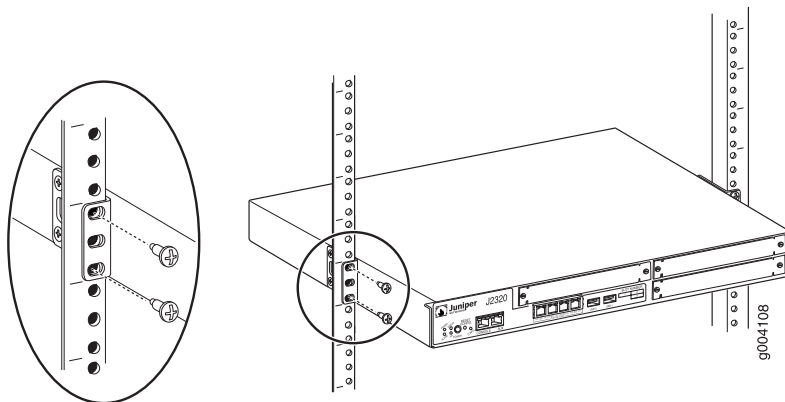
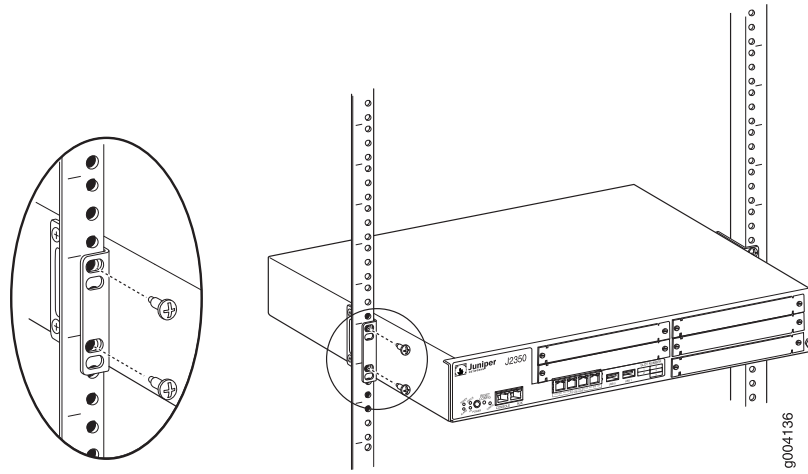


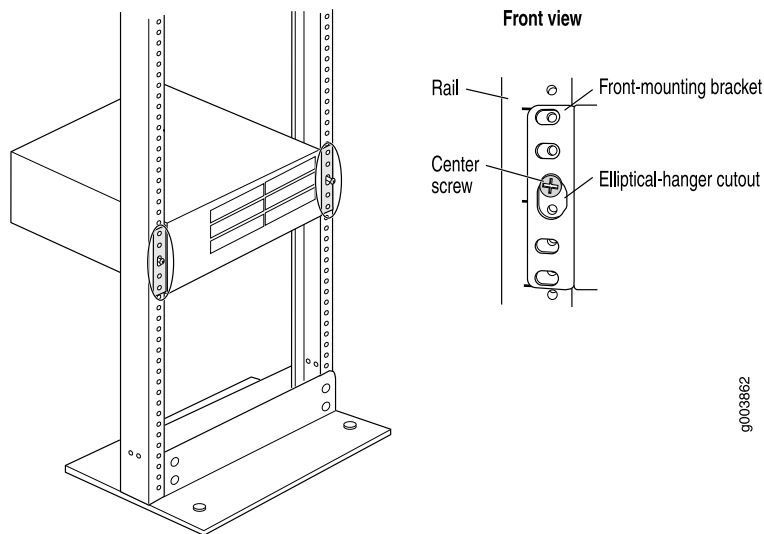
Figure 4: Hanging a J2350 Router in a Rack

3. Have a second person install a mounting screw into each of the two aligned holes. With a number 2 Phillips screwdriver, tighten the screws.
4. Verify that the mounting screw on one side of the rack is aligned with the mounting screw on the opposite side and that the router is level.
5. Install the second screw in each mounting bracket.

Installing J4350 or J6350 Services Routers

To install a J4350 or J6350 Services Router in a rack:

1. Make sure the rack is properly secured to the building in its permanent location.
2. Attach a screw to each rack rail in the third hole down from where you want the top of the router to be positioned, as shown in Figure 5 on page 8. Screw only part way in, leaving about 1/4 in. (6 mm) distance between the screw head and the rail.
3. Lift the router and insert the elliptical openings in the mounting brackets onto the partially inserted screws so that the router is hanging from the two screws.

Figure 5: Hanging the Router in the Rack

4. Install at least two mounting screws into each mounting bracket, in addition to the center screws from which the router hangs.

Connecting Power to a Services Router

J2320, J2350, and J4350 Services Routers have a fixed power supply. J6350 Services Routers have field-replaceable AC or DC power supplies.

To connect AC or DC power:

1. Connect the router to earth ground with a 14 AWG grounding cable:
 - a. Connect one end to a proper earth ground point (the rack, for example).
 - b. Remove the screw and washer from the PEM nut on the protective earthing terminal at the rear of the router chassis. (The J4350 and J6350 chassis have two PEM nuts.)
 - c. Secure the other end of the cable to this grounding point with the washer and then with the screw.
2. For an AC power supply only:
 - a. Insert the appliance coupler end of the power cord into the appliance inlet on the router's power supply faceplate.
 - b. Insert the plug into an AC power source receptacle.

- c. If the power supply includes a on/off switch, turn the switch to on.
3. For a DC power supply only:
 - a. Ensure that the voltage across the DC power source cable leads is 0 volts and that the cable leads cannot become active during installation.
 - b. Remove the clear plastic cover protecting the terminal block.
 - c. Remove the two center screws next to the labels **–48 VDC** and **RTN**.
 - d. Secure the positive (+) DC source power cable lug to the **RTN** terminal, tightening the screw only until snug. Do not overtighten.
 - e. Secure the negative (–) DC source power cable lug to the **–48 VDC** terminal, tightening the screw only until snug. Do not overtighten.
 - f. Replace the plastic cover.
4. Repeat Step 2 or Step 3 for the second power supply, if one is installed.

For complete instructions, see the *J-series Services Routers Hardware Guide*.

Basic Connection and Configuration with the J-Web Interface

For J-Web access, you connect from your management PC or laptop to the Services Router through one of the built-in Ethernet interfaces. The examples in this document use port 0/0. (For information about the J-Web interface, see “J-Web Basics” on page 15.)

Step 1. Connecting, Logging In, and Starting the J-Web Interface

When the Services Router is powered on for the first time, it searches for a DHCP server, and if it does not find one, it assigns an IP address within the **192.168.1.0/24** subnetwork to any devices connected to it.

To connect to the J-Web interface through port 0/0 on the router:

1. On the management device, such as a PC or laptop, you use to access the J-Web interface, verify that the address of the port that you connect to the router is set to one of the following:
 - An Ethernet address on the **192.168.1/24** subnetwork other than **192.168.1.1**
 - An Ethernet address from a DHCP server
2. Turn off the power to the management device.
3. Plug one end of the Ethernet cable into the Ethernet port on the management device.
4. Connect the other end of the Ethernet cable to the built-in Ethernet port on the router.
5. Power on the router by pressing the power button on the front panel.

6. Wait until the **STATUS** LED on the front panel turns solid green.
7. Turn on the power to the management device. The router assigns an IP address to the management device within the 192.168.1/24 subnetwork if the device is configured to use DHCP.
8. From the management device, open a Web browser and enter the IP address 192.168.1.1 in the address field. The Set Up Quick Configuration page appears.



NOTE: You must manually configure the IP address for the management port you are using before you save your initial configuration. When you save the configuration for the first time, the DHCP lease is lost and you will lose the connection to the router if you have not manually configured the IP address. If you lose connection through the management interface, you must connect through the console port.

Step 2. Configuring Basic Settings with J-Web Quick Configuration

When you click **OK** or **Apply** on J-Web Quick Configuration pages, the configuration is saved and activated automatically. To configure basic settings with the J-Web interface:

1. If the Set Up Quick Configuration page is not displayed, select **Configuration > Quick Configuration > Set Up**.
2. Enter information in the boxes on the Set Up Quick Configuration page as shown in Table 2 on page 10, then click **OK** or **Apply**.

Table 2: J-Web Set Up Quick Configuration

Field	Description
Host Name (required)	Hostname of the router—for example, Chicago .
Domain Name	Network or subnetwork that the router belongs to.
Root Password (required)	Root password that user “root” can use to log in to the router.
Verify Root Password (required)	Retyped password.
Time Zone	Time zone in which the router is located.
NTP Servers	NTP server to synchronize the system time.
Current System Time	Your current time and date.
DNS Name Servers	DNS server to resolve hostnames into addresses.
Domain Search	Name of each domain to include in a DNS search.
Default Gateway	Default route. The IP address of a default router that the Services Router can use to direct packets addressed to networks not explicitly listed in the routing table.

Table 2: J-Web Set Up Quick Configuration (*continued*)

Field	Description
Loopback Address	Reserved IP address that is always available on the router. By default, this address is set to 127.0.0.1/32 .
fe-0/0/0 Address or ge-0/0/0 Address	IP address and prefix length of built-in Ethernet port 0. The interface fe-0/0/0 or ge-0/0/0 is typically used as the management interface for accessing the router. The DHCP client sets this address to 192.168.1.1/24 if no DHCP server is found. You must enter the fe-0/0/0 or ge-0/0/0 address on the Quick Configuration Set Up page before you click Apply or OK . If you do not manually configure this address, the DHCP lease is lost and you will lose your connection to the J-Web interface when you click Apply or OK .
Allow Telnet Access	Enables remote access to the router with Telnet.
Allow JUNOScript over Clear-Text Access	Allows JUNOScript to send unencrypted text to the router over a TCP connection.
Allow SSH Access	Enables remote SSH access to the router.

3. To configure additional interfaces:
 - a. Under Quick Configuration, click **Interfaces**, and then click the interface you want to configure.
 - b. On the Interfaces page, click **Add** to add a logical interface.

IP addresses are configured on the logical interface.
 - c. Optionally, provide a brief description of the interface.
 - d. In the two boxes provided, type the IP address (for example, **192.168.1.4**) and the number of bits in the subnet mask (for example, **24**), click **Add**, and then click **OK** or **Apply**.

To edit an existing interface, you click the logical interface.

4. To enable routing protocols, under Quick Configuration click **Routing and Protocols**.
 - To add static routes, click **Static Routing**.
 - To configure a routing protocol, such as OSPF, RIP, BGP, and DLSw, click the protocol.

When you are finished with a page, click **OK** or **Apply**.

For complete details on how to configure interfaces and routing, see the *JUNOS Software Interfaces and Routing Configuration Guide*.

Step 3. Installing JUNOS Software

For information explaining how to install JUNOS software, see the following guides:

- Migrating from JUNOS software (legacy services) to JUNOS software—*JUNOS Software Migration Guide*.
- Upgrading to a later version of JUNOS software—*JUNOS Software Administration Guide*.



NOTE: *JUNOS software (legacy services)* denotes the packet-based software for the J-series Services Router, and *JUNOS software* denotes the flow-based software for the J-series Services Router.

Step 4. Adding Licenses with the J-Web Interface

If you purchased one or more licenses, you received an envelope with instructions for obtaining license keys from the Web. To enable each license on the router, you must add the license key. You can add one or more license keys. To add a license key and enable a license:

1. Follow the instructions in your license envelope to generate the license key from the Web site.
2. Copy the license key onto the router with the J-Web interface:
 - a. Click **Manage > Licenses**.
 - b. Enter the license key in one of the following ways:
 - In the License File URL box, type the URL for the license key Web site.
 - Copy the license key text, and paste it into the License Key Text box, separating multiple license keys with a blank line.
 - c. Click **OK**.

For complete instructions, see the *JUNOS Software Administration Guide*.

Basic Connection and Configuration with the CLI

For CLI access, you connect from your management PC or laptop to the Services Router through the console port. (For information about the CLI, see “JUNOS CLI Basics” on page 16.)

Step 1. Connecting, Logging In, and Starting the CLI

You are prompted for a username and password. The default username is **root**. Because no password is initially required, press Enter at the password prompt for a first-time login.

To access a Services Router with the CLI:

1. Turn off power to the management PC or laptop.
2. Connect one end of the console cable to the serial port adapter, plug the adapter into a serial port on the PC or laptop, and plug the other end of the cable into the console port on the Services Router.
3. Turn on power to the PC or laptop.
4. On the PC or laptop, start the terminal emulation program (such as Microsoft Windows HyperTerminal), select the **COM** port, and configure the following port settings: **9600** (bits per second), **8** (data bits), **none** (parity), **1** (stop bits), and **none** (flow control).
5. Press the **POWER** button on the router, and verify that the **POWER** LED turns green.
6. Wait for the system to boot, and when presented with a login prompt, log in as **root**, and press Enter at the **Password** prompt.

When you have been authenticated through the CLI, you enter the UNIX shell:

```

routername (ttyd0)

login: root

Password:
JUNOS 8.5R1 20070628.0 built 08:11:01 UTC
root%
```

7. At the **%** prompt, type the **cli** command and press Enter. The prompt changes to an angle bracket (**>**) when you enter CLI operational mode.

```

root@% cli

root>
```

For complete instructions, see the *J-series Services Routers Hardware Guide*.

Step 2. Configuring Basic Settings with the CLI

In CLI configuration mode, you use the **set** command to enable features, and the **delete** command to disable them. The commands you enter do not update the active configuration on the router until you use the **commit** command.

To configure basic settings with the CLI:

1. From the CLI, enter configuration mode:

```

root> configure
root#
```

2. Set the IP addresses of the built-in Ethernet ports. For example:

```

root# set interfaces ge-0/0/0 unit 0 family inet address 1.1.2.31/24
root# set interfaces ge-0/0/1 unit 0 family inet address 1.6.2.1/24
```

```

root# set interfaces ge-0/0/2 unit 0 family inet address 2.8.3.1/24
root# set interfaces ge-0/0/3 unit 0 family inet address 9.1.4.1/24

```

The unit number is the logical interface number. IP addresses are configured on the logical interface. Setting the protocol family to `inet` specifies the routing table of IPv4 addresses.

3. Set a default route (default gateway) for IPv4 packets. For example:

```

root# set routing-options static route 1.6.2.1/24 next-hop 10.1.1.50

```

4. Configure one or more static routes:

```

root# set routing-options static route destination-prefix next-hop address

```

5. Set the hostname. For example:

```

root# set system host-name Chicago

```

6. Save your configuration settings and activate them on the Services Router:

```

root# commit

```

For complete instructions, see the *JUNOS Software Interfaces and Routing Configuration Guide*.

Step 3. Installing JUNOS Software

For information explaining how to install JUNOS software, see the following guides:

- Migrating from JUNOS software (legacy services) to JUNOS software—*JUNOS Software Migration Guide*.
- Upgrading to a later version of JUNOS software—*JUNOS Software Administration Guide*.



NOTE: *JUNOS software (legacy services)* denotes the packet-based software for the J-series Services Router, and *JUNOS software* denotes the flow-based software for the J-series Services Router.

Step 4. Adding Licenses with the CLI

If you purchased one or more licenses, you received an envelope with instructions for obtaining license keys from the Web. To enable each license on the router, you must add the license key. You can add one or more license keys from the CLI.

To add a license key and enable a license:

1. Follow the instructions in your license envelope to generate the license key from the Web site.

2. Copy the license key onto the router with the CLI:
 - a. Type the following command, and press Enter:

```
root> request system license add terminal
```

- b. When prompted, copy and paste the license key from the Web site at the command line, separating multiple license keys with a blank line.
 - c. To exit license key entry, press Ctrl + D.

For complete instructions, see the *JUNOS Software Administration Guide*.

J-Web Basics

The task bar at the top of the J-Web interface identifies the main J-Web functions. You access specific tasks on the left.

- Monitor—Output from common **show** commands
- Configuration—Quick Configuration wizards and a graphical version of the CLI
- Diagnose—Ping, traceroute, and packet capture
- Manage—Configuration file management and licenses
- Events—System log messages
- Alarms—Active alarms

The first time you connect to a Services Router with the J-Web interface, you bypass the login page and go directly to the Set Up Quick Configuration page. At subsequent logins, you go directly to the System Monitor page.

Click **Monitor** to display information about the system (system identification, system time, users, memory usage, CPU usage, and system storage) functions.

Click **Configuration** then **Quick Configuration** to access Quick Configuration “wizard” pages for common configuration tasks such as initial setup, secure access, interfaces, users, SNMP, routing and protocols, class of service, security policies, schedulers, zones, VPNs, firewall NAT, authentication, and ALGs

For configuration details and tasks not covered by Quick Configuration, you can access a graphical version of the JUNOS CLI known as the J-Web configuration editor. Select **Configuration > View and Edit Configuration > Edit Configuration** to display a list of configurable features—like the list displayed when you enter **set ?** in CLI configuration mode.

When you click **OK** or **Apply** on J-Web Quick Configuration pages, the configuration is saved and activated automatically. In contrast, you must click **Commit** to apply changes on J-Web configuration editor pages.

For complete information about J-Web configuration features, see the *J-Web Interface User Guide*.

JUNOS CLI Basics

After you start the CLI with the `cli` command, type a question mark (?) to display a list of the available commands:

```
root> ?
Possible completions:
clear          Clear information in the system
configure      Manipulate software configuration information
file           Perform file operations
help           Provide help information
monitor        Show real-time debugging information
mtrace         Trace multicast path from source to receiver
op             Invoke an operation script
ping           Ping remote target
quit           Exit the management session
request        Make system-level requests
restart        Restart software process
set            Set CLI properties, date/time, craft interface message
show           Show system information
ssh            Start secure shell on another host
start          Start shell
telnet         Telnet to another host
test           Perform diagnostic debugging
traceroute     Trace route to remote host
```

To display the options available for a command, type the command followed by a space and a question mark:

```
root> show ?
Possible completions:
accounting     Show accounting profiles and records
aps            Show Automatic Protection Switching information
arp            Show system Address Resolution Protocol table entries
as-path        Show table of known autonomous system paths
bfd            Show Bidirectional Forwarding Detection information
bgp            Show Border Gateway Protocol information
chassis        Show chassis information
class-of-service Show class-of-service (CoS) information
cli            Show command-line interface settings
configuration   Show current configuration
connections     Show circuit cross-connect connections
dialer         Show dialer information
dlsw           Show DLSw information
---(more 93%)---
```

To use command completion, type the first few letters of a command and press the Spacebar or the Tab key.

For example, when you type the following partial command, the system completes the command `show chassis hardware` and displays hardware information:

```
root> sh<tab> ch<tab> h<tab>
user@host> show chassis hardware
Hardware inventory:
```

Item	Version	Part number	Serial number	Description
Chassis			JN1086AA8ADA	J4350
Midplane	REV 00	710-012339	NE0664	
System IO	REV 00	710-012315	NE3564	JX350 System IO

Crypto Module		Crypto Acceleration
Routing Engine	REV 00 710-012149	RE-J4350-2540
FPC 0		FPC
PIC 0		4x GE Base PICPower
Supply 0		

Type the following partial command to display the JUNOS software version running on the router:

```
root> sh ver
Hostname: host
Model: j4350
JUNOS Software Release [8.5-20070628.0] Enhanced Services
```

To access configuration mode, enter the **configure** command. The prompt changes to a pound sign (#).

```
root> configure
root#
```

To activate changes to the configuration, enter the **commit** command.

```
root> commit
root#
```

To exit configuration mode, enter the **exit** command. Use the **exit** command again to exit the CLI completely.

```
root# exit
root> exit
root@%
```

For complete information about CLI features, see the *JUNOS CLI User Guide*.

Safety Warnings Summary



NOTE: This is a summary of safety warnings. For a complete list of warnings, including translations, see the *J-series Services Routers Hardware Guide* at <http://www.juniper.net/techpubs/>.



WARNING: Certain ports on the router are designed for use as intrabuilding (within-the-building) interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE, Issue 4) and require isolation from the exposed outside plant (OSP) cabling. To comply with NEBS requirements and protect against lightening surges and commercial power disturbances, the intrabuilding ports *must not* be metalically connected to interfaces that connect to the OSP or its wiring. The intrabuilding ports on the router are suitable for connection to intrabuilding or unexposed wiring or cabling only. The addition of primary protectors is not sufficient protection for connecting these interfaces metalically to OSP wiring.



CAUTION: To comply with intrabuilding lightning and surge requirements, intrabuilding wiring must be shielded, and the shield for the wiring must be grounded at both ends.



CAUTION: Before removing or installing components of a router, attach an ESD strap to an ESD point and place the other end of the strap around your bare wrist. Failure to use an ESD strap could result in damage to the router.



CAUTION: For routers with AC power supplies, an external surge protective device (SPD) must be used at the AC power source.

- Permit only trained and qualified personnel to install or replace Services Router components.
- The equipment is suitable for installation in locations where the National Electrical Code (NEC) applies, as well as in Network Telecommunication Facilities.
- Perform only the procedures described in this quick start and the Getting Started Guide for your device. Other services must be performed by authorized service personnel only.
- Before you connect a Services Router to a power source, read the installation instructions in the Getting Started Guide for your device.
- Before installing the router, read the guidelines about preparing for router installation in the Getting Started Guide for your device, to make sure that the site meets power, environmental, and clearance requirements for the router.
- When installing the Services Router, do not use a ramp inclined at more than 10 degrees.
- We recommend that two people perform installation of J-series Services Routers. Have one person lift the router into position and a second person secure the mounting screws. To prevent injury, keep your back straight and lift with your legs, not your back.
- Mount the Services Router at the bottom of the rack if it is the only unit in the rack.
- When mounting the Services Router in a partially filled rack, load the rack from the bottom to the top, with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the Services Router in the rack.
- Grounding surfaces are to be cleaned and brought to a bright finish before grounding connections can be made.
- When removing or installing an electrical component, always place it component-side up on a flat antistatic surface or in an electrostatic bag.
- Do not work on the system or connect or disconnect cables during electrical storms.

- Before working on equipment that is connected to power lines, remove jewelry, including rings, necklaces, and watches. Metal objects heat up when connected to power and ground and can cause serious burns or become welded to the terminals.
- Failure to observe these safety warnings can result in serious physical injury.
- AC power cable warning (Japan):



WARNING: The attached power cable is only for this product. Do not use the cable for another product.

注意

附属の電源コードセットはこの製品専用です。
他の電気機器には使用しないでください。

g017253

Compliance Statements for NEBS

This product complies with the following Network Equipment Building System (NEBS) standards:

- The equipment is suitable for installation as part of the Common Bonding Network (CBN).
- The equipment is suitable for installation in locations where the National Electrical Code (NEC) applies.
- The battery return connection is to be treated as a Common DC return (DC-C), as defined in GR-1089-CORE.

Declarations of Conformity



Declaration of Conformity

Juniper Networks, Inc.
1194 N. Mathilda Ave
Sunnyvale, CA. 94089 USA

declares that under our sole responsibility the product(s)

Services Router
Model J2320, J2350, SSG-320, SSG-350

are in conformity with the provisions of the following EC Directives, including all amendments,
and with national legislation implementing these directives:

Low Voltage Directive 73/23/EEC
EMC Directive 89/336/EEC

and that the following harmonized standards have been applied

EN 60950-1:2001+A11
EN 60825-1:1994+A1+A2


EN 300 386 V1.3.3:2005
EN 55024:1998+A1+A2
EN 61000-3-2, EN 61000-3-3
EN 55022:1998+A1(2000)+A2(2003) Class A
EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-6,
EN 61000-4-5, EN 61000-4-11 (-5 and -11 AC only)

A handwritten signature in black ink, appearing to read "John Lockwood".

Place
Sunnyvale, CA

Signature
John Lockwood

Date
06/20/2007



Declaration of Conformity

Juniper Networks, Inc.
1194 N. Mathilda Ave
Sunnyvale, CA. 94089 USA

declares that under our sole responsibility the product(s)

**Internet Router
Model J4350/J6350**

are in conformity with the provisions of the following EC Directives, including all amendments,
and with national legislation implementing these directives:

**Low Voltage Directive 73/23/EEC
EMC Directive 89/336/EEC**

and that the following harmonized standards have been applied

EN 60950-1: 2001 + A11
EN 60825-1: 1994 + A1+A2

**EN 300 386 V1.3.1:2001
EN 55024:1998**
EN 55022:1998+A1+A2
EN 61000-3-2, EN 61000-3-3
EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5,
EN 61000-4-6, EN 61000-4-11

Place
Sunnyvale, CA

Signature
John Lockwood

Date
10/09/2006

List of Technical Publications

The following sections list hardware and software guides and release notes for J-series Services Routers running JUNOS software.

All documents are available at <http://www.juniper.net/techpubs/>.

- Hardware Guides**
- *J-series Services Routers Quick Start*—Explains how to quickly set up a J-series Services Router. This document contains router declarations of conformity.
 - *J-series Services Routers Hardware Guide*—Provides an overview, basic instructions, and specifications for J-series Services Routers. This guide explains how to prepare a site, unpack and install the router, replace router hardware, and establish basic router connectivity. This guide contains hardware descriptions and specifications.

- Software Guides**
- *JUNOS Software Interfaces and Routing Configuration Guide*—Explains how to configure SRX-series and J-series interfaces for basic IP routing with standard routing protocols, ISDN service, firewall filters (access control lists), and class-of-service (CoS) traffic classification.
 - *JUNOS Software Security Configuration Guide*—Explains how to configure and manage SRX-series and J-series security services such as stateful firewall policies, IPsec VPNs, firewall screens, Network Address Translation (NAT), Public Key Cryptography, chassis clusters, Application Layer Gateways (ALGs), and Intrusion Detection and Prevention (IDP).
 - *JUNOS Software Administration Guide*—Shows how to monitor SRX-series and J-series devices and routing operations, firewall and security services, system alarms and events, and network performance. This guide also shows how to administer user authentication and access, upgrade software, and diagnose common problems.
 - *JUNOS Software CLI Reference*—Provides the complete configuration hierarchy available on SRX-series and J-series devices. This guide also describes the configuration statements and operational mode commands unique to these devices.
 - *JUNOS Network Management Configuration Guide*—Describes enterprise-specific MIBs for JUNOS software. The information in this guide is applicable to M-series, T-series, EX-series, SRX-series, and J-series devices.
 - *JUNOS System Log Messages Reference*—Describes how to access and interpret system log messages generated by JUNOS software modules and provides a reference page for each message. The information in this guide is applicable to M-series, T-series, EX-series, SRX-series, and J-series devices.
 - *JUNOS Software Design and Implementation Guide*—Provides guidelines and examples for designing and implementing IPsec VPNs, firewalls, and routing on J-series Services Routers running JUNOS software.
 - *JUNOS Software Migration Guide*—Provides instructions for migrating an SSG device running ScreenOS software to JUNOS software or upgrading a J-series Services Router to a later version of JUNOS software.
 - *WXC Integrated Services Module Installation and Configuration Guide*—Explains how to install and initially configure a WXC Integrated Services Module in a J-series Services Router for application acceleration.
- Release Notes**
- *JUNOS Software Release Notes*—Summarize new features and known problems for a particular release of JUNOS software, including JUNOS software for J-series and SRX-series devices. The release notes also contain corrections and updates to the manuals and software upgrade and downgrade instructions for JUNOS software.

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 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/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 Management tool: <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 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>.

Revision History

January 2009—Revision R4

October 2008—Revision R3

August 2008—Revision R2

February 2008—Revision R1

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