

C Series C3000 and C5000 Controller Quick Start

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This document describes how to install the Juniper Networks C Series C3000 and C5000 Controllers.

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C3000 and C5000 Controllers Quick Start Description

This Quick Start contains information you need to install and configure a C Series Controller quickly. For complete installation instructions, see the *C3000 and C5000 Hardware Guide* at <http://www.juniper.net/techpubs/>.



WARNING: This Quick Start contains a summary of safety warnings in “[Safety Warnings](#)” on page 13. For a complete list of warnings for this controller, including translations, see the *C3000 and C5000 Hardware Guide* at <http://www.juniper.net/techpubs/>.

The C Series Controller enables you to easily install, configure, and support Juniper Networks Session and Resource Control Policy Engine (SRC PE) software. It provides easy access to troubleshooting information, such as reporting events, logs, and system dumps while providing Session Resource Controller functionality.

There are two C Series Controller models: the C3000 model and the C5000 model. Each model is composed of four hard drives, three fan modules, redundant power supplies, one USB port, a console management port, and four Ethernet ports.

The system is shipped in a cardboard carton and secured with foam packing material. The carton also contains an accessory box and quick start instructions.

Step 1: Prepare the Site for C Series Controller Installation

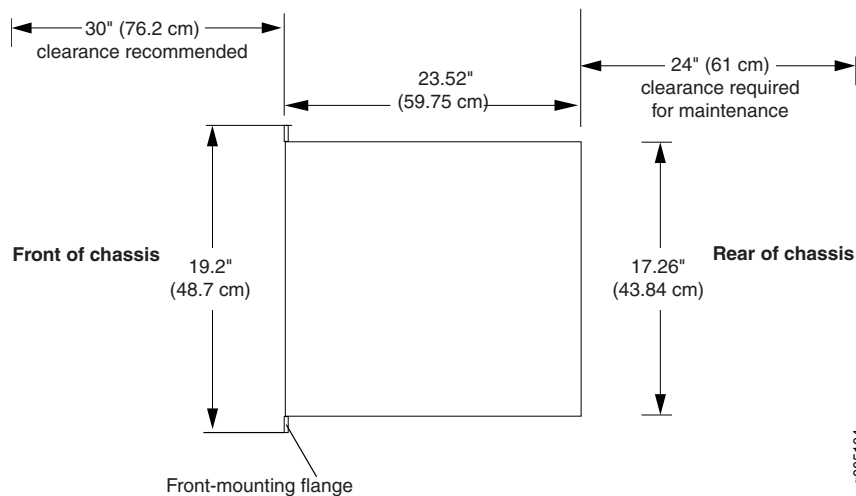
- [Rack Requirements on page 3](#)
- [Tools Required to Prepare the C3000 and C5000 Controllers for Installation on page 4](#)

Rack Requirements

- You can install the controller in a four-post rack or cabinet or an open-frame rack.
- The rack rails must be spaced widely enough to accommodate the controller chassis's external dimensions: 3.5 in. (8.8 cm) high, 23.5 in. (59.7 cm) deep, and 17.26 in. (43.7 cm) wide. The outer edges of the mounting brackets extend the width to 19.2 in. (48.7 cm).
- The rack must be strong enough to support the weight of the fully configured controller, up to 43.31 lb (19.65 kg).
- For the cooling system to function properly, the airflow around the chassis must be unrestricted. Allow at least 6 in. (15.2 cm) of clearance between side-cooled controllers. Allow 2.8 in. (7 cm) between the side of the chassis and any non-heat-producing surface such as a wall.
- For service personnel to remove and install hardware components, there must be adequate space at the front and back of the controller. Allow at least 30 in. (76.2 cm) in front of the controller and 24 in. (61 cm) behind the controller.
- The rack or cabinet must have an adequate supply of cooling air.

- Ensure that the cabinet allows the chassis hot exhaust air to exit from the cabinet without recirculating into the controller.
- The controller must be installed into a rack that is secured to the building structure.
- Mount the controller at the bottom of the rack if it is the only unit in the rack.
- When mounting the controller in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

Figure 1: C Series Chassis Dimensions and Clearance Requirements



Height: 3.5" (8.8 cm)

Tools Required to Prepare the C3000 and C5000 Controllers for Installation

To install the controller in a rack, you need the following tools:

- Phillips (+) screwdriver, number 2

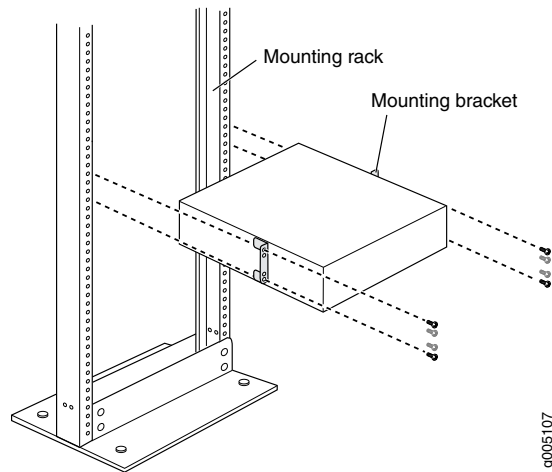
Step 2: Install the Controller in a Rack

- [Install the C Series Controller in a Two-Post Rack on page 4](#)
- [Install the Controller in a Four-Post Rack on page 5](#)

Install the C Series Controller in a Two-Post Rack

1. Remove the two front mount rails from either side of the chassis.
2. Insert one midmount bracket to the center on either side of the chassis.
3. Attach the chassis to the equipment rack and insert the other two midmount brackets on either side of the system to secure the chassis to the backs of the post (see [Figure 2 on page 5](#)).
4. Verify that the mounting screws on one side of the rack are aligned with the mounting screws on the opposite side and that the appliance is level.

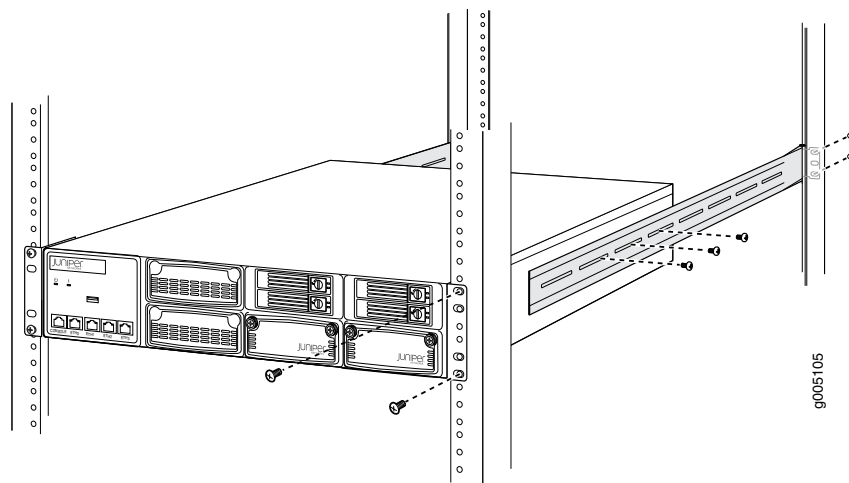
Figure 2: Install the C Series Controller in a Two-Post Rack



Install the Controller in a Four-Post Rack

1. Insert four rack-mount screws on each side of the system to secure the front of the chassis to the equipment rack.
2. Slide the rear mount rail brackets into the backs of the front rails on either side of the chassis, and align the brackets with your rear equipment rack posts. Secure the rear mount rail brackets to your equipment rack with two rack mount screws each.
3. Insert locking screws on the sides of the rear mount brackets to secure the front and rear mounting brackets in place. See [Figure 3 on page 5](#).
4. Verify that the mounting screws on one side of the rack are aligned with the mounting screws on the opposite side and that the appliance is level.

Figure 3: Install the C Series Controller in a Four-Post Rack



Step 3: Connect External Devices and Cables

- Connect the C Series Controller to a Network for Out-of-Band Management on page 6
- Connect the C Series Controller to a Management Console on page 6

Connect the C Series Controller to a Network for Out-of-Band Management

1. Turn off the power to the management device.
2. Plug one end of the Ethernet cable (Figure 4 on page 6 shows the connector) into one of the Ethernet ports on the front panel. Figure 5 on page 6 shows the port. Plug the other end of the cable into the network device.

Figure 4: Ethernet Cable Connector

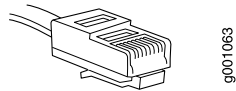
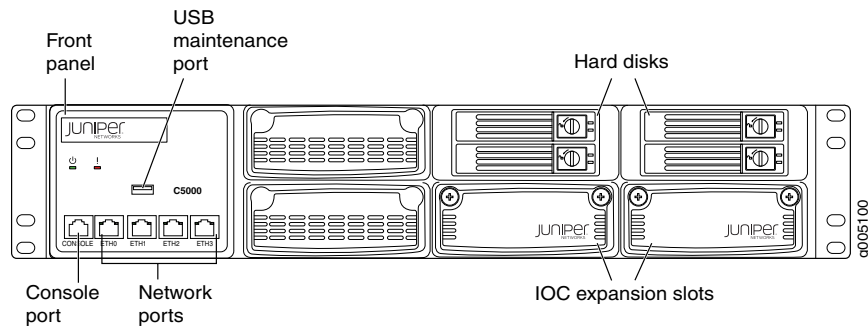


Figure 5: Network Ports Location



Connect the C Series Controller to a Management Console

1. Turn off the power to the console.
2. Plug the RJ-45 end of the serial cable (Figure 6 on page 6 shows the connector) into the port labeled **CONSOLE** on the front panel. Figure 7 on page 7 shows the location of the port on the front panel.
3. Plug the female DB-9 end into the device's serial port.

Figure 6: Console Cable Connector

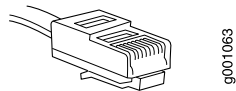
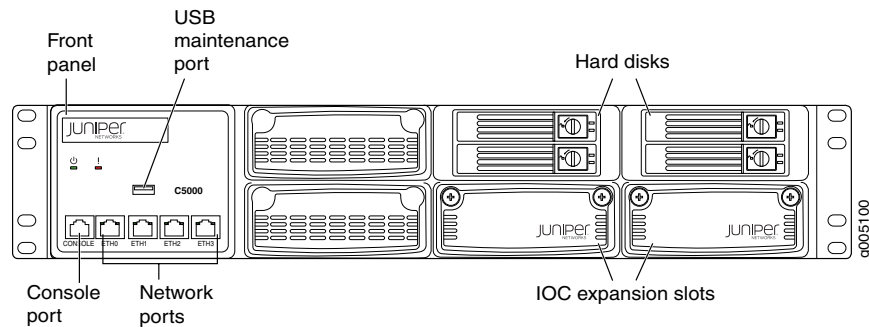


Figure 7: Console Port Location



Step 4: Connect Power Cables

Depending on your configuration, your controller uses either AC or DC power supplies. Perform the appropriate procedures for each power supply in your controller.

- [Connect Power to an AC-Powered Controller on page 7](#)
- [Connect Power to a DC-Powered Controller on page 8](#)

Connect Power to an AC-Powered Controller

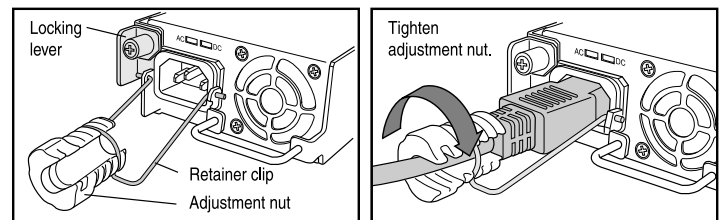


NOTE: C3000 and C5000 Controllers now ship with a retainer clip for the power cord. The retainer clip prevents accidental disconnection of the power cord by securing the cord to the chassis. Steps 1 and 3 apply only to appliances equipped with retainer clips.

To connect AC power to a C3000 or C5000 Controller:

1. Squeeze the two sides of the power cord retainer clip and insert the L-shaped ends of the wire clip into the holes in the bracket on each side of the AC appliance inlet.

Figure 8: Connecting Power on an AC-Powered C3000 or C5000 Controller



2. Insert the coupler end of the power cord into the AC appliance inlet.

If your controller contains two power supplies, plug each power cord into a separate power circuit to ensure that the device continues to receive power if one of the power circuits fails.

- Push the power cord into the slot in the adjustment nut of the power cord retainer clip. Turn the nut until it is snug against the base of the coupler and the slot in the nut is turned 90° from the top of the switch.



NOTE: We suggest that you use an uninterruptible power supply (UPS) with you C Series Controller.



NOTE: To provide redundancy, do not terminate Power A and Power B leads at the same power source.

Connect Power to a DC-Powered Controller

Table 1: C3000 and C5000 DC Power System Input Voltage

Item	Specification
DC input voltage	Operating range: -48 to -60 VDC

- Verify that there is no power flowing from either external power source, so that the voltage across the leads of the DC power cables is 0 V. Ensure that there is no chance that the cable leads might become active during the procedure.
- Remove the clear plastic shield covering the field-wiring terminals on the power supply.
- Remove the screws on the field-wiring and ground terminal.
- Verify that a licensed electrician has attached a listed DC power cable lug to each power source cable and ground cable.



NOTE: You must bend the cable lug that attaches to the DC power source cable at a 90° angle to properly install the clear plastic shield covering.

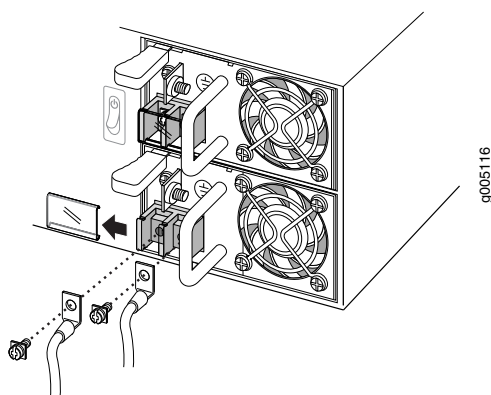
- Insert the DC power and ground cable lugs into the appropriate terminals. Using a number 1 Phillips screwdriver, turn the screw on each terminal clockwise to secure the cable. Apply 8.68 lb-in. (.98 Nm) of torque to each screw.
 - Insert the positive (+) source cable into the return terminal, which is labeled **RTN**.
 - Insert the negative (-) source cable into the input terminal, which is labeled **-48V**.
 - Align the ground cable with the ground terminal.



CAUTION: Ensure that each cable lug seats flush against the surface of the terminal block as you tighten the screws.

6. Verify that the DC source power and grounding cabling are correct, that they are not touching or blocking access to controller components, and that they do not drape where people could trip on them.
7. Replace the clear plastic shield over the field-wiring terminals.
8. Turn on the current from the power source so that voltage flows to the controller.

Figure 9: Connecting DC Power Cables to the Controller



Step 5: Perform the Initial Software Configuration for the C Series Controller

- [Setting Up Management Access and Logging In](#) on page 9
- [Configuring the Juniper Networks Database](#) on page 10
- [Configure Hostname and Domain Parameters](#) on page 10
- [Configure the System for Remote Access](#) on page 11
- [Configure the System to Accept SSH and Telnet Connections](#) on page 11
- [Add an Admin User Account](#) on page 12

Setting Up Management Access and Logging In

To log in to the system:

1. Start your terminal emulation program using the following settings:

- Bits per second: 9600
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: none

2. Enter the username.

```
SRC-PE Release 4.0 [V.4.0.0.R-1]
localhost login:root
```

3. Enter the password.

```
Password:password
```

You are now logged in as root user.

4. To access the CLI, enter the `cli` command.

```
[root@localhost ~]# cli
```

```
--- SRC CLI 4.0 build CLI.R.4.0.0.001
(c) 2005-2009 Juniper Networks Inc.
root@localhost>
```

Configuring the Juniper Networks Database

1. From configuration mode, access the configuration statement that configures the Juniper Networks database.

```
user@host# edit system ldap server
```

2. Enable standalone mode.

```
[edit system ldap server]
user@host# set stand-alone
```

Configure Hostname and Domain Parameters

1. Enter configuration mode.

```
root@host> edit
```

2. Configure the hostname.

```
[edit]
root@host# set system host-name host-name
```

For example:

```
[edit]
root@host# set system host-name my-hostname
```

3. Configure either a list of domain names to search, or create the domain name. We recommend configuring a list of domain names to search.

To configure a list of domain names to search:

```
[edit]
root@host# set system domain-search [domain-name1, domain-name2, ...]
```

For example:

```
[edit]
root@host# set system domain-search [my-domain.juniper.net domain.juniper2.net]
```

To configure the domain name:

```
[edit]
root@host# set system domain-name domain-name
```

For example:

```
[edit]
root@host# set system domain-name my-domain.juniper.net
```

Configure the System for Remote Access

1. From configuration mode, access the configuration statement that configures the interface.

```
user@host# edit interfaces eth0
```

2. Specify the unit, family, and IP address for the interface.

```
[edit interfaces eth0]
user@host# set unit number family inet address address
```

For example, to configure an interface with only an IP address:

```
[edit interfaces eth0]
user@host# set unit 0 family inet address 192.2.0.10/24
```

3. (Optional) Specify the broadcast address for the interface.

```
[edit interfaces eth0]
user@host# set unit number family inet broadcast broadcast
```

For example, to configure an interface with only a broadcast address:

```
[edit interfaces eth0]
user@host# set unit 0 family inet broadcast 192.2.0.255
```

4. Verify the interface configuration.

```
[edit interfaces eth0]
user@host# show
unit 0 {
  family {
    inet {
      broadcast 192.2.0.255;
    }
  }
}
```

Configure the System to Accept SSH and Telnet Connections

1. From configuration mode, access the `[edit system services ssh]` hierarchy level.

- (Optional) Specify whether or not to allow root login through SSH.

```
[edit system services ssh]
user@host> set root-login (allow | deny | deny-password)
```

where:

- allow**— Allow users to log in to the C Series Controller as **root** through SSH.
- deny**— Disable users from logging in to the system as **root** through SSH.
- deny-password**— Allow users to log in to the system as **root** through SSH when the authentication method (for example, RSA authentication) does not require a password. (Default)

To configure the system to accept Telnet connections:

- In edit mode, type the following command.

```
[edit]
user@host# set system services telnet
```

Add an Admin User Account

- Create an account for an administrative user.

```
[edit]
user@host # edit system login user user
```

For example:

```
[edit]
user@host # edit system login user myadmin
```

- Set the class for the administrative user to the login class that you created.

```
[edit system login user myadmin]
user@host # set class class
```

For example:

```
[edit system login user myadmin]
user@host # set class super-user
```

- Specify the name of the administrative user.

```
[edit system login user myadmin]
user@host # set full-name "John Doe"
```

- Set the CLI editing level to expert.

```
[edit system login user myadmin]
user@host# set level expert
```

- (Optional) Specify that a space be used for command completion.

```
[edit system login user myadmin]
user@host # set complete-on-space on
```

- Verify that the configuration for the administrative user is correct.

```
[edit system login user myadmin]
user@host# show
```

```
class super-user;
full-name "John Doe";
uid 506;
gid 100;
level expert;
complete-on-space on;
```

7. Set the password of the user.

```
[edit]
user@host# edit system login user myadmin authentication
[edit system login user myadmin authentication]
user@host# set plain-text-password
```

Safety Warnings



WARNING: See installation instructions before connecting the controller. This is a summary of safety warnings. For a complete list of warnings for this controller, including translations, see the *C3000 and C5000 Hardware Guide* at <http://www.juniper.net/techpubs/>.



WARNING: The recommended maximum ambient temperature is 104°F (40°C). For safe operation take into consideration the internal temperature within the rack.



WARNING: Install equipment in the rack from the bottom upward. Doing this helps maintain the stability of the rack and reduces the chance of the rack tipping over.



WARNING: Do not insert any metal object, such as a screwdriver, into the system. Doing so can cause electric shock and serious burns.



WARNING: Three people are required to install the system in a rack: two to lift the system into position and one to screw it to the rack.



WARNING: Connect the system or rack to ground (earth), and ensure that a reliable grounding path is maintained in the rack.



WARNING: Do not work on the system or connect or disconnect cables during lightning activity.



WARNING: Be sure that circuit breakers for the power source are in the OFF position before attaching power cables.



WARNING: Before servicing the system, turn off the power.



WARNING: Remove jewelry (including rings, necklaces, and watches) before working on equipment that is connected to power lines. Metal objects heat up when connected to power and ground and can cause serious burns or become welded to the terminals.



CAUTION: Evaluate the overall loading of the branch circuit before you install any equipment into a rack.



WARNING: There is a danger of explosion if the battery is incorrectly replaced. Return the device to the manufacturer for battery replacement. Moreover, never open the chassis under any circumstances. Doing so will also void the warranty.



WARNING: La batterie présente un risque d'explosion si elle n'est pas remplacée comme il se doit. Retournez l'appareil au fabricant pour faire remplacer la batterie. Le châssis ne doit par ailleurs en aucun cas être ouvert. Cela annulerait la garantie.



WARNING: Before working on a device that has an On/Off switch, turn the power off and disconnect the power cord to all power supplies.

For DC power supplies, locate the circuit breaker on the panel board that services the DC circuit, switch the circuit breaker to the off position, and tape the switch handle of the circuit breaker in the off position.



WARNING: Avant de commencer à travailler sur un appareil muni d'un interrupteur On. Off (Marche/Arrêt), Coupez l'alimentation et débranchez le cordon d'alimentation de toute source d'alimentation.

Dans le cas d'une alimentation à courant continu, repérez le disjoncteur sur le tableau de contrôle qui alimente le circuit c.c., placez-le en position d'off

(arrêt) et maintenez le bouton du disjoncteur en position d'arrêt à l'aide de ruban adhésif.



WARNING: This unit has two power cables. To avoid electric shock, disconnect both power cables before servicing the unit.



WARNING: Cette unité possède deux cordons d'alimentation. Pour supprimer tout risque électrique, débranchez les deux cordons d'alimentation de l'unité.



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

注意

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

9017253

Some Juniper Networks devices are equipped with fiber-optic ports, which emit radiation that may be harmful to the human eye. Fiber-optic ports are considered Class 1 laser or Class 1 LED ports.



WARNING: Class 1 LED product.



WARNING: Do not stare into the laser beam or view it directly with optical instruments.

To avoid exposure to radiation, do not stare into the aperture of a fiber-optic port. Invisible radiation might be emitted from the aperture of the port when no fiber cable is connected.

These products have been tested and found to comply with Class 1 limits of IEC 60825-1, IEC 60825-2, EN 60825-1, EN 60825-2, and 21CFR1040.



WARNING: This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures. (VCCI-A)

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Declaration of Conformity for the C3000 and C5000 Controllers

Figure 10 on page 17 shows the Declaration of Conformity for the controller.

Figure 10: C3000 and C5000 Controllers Declaration of Conformity

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Declaration of Conformity
R&TTE Directive 1999/5/EC
according to EN 45014

CE

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

declares under our sole responsibility that the product(s):


JA-C3000-A-BSE and JA-C5000-A-BSE

are in conformity with the provisions of R&TTE Directive 1999/5/EC. The conformity has been assessed according to the procedure detailed in Annex II of the Directive.

The following harmonized standards were applied:

EMC	EN 300 386 v1.4.1: 2008
	EN 55022 + A1 Class A: 2006
	EN 55024 +A1+A2: 1998
Safety	EN 60950-1: 2006 (2nd Edition)

This product carries the CE Mark, which was first affixed in 2010.

Place	Signature	Date
Sunnyvale, CA		16-Sep-10

Michael J. Azar
Homologation Manager
1194 N. Mathilda Ave
Sunnyvale, CA 94089 USA

DoC: 10- 0005

SRC Documentation and Release Notes

For a list of related SRC documentation, see
<http://www.juniper.net/techpubs/software/src/>.

If the information in the latest release notes differs from the information in the documentation, follow the *SRC 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/>.

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/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/>
- 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, visit us at <http://www.juniper.net/support/requesting-support.html>

Revision History

March 2013—530-051836. Updated AC power cord connecting procedure

October 2010—530-036911. First edition.

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