

SRC PE Software Release Notes

Release 4.10.0
June 2016
Revision 1

These release notes cover Release 4.10.0 of the Juniper Networks Session and Resource Control (SRC) portfolio. The SRC software runs on C Series Controllers and acts as a VM. If the information in these release notes differs from the information found in the published documentation set, follow these release notes.

Contents

Release Overview	3
Before You Start	3
Documentation	3
SRC Software	5
Release Highlights	5
Support for Creating a Virtualized SRC Instance on a VMware Hypervisor	5
Support for Creating Multiple Snapshots of the System Software	5
Monitoring DHCP Traffic Using Monitoring Agent in SRC	6
SNMP Support for Diameter Component	6
Gx Parameter Substitution Support	6
Removal of SSR from SRC Software	6
Features Not Fully Qualified	6
DMI	7
Upgrading the System Software	7
Recovering Passwords for the Juniper Networks Database	7
Migrating SDX Data to a Juniper Networks Database	7
Migrating Solaris-Based VTAs to the SRC VTA Running on the C Series Controller	7
Known Behavior	7
Aggregate Services	8
Configuration Updates	8
Hardware	9
Juniper Networks Database	9
Memory Test Utility	9
MIBs	10
Policy Management	10
SAE	10
Software Upgrade	11

VTA	11
Known Problems and Limitations	11
3GPP Gy	11
CLI	11
Gx Router Driver (Services Control Gateway)	12
LDAP	12
SAE	12
Documentation Updates	12
Migration	12
Policy Changes	12
Migrating VTAs Running on Solaris to SRC VTA Running on the C Series Controller	12
Migrating the C Series Controller to Software Release 4.10.0	13
Restrictions and Recommendations	14
VTA	14
RADIUS Server	14
Web Browsers	14
SRC Virtualization	14
Resolved Problems	14
Gx Router Driver (Services Control Gateway)	15
SAE	15
Virtualized SRC Software	15
SRC Software Compatibility Matrix	16
Third-Party Software	16
SRC Documentation and Release Notes	18
Documentation Feedback	18
Requesting Technical Support	18
Self-Help Online Tools and Resources	18
Opening a Case with JTAC	19
Revision History	20

Release Overview

If the information in your current release notes differs from the information found in the other documentation sources, follow the *SRC PE Release Notes*.

Before You Start

Before you use your new software, read these *Release Notes* in their entirety, especially the section *Known Problems and Limitations*. You need the following documentation to fully understand all the features available in Release 4.10.0:

- These *SRC 4.10.0 Release Notes*, which describe the changes between Releases 4.9.0 and 4.10.0.
- The 4.10.0 SRC Policy Engine (SRC PE) software documentation set, which provides detailed information about features available in Release 4.10.x.

If the information in your current release notes differs from the information found in the other documentation sources, follow the *Release Notes*.

Documentation

The SRC 4.10.x SRC PE core documentation set consists of several manuals and is available only in electronic format. Refer to the following table to help you decide which document to use.



NOTE: The configurations and features explained in the SRC 4.10.x SRC PE software documentation set for the C Series Controllers are also applicable to virtualized SRC software unless otherwise specified.

Task	Related Documentation
Install SRC software on the C Series Controller.	<i>C Series Controllers C3000 and C5000 Hardware Guide</i> <i>C Series Controllers C2000 and C4000 Hardware Guide</i>
Get up and running quickly.	<i>C3000 and C5000 Quick Start Guide</i> <i>C2000 and C4000 Quick Start Guide</i>
Learn about the general operation of the SRC software.	<i>SRC PE Getting Started Guide</i>
Perform basic configuration.	<i>SRC PE Getting Started Guide</i>
Use the SRC CLI.	<i>SRC PE CLI User Guide</i>
Use the License Manager and directory events.	<i>SRC PE Getting Started Guide</i>

Task	Related Documentation
Use the SAE, Juniper Networks routers, NIC, ACP, and SIC.	<i>SRC PE Network Guide</i>
Use the SNMP agent and logging utilities.	<i>SRC PE Monitoring and Troubleshooting Guide</i>
Integrate external network devices into the SRC network.	<i>SRC PE Network Guide</i>
Work with SRC services and policies.	<i>SRC PE Services and Policies Guide</i>
Work with SRC subscribers and subscriptions.	<i>SRC PE Subscribers and Subscriptions Guide</i>
Use the enterprise portals.	<i>SRC Sample Applications Guide</i>
Use the residential portal.	<i>SRC Sample Applications Guide</i>
Use the C-Web interface to configure the SRC software.	<i>SRC PE C-Web Interface Configuration Guide</i>
Get specific information about commands and statements for: <ul style="list-style-type: none"> • CLI and system • Juniper Networks database • Service Activation Engine (SAE) • Network Information Collector (NIC) • Subscriber Information Collector (SIC) • SNMP agent • SRC Admission Control Plug-In (SRC ACP) • Volume Tracking Application (VTA) • SRC License Management • Common Object Services (COS) Naming Service 	<i>SRC PE CLI Command Reference, Volume 1</i>
Get specific information about commands and statements for: <ul style="list-style-type: none"> • Services • Policies • Subscribers • Redirect server • External Subscriber Monitor • Application Server • Dynamic Service Activator • IP Multimedia Subsystem (IMS) • Diameter application • Juniper Policy Server (JPS) 	<i>SRC PE CLI Command Reference, Volume 2</i>

The entire documentation set, including the release notes, in PDF format is available on the Juniper Networks website:

<http://www.juniper.net/techpubs/software/management/src/>

SRC Software

The SRC software for C Series Controllers is preinstalled on the device and available on the USB storage device supplied with the platform.

You can also download the SRC software and the product release notes from the Juniper Networks website at:

<https://www.juniper.net/support/downloads/?p=src#sw>

You must download the SRC iso, qcow2, or vmdk image from the Juniper Networks website for deploying the SRC software as a virtual machine (VM).

Release Highlights

Highlights include the following product enhancements:



NOTE: The SRC software runs as VMs and runs on C Series Controllers—a range of hardware platforms. The SRC 4.10.0 software contains the features found in the SRC 4.9.0 release plus the features listed in this section. The SRC 4.10.0 software may contain references to the service activation engine (SAE) Release version 7.16.0. SRC 4.10.0 software does not run on the discontinued C2000 and C4000 controllers because of hardware incompatibility.

Support for Creating a Virtualized SRC Instance on a VMware Hypervisor

The SRC software enables you to create a virtualized SRC instance on a VMware hypervisor by using the newly introduced Virtual Machine Disk (vmdk) image or the existing iso image. vmdk is a file format that describes containers for virtual hard disk drives to be used in VMware virtual machines. The vmdk image shipped with the SRC software is of the monolithicSparse type, and the image has been tested with monolithicSparse and monolithicFlat types. If you are using VMware ESXi, either the iso image or the vmdk image of monolithicFlat type must be used. To convert the monolithicSparse type to the MonolithicFlat type, use the **qemu-img convert -f vmdk vmdk-file-name-MonolithicSparse -O vmdk output-file-name -o subformat={ monolithicFlat }** command. To use this command, you must have the qemu-img tool installed in your system.

The SRC software installation is currently supported and tested on the VMware Workstation 12 Player, VMware Workstation 12 Pro, and VMware ESXi 5.5.0.

Support for Creating Multiple Snapshots of the System Software

The SRC software enables you to create and maintain multiple snapshots of the system software by using the existing **request system snapshot** command. The **request system delete** command is newly introduced to delete a specific snapshot from the available snapshots. The SRC 4.10.0 software also enables you to create and maintain one or more snapshots of the qcow2 image that is used for creating a virtualized SRC instance. You

can use the newly introduced **snapshot_Qcow2.py** script to create a snapshot of the qcow2 image.

Monitoring DHCP Traffic Using Monitoring Agent in SRC

The SRC software now supports monitoring of DHCP traffic using Monitoring Agent.

The **capture-devices** option is newly introduced in the **slot number external-subscriber-monitor** command to configure the network interfaces on which the DHCP packets need to be captured.

You can now use the newly introduced **slot number external-subscriber-monitor dhcp** configuration statement to enable the DHCP support and packet-forwarding to an event-handler.

SNMP Support for Diameter Component

A new **Juniper-SDX-DIAMETER-MIB** file has been added to allow you to monitor the statistics and status of Diameter component by querying the MIBs.

Gx Parameter Substitution Support

The SRC software now provides the substitution support for Gx attributes. The parameter support is added with static and dynamic PCC rules for Gx policies. Additionally, service substitutions are made available with activation attributes (such as, **serviceIdentifier**, **ratingGroup**, **grantTotalOctets**, **grantOutOctets**, and **grantInOctets**) through DSA or invocation of SAE core APIs.

Removal of SSR from SRC Software

The SSR component has been removed from the SRC software.

Features Not Fully Qualified

The SRC Release 4.10.x documentation set describes some features that are present in the code, but that have not yet been fully qualified by Juniper Networks. These features will be fully tested and supported in a future release. We expect these features to operate as documented; however, if you use any of these features before they have been fully qualified, it is your responsibility to ensure that the feature operates correctly in your targeted configuration.

The following features are available in the product, but they are not fully qualified in this release.

DMI

- Using the SRC Device Management Interface (DMI) driver and Junos Space, the SRC software can manage DMI devices connected to routers that run on Junos. This feature is supported only for demonstration purposes.

Upgrading the System Software

You cannot directly upgrade to SRC Release 4.10.0 from releases earlier than SRC Release 4.8.0, because the SRC software uses CentOS 6.5 from Release 4.8.0 onwards. To migrate to SRC Release 4.10.0, please see [Migrating the C Series Controller to Software Release 4.10.0 on page 13](#).

Recovering Passwords for the Juniper Networks Database

The documentation does not disclose the default passwords that the Juniper Networks database uses. If you need access to these passwords or need to recover a password, contact Juniper Networks Technical Assistance Center (JTAC) for assistance.

Migrating SDX Data to a Juniper Networks Database

If you have an existing SDX installation and want to migrate your data from the directory storing the SDX data to the Juniper Networks database on an SRC platform, contact Juniper Networks Professional Services.

Migrating Solaris-Based VTAs to the SRC VTA Running on the C Series Controller

To run both Solaris-based VTAs and SRC VTAs (running SRC Release 4.2 and later) in the same SRC network, the Solaris-based VTAs must be running SRC Release 4.1 software.

If you have Solaris-based VTAs running and want to migrate to the SRC 4.10 VTA, contact Juniper Networks Professional Services for assistance in the migration.

Known Behavior

This section describes certain SRC software behaviors and related issues to clarify how the system works.

For the most complete and latest information about known defects, use the Juniper Networks online [Problem Report Search](#) application.

Aggregate Services

- NIC does not map primary username to managing SAE in aggregate services.

If you use aggregate services and specify a primary username for a subscriber reference expression, note that the configuration scenarios provided with the NIC do not provide a mapping from a primary username to the managing SAE. Consider using the login name instead. If you want to use the primary username as the subscriber reference expression for a fragment service, contact Juniper Networks Professional Services for assistance with setting up the NIC configuration to resolve the primary username to locate the managing SAE.

Configuration Updates

- When you use the **load merge**, **load override**, or **load replace** command at any hierarchy level, the command loads all the configuration in the specified file.

If you want to load the configuration for a specified hierarchy level:

- Ensure that the file contains the **sdx:current=true** text to identify the level at which the configuration is to be loaded.
- Run a **load** command with the **relative** option at the level at which you want to update the configuration.

If a file contains configuration statements other than those at and below the level identified by **sdx:current=true**, the command disregards the other statements.

If you enter a **load** command with the **relative** option and the file does not contain the text **sdx:current=true**, you receive a message indicating that the configuration cannot be loaded.

Hardware

- From Release 4.8.0 onwards, the SRC software runs on CentOS 6.5. However, this operating system does not support older C series controllers (C2000 and C4000) because of hardware incompatibility. [PR1049794](#)

Juniper Networks Database

- Recommendations for use of multiple primary Juniper Networks databases.

We recommend that you configure two to four Juniper Networks databases as primary databases in a community. If you plan to use more than two Juniper Networks databases in a primary role and expect to have frequent updates to the Juniper Networks database, we recommend that you test your application scenario with a projected traffic load. For assistance testing your application scenario, contact Juniper Networks Professional Services or JTAC.

Memory Test Utility

- From Release 4.8.0 onwards, the SRC software does not support the memory test utility. Hence, the boot menu in SRC Release 4.8.0 and later does not display the option for memory test utility. In addition, you cannot execute the memory test utility in SRC Release 4.7.0 and earlier even though the utility option is displayed in the boot menu if you have restored SRC to Release 4.7.0 and earlier from Release 4.8.0 and later.

We recommend that you use a bootable USB storage device for executing the memory test utility. To test the SRC system memory using the memory test utility:

1. Download the **memtest86-usb.img** image file to your Linux workstation from the <http://www.memtest86.com/download.htm> link.
2. Insert your USB storage device into the USB port on your Linux workstation.
3. Determine the system device of your USB storage device by executing the **fdisk -l** command.
4. Copy the downloaded image onto your USB storage device by using the **dd** command. For example, if **sda** is the system device of the USB storage device then the **dd** command should be executed as:
dd if=/tmp/memtest86-usb.img of=/dev/sda
5. Remove the USB storage device from the Linux workstation.
6. Plug the USB storage device into the USB port on the SRC system.

7. Restart the SRC system.
8. Change the boot order to boot from the USB storage device while the SRC system is rebooting.

MIBs

- Recommendations for use of latest SNMP MIBs that the SRC software supports in this release.

We recommend that you download the latest MIBs from the Juniper Networks website at http://www.juniper.net/techpubs/en_US/src/information-products/pathway-pages/c-series/index.html while using the latest version of the SRC software.

Policy Management

- Use care when modifying configurations with other policy management tools for interfaces on JunosE routers that are managed by the SRC software.

When applying policies to interfaces on JunosE routers that are managed by the SRC software, carefully consider using other policy management tools, such as CLI, RADIUS, CoA, or Service Manager. Policies that are applied to the interface before SRC management begins, such as at access-accept time, are properly replaced. However, if other policy managers change existing policies while SRC management is active, problems can occur.

- If you have a preconfigured policy through CLI or RADIUS as part of subscriber PVC/VLAN provisioning, the existing policy becomes inactive and the SAE manages the subscriber interface. When the SAE stops managing the interface, the preconfigured policy becomes active. However, if you change the policy on the interface using CLI or CoA, problems can occur.
- If you have a policy in Access-Accept, the existing policy becomes inactive and the SAE manages the interface.

SAE

- When you configure an interface classifier rule under the **[edit shared classification-script interface classifier]** hierarchy level, the changes do not take effect immediately on the SRC software. For a workaround, see the PR record. [PR973224](#)
- When policies are installed via RAR, service mismatch between SRC and SCG occurs if there are partial charging rule install failures at SCG side. [PR1127708](#)

Software Upgrade

- Unsupported class version error is displayed while upgrading SRC release 4.9.0 to 4.10.0. [PR1180633](#)

VTA

- In SRC 4.1 and earlier software releases, the SRC VTA provided a public Enterprise Java Bean (EJB)-based API. In the SRC 4.2.x software release, this API has been deprecated. It may be removed in a future release. In SRC 4.2.0 and later software releases, the EJB-based API has been replaced with a SOAP API that provides the same functionality.

Known Problems and Limitations

This section identifies known problems and limitations in this release.

For the most complete and latest information about known defects, use the Juniper Networks online [Problem Report Search](#) application.

3GPP Gy

- When services are modified through DSA, SRC's Gy sends CCR-I message instead of CCR-U message to the OCS. For a workaround, see the PR record. [PR1097134](#)
- If SRC's Gy is enabled after the SAE, SRC's plug-ins are not initialized for certain subscribers. For a workaround, see the PR record. [PR1097126](#)

CLI

- The SRC software supports VSA definitions only in the format **Vendor-Specific.4874.<vsa#>.<type>**, even though the SRC software accepts other formats too. [PR939170](#)
- When you load backup configuration from XML or text file by using the **load replace** command, the CLI displays a null pointer exception because of the new logrotate files added in the SRC Release 4.8.0. The **load merge** and **load override** commands load the backup configuration without any error. For a workaround, see the PR record. [PR1039688](#)
- When the **request system snapshot** command is executed, no success messages are getting displayed in the CLI on the successful snapshot creation. [PR1180955](#)
- While executing the **request system ldap data import** command, the CLI sometimes displays string formatting error. [PR1184262](#)
- Changes to the existing configurations of bond interface are not taking effect even though the configurations are committed successfully in the CLI. [PR1184724](#)
- Config-remover does not remove UMCssr logrotate configurations. [PR1184257](#)

Gx Router Driver (Services Control Gateway)

- Subscriber classification based on interface name is not supported for IPv6 subscribers of Services Control Gateway. [PR1098522](#)

LDAP

- LDAP connection is getting timed out while importing LDIF files. [PR1184625](#)
- While importing LDIF files, NIC scenarios containing `ssr-client` agents exist in LDAP. [PR1184255](#)

SAE

- The `show sae drivers device-name` command displays the number of junos-ise devices that are not currently connected. [PR904065](#)
- SAE RADIUS local address and SAE real portal address are not getting updated properly after installing the SRC Release 4.8.0. As a workaround, you must manually configure these attributes. For more information on the workaround, see the PR record. [PR1039725](#)

Documentation Updates

There are no errata or changes in the documentation set published for SRC Release 4.10.x.

Migration

This section provides information about migrating from earlier SRC software releases to SRC Release 4.10.0.

Policy Changes

Starting with SRC Release 4.2.0, an action configured for a policy rule no longer requires a name to identify the action. Old configurations with a name are accepted.



.....
NOTE: You cannot have multiple instances of the same action configured for one rule.
.....

Migrating VTAs Running on Solaris to SRC VTA Running on the C Series Controller

If you have Solaris-based VTAs running and want to migrate to the SRC 4.10 VTA, which runs on the C Series Controller, contact Juniper Networks Professional Services.

The basic procedure to migrate from Solaris-based VTAs to a VTA running on SRC 4.10 C Series Controllers is:

1. Copy your VTA configuration data into the Juniper Networks database (if necessary).
2. Execute a shell script to copy the VTA configuration to a new version compatible with the SRC VTA. This script is specific to your environment. Please contact Juniper Networks Professional Services for assistance.
3. Configure and start the SRC VTA.
4. Shut down the Solaris VTA.
5. Modify the SAE EJB plug-ins to send their events to the SRC VTA.

To run both Solaris-based VTAs and SRC-based VTAs, the Solaris-based VTAs must be running a minimum of SRC Release 4.1 software.



NOTE: With the inclusion of the VTA in the SRC software package that runs on the C Series Controller and acts as VMs, there is no longer a separate application library package. If you wish to continue running your VTA on a Solaris host, use the SRC 4.1 Application Library package. The SRC 4.1 VTA is compatible with SRC 4.10.

Migrating the C Series Controller to Software Release 4.10.0

You cannot upgrade the C Series Controller software to Release 4.10.0 from a release earlier than 4.8.0 by using the **request system upgrade url** *url* command, because SRC 4.8.0 and 4.9.0 use a different operating system (CentOS 6.5). You must reimage the controller by using the USB storage device. For more information about using the USB storage device to reimage the controller, see *Recovering or Installing System Software on a C Series Controller by Using the USB Storage Device Supplied by Juniper Networks*.

The basic procedure to migrate the C Series Controller from release earlier than 4.8.0 to Release 4.10.0 is:

1. Back up the configuration to the USB storage device or to a remote server by using the **save** and **file copy** commands.



NOTE: We recommend that you back up the configuration to the remote server.

2. Create an installation medium by using the read/write USB storage device.
3. Boot the controller from the USB storage device and install the software.
4. Load the backup configuration by using the **load** command.

You can load backup configuration from the XML, text, or LDAP LDIF file. Before loading backup configuration from XML or text file, you must perform the following steps in the backup configuration to avoid errors:

- For all router drivers, set the minimum thread pool size to 100.
- For all SRC components, set the maximum file size to 2,000,000.
- Define network device type and SAE connection.
- Delete logrotate configurations.
- Delete the external interface configurations.

Restrictions and Recommendations

VTA

VTAs have been tested with the following databases:

- MySQL version 4.0.13 (<http://www.mysql.com>)
- Oracle Database version 9i (<http://www.oracle.com>)

RADIUS Server

Juniper Networks SRC Release 4.10.0 was tested with Juniper Networks Steel-Belted Radius Carrier server.

Any RADIUS product compliant with RFC 2865 and RFC 2866 should be suitable for use with SRC Release 4.10.0.

Web Browsers

The C-Web interface in SRC Release 4.10.0 was tested with and supports only with the following Web browsers:

- Firefox 10.0 or later
- Internet Explorer 8.0 or later
- Chrome 17.0 or later

SRC Virtualization

The SRC 4.10.0 software installation was tested and supported only over the VMware Workstation 12 Player, VMware Workstation 12 Pro, VMware ESXi 5.5.0, and the KVM hypervisor on CentOS 6.5.

Resolved Problems

This section lists known problems that have been resolved in the current release. For more information about resolved problems, contact JTAC.

For the most complete and latest information about resolved issues, use the Juniper Networks online [Problem Report Search](#) application.

Gx Router Driver (Services Control Gateway)

- When the SRC software receives an incremented origin state ID in the first CCR-I message sent from the Services Control Gateway after the SAE restarts, the subscriber sessions with lesser origin state ID are not cleared from the session store. [PR1098493](#)
- The output of the **show sae subscribers** command displays IPv4 address instead of IPv6 address even though activate-on-login provision is provided for IPv6 subscribers. [PR1098520](#)
- For interface policies, the SAE does not send the Charging-Rule-Remove AVP to the Services Control Gateway during the SRC software triggered subscriber session detach scenario. [PR1096826](#)
- When you modify the default policy configuration in the SRC software for active subscribers, the SRC software does not trigger the RAR messages. [PR1098513](#)
- The SAE does not deactivate the services for the associated charging rules which are partially failed during provisioning of policies to the Services Control Gateway. For a workaround, see the PR record. [PR1098515](#)
- The output of the **show sae drivers** command displays erroneous RAR attempt count in the Gx router driver statistics. [PR1098496](#)
- When the SRC software receives CCR messages with two different origin state IDs from the Services Control Gateway during SAE startup or failover, the subscriber sessions with lesser origin state ID are not cleared from the session store. [PR1098492](#)
- The SRC software sends the UNABLE_TO_DELIVER error to the Services Control Gateway instead of the UNABLE_TO_COMPLY error, when the origin state ID received in the CCR-I message is lesser than the value received in the previous message. [PR1098499](#)
- CLI displays the application-accounting attribute in the **policies group name list name rule name** command for Gx router driver until the Gx specific rule type is selected. For a workaround, see the PR record. [PR1097580](#)

SAE

- The service associated with the incorrect ESSMD policy exists in SAE but not in the MX series router if the Diameter component in the SRC software or Diameter service in the router is restarted before the router sends a session-sync-AAR message with failed policy information to SAE. [PR1049102](#)

Virtualized SRC Software

- The create_vm.py script fails to create a virtualized SRC instance by using the qcow2 image if an invalid memory value is provided as input. For a workaround, see the PR record. [PR1097104](#)
- The create_vm.py script fails to create a virtualized SRC instance by using the qcow2 image if the qcow2 image path provided as input contains a leading or trailing space. For a workaround, see the PR record. [PR1095166](#)

SRC Software Compatibility Matrix

Table 1 on page 16 shows which versions of the SRC software are compatible with specified versions of the Junos OS and JunosE OS.

For the most current information about supported software releases, contact JTAC.

Table 1: SRC Software Compatibility with JunosE OS and Junos OS

SRC Software Release	Tested with JunosE Release	Tested with Junos OS Release
4.2.0	12.2.1, 12.3.0, 13.0.0	11.1R5.4 - 11.2R2.4 - 11.4R1.9
4.3.0	13.0.0, 13.1.0, 13.2.0b1-7	11.4, 12.2, 12.3
4.4.0	13.2.0, 13.3.0, 14.1.0	11.4x27, 12.2x49, 12.3R3
4.5.0	14.2.0, 13.2.2, 14.3.0	12.3R3.1, 11.4X27.46, 13.3
4.6.0	14.3.0, 14.1.1, 13.2.3	11.4X27.55, 12.3R4.6, 13.3
4.7.0	14.3.0, 14.3.1, 15.1.0b1-7	12.3R6.6, 13.3R2.7, 14.1X50 - D40.1
4.8.0	14.3.2, 15.1.0	12.3R8.7, 13.3R5.4, 14.1.X50-D75
4.9.0	15.1.0, 15.1.1, 16.1.0 Beta 1	13.3R6.5, 14.1X50-D100.3
4.10.0	15.1.1, 15.1.2, 16.1.0	14.1.X50, 15.1R3.6, 16.1

Third-Party Software

This section lists the third-party software that is included with SRC Release 4.10.0. The third-party software is required to work with certain SRC components, and Juniper Networks supports issues associated with this software.

- 389 Directory Server v1.2.11.32 (<http://directory.fedoraproject.org/>)
- 4Suite 1.0.2-0 (<http://sourceforge.net/projects/foursuite/>)
- Apache-Axis 1.4 (<https://axis.apache.org/axis/>)
- Apache-Avalon 4.1.4 (<http://avalon.apache.org>)
- Apache-jakarta-ora 2.0.8 (<http://www.jakarta.org/oro/>)
- Beepcore-java 0.0.08 (<http://www.beepcore.org>)
- BouncyCastle CryptoAPI 1.33 (<http://bouncycastle.org/java.html>)
- Castor 0.9-AA (<http://mvnrepository.com/artifact/castor/castor>)
- CentOS 6.5 (<http://centos.org>)
- expect4j 1.0 (<https://github.com/cverges/expect4j>)

- GNUPROLOG for Java 0.2.1 (<http://gnuprologjava.sourceforge.net>)
- ini4j 0.4 (<http://ini4j.sourceforge.net>)
- JacORB 2.3.1 (<http://www.jacorb.org>)
- Jakarta Commons Collections 3.1 (<http://jakarta.apache.org/commons/collections>)
- Jakarta Struts 1.1-Beta3 (<http://jakarta.apache.org/struts/index.html>)
- jax 0.0.15 (<http://www.ibr.cs.tu-bs.de/projects/jasmin/jax.html>)
- JBoss J2EE Server 6.1.0 Final Neo (<http://jboss.org>)
- JDBM 0.12 (<http://jdbm.sourceforge.net>)
- Jersey 1.4 (<http://jersey.java.net>)
- JETTY 4.2.24 (<http://www.eclipse.org/jetty>)
- Jython 2.2 (<http://www.jython.org>)
- lksctp-tools 1.0.10-7 (<http://lksctp.sourceforge.net>)
- mozilla rhino javascript engine 1.5 (<http://www.mozilla.org/rhino>)
- OmniORB 4.2.0-45.1 (<http://omniorb.sf.net>)
- omniORBpy-4.2.0-30.1 (<http://omniorb.sf.net>)
- OpenJDK 1.7.0.85 (<http://openjdk.java.net>)
- pam-radius_auth 1.3.16-1 (http://freeradius.org/pam_radius/)
- pam-tacplus 1.2.9-4 (http://freecode.com/projects/pam_tacplus)
- perl-Config-General 2.38-1 (<http://search.cpan.org/dist/Config-General/General.pm>)
- perl-RRD-Simple 1.44-1 (<http://search.cpan.org/dist/RRD-Simple>)
- dvarrazzo-py-setproctitle 1.1.8 (<https://pypi.python.org/pypi/setproctitle/>)
- PYSNMP 1.6.5-1 (<http://pysnmp.sourceforge.net>)
- RRD Bot 0.9.7 (<http://thewalter.net/stef/software/rrdbot>)

SRC Documentation and Release Notes

For a list of related SRC documentation, see http://www.juniper.net/techpubs/en_US/release-independent/src/information-products/pathway-pages/c-series/product/index.html.

If the information in the latest release notes differs from the information in the documentation, follow the *SRC PE Release Notes*.

To obtain the most current version of all Juniper Networks[®] technical documentation, see the product documentation page on the Juniper Networks website at <http://www.juniper.net/techpubs/>.

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/feedback/>. If you are using e-mail, be sure to include the following information with your comments:

- Document or topic name
- URL or page number
- Software release version (if applicable)

Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or JNASC support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the JTAC User Guide located at <http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.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: <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, see <http://www.juniper.net/support/requesting-support.html>.

Revision History

June 2016—Revision 1, SRC Release 4.10.0

Copyright © 2016, Juniper Networks, Inc. All rights reserved.

Juniper Networks, Junos, Steel-Belted Radius, NetScreen, and ScreenOS are registered trademarks of Juniper Networks, Inc. in the United States and other countries. The Juniper Networks Logo, the Junos logo, and JunosE are trademarks of Juniper Networks, Inc. All other trademarks, service marks, registered trademarks, or registered service marks are the property of their respective owners.

Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.