

J-series Services Router Release Notes

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These release notes introduce the newest release of Juniper Networks J-series Services Routers and Release 7.6R4 of the JUNOS Internet software. They briefly describe J-series hardware features, identify known firmware and hardware problems, describe new J-Web features, and explain how to upgrade and downgrade the JUNOS Internet software and firmware on a Services Router. For information about software features and problems, see the *JUNOS Internet Software Release Notes*. You can find these release notes on the Juniper Networks Technical Publications Web page, which is located at <http://www.juniper.net/techpubs/>.

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J-series Services Router Features

This section describes the new J-series Services Routers features, available with the JUNOS 7.6R4 release. For more information, see the following manuals:

- *J-series Services Router Getting Started Guide*
- *J-series Services Router Basic LAN and WAN Access Configuration Guide*
- *J-series Services Router Advanced WAN Access Configuration Guide*
- *J-series Services Router Administration Guide*

For more information about the JUNOS Internet software that runs on Services Routers, see the manuals listed in Table 4 on page 12.

Interfaces and Chassis

- No port license requirement—Licenses are no longer required for any Services Router ports, such as T1, E1, serial, and Fast Ethernet.
- 4-wire support on Services Routers—To provide 1-port four-wire mode Annex A or Annex B support on the following hardware, G.SHDSL firmware has been upgraded to R3.0.5 from the previous R3.0.1. This upgrade fixes some of the issues seen with the older firmware.
 - Dual-Port G.SHDSL J2300 chassis
 - Dual-Port G.SHDSL with one ISDN BRI S/T J2300 chassis
 - G.SHDSL Physical Interface Module (PIM) for J4300 and J6300 chassis



NOTE: The new G.SHDSL firmware is not guaranteed to be backward compatible with older JUNOS software versions. To use JUNOS 7.6R4 on J-series G.SHDSL interfaces, you must upgrade the PIM firmware to R3.0.5 by issuing the **request system firmware upgrade** command. For firmware upgrade instructions, see the *J-series Services Router Administration Guide*.

Services Router User Interface and Configuration

- J-Web event viewer—The new Events item on the J-Web task bar provides an easy way to view the events recorded in the system log (also known as system log messages). By default, the View Events page displays the most recent 25 events, with severity levels highlighted in different colors. You can select the number of events to be displayed on the screen at a time. You can also filter events by system log filename, event ID, text from the event description, name of the process that generated the event, or time period, to display only the events you want.
- Dynamic J-Web menus—The J-Web menu framework is expanded to include four levels of menu options from the current three-level structure. The new framework has a “hover” menu system that eases navigation.
- Help on the Web—The J-Web context-sensitive help information displayed when you click **Help** has been moved from the Services Router to the Web. However, the help information for the Setup Quick Configuration page is still available on the Services Router too, in case you cannot access the Internet.
- Reduced license requirements—Licenses are no longer required for stateful firewall filters and NAT, and IPSec VPN tunneling.
- Root password enforcement—Setting a root password on the router is enforced when a **commit** command is issued. If the root password is not set, the commit operation fails and displays an error message.

For more information about these J-Web features, see the J-series manuals.

Outstanding J-series Services Router Issues

The following problems currently exist in J-series Services Routers. The identifier following the description is the tracking number in the Juniper Networks bug database.

Services Router User Interface and Configuration

If you include the **explicit-priority** statement at the **[edit system syslog file messages]** hierarchy level, the event ID is not displayed for any event in the J-Web event viewer. If you include **system syslog time-format millisecond** in the configuration, you cannot filter events in the J-Web event viewer. [PR/70523]

Interfaces and Chassis

- For ISDN dialer interfaces, when you include the **no-keepalives** statement at the **[edit interfaces dIO unit *logical-unit-number*]** hierarchy level and you issue the **show interfaces dIO** command, the output might display default keepalive settings. [PR/58520]
- If you disable an adaptive services interface by including the **disable** statement at the **[edit interfaces sp-0/0/0]** hierarchy level and then delete the **disable** statement from the configuration, the IPSec service might not reset correctly. As a workaround, either issue the **deactivate services** command followed by the

activate **services** command, or issue the **request chassis pic offline**
fpc-slot *pim-slot* pic-slot 0 command followed by the **request chassis pic online**
fpc-slot *pim-slot* pic-slot 0 command. [PR/58522]

- When you configure the **dialer-watch** option, IPv6 prefixes are not monitored. [PR/59143]
- If you take an ISDN interface offline, the LEDs on the ISDN PIM might not turn off. [PR/59536]
- For ISDN interfaces, if you include the **vrf-table-label** statement at the **[edit interfaces routing-instances *routing-instance-name*]** hierarchy level, packets might be dropped from the connection. [PR/59718]
- For ISDN dialer interfaces, if you include the **minimum-links** statement at the **[edit interfaces dlo unit *logical-unit-number*]** hierarchy level and then deactivate the BRI interface associated with the dialer interface, the output packets counter displayed in the output of the **show interfaces** command might continue to increment when the specified number of minimum links are not available. [PR/59986]
- For ISDN dialer interfaces, when you configure the **load-threshold 100** statement at the **[edit interfaces dlo unit *logical-unit-number* dialer-options]** hierarchy level and the 56-Kbps threshold is exceeded, the interface does not support additional network traffic and might not activate another BRI interface. [PR/60045]
- If you are using a G.SHDSL interface in two-wire mode with an ADTRAN DSLAM, the 320-Kbps line rate might not work. [PR/62177]
- A G.SHDSL interface configured in two-wire mode with an ADTRAN DSLAM might show considerable packet loss if the line rate is configured at 448 Kbps. [PR/62179]
- When a G.SHDSL interface initiates negotiations with an ADTRAN DSLAM, the G.SHDSL interface requires more than a minute to negotiate successfully. PR/[62462]
- On a J2300 Services Router with G.SHDSL interfaces installed, the 320-Kbps line rate might not work with an ADTRAN DSLAM. [PR/64727]
- On a J2300 Services Router with G.SHDSL interfaces installed, the 440-Kbps line rate might not work with an ADTRAN DSLAM. [PR/64729]

Class of Service

- If you oversubscribe an E1 interface, latency on the high-priority queue might be higher than expected. As a workaround, configure a shaping rate on the E1 interface that is equal to the line rate minus the E1 framing overhead. [PR/60595]

Resolved Issues

The following issues have been resolved. The identifier after the description is the tracking number in the bug database.

- The following issue was resolved since JUNOS Release 7.6R3:

If an ISDN dialer interface is configured as a dialer watch interface and is deactivated and configured as a backup interface, the dialer interface does not dial out when the primary interface becomes unavailable. As a workaround, disable the primary interface and commit the configuration, then enable the primary interface and commit the configuration. [PR/67355: This issue has been resolved.]
- The following issue was resolved since JUNOS Release 7.6R2:

On J-series Services Routers, for multilink dialer interfaces, the NCP `inet6` status in the output of the `show interface dln` command always displays `not-configured`, even when the IPv6 addresses are configured and are reachable. [PR/63344: This issue has been resolved.]

Errata

- Payload loopback functionality is not supported on ATM-over-SHDSL interfaces. [*J-series Services Router Basic LAN and WAN Access Configuration Guide*]
- You cannot use the J-Web interface to configure a discard action for IPv6 firewall filters. You can configure the discard action for IPv4 firewall filters only. [*J-series Services Router Advanced WAN Access Configuration Guide*]

Supported Third-Party Hardware

The USB slots on J-series Services Routers accept a USB storage device or USB storage device adapter with a compact flash disk installed, as defined in the *CompactFlash Specification* published by the CompactFlash Association. When the USB device is installed and configured, it automatically acts as a secondary boot device if the primary compact flash disk fails on startup. Depending on the size of the USB storage device, you can also configure it to receive any core files generated during a router failure. The USB device must have a storage capacity of at least 256 MB.

Table 1 on page 7 lists USB devices supported for use with the J-series routers.

Table 1: Supported USB Devices on the J-series Services Routers

Manufacturer	Storage Capacity	Part Number
SanDisk—Cruzer Mini 2.0	256 MB	SDCZ2-256-A10
SanDisk—ImageMate USB 2.0 Reader/Writer for CompactFlash Type I and II	N/A	Model# SDDR-91-A15 20-90-0015
SanDisk CompactFlash	512 MB	SDCFB-512-455
SanDisk CompactFlash	1 GB	SDCFB-1000-A10

Contact Juniper Networks customer support before using USB interfaces in a J-series Services Router.

J-series Upgrade and Downgrade Instructions

This section contains the following topics:

- Upgrade Instructions on page 7
- Downgrade Instructions on page 11

Upgrade Instructions

This section contains the following topics:

- Before You Begin on page 7
- About the junos-jseries Package on page 8
- Installing Software Upgrades with the J-Web Interface on page 8
- Installing Software Upgrades with the CLI on page 10

Before You Begin

Before upgrading, be sure to back up the currently running and active file system and configuration so that you can recover to a known, stable environment in case the upgrade is unsuccessful. To back up the file system, you must have a removable compact flash disk installed on the J4300 or J6300 Services Router, or a USB drive installed on any J-series Services Router. The backup device must have a storage capacity of at least 256 MB.

To back up the file system to the removable compact flash disk, issue the following command:

```
user@host> request system snapshot media removable-compact-flash
```

To back up the file system to the removable USB drive, issue the following command:

```
user@host> request system snapshot media usb
```

Before installing the software upgrade, issue the following command, which frees storage by rotating noncurrent log files in `/var/log`, deleting files in `/var/tmp` that have not been modified in two days, and deleting all crash files in `/var/crash`:

```
user@host> request system storage cleanup
```

Before deleting the files, you can view the files to be deleted by issuing the following command:

```
user@host> request system storage cleanup dry-run
```

About the junos-jseries Package

All `junos-jseries` software is delivered in signed packages that contain digital signatures. A package is installed only if the digital signature within it matches the signature recorded in its corresponding `.sig` file. (For example, `-export.tgz` contains `-export.tgz` and `-export.tgz.sig`. The `junos-jseries-release-export.tgz` package is installed only if the digital signatures match in the two `-export.tgz.sig` files.)

The `junos-jseries` package completely reinstalls the software. This package rebuilds the file system but retains configuration files and similar information from the previous version.

For more information, see the *J-series Services Router Administration Guide*.



NOTE: If the router is running a software version previous to JUNOS Release 7.2R3 or 7.3R2, you might need to upgrade to one of these interim software releases before you can upgrade to JUNOS Release 7.6R4.

Installing Software Upgrades with the J-Web Interface

You can install software upgrades from a remote server, or by uploading files to the Services Router.

- Installing Software Upgrades from a Remote Server on page 8
- Installing Software Upgrades by Uploading Files on page 9

Installing Software Upgrades from a Remote Server

You can use the J-Web interface to install software upgrades on the Services Router from a remote server.

To install software upgrades from a remote server:

1. Using a Web browser, follow the links to the following download URL on the Juniper Networks Web page. Choose either **Canada and U.S. Version** or **Worldwide Version**.
 - <https://www.juniper.net/support/csc/swdist-domestic/>
 - <https://www.juniper.net/support/csc/swdist-ww/>
2. Log in to the Juniper Networks authentication system using the username (generally your e-mail address) and password supplied by Juniper Networks representatives.
3. Download the software to your local host or internal software distribution site.
4. In the J-Web interface, select **Manage > Software > Install Remote**.
5. On the Install Remote Quick Configuration page, enter information into the fields described in Table 2 on page 9.
6. Click **Fetch and Install Package**. The software is activated after the router has rebooted.

Table 2: Install Remote Quick Configuration Field Descriptions

Field	Function	Your Action
Package Location (required)	Specifies the FTP or HTTP server, file path, and software package name location.	Type the full address of the software package location on the FTP or HTTP server.
User	Specifies the username, if the server requires one.	Type the username.
Password	Specifies the password, if the server requires one.	Type the password.
Reboot If Required	If this box is checked, the router is automatically rebooted when the upgrade is complete.	Check the box if you want the router to automatically reboot when the upgrade is complete.

Installing Software Upgrades by Uploading Files

You can use the J-Web interface to install software upgrades by uploading files to the Services Router.

To install software upgrades by uploading files:

1. Using a Web browser, follow the links to the following download URL on the Juniper Networks Web page. Choose either **Canada and U.S. Version** or **Worldwide Version**.
 - <https://www.juniper.net/support/csc/swdist-domestic/>
 - <https://www.juniper.net/support/csc/swdist-ww/>
2. Log in to the Juniper Networks authentication system using the username (generally your e-mail address) and password supplied by Juniper Networks representatives.
3. Download the software to your local host or internal software distribution site.
4. In the J-Web interface, select **Manage > Software > Upload Package**.
5. On the Upload Package Quick Configuration page, enter information into the fields described in Table 3 on page 10.
6. Click **Upload Package**. The software is activated after the router has rebooted.

Table 3: Upload Package Quick Configuration Field Descriptions

Field	Function	Your Action
File to Upload (required)	Specifies the location of the software package.	Type the location of the software package, or click Browse to navigate to the location.
Reboot If Required	If this box is checked, the router is automatically rebooted when the upgrade is complete.	Select the check box if you want the router to automatically reboot when the upgrade is complete.

Installing Software Upgrades with the CLI

To install software upgrades on a router using the CLI:

1. Using a Web browser, follow the links to the following download URL on the Juniper Networks Web page. Choose either **Canada and U.S. Version** or **Worldwide Version**.
 - <https://www.juniper.net/support/csc/swdist-domestic/>
 - <https://www.juniper.net/support/csc/swdist-ww/>
2. Log in to the Juniper Networks authentication system using the username (generally your e-mail address) and password supplied by Juniper Networks representatives.

3. Download the software to your local host.
4. Install the new package on the router:

```
user@host> request system software add validate unlink reboot source
```

Replace *source* with one of the following:

- */pathname/package-name*—For a software package that is installed from a local directory on the router.
- For software packages that are downloaded and installed from a remote location:
 - `ftp://hostname/pathname/package-name`
 - `http://hostname/pathname/package-name`

The **validate** option validates the software package against the current configuration as a prerequisite to adding the software package to ensure that the router reboots successfully. This is the default behavior when the software package being added is a different release.

The **unlink** option removes the package at the earliest opportunity in order to make room to complete the installation.

Adding the **reboot** command reboots the router after the upgrade is validated and installed. When the reboot is complete, the router displays the login prompt.

Rebooting occurs only if the upgrade is successful.

Downgrade Instructions

This section contains the following topics:

- Downgrading the Software with the J-Web Interface on page 11
- Downgrading the Software with the CLI on page 12



NOTE: You cannot downgrade more than three releases. For example, if your routing platform is running JUNOS Release 7.5, you can downgrade the software to Release 7.2 directly, but not to Release 7.1. As a workaround, first downgrade to Release 7.2 and then downgrade to Release 7.1.

Downgrading the Software with the J-Web Interface

You can downgrade the software using the J-Web interface. When you downgrade the software to a previous version, the software version that is saved in `junos.old` is the version of the JUNOS software that your router is downgraded to. For your changes to take effect, you must reboot the router.

1. Go to **Manage > Software > Downgrade**. The previous version (if any) is displayed on this page.



NOTE: After you perform this operation, you cannot undo it.

2. Select **Downgrade** to downgrade to the previous version of the software or **Cancel** to cancel the downgrade process.
3. When the downgrade process is complete, for the new software to take effect, click **Manage > Reboot** to reboot the router.

Downgrading the Software with the CLI

You can revert to the previous set of software using the `request system software rollback` command in the CLI.

You can issue the `request system software rollback` command only once. Issuing the `request system software rollback` command again results in an error.

To downgrade to an earlier version of software, follow the procedure for upgrading, using the `junos-jseries` software bundle labeled for the appropriate release.

Related Juniper Networks Documentation

Table 4 on page 12 lists and describes the publications for J-series Services Routers, the JUNOS CLI, the JUNOScript application programming interface (API), and the JUNOScope network management software.

Table 4: Juniper Networks Technical Documentation

Title	Description
J-series Guides	
<i>J-series Services Router Getting Started Guide</i>	Provides an overview, basic instructions, and specifications for J-series Services Routers. The guide explains how to prepare your site for installation, unpack and install the router and its components, install licenses, and establish basic connectivity.
<i>J-series Services Router Basic LAN and WAN Access Configuration Guide</i>	Explains how to configure the interfaces on J-series Services Routers for basic IP routing with standard routing protocols, ISDN backup, and digital subscriber line (DSL) connections.
<i>J-series Services Router Advanced WAN Access Configuration Guide</i>	Explains how to configure J-series Services Routers in virtual private networks (VPNs) and multicast networks, configure data link switching (DLSw) services, and apply routing techniques such as policies, stateless and stateful firewall filters, IP Security (IPSec) tunnels, and class-of-service (CoS) classification for safer, more efficient routing.

Table 4: Juniper Networks Technical Documentation *(continued)*

Title	Description
<i>J-series Services Router Administration Guide</i>	Shows how to manage users and operations, monitor network performance, upgrade software, and diagnose common problems on J-series Services Routers.
JUNOS Configuration Guides	
<i>JUNOS Class of Service Configuration Guide</i>	Provides an overview of the class-of-service (CoS) functions of the JUNOS software and describes how to configure CoS features, including configuring multiple forwarding classes for transmitting packets, defining which packets are placed into each output queue, scheduling the transmission service level for each queue, and managing congestion through the random early detection (RED) algorithm.
<i>JUNOS CLI User Guide</i>	Describes how to use the JUNOS command-line interface (CLI) to configure, monitor, and manage Juniper Networks routing platforms. This material was formerly covered in the <i>JUNOS System Basics Configuration Guide</i> .
<i>JUNOS Feature Guide</i>	Provides a detailed explanation and configuration examples for several of the most complex features in the JUNOS software.
<i>JUNOS MPLS Applications Configuration Guide</i>	Provides an overview of traffic engineering concepts and describes how to configure traffic engineering protocols.
<i>JUNOS Multicast Protocols Configuration Guide</i>	Provides an overview of multicast concepts and describes how to configure multicast routing protocols.
<i>JUNOS Network Interfaces Configuration Guide</i>	Provides an overview of the network interface functions of the JUNOS Internet software and describes how to configure the network interfaces on the routing platform.
<i>JUNOS Network Management Configuration Guide</i>	Provides an overview of network management concepts and describes how to configure various network management features, such as SNMP and accounting options.
<i>JUNOS Software Installation and Upgrade Guide</i>	Provides a description of JUNOS software components and packaging, and includes detailed information about how to initially configure, reinstall, and upgrade the JUNOS system software. This material was formerly covered in the <i>JUNOS System Basics Configuration Guide</i> .
<i>JUNOS Policy Framework Configuration Guide</i>	Provides an overview of policy concepts and describes how to configure routing policy, firewall filters, forwarding options, and cflowd.
<i>JUNOS Routing Protocols Configuration Guide</i>	Provides an overview of routing concepts and describes how to configure routing, routing instances, and unicast routing protocols.
<i>JUNOS Services Interfaces Configuration Guide</i>	Provides an overview of the services interfaces functions of the JUNOS software and describes how to configure the services interfaces on the router.

Table 4: Juniper Networks Technical Documentation *(continued)*

Title	Description
<i>JUNOS System Basics Configuration Guide</i>	Describes Juniper Networks routing platforms, and provides information about how to configure basic system parameters, supported protocols and software processes, authentication, and a variety of utilities for managing your router on the network.
<i>JUNOS VPNs Configuration Guide</i>	Provides an overview and describes how to configure Layer 2 and Layer 3 virtual private networks (VPNs), virtual private LAN service (VPLS), and Layer 2 circuits. Provides configuration examples.
JUNOS References	
<i>JUNOS Hierarchy and RFC Reference</i>	Describes the JUNOS <i>configuration mode</i> commands. Provides a hierarchy reference that displays each level of a configuration hierarchy and includes all possible configuration statements that can be used at that level. This material was formerly covered in the <i>JUNOS System Basics Configuration Guide</i> .
<i>JUNOS System Basics and Services Command Reference</i>	Describes the JUNOS software <i>operational mode</i> commands you use to monitor and troubleshoot system basics, including commands for real-time monitoring and route (or path) tracing, system software management, and chassis management. This guide also describes commands for monitoring and troubleshooting services such as class of service (CoS), IP Security (IPSec), stateful firewalls, flow collection, and flow monitoring.
<i>JUNOS Interfaces Command Reference</i>	Describes the JUNOS software <i>operational mode</i> commands you use to monitor and troubleshoot interfaces.
<i>JUNOS Routing Protocols and Policies Command Reference</i>	Describes the JUNOS software <i>operational mode</i> commands you use to monitor and troubleshoot routing policies and protocols, including firewall filters.
<i>JUNOS System Log Messages Reference</i>	Describes how to access and interpret system log messages generated by JUNOS software modules and provides a reference page for each message.
JUNOS API and Scripting Documentation	
<i>JUNOScript API Guide</i>	Describes how to use the JUNOScript application programming interface (API) to monitor and configure Juniper Networks routers.
<i>JUNOS XML API Configuration Reference</i>	Provides reference pages for the configuration tags in the JUNOScript API.
<i>JUNOS XML API Operational Reference</i>	Provides reference pages for the operational tags in the JUNOScript API.
<i>JUNOS Configuration and Diagnostic Automation Guide</i>	Provides an overview, instructions for using, and examples of the commit script and self-diagnosis features of the JUNOS software. This guide explains how to enforce custom configuration rules defined in scripts that run at commit time, how to use commit script macros to provide simplified aliases for frequently used configuration statements, and how to configure diagnostic event policies and actions associated with each policy.
<i>NETCONF API Guide</i>	Describes how to use the NETCONF API to monitor and configure Juniper Networks routing platforms.

Table 4: Juniper Networks Technical Documentation *(continued)*

Title	Description
JUNOS Comprehensive Index and Glossary	
<i>JUNOS Comprehensive Index and Glossary</i>	Provides a complete index of all JUNOS Internet software books and the <i>JUNOScript API Guide</i> . Also provides a comprehensive glossary.
JUNOScope Software Documentation	
<i>JUNOScope Software User Guide</i>	Describes the JUNOScope software graphical user interface (GUI), how to install and administer the software, and how to use the software to manage router configuration files and monitor router operations.
Release Notes	
<i>J-series Services Router Release Notes</i>	Summarize new features, identify hardware problems, provide information omitted from the manual, and contain upgrade and downgrade instructions.
<i>JUNOS Release Notes</i>	Summarize new features for a particular software release, provide corrections and updates to published JUNOS and JUNOScript manuals, provide information that might have been omitted from the manuals, and describe upgrade and downgrade procedures.
<i>JUNOScope Release Notes</i>	Contain corrections and updates to the published JUNOScope manual, provide information that might have been omitted from the manual, and describe upgrade and downgrade procedures.

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can 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 Support

For technical support, open a support case with the Case Manager link at <http://www.juniper.net/support/> or call 1-888-314-JTAC (from the United States, Canada, or Mexico) or 1-408-745-9500 (from elsewhere).

If you are reporting a hardware or software problem, issue the following command from the CLI before contacting support:

```
user@host> request support information | save filename
```

To provide a core file to Juniper Networks for analysis, compress the file with the `gzip` utility, rename the file to include your company name, and copy it to `ftp.juniper.net:pub/incoming`. Then send the filename, along with software version information (the output of the `show version` command) and the configuration, to `support@juniper.net`. For documentation issues, fill out the bug report form located at <https://www.juniper.net/beta/junos/docbug/>.

Revision History

13 February 2007—Revision 4, JUNOS Release 7.6R4

3 November 2006—Revision 3, JUNOS Release 7.6R3

6 July 2006—Revision 2, JUNOS Release 7.6R2

3 May 2006—Revision 1, JUNOS Release 7.6R1

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