

SRX 5800 Services Gateway DC Power Supply Installation Instructions

August 2008
Part Number: 530-023517-01
Revision 01

This document describes how to remove and replace a DC power supply on a Juniper Networks SRX 5800 services gateway.

Contents

DC Power Supply	2
DC Power Supply LEDs	2
Replacing a DC Power Supply	3
Removing a DC Power Supply	3
Installing a DC Power Supply	6
Preventing Electrostatic Discharge Damage	9
Electrostatic Discharge Point	10
List of Technical Publications	11
Requesting Technical Support	12
Revision History	13

DC Power Supply

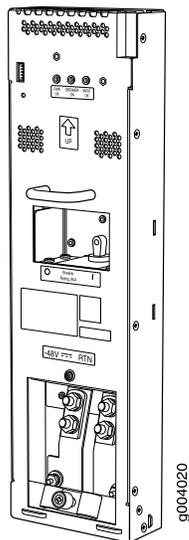
In the DC power configuration, the services gateway contains either two or four DC power supplies (see Figure 1 on page 2), located at the lower rear of the chassis in slots **PEM0** through **PEM3** (left to right). You can upgrade your DC power system from two to four power supplies. The DC power supplies in slots **PEM0** and **PEM2** provide power to the lower fan tray, card slots **6** through **11**, and SCB slots **1** and **2**. The DC power supplies in slots **PEM1** and **PEM3** provide power to the upper fan tray, card slots **0** through **5**, and SCB slot **0**.

Four power supplies provide full redundancy. If a DC power supply fails, its redundant power supply takes over without interruption.

Each DC power supply has a single DC input (-48 VDC and return) that requires a dedicated 80 A (-48 VDC) circuit breaker for the maximum hardware configuration. For information about site power preparations and connecting the services gateway to power and ground, see the *SRX 5800 Services Gateway Hardware Guide*.

For site power preparations, including DC power supply and power system electrical specifications, see the *SRX 5800 Services Gateway Hardware Guide*.

Figure 1: DC Power Supply



DC Power Supply LEDs

Each DC power supply faceplate contains three LEDs that indicate the status of the power supply (see Table 1 on page 3). The power supply status is also reflected in two LEDs on the craft interface (see the *SRX 5800 Services Gateway Hardware Guide*). In addition, a power supply failure triggers the red alarm LED on the craft interface.

Table 1: DC Power Supply LEDs

Label	Color	State	Description
PWR OK	Green	Off	Power supply is not functioning normally. Check the INPUT OK LED for more information.
		On	Power supply is functioning normally.
BREAKER ON	Green	Off	DC power supply circuit breaker is turned off.
		On	DC power supply circuit breaker is turned on.
INPUT OK	Green	Off	DC input to the PEM is not present.
		On	DC input is present, and is connected in correct polarity.
		Amber	On

Replacing a DC Power Supply

To replace a DC power supply, use the following procedures:

- Removing a DC Power Supply on page 3
- Installing a DC Power Supply on page 6

Removing a DC Power Supply

The power supplies are located at the rear of the chassis. Each DC power supply weighs approximately 3.8 lb (1.7 kg).



CAUTION: Do not leave a power supply slot empty for more than 30 minutes while the services gateway is operational. For proper airflow, the power supply must remain in the chassis, or a blank panel must be used in an empty slot.



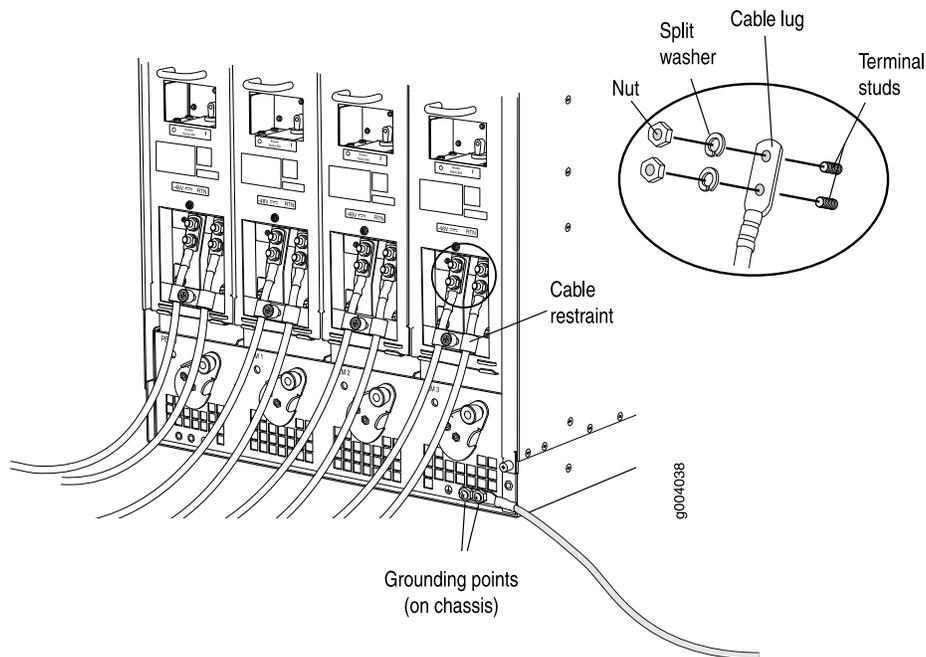
NOTE: After powering off a power supply, wait at least 60 seconds before turning it back on.

To remove a DC power supply:

1. Make sure that the voltage across the DC power source cable leads is 0 V and that there is no chance that the cables might become active during the removal process.
2. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist and connect the strap to one of the ESD points on the chassis. For more information about ESD, see “Preventing Electrostatic Discharge Damage” on page 9.
3. Switch the circuit breaker on the power supply faceplate to the OFF position 0.

4. Remove the clear plastic cover protecting the terminal studs on the faceplate.
5. Remove the nuts and washers from the terminal studs (see Figure 2 on page 4). (Use a 3/8-in. nut driver or pliers.)

Figure 2: Disconnecting Power Cables from the DC Power Supply



6. Remove the cable lugs from the terminal studs.
7. Loosen the captive screw on the cable restraint on the lower edge of the power supply faceplate.
8. Carefully move the power cables out of the way.
9. While grasping the handle on the power supply faceplate with one hand, use your other hand to pull the spring-loaded locking pin in the release lever away from the chassis and turn the release lever counterclockwise until it stops (see Figure 3 on page 5).
10. Let go of the locking pin in the release lever. Ensure that the pin is seated inside the corresponding hole in the chassis.
11. Pull the power supply straight out of the chassis.



WARNING: Do not touch the power connector on the top of the power supply (see Figure 4 on page 5). It can contain dangerous voltages.

Figure 3: Removing a DC Power Supply

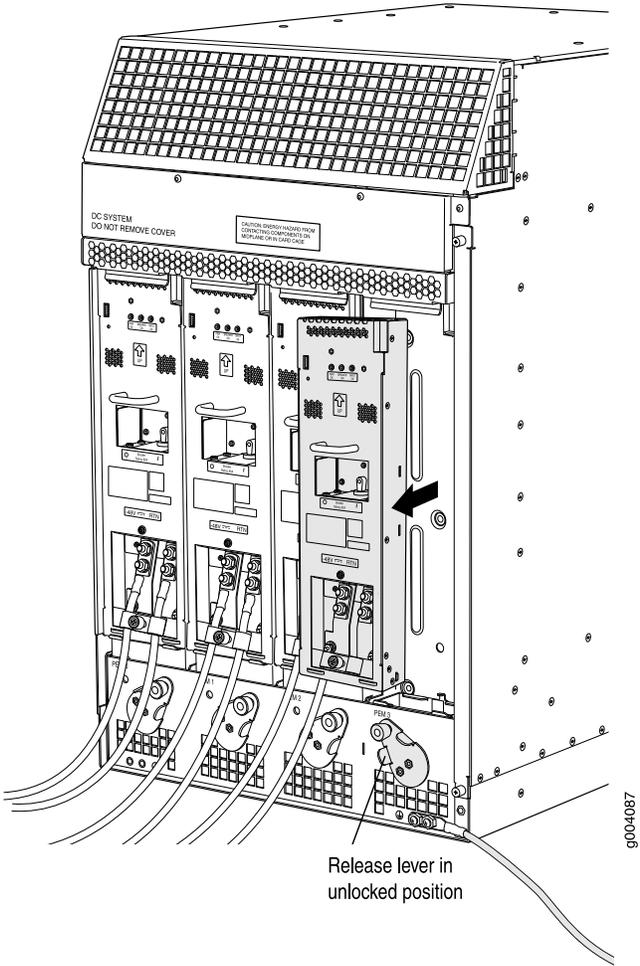
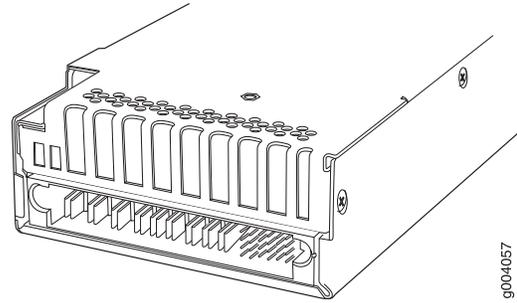


Figure 4: Top of the Power Supply Showing Midplane Connector



Connector end of AC or DC Power supply

Installing a DC Power Supply

To install a DC power supply (see Figure 5 on page 8):

1. Ensure that the voltage across the DC power source cable leads is 0 V and that there is no chance that the cable leads might become active during installation.



CAUTION: You must ensure that power connections maintain the proper polarity. The power source cables might be labeled (+) and (-) to indicate their polarity. There is no standard color coding for DC power cables. The color coding used by the external DC power source at your site determines the color coding for the leads on the power cables that attach to the terminal studs on each power supply.

2. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist and connect the strap to one of the ESD points on the chassis. For more information about ESD, see “Preventing Electrostatic Discharge Damage” on page 9.
3. Switch the circuit breaker on the power supply faceplate to the OFF position O.
4. Ensure that the release lever below the empty power supply slot is engaged in the counterclockwise, or unlocked, position (see Figure 5 on page 8).

If necessary, pull the spring-loaded locking pin in the release lever away from the chassis and turn the release lever counterclockwise until it stops. Let go of the locking pin in the release lever. Ensure that the pin is seated inside the corresponding hole in the chassis.

5. Using both hands, slide the power supply straight into the chassis until the power supply is fully seated in the chassis slot. The power supply faceplate should be flush with any adjacent power supply faceplates.

The small tab on the metal housing that is controlled by the release lever must be inside the corresponding slot at the bottom of the power supply (see Figure 5 on page 8). This tab is used to pull the power supply down in the chassis slot, before the power supply is removed.

6. While firmly pushing the handle on the power supply faceplate with one hand, use your other hand to pull the spring-loaded locking pin in the release lever away from the chassis and turn the release lever clockwise until it stops.
7. Let go of the locking pin in the release lever. Ensure that the pin is seated inside the corresponding hole in the chassis.
8. Remove the clear plastic cover protecting the terminal studs on the faceplate.
9. Remove the nuts and washers from the terminal studs.
10. Attach the lugs on the DC source power cables to the terminal studs, making sure the cables are not touching or in the way of any services gateway components (see Figure 6 on page 9).

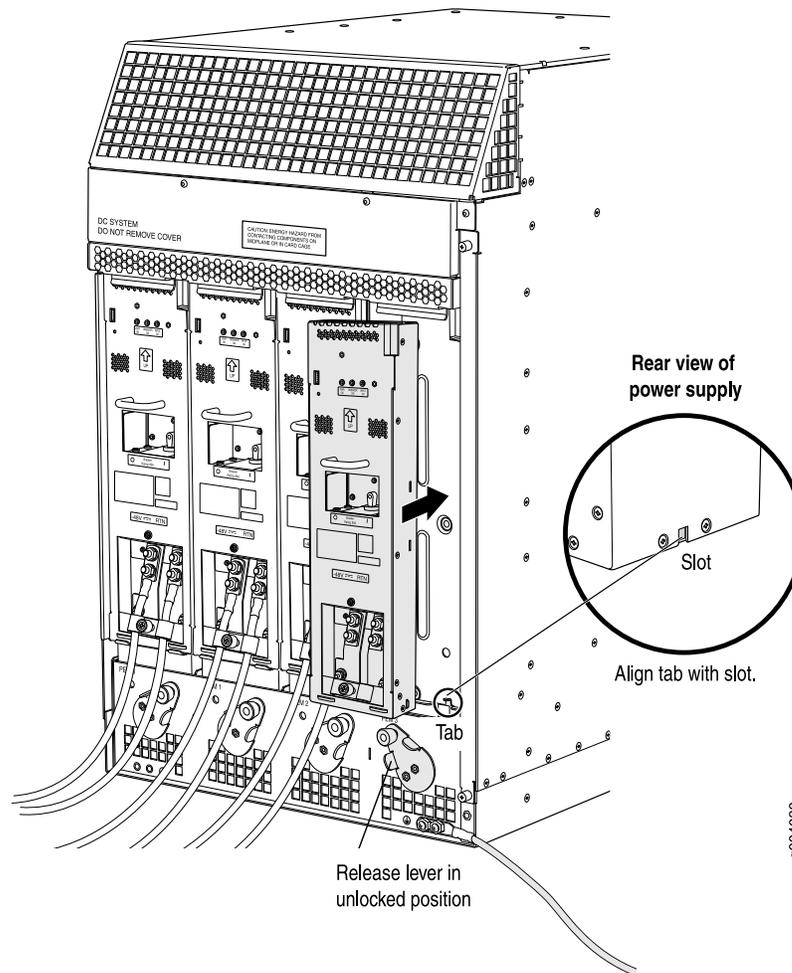
- Attach the positive (+) DC source power cable lug to the RTN (return) terminal.
- Attach the negative (-) DC source power cable lug to the -48V (input) terminal.



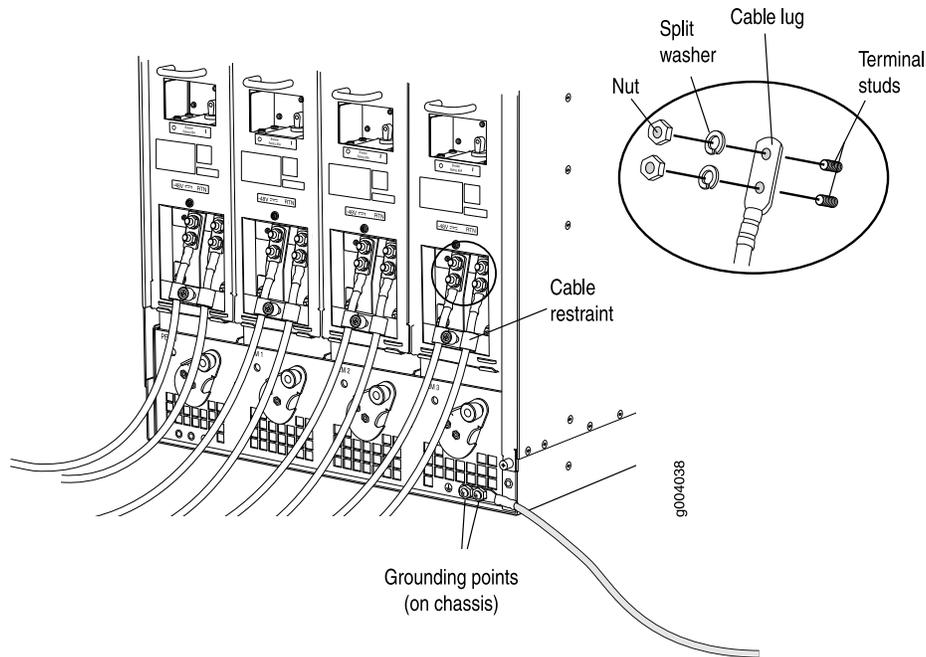
NOTE: The DC power supply in PEMO must be powered by dedicated power feeds derived from feed A, and the DC power supply in PEM2 must be powered by dedicated power feeds derived from feed B. This configuration provides the commonly deployed A/B feed redundancy for the system. For information about connecting to DC power sources, see the *SRX 5800 Services Gateway Hardware Guide*.

11. Secure each power cable lug to the terminal studs, first with the split washer, then with the nut. Apply between 23 lb-in. (2.6 Nm) and 25 lb-in. (2.8 Nm) of torque to each nut.
12. Loosen the captive screw on the cable restraint on the lower edge of the power supply faceplate.
13. Route the positive and negative DC power cables through the left and right sides of the cable restraint.
14. Tighten the cable restraint captive screw to hold the power cables in place.
15. Replace the clear plastic cover over the terminal studs on the faceplate.
16. Verify that the ground and power cabling are correct, that they are not touching or blocking access to services gateway components, and that they do not drape where people could trip on them.
17. Switch the circuit breaker on the power supply to the ON position and observe the status LEDs on the power supply faceplate. If the power supply is correctly installed and functioning normally, the PWR OK, BREAKER ON, and INPUT OK LEDs light steadily.

Figure 5: Installing a DC Power Supply



9004088

Figure 6: Connecting DC Power to the Services Gateway

Preventing Electrostatic Discharge Damage

Many services gateway hardware components are sensitive to damage from static electricity. Some components can be impaired by voltages as low as 30 V. You can easily generate potentially damaging static voltages whenever you handle plastic or foam packing material or if you move components across plastic or carpets. Observe the following guidelines to minimize the potential for electrostatic discharge (ESD) damage, which can cause intermittent or complete component failures:

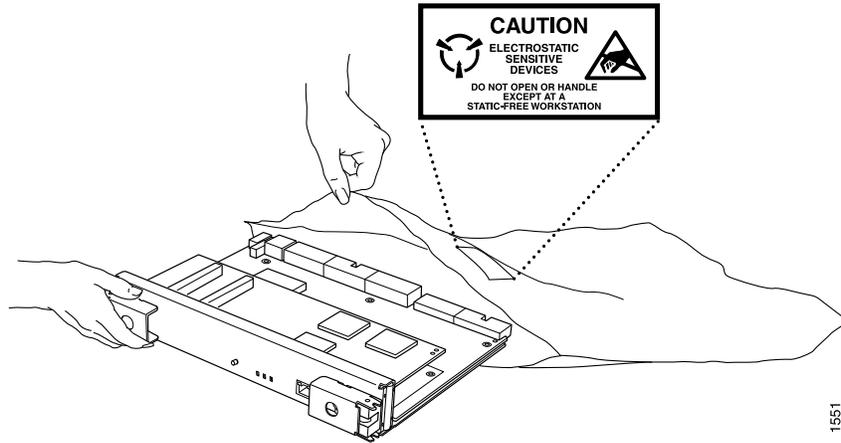
- Always use an ESD wrist strap or ankle strap, and verify that it is in direct contact with your skin.



CAUTION: For safety, periodically check the resistance value of the ESD strap. The measurement should be in the range of 1 to 10 Mohms.

- When handling any component that has been removed from the chassis, verify that the equipment end of your ESD strap is attached to one of the ESD points on the chassis, which are shown in Figure 8 on page 11.
- Avoid contact between the component and your clothing. ESD voltages emitted from clothing can still damage components.
- When removing or installing a component, always place it component-side up on an antistatic surface, in an antistatic card rack, or into an electrostatic bag (see Figure 7 on page 10). If you are returning a component, place it into an electrostatic bag before packing it.

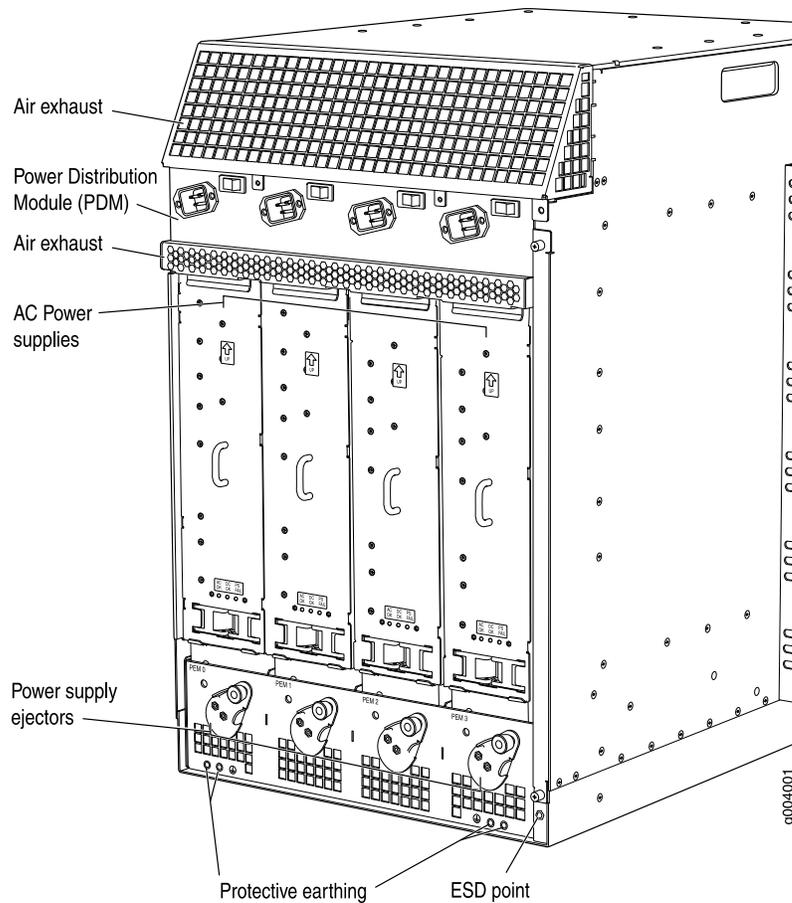
Figure 7: Placing a Component into an Electrostatic Bag



Electrostatic Discharge Point

Figure 8 on page 11 shows the location of the ESD point on the rear of the SRX 5800 chassis.

Figure 8: Rear View of an SRX 5800 Services Gateway (AC-Powered Shown, DC Similar)



List of Technical Publications

Table 2 on page 11 lists the hardware guides and release notes for Juniper Networks SRX-series services gateways and describes the contents of each document. All documents are available at <http://www.juniper.net/techpubs/>.

Table 2: Technical Documentation for Supported Devices

Book	Description
Hardware Documentation	
<i>SRX 5800 Services Gateway Hardware Guide</i>	Describes how to install, maintain, and troubleshoot the services gateway and components. Each services gateway type has its own hardware guide.
Release Notes	

Table 2: Technical Documentation for Supported Devices (continued)

Book	Description
<i>JUNOS Software for SRX-series Services Gateway Release Notes</i>	Summarizes new features and known problems for a particular release of JUNOS software on SRX-series services gateways, including J-Web interface features and problems. The release notes also contain corrections and updates to the manuals and software upgrade and downgrade.

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

August 2008—530-023517-01 Revision 01. Initial release.

Copyright © 2009, Juniper Networks, Inc. All rights reserved.

Juniper Networks, the Juniper Networks logo, JUNOS, NetScreen, ScreenOS, and Steel-Belted Radius are registered trademarks of Juniper Networks, Inc. in the United States and other countries. JUNOSe is a trademark 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.

Products made or sold by Juniper Networks or components thereof might be covered by one or more of the following patents that are owned by or licensed to Juniper Networks: U.S. Patent Nos. 5,473,599, 5,905,725, 5,909,440, 6,192,051, 6,333,650, 6,359,479, 6,406,312, 6,429,706, 6,459,579, 6,493,347, 6,538,518, 6,538,899, 6,552,918, 6,567,902, 6,578,186, and 6,590,785.