

# JUNOScope 7.6 Software Release Notes

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These release notes accompany Release 7.6R4 of the JUNOScope software. They describe the key features, documentation, and known problems with the software. The JUNOScope software is a network management application that provides router configuration management, inventory management, operational status, and troubleshooting tools for Juniper Networks J-series, M-series, and T-series routing platforms.

You can also 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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## Release 7.6 Features

The following features have been added to JUNOScope Release 7.6. For more detailed information, see the appropriate sections of the *JUNOScope 7.6 Software User Guide*.

- JUNOScope Linux Server Support—In addition to supporting Sun Solaris 5.8 and above, the JUNOScope software now supports Red Hat Enterprise Linux ES versions 3 and 4 running on Red Hat certified and supported hardware platforms.
- JUNOScope Security Enhanced Audit Logging—The JUNOScope software provides several security enhancements, including:
  - Logging user authentication activity and privileged operations that change information on the network to a new internal audit Log, the syslog server, and an optional RADIUS accounting server.
  - Configuring and enforcing an authentication policy for each JUNOScope user. The JUNOScope administrator can edit the user authentication policy, including unlocking or locking the account, specifying maximum login attempts, and viewing an access window within which the failed login attempts occur.
- Configuration Editor Commit Synchronization—The JUNOScope Configuration Editor synchronizes committed configuration changes on devices with redundant Routing Engines.

## Current Software Release

The current JUNOScope software release is Release 7.6R4. For information about installing the software release, see “Installing, Reconfiguring, Reinstalling or Upgrading and Uninstalling the JUNOScope Software Instructions” on page 4.

## Fixed Problems

The following issues have been resolved since JUNOS Release 7.6R2. The identifier following the description is the tracking number in our bug database.

<b>Archive and Restore</b>	The archive and restore operations now set the Web browser client IP address correctly to 127.0.0.1, the loopback address, in the Audit Log. (PR 70020)
<b>Secret Data Import</b>	The Key text box for decrypting when importing secret data is applicable only for the Import Authentication dialog box and the Import/Export Data dialog box. The Key text box is not applicable in any other import dialog box. This is intended behavior. (PR 70384)
<b>Users Local Authentication and RADIUS Configuration</b>	Editing user local authentication and RADIUS configuration information displays a password error message due to a password length restriction. The workaround is to use the unencrypted password instead of the encrypted one. (PR 68202)
<b>Import/Export Data</b>	When you import data that is encrypted but does not contain the password to decrypt, and you do not provide the correct password, an Import/Export error message appears. The workaround is to verify that the key provided at import time for the encrypted data is correct. If not, the import data might be corrupted. When this happens, delete the data and reimport it with the correct key. (PR 68358)
<b>RADIUS Authentication</b>	The JUNOScope software is now using backup RADIUS servers for RADIUS authentication. (PR 69900)

## Caveats

The Security Enhanced Audit Logging feature in Red Hat Enterprise Linux is not supported in this release of the JUNOScope software.

## Errata

The following describes outstanding issues with the *JUNOScope 7.6 Software User Guide*.

### Configuring the Steel-Belted RADIUS Server for Accounting Attributes

To modify the Steel-Belted RADIUS server configuration files for logging the new Juniper vendor-specific RADIUS accounting attributes, follow these steps:

1. Modify the dictionary file, `juniper.dct`, by adding the following:
  - a. To add the bundle Juniper vendor ID, add the following line:

```
OPTION bundle-vendor-id = 2636
```

just after the existing line:

```
MACRO Juniper-VSA(t,s) 26 [vid=2636 type1=%t% len1=+2 data=%s%]
```

- b. To add the new vendor-specific attributes, add the following lines:

```
ATTRIBUTE Juniper-JUNOScope-Priv-Op Juniper-VSA(101, string)
ATTRIBUTE Juniper-JUNOScope-Target Juniper-VSA(102, string)
ATTRIBUTE Juniper-JUNOScope-Schedule Juniper-VSA(103, string)
ATTRIBUTE Juniper-JUNOScope-Login-Failure Juniper-VSA(104, string)
ATTRIBUTE Juniper-JUNOScope-Client-Addr Juniper-VSA(105, string)
```

just after existing line:

```
ATTRIBUTE Juniper-Config-Change Juniper-VSA(9, string) r
```

2. Modify the `account.ini` file by adding the following lines:

```
Juniper-JUNOScope-Priv-Op=
Juniper-JUNOScope-Target=
Juniper-JUNOScope-Schedule=
Juniper-JUNOScope-Login-Failure=
Juniper-JUNOScope-Client-Addr=
```

Add the attributes after the following line:

```
ATTRIBUTE Juniper-Config-Change Juniper-VSA(9, string) r
```

The new changes to the Steel-Belted RADIUS configuration files will be available in the next major release of Steel-Belted RADIUS, for example release 5.5.

**Configuring an AAA Merit Server RADIUS for Accounting Attributes**

To modify a AAA Merit Server for logging the new vendor-specific RADIUS accounting attributes, do the following:

1. Modify the dictionary configuration file by adding the following lines:

```
Juniper.attr Juniper-JUNOScope-Priv-Op 101 string (1, 0)
Juniper.attr Juniper-JUNOScope-Target 102 string (1, 0)
Juniper.attr Juniper-JUNOScope-Schedule 103 string (1, 0)
Juniper.attr Juniper-JUNOScope-Login-Failure 104 string (1, 0)
Juniper.attr Juniper-JUNOScope-Client-Addr 105 string (1, 0)
```

after the lines where all the existing Juniper vendor-specific names (such as Juniper-Local-User-Name, Juniper-Allow-Commands, and so on) are specified.

## **Installing, Reconfiguring, Reinstalling or Upgrading and Uninstalling the JUNOScope Software Instructions**

Before installing the JUNOScope software, ensure that your network meets the requirements described in the following sections:

- System Requirements on page 5
- Red Hat Enterprise Linux ES File Package Requirements on page 6
- JUNOScope Client Workstation Requirements on page 6
- RADIUS Server Requirements on page 6

To install, reconfigure, reinstall or upgrade, or deinstall the JUNOScope software, see the following sections:

- Installing the JUNOScope Software on page 7
- Reconfiguring the JUNOScope Software on page 8
- Reinstalling or Upgrading the JUNOScope Software on page 9
- Uninstalling the JUNOScope Software on page 9

## System Requirements

The JUNOScope software runs on both Sun Solaris servers (see Table 1) and Red Hat Linux servers (see Table 2). Before you install the JUNOScope software, ensure that the supported UNIX server workstation on which you install the software meets the following system requirements.

Table 1 shows the minimum system requirements for a Sun Solaris server.

**Table 1: Sun Solaris Server System Minimum Requirements**

System	Minimum Requirement
Operating system	Solaris 5.8 or later
Processor	UltraSPARC III or equivalent
Speed	1.3 GHz or faster
RAM	1 GB
Free disk space	1 GB

Table 2 shows the minimum system requirements for a Red Hat Linux server. (See also “Red Hat Enterprise Linux ES File Package Requirements” on page 6.)

**Table 2: Red Hat Linux Server System Minimum Requirements**

System	Minimum Requirement
Hardware	Red Hat certified hardware platforms
Operating system	Red Hat Enterprise Linux ES version 3 and 4
Processor	Pentium 4 processor
Speed	2.8 GHz or faster
RAM	1 GB
Free disk space	1 GB

## Red Hat Enterprise Linux ES File Package Requirements

If a minimal install of Red Hat Enterprise Linux ES is performed on the server, the JUNOScope software administrator should ensure that the following file packages are installed for the JUNOScope software to run properly (see Table 3). All packages should be available in a full install of Red Hat Enterprise Linux ES.

**Table 3: Red Hat Enterprise Linux ES File Package Requirements**

Version	Required File Packages
Red Hat Enterprise Linux ES version 3 (Update 6)	krb5-libs-1.2.7-47.i386.rpm XFree86-libs-4.3.0-97.EL.i386.rpm
Red Hat Enterprise Linux ES version 4 (Update 2)	compat-libcom_err-1.0-5.i386.rpm krb5-libs-1.3.4-17.i386.rpm xorg-x11-deprecated-libs-6.8.2-1.EL.13.20.i386.rpm xorg-x11-libs-6.8.2-1.EL.13.20.i386.rpm

To verify that the file package `krb5-libs-1.3.4-17.i386.rpm` is installed, use the following command:

```
hostname% rpm -queryformat "%{NAME}-%{VERSION}-%{RELEASE}-%{ARCH}\n" -query krb5-libs
```

You can install each package individually via `rpm`, from the original Red Hat Enterprise Linux ES distribution.

To install the file package `xorg-x11-libs-6.8.2-1.EL.13.20.i386.rpm`, use the following command:

```
hostname% rpm -install xorg-x11-libs-6.8.2-1.EL.13.20.i386.rpm
```

## JUNOScope Client Workstation Requirements

Ensure that the client workstation from which you connect to the JUNOScope software is running either Microsoft Internet Explorer 6 or Netscape Navigator 6 or later with JavaScript enabled.

## RADIUS Server Requirements

Ensure that the RADIUS server complies with RFC 2865, *Remote Authentication Dial-In User Service*.

## Syslog Server Requirements

Ensure that the syslog server (`syslogd`) is running and configured to receive JUNOScope system log messages.

## ***Installing the JUNOScope Software***

You can install the JUNOScope software in one of the following ways:

- Installing the JUNOScope Software from the CD on page 7
- Downloading the JUNOScope Software from the Software Download Page on page 8

To upgrade the JUNOScope software, see “Reinstalling or Upgrading the JUNOScope Software” on page 9.

For more information about installing the JUNOScope software, see the *JUNOScope Software User Guide*.

### ***Installing the JUNOScope Software from the CD***

To install the JUNOScope software from the product CD, follow these steps:

1. Insert the JUNOScope software CD into the CD drive of the server workstation.
2. Mount the CD.

If the volume management (volmgt) daemon, vold, is running on your server, the CD automatically mounts itself. To mount the CD manually, follow the procedure for your operating system.

3. Start the JUNOScope installation:

```
hostname% cdrom-mount-directory/jtk-installer install-directory
```

Replace *cdrom-mount-directory* with the directory on which the CD is mounted: /mnt, /cdrom, or /cdrom/JUNOScope, depending on your host setup.

Replace *install-directory* with the directory in which to install the JUNOScope software. If you do not specify an installation directory, the software is installed in the current directory.

For more information about installing the JUNOScope software, see the *JUNOScope Software User Guide*.

## ***Downloading the JUNOScope Software from the Software Download Page***

To download the JUNOScope software from the Juniper Networks Web site and start the JUNOScope installation, follow these steps:

1. Using a Web browser, go to the following location:

```
https://www.juniper.net/junos/swdist/encryption/index.htm
```

2. Log in to the Juniper Networks authentication system using the username (generally your e-mail address) and password supplied by a Juniper Networks representative.
3. Download the JUNOScope software to the server workstation.
4. Start the JUNOScope installation program:

```
hostname% download-directory/jtk-install-7.6R4.X-sunos5-sparc.sh install-directory
```

or

```
hostname% download-directory/jtk-install-7.6R4.X-linux2-i386.sh install-directory
```

Replace *download-directory* with the directory into which you downloaded the JUNOScope software from the software download page.

**jtk-install-7.6R4.X-sunos5-sparc.sh** or **jtk-install-7.6R4.X-linux2-i386.sh** is the JUNOScope software file. Replace *X* with the software version to download.

Replace *install-directory* with the directory in which to install the JUNOScope software. If you do not specify an installation directory, the software is installed in the current directory.

## ***Reconfiguring the JUNOScope Software***

You can change the following JUNOScope software installation settings without rerunning the installation program. For more information about these settings, see the *JUNOScope Software User Guide*.

- HTTPS and HTTP ports on which the JUNOScope Web server should listen
- Port on which the JUNOScope server listens for control messages
- HTTP port on which the JUNOScope report server should listen
- Java Database Connectivity (JDBC) URL for accessing the JUNOScope database and demo database
- Enable or disable access for SQL interface to Inventory Management System
- Debug logging
- Syslog facility
- Idle session timeout
- Licensed software modules

You cannot change some settings, such as passwords.

To change JUNOScope software settings, use the following command:

```
hostname% <install-directory>/jtk/bin/jtk-setup.sh
```

## ***Reinstalling or Upgrading the JUNOScope Software***

The process for reinstalling or upgrading the JUNOScope software is the same as for installing the software. To install the JUNOScope software, see “Installing the JUNOScope Software from the CD” on page 7 or “Downloading the JUNOScope Software from the Software Download Page” on page 8.

To reinstall or upgrade JUNOScope software, you must use the same user ID as the one used for the currently installed software.

## ***Uninstalling the JUNOScope Software***

To uninstall the JUNOScope software, follow these steps:

1. Stop the JUNOScope software and database by changing to the directory where you installed the JUNOScope software and typing the following command:

```
hostname% <install-directory>/jtk/rc.d/jtk stop
```

2. Remove the JUNOScope software by typing the following command:

```
hostname% rm -rf <install-directory>
```



**WARNING:** This command removes the JUNOScope <install-directory>, including all data.

## Related Juniper Networks Documentation

Table 4 lists the software and hardware guides and release notes for Juniper Networks J-series, M-series, and T-series routing platforms and describes the contents of each document. Table 5 lists the books included in the *Network Operations Guide* series.

**Table 4: Technical Documentation for J-series, M-series, and T-series Routing Platforms (Sheet 1 of 3)**

Document	Description
<b>JUNOS Internet Software for J-series, M-series, and T-series Routing Platforms Configuration Guides</b>	
<i>Class of Service</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>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>Feature Guide</i>	Provides a detailed explanation and configuration examples for several of the most complex features in the JUNOS software.
<i>JUNOS-FIPS</i>	(M-series and T-series routing platforms only) Provides an overview of JUNOS-FIPS 140-2 concepts and describes how to install and configure the JUNOS-FIPS software. Describes FIPS-related commands and how to configure, authorize, and zeroize the Adaptive Services (AS) II FIPS Physical Interface Card (PIC).
<i>MPLS Applications</i>	Provides an overview of traffic engineering concepts and describes how to configure traffic engineering protocols.
<i>Multicast Protocols</i>	Provides an overview of multicast concepts and describes how to configure multicast routing protocols.
<i>Network Interfaces</i>	Provides an overview of the network interface functions of the JUNOS software and describes how to configure the network interfaces on the routing platform.
<i>Network Management</i>	Provides an overview of network management concepts and describes how to configure various network management features, such as SNMP and accounting options.
<i>Policy Framework</i>	Provides an overview of policy concepts and describes how to configure routing policy, firewall filters, forwarding options, and cflowd.
<i>Routing Protocols</i>	Provides an overview of routing concepts and describes how to configure routing, routing instances, and unicast routing protocols.
<i>Services Interfaces</i>	Provides an overview of the services interfaces functions of the JUNOS software and describes how to configure the services interfaces on the routing platform.
<i>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>System Basics</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>VPNs</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.

**Table 4: Technical Documentation for J-series, M-series, and T-series Routing Platforms (Sheet 2 of 3)**

Document	Description
<b>JUNOS References</b>	
<i>Hierarchy and RFC Reference</i>	Describes the JUNOS configuration mode 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>Interfaces Command Reference</i>	Describes the JUNOS software operational mode commands you use to monitor and troubleshoot interfaces.
<i>Routing Protocols and Policies Command Reference</i>	Describes the JUNOS software operational mode commands you use to monitor and troubleshoot routing protocols and policies, including firewall filters.
<i>System Basics and Services Command Reference</i>	Describes the JUNOS software operational mode 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. Also describes commands for monitoring and troubleshooting services such as CoS, IP Security (IPSec), stateful firewalls, flow collection, and flow monitoring.
<i>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.
<b>J-Web User Guide</b>	
<i>J-Web Interface User Guide</i>	Describes how to use the J-Web GUI to configure, monitor, and manage Juniper Networks routing platforms.
<b>JUNOS API and Scripting Documentation</b>	
<i>JUNOScript API Guide</i>	Describes how to use the JUNOScript application programming interface (API) to monitor and configure Juniper Networks routing platforms.
<i>JUNOS XML API Configuration Reference</i>	Provides reference pages for the configuration tag elements in the JUNOS XML API.
<i>JUNOS XML API Operational Reference</i>	Provides reference pages for the operational tag elements in the JUNOS XML 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.
<b>JUNOS Comprehensive Index and Glossary</b>	
<i>Comprehensive Index and Glossary</i>	Provides a complete index of all JUNOS software books, the <i>JUNOScript API Guide</i> , and the <i>NETCONF API Guide</i> . Also provides a comprehensive glossary.
<b>JUNOScope Documentation</b>	
<i>JUNOScope Software User Guide</i>	Describes the JUNOScope software GUI, how to install and administer the software, and how to use the software to manage routing platform configuration files and monitor routing platform operations.
<b>J-series Services Router Documentation</b>	
<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.

**Table 4: Technical Documentation for J-series, M-series, and T-series Routing Platforms (Sheet 3 of 3)**

Document	Description
<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.
<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.
<b>M-series and T-series Hardware Documentation</b>	
<i>Hardware Guide</i>	Describes how to install, maintain, and troubleshoot routing platforms and components. Each platform has its own hardware guide.
<i>PIC Guide</i>	Describes the routing platform PICs. Each platform has its own PIC guide.
<b>Release Notes</b>	
<i>JUNOS Release Notes</i>	Summarize new features and known problems for a particular software release, provide corrections and updates to published JUNOS, JUNOScript, and NETCONF manuals, provide information that might have been omitted from the manuals, and describe upgrade and downgrade procedures.
<i>Hardware Release Notes</i>	Describe the available documentation for the routing platform and the supported PICs, and summarize known problems with the hardware and accompanying software. Each platform has its own release notes.
<i>JUNOScope Software 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.
<i>J-series Services Router Release Notes</i>	Briefly describe the J-series Services Router features, identify known hardware problems, and provide upgrade and downgrade instructions.

**Table 5: JUNOS Internet Software Network Operations Guides**

Book	Description
<b>JUNOS Internet Software for M-series and T-series Routing Platforms Network Operations Guides</b>	
<i>Baseline</i>	Describes the most basic tasks for running a network using Juniper Networks products. Tasks include upgrading and reinstalling JUNOS software, gathering basic system management information, verifying your network topology, and searching log messages.
<i>Interfaces</i>	Describes tasks for monitoring interfaces. Tasks include using loopback testing and locating alarms.
<i>MPLS</i>	Describes tasks for configuring, monitoring, and troubleshooting an example MPLS network. Tasks include verifying the correct configuration of the MPLS and RSVP protocols, displaying the status and statistics of MPLS running on all routers in the network, and using the layered MPLS troubleshooting model to investigate problems with an MPLS network.
<i>MPLS Log Reference</i>	Describes MPLS status and error messages that appear in the output of the <code>show mpls lsp extensive</code> command. The guide also describes how and when to configure Constrained Shortest Path First (CSPF) and RSVP trace options, and how to examine a CSPF or RSVP failure in a sample network.
<i>Hardware</i>	Describes tasks for monitoring M-series and T-series routing platforms.

## How To Request Support

For technical support, open a support case using 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).

For documentation issues, fill out the bug report form located at <https://www.juniper.net/techpubs/docbug/docbugreport.html>.

## Revision History

13 February 2007—Revision 4, JUNOScope Release 7.6R4

2 October 2006—Revision 3, JUNOScope Release 7.6R3

5 July 2006—Revision 2, JUNOScope Release 7.6R2

1 May 2006—Revision 1, JUNOScope Release 7.6R1

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