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Juniper Secure Analytics 7500 Hardware Guide

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Juniper Secure Analytics 7500 Hardware Guide

The information in this document is current as of the date on the title page.

YEAR 2000 NOTICE

Juniper Networks hardware and software products are Year 2000 compliant. Junos OS has no known time-related limitations through the year 2038. However, the NTP application is known to have some difficulty in the year 2036.

END USER LICENSE AGREEMENT

The Juniper Networks product that is the subject of this technical documentation consists of (or is intended for use with) Juniper Networks software. Use of such software is subject to the terms and conditions of the End User License Agreement ("EULA") posted at https://support.juniper.net/support/eula/. By downloading, installing or using such software, you agree to the terms and conditions of that EULA.

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About This Guide

Use this guide to install hardware and perform initial software configuration, routine maintenance, and troubleshooting for JSA7500.

After completing the installation and basic configuration procedures covered in this guide, refer to the JSA software documentation for information about further software configuration. See Juniper Secure Analytics.

Juniper Secure Analytics (JSA) appliances are designed to respond to the right threats at the right time through effective analysis of networks, events, and audit log files. JSA has the ability to identify environmental anomalies in the network, an attack path, and the source of a threat. JSA provides network remediation for threat responses across all security products.

RELATED DOCUMENTATION

- Hardware Guide
- Quick Start Guide
- Release Notes
- Introducing JSA5500
- Introducing JSA7500
- STRM Series to JSA Series Migration Guide
- Installing JSA Using a Bootable USB Flash-Drive Technical Note

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Overview

CHAPTER 1

Introduction

IN THIS CHAPTER

JSA Appliance Models

Juniper Secure Analytics (JSA) appliances are designed to respond to the right threats at the right time through effective analysis of networks, events, and audit log files. JSA has the ability to identify environmental anomalies in the network, an attack path, and the source of a threat. JSA provides network remediation for threat responses across all security products.

The JSA appliances use two drivers, Security Information Management (SIM) and Security Event Management (SEM), for security analysis of external and internal threats. SIM provides reporting and analysis of data from host systems, applications, and security devices to support security policy compliance management, internal threat management, and regulatory compliance initiatives. SEM improves security incident response capabilities by processing data from security devices and network devices. It helps network administrators to provide effective responses to external and internal threats.

Table 1 on page 2 lists the Juniper Secure Analytics (JSA) appliance models.

Table 1: JSA Appliance Models

Model	Device Type	Memory	Storage Configuration
JSA3800	Low memory	64 GB	Six 900 GB HDDs, RAID10 For more information on JSA3800, see JSA3800 Hardware Guide

Table 1: JSA Appliance Models *(Continued)*

Model	Device Type	Memory	Storage Configuration
JSA5800	High memory	128 GB	Eight 900 GB HDDs, RAID10 For more information on JSA5800, see JSA5800 Hardware Guide
JSA7500	High memory	128 GB	28 drives of 900 GB HDDs, RAID10
JSA7800	High memory	128 GB	Sixteen 2 TB HDDs, RAID6 For more information on JSA7800, see JSA7800 Hardware Guide.

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JSA Appliance Hardware Features

The Juniper Secure Analytics (JSA) appliance provides the following features:

- Monitor utility for power supply unit (PSU) and fans
- Add setup logs automatically
- Support high availability (HA)
- Hot-swappable hard disk supporting RAID
- Automatic RAID rebuild on HDD swap
- Support hot-swappable dual-AC or dual-DC power supplies with a redundant configuration in the chassis

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Components

CHAPTER 2

Hardware Components and Specifications

IN THIS CHAPTER

Hardware Specifications

Table 2 on page 6 lists the hardware specifications for the JSA7500 appliance.

Table 2: Hardware Specifications

Specification	JSA7500
Dimensions (D x W x H)	597.5 mm x 438.4 mm x 88 mm (23.52-in. x 17.26-in. x 3.5-in.)
Weight	60 lb
Warranty	1 year HW, 90 days SW
Fans	8 x 80 mm redundant hot swap
Panel Display	• LEDs: Power, HW Alert • HD Activity and Fail LED on drive tray
Rack mountable	Front-and-rear or mid-mount, flush or recessed mounting
Ports	1 console, 4x RJ-45 10/100/1000

Table 2: Hardware Specifications *(Continued)*

Specification	JSA7500
Power	*AC Power Supply* • 100 V to 240 V, 50 - 60 Hz, 750 W hot-swap module • Efficiency • Typical 85% at 115 V, 12 V / 62.5 A 5 Vsb / 3.0 A *DC Power Supply* • 750 W hot-swap module • -40 V to -60 V • 20.0 A (Unit ships with dual DC supplies)
Environmental specifications	
Temperature operating	5° C – 40° C 41° F – 104° F
Temperature storage	-40° C – 70° C -40° F – 158° F
Humidity operating	8% - 90% non-condensing
Humidity storage	5% - 95% non-condensing
Altitude operating	10000 ft max.
Altitude storage	40000 ft max.

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JSA Transceiver Interface

Table 3 on page 8 lists the different types of transceiver interfaces available on the various types of Juniper Secure Analytics (JSA) appliances.

Table 3: JSA Appliance Transceiver Interface Types

Transceiver Type	Card Model	Model	Description
SFP+	• UNIV-SFPP-DUAL-SR • UNIV-SFPP-DUAL-LR	JSA7500	• UNIV-SFPP-DUAL-SR Dual Rate 10GBASE-LR/ 1000BASE-LX • UNIV-SFPP-DUAL-LR Dual Rate 10GBASE-SR/ 1000BASE-SX
IOC	UNIV-10GE-2SFPP-H	JSA7500	Network adapter with support for dual rate SFP+ optics for JSA7500
	UNIV-10GE-2SFPP	JSA7500	Network adapter with support for dual rate SFP+ optics

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CHAPTER 3

JSA7500

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JSA7500 Front Panel

The JSA7500 appliance has a 2-U, rack-mountable chassis redundant DC power supplies (optional AC power supplies), twenty-eight hot-swappable hard drives in a RAID10 array, 128 GB of memory, and four Gigabit Ethernet interfaces.

Figure 1 on page 9 shows the front panel components of the JSA7500 appliance.

Figure 1: JSA7500 Front Panel

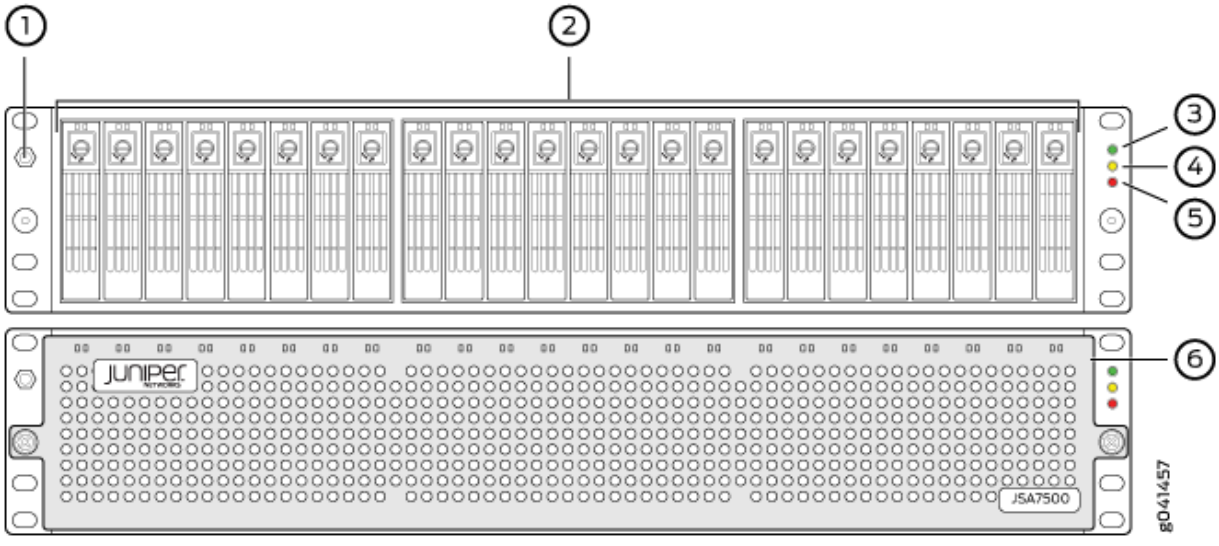

Table 4 on page 10 lists the front panel components of the JSA7500 appliance.

Table 4: JSA7500 Front Panel Components

Callout	Component	Description
1	ESD wrist strap grounding jack	Connect the equipment end of your ESD grounding strap to the ESD point on the chassis to minimize the potential for electrostatic discharge (ESD) damage.
2	Hard drives	24 drives of 900 GB HDDs (Drive0 - Drive23).
3	Chassis LEDs	Power (green)—Indicates that the appliance is powered on.
4	Hardware disk activity LED	Hard disk activity (yellow)—Indicates the hard disk is in use (writing or reading data).
5	Fault LED	Fault (red)—Indicates that a fan, power supply, or temperature alarm has occurred.
6	Front bezel with air filter	Provides optimum cooling.

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JSA7500 Back Panel

Figure 2 on page 11 shows the back panel components of the JSA7500 appliance.

Figure 2: JSA7500 Back Panel

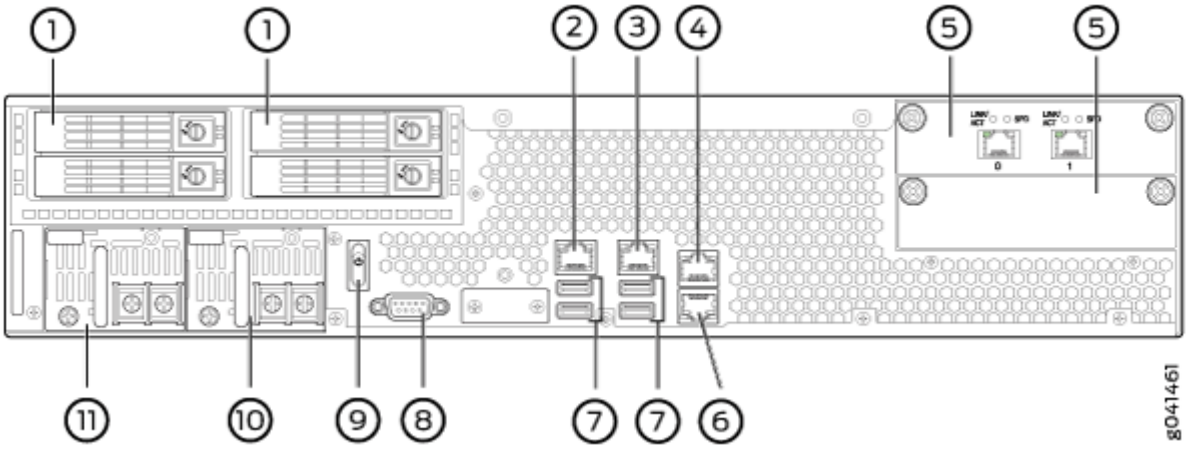

Table 5 on page 11 lists the back panel components of the JSA7500 appliance.

Table 5: JSA7500 Back Panel Components

Callout	Component	Description
1	Hard drive	4 drives of 900 GB HDDs: • Drive24 (top left) and Drive25 (bottom left) • Drive26 (top) and Drive27 (bottom)
2	Network port 0	RJ-45 Ethernet 10/100/1000 ports
3	Network port 1	RJ-45 Ethernet 10/100/1000 ports
4	Network port 2	RJ-45 Ethernet 10/100/1000 ports
5	IOC expansion slots	Two slots for additional IOC expansion with 2-port dual-rate 1GbE/10GbE SFP+
6	Network port 3	RJ-45 Ethernet 10/100/1000 ports
7	USB ports	Accepts a USB storage device

Table 5: JSA7500 Back Panel Components *(Continued)*

Callout	Component	Description
8	DB-9 Serial Console port	one serial console port
9	Power switch	Provides power to all components
10	Redundant power supply	Provides power to all components The status of the power supply LED is as follows: • Green—Indicates that the appliance is powered on. • Amber—Indicates that the power supply is in standby mode. • No color—Indicates a power supply failure.
11	Redundant power supply	Provides power to all components The status of the power supply LED is as follows: • Green—Indicates that the appliance is powered on. • Amber—Indicates that the power supply is in standby mode. • No color—Indicates a power supply failure.

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PART

Planning

CHAPTER 4

Site Preparation

IN THIS CHAPTER

Additional Hardware Requirements

Before installing your Juniper Secure Analytics (JSA) systems, ensure that you have access to the following additional hardware components:

- A serial console.
- To make sure that your JSA data is preserved during a power failure, we recommend that all JSA appliances or systems running JSA software storing data (such as Consoles, Event Processors, or Flow Processors) be equipped with an uninterruptible power supply (UPS).

We recommend that you install JSA on your LAN to ensure that it can communicate with your applicable resources, such as authentication servers, DNS servers, internal webservers through HTTP/HTTPS, external websites through HTTP/HTTPS (optional), the Juniper Networks update server through HTTP, network file system (NFS) file servers (optional), and client/server applications (optional).

Table 6 on page 14 lists the port information for the JSA appliance.

Table 6: Required JSA Ports

Direction	Port	Description	LAN	Internet	Depends on Configuration
In	22	SSH command-line management	Yes	No	No

Table 6: Required JSA Ports *(Continued)*

Direction	Port	Description	LAN	Internet	Depends on Configuration
	443	Web interface	Yes	No	No
Out	22	SSH connection to new managed device	Yes	Yes	No
	53	DNS lookups	Yes	No	No
	80	System security updates from Juniper Networks	Yes	Yes	Yes
	123	NTP time synchronization	Yes	Yes	Yes

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General Site Installation Guidelines for the JSA Appliance

The following precautions can help you plan an acceptable operating environment for your JSA appliance and avoid environmentally caused equipment failures:

- For the cooling system to function properly, the airflow around the chassis must be unrestricted. Allow sufficient clearance between the front and back of the chassis and adjacent equipment. Ensure that there is adequate circulation in the installation location.

- Follow the electrostatic discharge (ESD) procedures to avoid damaging the equipment. Static discharge can cause components to fail, either completely or intermittently over time.

NOTE: Install the appliance only in restricted areas, such as dedicated equipment rooms and equipment closets, in accordance with Articles 110–16, 110–17, and 110–18 of the National Electrical Code, ANSI/NFPA 70.

RELATED DOCUMENTATION

Additional Hardware Requirements

JSA Appliance Rack Requirements

The Juniper Secure Analytics (JSA) appliance can be installed in a rack. Many types of racks are acceptable, including front-mount racks and two-post (telco) racks.

Table 7 on page 16 provides the details of requirements for rack size, clearance, airflow, spacing of mounting brackets and flange holes, and connecting to the building structure.

Table 7: Rack Requirements for the JSA Appliance

Rack Requirement	Specifications
Size	A 19-in. (48.3 cm) rack as defined in Cabinets, Racks, Panels, and Associated Equipment (document number EIA-310-D) published by the Electronics Industry Association (http://www.eia.org).
Clearance	• The outer edges of the mounting brackets extend the width of either chassis to 19-in. (48.3 cm). • The front of the chassis extends approximately 0.5-in. (1.27 cm) beyond the mounting ears.

Table 7: Rack Requirements for the JSA Appliance *(Continued)*

Rack Requirement	Specifications
Spacing of mounting bracket and flange holes	• The holes within each rack set are spaced at 2-U [3.5-in. (4.5 cm)]. The device can be mounted in any rack that provides holes or hole patterns spaced at 2-U [3.5-in. (4.5 cm)] increments. The holes within each rack set are spaced at 2-U [3.5-in. (4.5 cm)]. The device can be mounted in any rack that provides holes or hole patterns spaced at 1-U [1.75-in. (4.5 cm)] increments. • The mounting brackets and front-mount flanges used to attach the chassis to a rack are designed to fasten to holes spaced at rack distances of 2-U (3.5-in.). • The mounting holes in the mounting brackets provided with the device are spaced 1.25-in. (3.2 cm) apart (top and bottom mounting hole).
Connecting to the building structure	Always secure the rack in which you are installing the JSA to the structure of the building. If your geographical area is subject to earthquakes, bolt the rack to the floor. For maximum stability, also secure the rack to ceiling brackets.

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PART

Safety

CHAPTER 5

General Safety and Regulatory Information

IN THIS CHAPTER

General Safety Guidelines and Warnings

The following guidelines help ensure your safety and protect the device from damage. The list of guidelines might not address all potentially hazardous situations in your working environment, so be alert and exercise good judgment at all times.

- Perform only the procedures explicitly described in the hardware documentation for this device. Make sure that only authorized service personnel perform other system services.
- Keep the area around the device clear and free from dust before, during, and after installation.
- Keep tools away from areas where people could trip over them while walking.
- Do not wear loose clothing or jewelry, such as rings, bracelets, or chains, which could become caught in the device.
- Wear safety glasses if you are working under any conditions that could be hazardous to your eyes.
- Do not perform any actions that create a potential hazard to people or make the equipment unsafe.
- Never attempt to lift an object that is too heavy for one person to handle.
- Never install or manipulate wiring during electrical storms.

- Never install electrical jacks in wet locations unless the jacks are specifically designed for wet environments.
- Operate the device only when it is properly grounded.
- Ensure that the separate protective earthing terminal provided on this device is permanently connected to earth.
- Replace fuses only with fuses of the same type and rating.
- Do not open or remove chassis covers or sheet-metal parts unless instructions are provided in the hardware documentation for this device. Such an action could cause severe electrical shock.
- Do not push or force any objects through any opening in the chassis frame. Such an action could result in electrical shock or fire.
- Avoid spilling liquid onto the chassis or onto any device component. Such an action could cause electrical shock or damage the device.
- Avoid touching uninsulated electrical wires or terminals that have not been disconnected from their power source. Such an action could cause electrical shock.
- Always ensure that all modules, power supplies, and cover panels are fully inserted and that the installation screws are fully tightened.

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Definitions of Safety Warning Levels

The documentation uses the following levels of safety warnings (there are two “Warning” formats):

NOTE: You might find this information helpful in a particular situation, or you might overlook this important information if it was not highlighted in a Note.

CAUTION: You need to observe the specified guidelines to avoid minor injury or discomfort to you or severe damage to the device.

LASER WARNING: This symbol alerts you to the risk of personal injury from a laser.

WARNING: This symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

Waarschuwing Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van standaard maatregelen om ongelukken te voorkomen.

Varoitus Tämä varoitusmerkki merkitsee vaaraa. Olet tilanteessa, joka voi johtaa ruumiinvammaan. Ennen kuin työskentelet minkään laitteiston parissa, ota selvää sähkökytkentöihin liittyvistä vaaroista ja tavanomaisista onnettomuuksien ehkäisykeinoista.

Attention Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant causer des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers posés par les circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents.

Warnung Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu einer Körperverletzung führen könnte. Bevor Sie mit der Arbeit an irgendeinem Gerät beginnen, seien Sie sich der mit elektrischen Stromkreisen verbundenen Gefahren und der Standardpraktiken zur Vermeidung von Unfällen bewußt.

Avvertenza Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di lavorare su qualsiasi apparecchiatura, occorre conoscere i pericoli relativi ai circuiti elettrici ed essere al corrente delle pratiche standard per la prevenzione di incidenti.

Advarsel Dette varselsymbolet betyr fare. Du befinner deg i en situasjon som kan føre til personskade. Før du utfører arbeid på utstyr, må du vare oppmerksom på de faremomentene som elektriske kretser innebærer, samt gjøre deg kjent med vanlig praksis når det gjelder å unngå ulykker.

Aviso Este símbolo de aviso indica perigo. Encontra-se numa situação que lhe poderá causar danos físicos. Antes de começar a trabalhar com qualquer equipamento, familiarize-se com os perigos relacionados com circuitos eléctricos, e com quaisquer práticas comuns que possam prevenir possíveis acidentes.

¡Atención! Este símbolo de aviso significa peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considerar los riesgos que entraña la corriente eléctrica y familiarizarse con los procedimientos estándar de prevención de accidentes.

Varning! Denna varningssymbol signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanligt förfarande för att förebygga skador.

RELATED DOCUMENTATION

- Fire Safety Requirements | 22
- Qualified Personnel Warning | 23
- Warning Statement for Norway and Sweden | 24
- General Safety Guidelines and Warnings | 19

Fire Safety Requirements

In the event of a fire emergency involving switches and other network equipment, the safety of people is the primary concern. You should establish procedures for protecting people in the event of a fire emergency, provide safety training, and properly provision fire-control equipment and fire extinguishers.

In addition, you should establish procedures to protect your equipment in the event of a fire emergency. Juniper Networks products should be installed in an environment suitable for electronic equipment. We recommend that fire suppression equipment be available in the event of a fire in the vicinity of the equipment and that all local fire, safety, and electrical codes and ordinances be observed when you install and operate your equipment.

Fire Suppression

In the event of an electrical hazard or an electrical fire, you should first turn power off to the equipment at the source. Then use a Type C fire extinguisher, which uses noncorrosive fire retardants, to extinguish the fire.

Fire Suppression Equipment

Type C fire extinguishers, which use noncorrosive fire retardants such as carbon dioxide and Halotron™, are most effective for suppressing electrical fires. Type C fire extinguishers displace oxygen from the point of combustion to eliminate the fire. For extinguishing fire on or around equipment that draws air from the environment for cooling, you should use this type of inert oxygen displacement extinguisher instead of an extinguisher that leaves residues on equipment.

Do not use multipurpose Type ABC chemical fire extinguishers (dry chemical fire extinguishers). The primary ingredient in these fire extinguishers is monoammonium phosphate, which is very sticky and difficult to clean. In addition, in the presence of minute amounts of moisture, monoammonium phosphate can become highly corrosive and corrodes most metals.

Any equipment in a room in which a chemical fire extinguisher has been discharged is subject to premature failure and unreliable operation. The equipment is considered to be irreparably damaged.

NOTE: To keep warranties effective, do not use a dry chemical fire extinguisher to control a fire at or near a Juniper Networks JSA appliance or other network device provided by Juniper. If a dry chemical fire extinguisher is used, the unit is no longer eligible for coverage under a service agreement.

We recommend that you dispose of any irreparably damaged equipment in an environmentally responsible manner.

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- General Safety Guidelines and Warnings | 19
- Definitions of Safety Warning Levels | 20

Qualified Personnel Warning

WARNING: Only trained and qualified personnel should install or replace the device.
Waarschuwing Installatie en reparaties mogen uitsluitend door getraind en bevoegd personeel uitgevoerd worden.

Varoitus Ainoastaan koulutettu ja pätevä henkilökunta saa asentaa tai vaihtaa tämän laitteen.

Attention Tout installation ou remplacement de l'appareil doit être réalisé par du personnel qualifié et compétent.

Warnung Gerät nur von geschultem, qualifiziertem Personal installieren oder auswechseln lassen.

Avvertenza Solo personale addestrato e qualificato deve essere autorizzato ad installare o sostituire questo apparecchio.

Advarsel Kun kvalifisert personell med riktig opplæring bør montere eller bytte ut dette utstyret.

Aviso Este equipamento deverá ser instalado ou substituído apenas por pessoal devidamente treinado e qualificado.

¡Atención! Estos equipos deben ser instalados y reemplazados exclusivamente por personal técnico adecuadamente preparado y capacitado.

Varning! Denna utrustning ska endast installeras och bytas ut av utbildad och kvalificerad personal.

RELATED DOCUMENTATION

- Warning Statement for Norway and Sweden | 24
- General Safety Guidelines and Warnings | 19
- Definitions of Safety Warning Levels | 20
- Fire Safety Requirements | 22

Warning Statement for Norway and Sweden

WARNING: The equipment must be connected to an earthed mains socket-outlet.

Advarsel Apparatet skal kobles til en jordet stikkontakt.

Varning! Apparaten skall anslutas till jordat nätuttag.

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Agency Approvals for JSA

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JSA7500 comply with the following standards:

- Safety
  - CAN/CSA-C22.2 No. 60950-1 (2007) Information Technology Equipment
  - UL 60950-1 (2nd Ed.) Information Technology Equipment
  - EN 60950-1 (2006) Information Technology Equipment
  - IEC 60950-1 (2005) Information Technology Equipment
  - EN 60825-1 (2007) Safety of Laser Products - Part 1: Equipment classification and requirements
- EMC
  - FCC 47CFR Part 15 Class A (USA)
  - EN 55022 Class A Emissions (Europe)
  - ICES-003 Class A
  - VCCI Class A (Japan)
  - AS/NZS CISPR 22 Class A (Australia/New Zealand)
  - CISPR 22 Class A
  - EN 55024

  - EN 300386
  - EN 61000-3-2 Power Line Harmonics
  - EN 61000-3-3 Voltage Fluctuations and Flicker
  - EN 61000-4-2 ESD
  - EN 61000-4-3 Radiated Immunity
  - EN 61000-4-4 EFT
  - EN 61000-4-5 Surge
  - EN 61000-4-6 Low Frequency Common Immunity
  - EN 61000-4-11 Voltage Dips and Sags
- NEBS (JSA7500 only)
  - GR-1089-Core
  - Common Bonding Network(CBN)
  - National Electrical Code (NEC)

Compliance Statement for Argentina

EQUIPO DE USO IDÓNEO.

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CHAPTER 6

Radiation and Laser Warnings

IN THIS CHAPTER

Laser and LED Safety Guidelines and Warnings for JSA

IN THIS SECTION

Observe the following guidelines and warnings:

General Laser Safety Guidelines

When working around ports that support optical transceivers, observe the following safety guidelines to prevent eye injury:

- Do not look into unterminated ports or at fibers that connect to unknown sources.
- Do not examine unterminated optical ports with optical instruments.
- Avoid direct exposure to the beam.

LASER WARNING: Unterminated optical connectors can emit invisible laser radiation. The lens in the human eye focuses all the laser power on the retina, so focusing the eye directly on a laser source—even a low-power laser—could permanently damage the eye.

Class 1 Laser Product Warning

LASER WARNING: Class 1 laser product.
Waarschuwing Klasse-1 laser produkt.

Varoitus Luokan 1 lasertuote.

Attention Produit laser de classe I.

Warnung Laserprodukt der Klasse 1.

LASER WARNING: **Avvertenza** Prodotto laser di Classe 1.
Advarsel Laserprodukt av klasse 1.

Aviso Produto laser de classe 1.

¡Atención! Producto láser Clase I.

Varning! Laserprodukt av klass 1.

Class 1 LED Product Warning

LASER WARNING: Class 1 LED product.
Waarschuwing Klasse 1 LED-product.

Varoitus Luokan 1 valodiodituote.

Attention Alarme de produit LED Class I.

Warnung Class 1 LED-Produktwarnung.

LASER WARNING: **Avvertenza** Avvertenza prodotto LED di Classe 1.
Advarsel LED-produkt i klasse 1.

Aviso Produto de classe 1 com LED.

¡Atención! Aviso sobre producto LED de Clase 1.

Varning! Lysdiodprodukt av klass 1.

Laser Beam Warning

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

LASER WARNING: **Waarschuwing** Niet in de straal staren of hem rechtstreeks bekijken met optische instrumenten.

LASER WARNING: **Varoitus** Älä katso säteeseen äläkä tarkastele sitä suoraan optisen laitteen avulla.

LASER WARNING: **Attention** Ne pas fixer le faisceau des yeux, ni l'observer directement à l'aide d'instruments optiques.

LASER WARNING: **Warnung** Nicht direkt in den Strahl blicken und ihn nicht direkt mit optischen Geräten prüfen.

LASER WARNING: **Avvertenza** Non fissare il raggio con gli occhi né usare strumenti ottici per osservarlo direttamente.

LASER WARNING: **Advarsel** Stirr eller se ikke direkte p strlen med optiske instrumenter.

LASER WARNING: **Aviso** Não olhe fixamente para o raio, nem olhe para ele directamente com instrumentos ópticos.

LASER WARNING: **¡Atención!** No mirar fijamente el haz ni observarlo directamente con instrumentos ópticos.

LASER WARNING: **Varning!** Rikta inte blicken in mot strålen och titta inte direkt på den genom optiska instrument.

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Maintenance and Operational Safety Guidelines and Warnings | 40

Installation Instructions Warning | 32

Radiation from Open Port Apertures Warning

LASER WARNING: Because invisible radiation might be emitted from the aperture of the port when no fiber cable is connected, avoid exposure to radiation and do not stare into open apertures.

Waarschuwing Aangezien onzichtbare straling vanuit de opening van de poort kan komen als er geen fiberkabel aangesloten is, dient blootstelling aan straling en het kijken in open openingen vermeden te worden.

Varoitus Koska portin aukosta voi emittoitua näkymätöntä säteilyä, kun kuitukaapelia ei ole kytkettynä, vältä säteilylle altistumista äläkä katso avoimiin aukkoihin.

Attention Des radiations invisibles à l'il nu pouvant traverser l'ouverture du port lorsqu'aucun câble en fibre optique n'y est connecté, il est recommandé de ne pas regarder fixement l'intérieur de ces ouvertures.

Warnung Aus der Port-Öffnung können unsichtbare Strahlen emittieren, wenn kein Glasfaserkabel angeschlossen ist. Vermeiden Sie es, sich den Strahlungen auszusetzen, und starren Sie nicht in die Öffnungen!

Avvertenza Quando i cavi in fibra non sono inseriti, radiazioni invisibili possono essere emesse attraverso l'apertura della porta. Evitate di esporvi alle radiazioni e non guardate direttamente nelle aperture.

Advarsel Unngå utsettelse for stråling, og stirr ikke inn i åpninger som er åpne, fordi usynlig stråling kan emiteres fra portens åpning når det ikke er tilkoblet en fiberkabel.

Aviso Dada a possibilidade de emissão de radiação invisível através do orifício da via de acesso, quando esta não tiver nenhum cabo de fibra conectado, deverá evitar a exposição à radiação e não deverá olhar fixamente para orifícios que se encontrarem a descoberto.

¡Atención! Debido a que la apertura del puerto puede emitir radiación invisible cuando no existe un cable de fibra conectado, evite mirar directamente a las aperturas para no exponerse a la radiación.

Varning! Osynlig strålning kan avges från en portöppning utan ansluten fiberkabel och du bör därför undvika att bli utsatt för strålning genom att inte stirra in i oskyddade öppningar.

RELATED DOCUMENTATION

- Laser and LED Safety Guidelines and Warnings for JSA | **27**
- Maintenance and Operational Safety Guidelines and Warnings | **40**
- Installation Instructions Warning | **32**

CHAPTER 7

Installation and Maintenance Safety Information

IN THIS CHAPTER

Installation Instructions Warning

WARNING: Read the installation instructions before you connect the device to a power source.

Waarschuwing Raadpleeg de installatie-aanwijzingen voordat u het systeem met de voeding verbindt.

Varoitus Lue asennusohjeet ennen järjestelmän yhdistämistä virtalähteeseen.

Attention Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

Warnung Lesen Sie die Installationsanweisungen, bevor Sie das System an die Stromquelle anschließen.

Avvertenza Consultare le istruzioni di installazione prima di collegare il sistema all'alimentatore.

Advarsel Les installasjonsinstruksjonene før systemet kobles til strømkilden.

Aviso Leia as instruções de instalação antes de ligar o sistema à sua fonte de energia.

¡Atención! Ver las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

Varning! Läs installationsanvisningarna innan du kopplar systemet till dess strömförsörjningsenhet.

RELATED DOCUMENTATION

Ramp Warning | 34

Rack-Mounting Warnings | 34

Grounded Equipment Warning | 39

Maintenance and Operational Safety Guidelines and Warnings | 40

Chassis Lifting Guidelines for JSA

The weight of a fully loaded Juniper Secure Analytics (JSA) appliance is approximately 27 lb (12 kg). Observe the following guidelines for lifting and moving a JSA appliance:

- Before installing a JSA appliance, read the guidelines in "General Site Installation Guidelines for the JSA Appliance" on page 15.
- Before lifting or moving the JSA appliance, disconnect all external cables.
- As when lifting any heavy object, lift most of the weight with your legs rather than your back. Keep your knees bent and your back relatively straight and avoid twisting your body as you lift. Balance the load evenly and be sure that your footing is solid.

RELATED DOCUMENTATION

General Site Installation Guidelines for the JSA Appliance | 15

Ramp Warning | 34

Installation Instructions Warning | 32

Rack-Mounting Warnings | 34

Grounded Equipment Warning | 39

Maintenance and Operational Safety Guidelines and Warnings | 40

Ramp Warning

WARNING: When installing the device, do not use a ramp inclined at more than 10 degrees.

Waarschuwing Gebruik een oprijplaat niet onder een hoek van meer dan 10 graden.

Varoitus Älä käytä sellaista kaltevaa pintaa, jonka kaltevuus ylittää 10 astetta.

Attention Ne pas utiliser une rampe dont l'inclinaison est supérieure à 10 degrés.

Warnung Keine Rampen mit einer Neigung von mehr als 10 Grad verwenden.

Avvertenza Non usare una rampa con pendenza superiore a 10 gradi.

Advarsel Bruk aldri en rampe som heller mer enn 10 grader.

Aviso Não utilize uma rampa com uma inclinação superior a 10 graus.

¡Atención! No usar una rampa inclinada más de 10 grados

Varning! Använd inte ramp med en lutning på mer än 10 grader.

RELATED DOCUMENTATION

- Installation Instructions Warning | 32
- Rack-Mounting Warnings | 34
- Grounded Equipment Warning | 39
- Maintenance and Operational Safety Guidelines and Warnings | 40

Rack-Mounting Warnings

Ensure that the rack or cabinet in which the device is installed is evenly and securely supported. Uneven mechanical loading could lead to a hazardous condition.

WARNING: To prevent bodily injury when mounting or servicing the device in a rack, take the following precautions to ensure that the system remains stable. The following directives help maintain your safety:

- The device must be installed in a rack that is secured to the building structure.
- The device should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting the device on a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing equipment, install the stabilizers before mounting or servicing the device in the rack.

Waarschuwing Om lichamelijk letsel te voorkomen wanneer u dit toestel in een rek monteert of het daar een servicebeurt geeft, moet u speciale voorzorgsmaatregelen nemen om ervoor te zorgen dat het toestel stabiel blijft. De onderstaande richtlijnen worden verstrekt om uw veiligheid te verzekeren:

- De Juniper Networks device moet in een stellage worden geïnstalleerd die aan een bouwsel is verankerd.
- Dit toestel dient onderaan in het rek gemonteerd te worden als het toestel het enige in het rek is.
- Wanneer u dit toestel in een gedeeltelijk gevuld rek monteert, dient u het rek van onderen naar boven te laden met het zwaarste onderdeel onderaan in het rek.
- Als het rek voorzien is van stabiliseringshulpmiddelen, dient u de stabilisatoren te monteren voordat u het toestel in het rek monteert of het daar een servicebeurt geeft.

Varoitus Kun laite asetetaan telineeseen tai huolletaan sen ollessa telineessä, on noudatettava erityisiä varotoimia järjestelmän vakavuuden säilyttämiseksi, jotta vältytään loukkaantumiselta. Noudata seuraavia turvallisuusohjeita:

- Juniper Networks device on asennettava telineeseen, joka on kiinnitetty rakennukseen.
- Jos telineessä ei ole muita laitteita, aseta laite telineen alaosaan.
- Jos laite asetetaan osaksi täytettyyn telineeseen, aloita kuormittaminen sen alaosasta kaikkein raskaimmalla esineellä ja siirry sitten sen yläosaan.
- Jos telinettä varten on vakaimet, asenna ne ennen laitteen asettamista telineeseen tai sen huoltamista siinä.

Attention Pour éviter toute blessure corporelle pendant les opérations de montage ou de réparation de cette unité en casier, il convient de prendre des précautions spéciales afin de maintenir la stabilité du système. Les directives ci-dessous sont destinées à assurer la protection du personnel:

- Le rack sur lequel est monté le Juniper Networks device doit être fixé à la structure du bâtiment.
- Si cette unité constitue la seule unité montée en casier, elle doit être placée dans le bas.
- Si cette unité est montée dans un casier partiellement rempli, charger le casier de bas en haut en plaçant l'élément le plus lourd dans le bas.
- Si le casier est équipé de dispositifs stabilisateurs, installer les stabilisateurs avant de monter ou de réparer l'unité en casier.

Warnung Zur Vermeidung von Körperverletzung beim Anbringen oder Warten dieser Einheit in einem Gestell müssen Sie besondere Vorkehrungen treffen, um sicherzustellen, daß das System stabil bleibt. Die folgenden Richtlinien sollen zur Gewährleistung Ihrer Sicherheit dienen:

- Der Juniper Networks device muß in einem Gestell installiert werden, das in der Gebäudestruktur verankert ist.
- Wenn diese Einheit die einzige im Gestell ist, sollte sie unten im Gestell angebracht werden.
- Bei Anbringung dieser Einheit in einem zum Teil gefüllten Gestell ist das Gestell von unten nach oben zu laden, wobei das schwerste Bauteil unten im Gestell anzubringen ist.
- Wird das Gestell mit Stabilisierungszubehör geliefert, sind zuerst die Stabilisatoren zu installieren, bevor Sie die Einheit im Gestell anbringen oder sie warten.

Avvertenza Per evitare infortuni fisici durante il montaggio o la manutenzione di questa unità in un supporto, occorre osservare speciali precauzioni per garantire che il sistema rimanga stabile. Le seguenti direttive vengono fornite per garantire la sicurezza personale:

- Il Juniper Networks device deve essere installato in un telaio, il quale deve essere fissato alla struttura dell'edificio.

- Questa unità deve venire montata sul fondo del supporto, se si tratta dell'unica unità da montare nel supporto.
- Quando questa unità viene montata in un supporto parzialmente pieno, caricare il supporto dal basso all'alto, con il componente più pesante sistemato sul fondo del supporto.
- Se il supporto è dotato di dispositivi stabilizzanti, installare tali dispositivi prima di montare o di procedere alla manutenzione dell'unità nel supporto.

Advarsel Unngå fysiske skader under montering eller reparasjonsarbeid på denne enheten når den befinner seg i et kabinett. Vær nøye med at systemet er stabilt. Følgende retningslinjer er gitt for å verne om sikkerheten:

- Juniper Networks device må installeres i et stativ som er forankret til bygningsstrukturen.
- Denne enheten bør monteres nederst i kabinettet hvis dette er den eneste enheten i kabinettet.
- Ved montering av denne enheten i et kabinett som er delvis fylt, skal kabinettet lastes fra bunnen og opp med den tyngste komponenten nederst i kabinettet.
- Hvis kabinettet er utstyrt med stabiliseringsutstyr, skal stabilisatorene installeres før montering eller utføring av reparasjonsarbeid på enheten i kabinettet.

Aviso Para se prevenir contra danos corporais ao montar ou reparar esta unidade numa estante, deverá tomar precauções especiais para se certificar de que o sistema possui um suporte estável. As seguintes directrizes ajudá-lo-ão a efectuar o seu trabalho com segurança:

- O Juniper Networks device deverá ser instalado numa prateleira fixa à estrutura do edificio.
- Esta unidade deverá ser montada na parte inferior da estante, caso seja esta a única unidade a ser montada.
- Ao montar esta unidade numa estante parcialmente ocupada, coloque os itens mais pesados na parte inferior da estante, arrumando-os de baixo para cima.
- Se a estante possuir um dispositivo de estabilização, instale-o antes de montar ou reparar a unidade.

¡Atención! Para evitar lesiones durante el montaje de este equipo sobre un bastidor, o posteriormente durante su mantenimiento, se debe poner mucho cuidado en que el

sistema quede bien estable. Para garantizar su seguridad, proceda según las siguientes instrucciones:

- El Juniper Networks device debe instalarse en un bastidor fijado a la estructura del edificio.
- Colocar el equipo en la parte inferior del bastidor, cuando sea la única unidad en el mismo.
- Cuando este equipo se vaya a instalar en un bastidor parcialmente ocupado, comenzar la instalación desde la parte inferior hacia la superior colocando el equipo más pesado en la parte inferior.
- Si el bastidor dispone de dispositivos estabilizadores, instalar éstos antes de montar o proceder al mantenimiento del equipo instalado en el bastidor.

Varning! För att undvika kroppsskada när du installerar eller utför underhållsarbete på denna enhet på en ställning måste du vidta särskilda försiktighetsåtgärder för att försäkra dig om att systemet står stadigt. Följande riktlinjer ges för att trygga din säkerhet:

- Juniper Networks device måste installeras i en ställning som är förankrad i byggnadens struktur.
- Om denna enhet är den enda enheten på ställningen skall den installeras längst ned på ställningen.
- Om denna enhet installeras på en delvis fylld ställning skall ställningen fyllas nedifrån och upp, med de tyngsta enheterna längst ned på ställningen.
- Om ställningen är försedd med stabiliseringsdon skall dessa monteras fast innan enheten installeras eller underhålls på ställningen.

RELATED DOCUMENTATION

Installation Instructions Warning | 32

Ramp Warning | 34

Grounded Equipment Warning | 39

Maintenance and Operational Safety Guidelines and Warnings | 40

Grounded Equipment Warning

WARNING: The device is intended to be grounded. During normal use, ensure that you have connected earth ground to the chassis.

Waarschuwing Deze apparatuur hoort geaard te worden Zorg dat de host-computer tijdens normaal gebruik met aarde is verbonden.

Varoitus Tämä laitteisto on tarkoitettu maadoitettavaksi. Varmista, että isäntälaite on yhdistetty maahan normaalikäytön aikana.

Attention Cet équipement doit être relié à la terre. S'assurer que l'appareil hôte est relié à la terre lors de l'utilisation normale.

Warnung Dieses Gerät muß geerdet werden. Stellen Sie sicher, daß das Host-Gerät während des normalen Betriebs an Erde gelegt ist.

Avvertenza Questa apparecchiatura deve essere collegata a massa. Accertarsi che il dispositivo host sia collegato alla massa di terra durante il normale utilizzo.

Advarsel Dette utstyret skal jordes. Forviss deg om vertsterminalen er jordet ved normalt bruk.

Aviso Este equipamento deverá estar ligado à terra. Certifique-se que o host se encontra ligado à terra durante a sua utilização normal.

¡Atención! Este equipo debe conectarse a tierra. Asegurarse de que el equipo principal esté conectado a tierra durante el uso normal.

Varning! Denna utrustning är avsedd att jordas. Se till att värdenheten är jordad vid normal användning.

RELATED DOCUMENTATION

- Installation Instructions Warning | 32
- Ramp Warning | 34
- Rack-Mounting Warnings | 34
- Maintenance and Operational Safety Guidelines and Warnings | 40

Maintenance and Operational Safety Guidelines and Warnings

IN THIS SECTION

While performing the maintenance activities for devices, observe the following guidelines and warnings:

Battery Handling Warning

WARNING: Replacing a battery incorrectly might result in an explosion. Replace a battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Waarschuwing Er is ontploffingsgevaar als de batterij verkeerd vervangen wordt. Vervang de batterij slechts met hetzelfde of een equivalent type dat door de fabrikant aanbevolen is. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften weggeworpen te worden.

Varoitus Räjähdyksen vaara, jos akku on vaihdettu väärään akkuun. Käytä vaihtamiseen ainoastaan saman- tai vastaavantyyppistä akkua, joka on valmistajan suosittelema. Hävitä käytetyt akut valmistajan ohjeiden mukaan.

Attention Danger d'explosion si la pile n'est pas remplacée correctement. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

Warnung Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

Advarsel Det kan være fare for eksplosjon hvis batteriet skiftes på feil måte. Skift kun med samme eller tilsvarende type som er anbefalt av produsenten. Kasser brukte batterier i henhold til produsentens instruksjoner.

Avvertenza Pericolo di esplosione se la batteria non è installata correttamente. Sostituire solo con una di tipo uguale o equivalente, consigliata dal produttore. Eliminare le batterie usate secondo le istruzioni del produttore.

Aviso Existe perigo de explosão se a bateria for substituída incorrectamente. Substitua a bateria por uma bateria igual ou de um tipo equivalente recomendado pelo fabricante. Destrua as baterias usadas conforme as instruções do fabricante.

¡Atención! Existe peligro de explosión si la batería se reemplaza de manera incorrecta. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

Varning! Explosionsfara vid felaktigt batteribyte. Ersätt endast batteriet med samma batterityp som rekommenderas av tillverkaren eller motsvarande. Följ tillverkarens anvisningar vid kassering av använda batterier.

Jewelry Removal Warning

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

Waarschuwing Alvorens aan apparatuur te werken die met elektrische leidingen is verbonden, sieraden (inclusief ringen, kettingen en horloges) verwijderen. Metalen voorwerpen worden warm wanneer ze met stroom en aarde zijn verbonden, en kunnen ernstige brandwonden veroorzaken of het metalen voorwerp aan de aansluitklemmen lassen.

Varoitus Ennen kuin työskentelet voimavirtajohtoihin kytkettyjen laitteiden parissa, ota pois kaikki korut (sormukset, kaulakorut ja kellot mukaan lukien). Metalliesineet kuumenevat, kun ne ovat yhteydessä sähkövirran ja maan kanssa, ja ne voivat aiheuttaa vakavia palovammoja tai hitsata metalliesineet kiinni liitäntänapoihin.

Attention Avant d'accéder à cet équipement connecté aux lignes électriques, ôter tout bijou (anneaux, colliers et montres compris). Lorsqu'ils sont branchés à l'alimentation et reliés à la terre, les objets métalliques chauffent, ce qui peut provoquer des blessures graves ou souder l'objet métallique aux bornes.

Warnung Vor der Arbeit an Geräten, die an das Netz angeschlossen sind, jeglichen Schmuck (einschließlich Ringe, Ketten und Uhren) abnehmen. Metallgegenstände erhitzen sich, wenn sie an das Netz und die Erde angeschlossen werden, und können schwere Verbrennungen verursachen oder an die Anschlußklemmen angeschweißt werden.

Avvertenza Prima di intervenire su apparecchiature collegate alle linee di alimentazione, togliersi qualsiasi monile (inclusi anelli, collane, braccialetti ed orologi). Gli oggetti metallici si riscaldano quando sono collegati tra punti di alimentazione e massa: possono causare ustioni gravi oppure il metallo può saldarsi ai terminali.

Advarsel Fjern alle smykker (inkludert ringer, halskjeder og klokker) før du skal arbeide på utstyr som er koblet til kraftledninger. Metallgjenstander som er koblet til kraftledninger og jord blir svært varme og kan forårsake alvorlige brannskader eller smelte fast til polene.

Aviso Antes de trabalhar em equipamento que esteja ligado a linhas de corrente, retire todas as jóias que estiver a usar (incluindo anéis, fios e relógios). Os objectos metálicos aquecerão em contacto com a corrente e em contacto com a ligação à terra, podendo causar queimaduras graves ou ficarem soldados aos terminais.

¡Atención! Antes de operar sobre equipos conectados a líneas de alimentación, quitarse las joyas (incluidos anillos, collares y relojes). Los objetos de metal se calientan cuando se conectan a la alimentación y a tierra, lo que puede ocasionar quemaduras graves o que los objetos metálicos queden soldados a los bornes.

Varning! Tag av alla smycken (inklusive ringar, halsband och armbandsur) innan du arbetar på utrustning som är kopplad till kraftledningar. Metallobjekt hettas upp när de kopplas ihop med ström och jord och kan förorsaka allvarliga brännskador; metallobjekt kan också sammansvetsas med kontakterna.

Lightning Activity Warning

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

Waarschuwing Tijdens onweer dat gepaard gaat met bliksem, dient u niet aan het systeem te werken of kabels aan te sluiten of te ontkoppelen.

Varoitus Älä työskentele järjestelmän parissa äläkä yhdistä tai irrota kaapeleita ukkosilmalla.

Attention Ne pas travailler sur le système ni brancher ou débrancher les câbles pendant un orage.

Warnung Arbeiten Sie nicht am System und schließen Sie keine Kabel an bzw. trennen Sie keine ab, wenn es gewittert.

Avvertenza Non lavorare sul sistema o collegare oppure scollegare i cavi durante un temporale con fulmini.

Advarsel Utfør aldri arbeid på systemet, eller koble kabler til eller fra systemet når det tordner eller lyner.

Aviso Não trabalhe no sistema ou ligue e desligue cabos durante períodos de mau tempo (trovoada).

¡Atención! No operar el sistema ni conectar o desconectar cables durante el transcurso de descargas eléctricas en la atmósfera.

Varning! Vid åska skall du aldrig utföra arbete på systemet eller ansluta eller koppla loss kablar.

Operating Temperature Warning

WARNING: To prevent the device from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of 104° F (40° C) for network devices of Juniper Networks. To prevent airflow restriction, allow at least 6 in. (15.2 cm) of clearance around the ventilation openings.

Waarschuwing Om te voorkomen dat welke device van de Juniper Networks router dan ook oververhit raakt, dient u deze niet te bedienen op een plaats waar de maximale aanbevolen omgevingstemperatuur van 40° C wordt overschreden. Om te voorkomen dat de luchtstroom wordt beperkt, dient er minstens 15,2 cm speling rond de ventilatie-openingen te zijn.

Varoitus Ettei Juniper Networks device-sarjan reititin ylikuumentuisi, sitä ei saa käyttää tilassa, jonka lämpötila ylittää korkeimman suositellun ympäristölämpötilan 40° C. Ettei ilmanvaihto estyisi, tuuletusaukkojen ympärille on jätettävä ainakin 15,2 cm tilaa.

Attention Pour éviter toute surchauffe des routeurs de la gamme Juniper Networks device, ne l'utilisez pas dans une zone où la température ambiante est supérieure à 40° C. Pour permettre un flot d'air constant, dégagez un espace d'au moins 15,2 cm autour des ouvertures de ventilations.

Warnung Um einen device der device vor Überhitzung zu schützen, darf dieser nicht in einer Gegend betrieben werden, in der die Umgebungstemperatur das empfohlene Maximum von 40° C überschreitet. Um Lüftungsverschluß zu verhindern, achten Sie darauf, daß mindestens 15,2 cm lichter Raum um die Lüftungsöffnungen herum frei bleibt.

Avvertenza Per evitare il surriscaldamento dei device, non adoperateli in un locale che ecceda la temperatura ambientale massima di 40° C. Per evitare che la circolazione dell'aria sia impedita, lasciate uno spazio di almeno 15.2 cm di fronte alle aperture delle ventole.

Advarsel Unngå overoppheting av eventuelle rutere i Juniper Networks device Disse skal ikke brukes på steder der den anbefalte maksimale omgivelsestemperaturen overstiger 40° C (104° F). Sørg for at klaringen rundt lufteåpningene er minst 15,2 cm (6 tommer) for å forhindre nedsatt luftsirkulasjon.

Aviso Para evitar o sobreaquecimento do encaminhador Juniper Networks device, não utilize este equipamento numa área que exceda a temperatura máxima recomendada de 40° C. Para evitar a restrição à circulação de ar, deixe pelo menos um espaço de 15,2 cm à volta das aberturas de ventilação.

¡Atención! Para impedir que un encaminador de la serie Juniper Networks device se recaliente, no lo haga funcionar en un área en la que se supere la temperatura ambiente máxima recomendada de 40° C. Para impedir la restricción de la entrada de aire, deje un espacio mínimo de 15,2 cm alrededor de las aperturas para ventilación.

Varning! Förhindra att en Juniper Networks device överhettas genom att inte använda den i ett område där den maximalt rekommenderade omgivningstemperaturen på 40° C överskrids. Förhindra att luftcirkulationen inskränks genom att se till att det finns fritt utrymme på minst 15,2 cm omkring ventilationsöppningarna.

Product Disposal Warning

WARNING: Disposal of this device must be handled according to all national laws and regulations.

Waarschuwing Dit produkt dient volgens alle landelijke wetten en voorschriften te worden afgedankt.

Varoitus Tämän tuotteen lopullisesta hävittämisestä tulee huolehtia kaikkia valtakunnallisia lakeja ja säännöksiä noudattaen.

Attention La mise au rebut définitive de ce produit doit être effectuée conformément à toutes les lois et réglementations en vigueur.

Warnung Dieses Produkt muß den geltenden Gesetzen und Vorschriften entsprechend entsorgt werden.

Avvertenza L'eliminazione finale di questo prodotto deve essere eseguita osservando le normative italiane vigenti in materia

Advarsel Endelig disponering av dette produktet må skje i henhold til nasjonale lover og forskrifter.

Aviso A descartagem final deste produto deverá ser efectuada de acordo com os regulamentos e a legislação nacional.

¡Atención! El desecho final de este producto debe realizarse según todas las leyes y regulaciones nacionales

Varning! Slutlig kassering av denna produkt bör skötas i enlighet med landets alla lagar och föreskrifter.

RELATED DOCUMENTATION

- Installation Instructions Warning | **32**
- Ramp Warning | **34**
- Rack-Mounting Warnings | **34**
- Grounded Equipment Warning | **39**

CHAPTER 8

Power and Electrical Safety Information

IN THIS CHAPTER

General Electrical Safety Guidelines and Warnings

WARNING: Certain ports on the device are designed for use as intrabuilding (within-the-building) interfaces only (Type 2 or Type 4 ports as described in *GR-1089-CORE*, Issue 4) and require isolation from the exposed outside plant (OSP) cabling. To protect against lightning surges and commercial power disturbances, the intrabuilding ports *must not* be metallically connected to interfaces that connect to the OSP or its wiring. The intrabuilding ports on the device are suitable for connection to intrabuilding or unexposed wiring or cabling only. The addition of primary protectors is not sufficient protection for connecting these interfaces metallically to OSP wiring.

WARNING: The intrabuilding port(s) (40G DACS and USB ports) of the equipment or subassembly must use shielded intrabuilding cabling or wiring that is grounded at both ends.

WARNING: The intrabuilding port(s) (including the following ports, when present: DAC, External Clock, Internal Clock, T1/E1, POE Ethernet) of the equipment or subassembly must use shielded intrabuilding cabling or wiring that is grounded at both ends.

CAUTION: Before removing or installing components of a device, attach an electrostatic discharge (ESD) grounding strap to an ESD point and place the other end of the strap around your bare wrist. Failure to use an ESD grounding strap could result in damage to the device.

- Install the device in compliance with the following local, national, and international electrical codes:
  - United States—National Fire Protection Association (NFPA 70), United States National Electrical Code.
  - Other countries—International Electromechanical Commission (IEC) 60364, Part 1 through Part 7.
  - Evaluated to the TN power system.
  - Canada—Canadian Electrical Code, Part 1, CSA C22.1.
- Locate the emergency power-off switch for the room in which you are working so that if an electrical accident occurs, you can quickly turn off the power.
- Make sure that grounding surfaces are cleaned and brought to a bright finish before grounding connections are made.
- Do not work alone if potentially hazardous conditions exist anywhere in your workspace.
- Never assume that power is disconnected from a circuit. Always check the circuit before starting to work.
- Carefully look for possible hazards in your work area, such as moist floors, ungrounded power extension cords, and missing safety grounds.
- Operate the device within marked electrical ratings and product usage instructions.
- To ensure that the device and peripheral equipment function safely and correctly, use the cables and connectors specified for the attached peripheral equipment, and make certain they are in good condition.

You can remove and replace many device components without powering off or disconnecting power to the device, as detailed elsewhere in the hardware documentation for this device. Never install an equipment that it appears to be damaged.

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Multiple Power Supplies Disconnection Warning | 59

TN Power Warning | 59

Action to Take After an Electrical Accident | 60

Prevention of Electrostatic Discharge Damage

Device components that are shipped in antistatic bags 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 grounding strap when you are handling components that are subject to ESD damage, and make sure that it is in direct contact with your skin.

  If a grounding strap is not available, hold the component in its antistatic bag (see Figure 3 on page 49) in one hand and touch the exposed, bare metal of the device with the other hand immediately before inserting the component into the device.

  WARNING: For safety, periodically check the resistance value of the ESD grounding strap. The measurement must be in the range 1 through 10 Mohms.

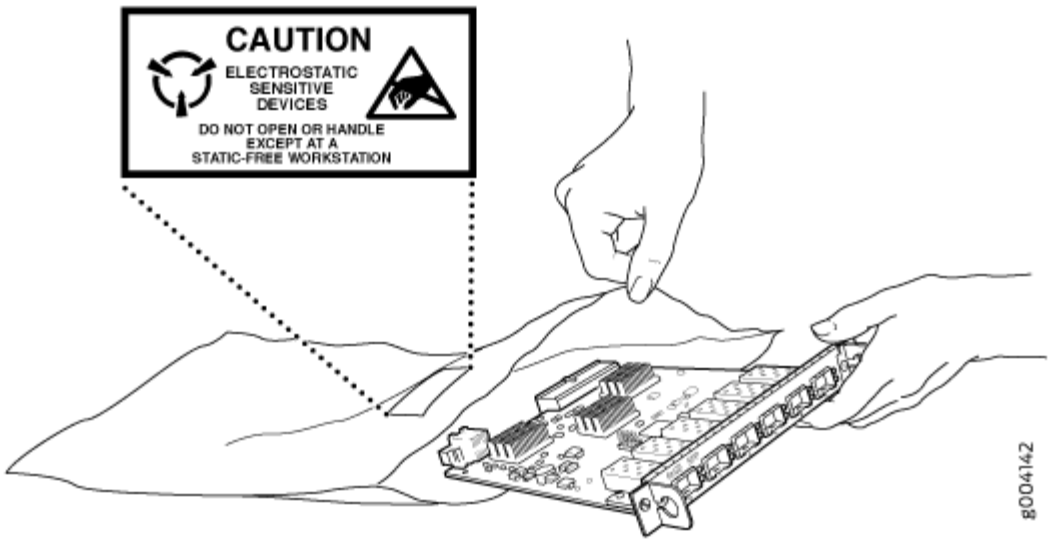
- When handling any component that is subject to ESD damage and that is removed from the device, make sure the equipment end of your ESD grounding strap is attached to the ESD point on the chassis.

  If no grounding strap is available, touch the exposed, bare metal of the device to ground yourself before handling the component.

- Avoid contact between the component that is subject to ESD damage and your clothing. ESD voltages emitted from clothing can damage components.

- When removing or installing a component that is subject to ESD damage, always place it component-side up on an antistatic surface, in an antistatic card rack, or in an antistatic bag (see Figure 3 on page 49). If you are returning a component, place it in an antistatic bag before packing it.

Figure 3: Placing a Component into an Antistatic Bag



CAUTION: ANSI/TIA/EIA-568 cables such as Category 5e and Category 6 can get electrostatically charged. To dissipate this charge, always ground the cables to a suitable and safe earth ground before connecting them to the system.

RELATED DOCUMENTATION

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AC Power Electrical Safety Guidelines

> ⚠ **CAUTION**: For devices with AC power supplies, an external surge protective device (SPD) must be used at the AC power source.

The following electrical safety guidelines apply to AC-powered devices:

- Note the following warnings printed on the device:

  "**CAUTION:** THIS UNIT HAS MORE THAN ONE POWER SUPPLY CORD. DISCONNECT ALL POWER SUPPLY CORDS BEFORE SERVICING TO AVOID ELECTRIC SHOCK."

  "**ATTENTION:** CET APPAREIL COMPORTE PLUS D'UN CORDON D'ALIMENTATION. AFIN DE PRÉVENIR LES CHOCS ÉLECTRIQUES, DÉBRANCHER TOUT CORDON D'ALIMENTATION AVANT DE FAIRE LE DÉPANNAGE."

- AC-powered devices are shipped with a three-wire electrical cord with a grounding-type plug that fits only a grounding-type power outlet. Do not circumvent this safety feature. Equipment grounding must comply with local and national electrical codes.
- You must provide an external certified circuit breaker rated minimum 20 A in the building installation.
- The power cord serves as the main disconnecting device for the AC-powered device. The socket outlet must be near the AC-powered device and be easily accessible.
- For devices that have more than one power supply connection, you must ensure that all power connections are fully disconnected so that power to the device is completely removed to avoid electric shock. To disconnect power, unplug all power cords (one for each power supply).

Power Cable Warning (Japanese)

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。

RELATED DOCUMENTATION

General Electrical Safety Guidelines and Warnings | 46

AC Power Disconnection Warning

WARNING: Before working on the device or near power supplies, unplug all the power cords from the appliance.

Waarschuwing Voordat u aan een frame of in de nabijheid van voedingen werkt, dient u bij wisselstroom toestellen de stekker van het netsnoer uit het stopcontact te halen.

Varoitus Kytke irti vaihtovirtalaitteiden virtajohto, ennen kuin teet mitään asennuspohjalle tai työskentelet virtalähteiden läheisyydessä.

Attention Avant de travailler sur un châssis ou à proximité d'une alimentation électrique, débrancher le cordon d'alimentation des unités en courant alternatif.

Warnung Bevor Sie an einem Chassis oder in der Nähe von Netzgeräten arbeiten, ziehen Sie bei Wechselstromeinheiten das Netzkabel ab bzw.

Avvertenza Prima di lavorare su un telaio o intorno ad alimentatori, scollegare il cavo di alimentazione sulle unità CA.

Advarsel Før det utføres arbeid på kabinettet eller det arbeides i nærheten av strømforsyningsenheter, skal strømledningen trekkes ut på vekselstrømsenheter.

Aviso Antes de trabalhar num chassis, ou antes de trabalhar perto de unidades de fornecimento de energia, desligue o cabo de alimentação nas unidades de corrente alternada.

¡Atención! Antes de manipular el chasis de un equipo o trabajar cerca de una fuente de alimentación, desenchufar el cable de alimentación en los equipos de corriente alterna (CA).

Varning! Innan du arbetar med ett chassi eller nära strömförsörjningsenheter skall du för växelströmsenheter dra ur nätsladden.

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DC Power Electrical Safety Guidelines | 52

DC Power Electrical Safety Guidelines

- A DC-powered device is equipped with a DC terminal block that is rated for the power requirements of a maximally configured device.

  NOTE: To supply sufficient power, terminate the DC input wiring on a facility DC source that is capable of supplying:

  - Minimum of 60 A at –38 VDC

  Incorporate an easily accessible disconnect device into the facility wiring. Be sure to connect the ground wire or conduit to a solid office earth ground. A closed loop ring is recommended for terminating the ground conductor at the ground stud.

- Run two wires from the circuit breaker box to a source of 38 VDC.

- A DC-powered device that is equipped with a DC terminal block is intended only for installation in a restricted access location. In the United States, a restricted access area is one in accordance with Articles 110-16, 110-17, and 110-18 of the National Electrical Code ANSI/NFPA 70.

  NOTE: Primary overcurrent protection is provided by the building circuit breaker. This breaker must protect against excess currents, short circuits, and earth grounding faults in accordance with NEC ANSI/NFPA 70.

- Ensure that the polarity of the DC input wiring is correct. Under certain conditions, connections with reversed polarity might trip the primary circuit breaker or damage the equipment.

- For personal safety, connect the green and yellow wire to safety (earth) ground at both the device and the supply side of the DC wiring.

- The marked input voltage of –38 VDC for a DC-powered device is the nominal voltage associated with the battery circuit, and any higher voltages are only to be associated with float voltages for the charging function.
- Because the device is a positive ground system, you must connect the positive lead to the terminal labeled RTN, the negative lead to the terminal labeled –38 VDC, and the earth ground to the device grounding points.

DC Power Disconnection Warning

WARNING: Before performing any of the DC power procedures, ensure that power is removed from the DC circuit. To ensure that all power is off, locate the circuit breaker on the panel board that services the DC circuit, switch the circuit breaker to the OFF position, and tape the device handle of the circuit breaker in the OFF position.

Waarschuwing Voordat u een van de onderstaande procedures uitvoert, dient u te controleren of de stroom naar het gelijkstroom circuit uitgeschakeld is. Om u ervan te verzekeren dat alle stroom UIT is geschakeld, kiest u op het schakelbord de stroomverbreker die het gelijkstroom circuit bedient, draait de stroomverbreker naar de UIT positie en plakt de schakelaarhendel van de stroomverbreker met plakband in de UIT positie vast.

Varoitus Varmista, että tasavirtapiirissä ei ole virtaa ennen seuraavien toimenpiteiden suorittamista. Varmistaaksesi, että virta on KATKAISTU täysin, paikanna tasavirrasta huolehtivassa kojetaulussa sijaitseva suojakytkin, käännä suojakytkin KATKAISTU-asentoon ja teippaa suojakytkimen varsi niin, että se pysyy KATKAISTU-asennossa.

Attention Avant de pratiquer l'une quelconque des procédures ci-dessous, vérifier que le circuit en courant continu n'est plus sous tension. Pour en être sûr, localiser le disjoncteur situé sur le panneau de service du circuit en courant continu, placer le disjoncteur en position fermée (OFF) et, à l'aide d'un ruban adhésif, bloquer la poignée du disjoncteur en position OFF.

Warnung Vor Ausführung der folgenden Vorgänge ist sicherzustellen, daß die Gleichstromschaltung keinen Strom erhält. Um sicherzustellen, daß sämtlicher Strom abgestellt ist, machen Sie auf der Schalttafel den Unterbrecher für die Gleichstromschaltung ausfindig, stellen Sie den Unterbrecher auf AUS, und kleben Sie den Schaltergriff des Unterbrechers mit Klebeband in der AUS-Stellung fest.

Avvertenza Prima di svolgere una qualsiasi delle procedure seguenti, verificare che il circuito CC non sia alimentato. Per verificare che tutta l'alimentazione sia scollegata

(OFF), individuare l'interruttore automatico sul quadro strumenti che alimenta il circuito CC, mettere l'interruttore in posizione OFF e fissarlo con nastro adesivo in tale posizione.

Advarsel Før noen av disse prosedyrene utføres, kontroller at strømmen er frakoblet likestrømkretsen. Sørg for at all strøm er slått AV. Dette gjøres ved å lokalisere strømbryteren på brytertavlen som betjener likestrømkretsen, slå strømbryteren AV og teipe bryterhåndtaket på strømbryteren i AV-stilling.

Aviso Antes de executar um dos seguintes procedimentos, certifique-se que desligou a fonte de alimentação de energia do circuito de corrente contínua. Para se assegurar que toda a corrente foi DESLIGADA, localize o disjuntor no painel que serve o circuito de corrente contínua e coloque-o na posição OFF (Desligado), segurando nessa posição a manivela do interruptor do disjuntor com fita isoladora.

¡Atención! Antes de proceder con los siguientes pasos, comprobar que la alimentación del circuito de corriente continua (CC) esté cortada (OFF). Para asegurarse de que toda la alimentación esté cortada (OFF), localizar el interruptor automático en el panel que alimenta al circuito de corriente continua, cambiar el interruptor automático a la posición de Apagado (OFF), y sujetar con cinta la palanca del interruptor automático en posición de Apagado (OFF).

Varning! Innan du utför någon av följande procedurer måste du kontrollera att strömförsörjningen till likströmskretsen är bruten. Kontrollera att all strömförsörjning är BRUTEN genom att slå AV det överspänningsskydd som skyddar likströmskretsen och tejpa fast överspänningsskyddets omkopplare i FRÅN-läget.

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- DC Power Wiring Sequence Warning | 56

DC Power Grounding Requirements and Warning

An insulated grounding conductor that is identical in size to the grounded and ungrounded branch circuit supply conductors but is identifiable by green and yellow stripes is installed as part of the branch circuit that supplies the device. The grounding conductor is a separately derived system at the supply transformer or motor generator set.

WARNING: When you install the device, the ground connection must always be made first and disconnected last.

Waarschuwing Bij de installatie van het toestel moet de aardverbinding altijd het eerste worden gemaakt en het laatste worden losgemaakt.

Varoitus Laitetta asennettaessa on maahan yhdistäminen aina tehtävä ensiksi ja maadoituksen irti kytkeminen viimeiseksi.

Attention Lors de l'installation de l'appareil, la mise à la terre doit toujours être connectée en premier et déconnectée en dernier.

Warnung Der Erdanschluß muß bei der Installation der Einheit immer zuerst hergestellt und zuletzt abgetrennt werden.

Avvertenza In fase di installazione dell'unità, eseguire sempre per primo il collegamento a massa e disconnetterlo per ultimo.

Advarsel Når enheten installeres, må jordledningen alltid tilkobles først og frakobles sist.

Aviso Ao instalar a unidade, a ligação à terra deverá ser sempre a primeira a ser ligada, e a última a ser desligada.

¡Atención! Al instalar el equipo, conectar la tierra la primera y desconectarla la última.

Varning! Vid installation av enheten måste jordledningen alltid anslutas först och kopplas bort sist.

RELATED DOCUMENTATION

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- DC Power Electrical Safety Guidelines | **52**
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DC Power Wiring Sequence Warning

WARNING: Wire the DC power supply using the appropriate lugs. When connecting power, the proper wiring sequence is ground to ground, +RTN to +RTN, then –40 V to –60 V. When disconnecting power, the proper wiring sequence is –40 V to –60 V, +RTN to +RTN, then ground to ground. Note that the ground wire must always be connected first and disconnected last.

Waarschuwing De juiste bedradingsvolgorde verbonden is aarde naar aarde, +RTN naar +RTN, en –40 V naar – 60 V. De juiste bedradingsvolgorde losgemaakt is en –40 naar –60 V, +RTN naar +RTN, aarde naar aarde.

Varoitus Oikea yhdistettava kytkentajarjestys on maajohto maajohtoon, +RTN varten +RTN, –40 V varten –60 V. Oikea irrotettava kytkentajarjestys on –40 V varten –60 V, +RTN varten +RTN, maajohto maajohtoon.

Attention Câblez l'approvisionnement d'alimentation CC En utilisant les crochets appropriés à l'extrémité de câblage. En reliant la puissance, l'ordre approprié de câblage est rectifié pour rectifier, +RTN à +RTN, puis –40 V à –60 V. En débranchant la puissance, l'ordre approprié de câblage est –40 V à –60 V, +RTN à +RTN, a alors rectifié pour rectifier. Notez que le fil de masse devrait toujours être relié d'abord et débranché pour la dernière fois. Notez que le fil de masse devrait toujours être relié d'abord et débranché pour la dernière fois.

Warnung Die Stromzufuhr ist nur mit geeigneten Ringösen an das DC Netzteil anzuschliessen. Die richtige Anschlusssequenz ist: Erdanschluss zu Erdanschluss, +RTN zu +RTN und dann -40 V zu -60V. Die richtige Sequenz zum Abtrennen der Stromversorgung ist -40 V zu -60 V, +RTN zu +RTN und dann Erdanschluss zu Erdanschluss. Es ist zu beachten dass der Erdanschluss immer zuerst angeschlossen und als letztes abgetrennt wird.

Avvertenza Mostra la morsettiera dell alimentatore CC. Cablare l'alimentatore CC usando i connettori adatti all'estremità del cablaggio, come illustrato. La corretta sequenza di cablaggio è da massa a massa, da positivo a positivo (da linea ad L) e da negativo a negativo (da neutro a N). Tenere presente che il filo di massa deve sempre venire collegato per primo e scollegato per ultimo.

Advarsel Riktig tilkoples tilkoplingssekvens er jord til jord, +RTN til +RTN, –40 V til –60 V. Riktig frakoples tilkoplingssekvens er –40 V til –60 V, +RTN til +RTN, jord til jord.

Aviso Ate con alambre la fuente de potencia cc Usando los terminales apropiados en el extremo del cableado. Al conectar potencia, la secuencia apropiada del cableado se muele para moler, +RTN a +RTN, entonces –40 V a –60 V. Al desconectar potencia, la

secuencia apropiada del cableado es –40 V a –60 V, +RTN a +RTN, entonces molió para moler. Observe que el alambre de tierra se debe conectar siempre primero y desconectar por último. Observe que el alambre de tierra se debe conectar siempre primero y desconectar por último.

¡Atención! Wire a fonte de alimentação de DC Usando os talões apropriados na extremidade da fiação. Ao conectar a potência, a seqüência apropriada da fiação é moída para moer, +RTN a +RTN, então –40 V a –60 V. Ao desconectar a potência, a seqüência apropriada da fiação é –40 V a –60 V, +RTN a +RTN, moeu então para moer. Anote que o fio à terra deve sempre ser conectado primeiramente e desconectado por último. Anote que o fio à terra deve sempre ser conectado primeiramente e desconectado por último.

Varning! Korrekt kopplingssekvens ar jord till jord, +RTN till +RTN, –40 V till –60 V. Korrekt kopplas kopplingssekvens ar –40 V till –60 V, +RTN till +RTN, jord till jord.

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- DC Power Disconnection Warning | **53**
- DC Power Grounding Requirements and Warning | **55**

DC Power Wiring Terminations Warning

WARNING: When stranded wiring is required, use approved wiring terminations, such as closed-loop or spade-type with upturned lugs. These terminations must be the appropriate size for the wires and must clamp both the insulation and conductor.

Waarschuwing Wanneer geslagen bedrading vereist is, dient u bedrading te gebruiken die voorzien is van goedgekeurde aansluitingspunten, zoals het gesloten-lus type of het grijperschop type waarbij de aansluitpunten omhoog wijzen. Deze aansluitpunten dienen de juiste maat voor de draden te hebben en dienen zowel de isolatie als de geleider vast te klemmen.

Varoitus Jos säikeellinen johdin on tarpeen, käytä hyväksyttyä johdinliitäntää, esimerkiksi suljettua silmukkaa tai kourumaista liitäntää, jossa on ylöspäin käännetyt kiinnityskorvat. Tällaisten liitäntöjen tulee olla kooltaan johtimiin sopivia ja niiden tulee puristaa yhteen sekä eristeen että johdinosan.

Attention Quand des fils torsadés sont nécessaires, utiliser des douilles terminales homologuées telles que celles à circuit fermé ou du type à plage ouverte avec cosses rebroussées. Ces douilles terminales doivent être de la taille qui convient aux fils et doivent être refermées sur la gaine isolante et sur le conducteur.

Warnung Wenn Litzenverdrahtung erforderlich ist, sind zugelassene Verdrahtungsabschlüsse, z.B. für einen geschlossenen Regelkreis oder gabelförmig, mit nach oben gerichteten Kabelschuhen zu verwenden. Diese Abschlüsse sollten die angemessene Größe für die Drähte haben und sowohl die Isolierung als auch den Leiter festklemmen.

Avvertenza Quando occorre usare trecce, usare connettori omologati, come quelli a occhiello o a forcella con linguette rivolte verso l'alto. I connettori devono avere la misura adatta per il cablaggio e devono serrare sia l'isolante che il conduttore.

Advarsel Hvis det er nødvendig med flertrådede ledninger, brukes godkjente ledningsavslutninger, som for eksempel lukket sløyfe eller spadetype med oppoverbøyde kabelsko. Disse avslutningene skal ha riktig størrelse i forhold til ledningene, og skal klemme sammen både isolasjonen og lederen.

Aviso Quando forem requeridas montagens de instalação eléctrica de cabo torcido, use terminações de cabo aprovadas, tais como, terminações de cabo em circuito fechado e planas com terminais de orelha voltados para cima. Estas terminações de cabo deverão ser do tamanho apropriado para os respectivos cabos, e deverão prender simultaneamente o isolamento e o fio condutor.

¡Atención! Cuando se necesite hilo trenzado, utilizar terminales para cables homologados, tales como las de tipo "bucle cerrado" o "espada", con las lengüetas de conexión vueltas hacia arriba. Estos terminales deberán ser del tamaño apropiado para los cables que se utilicen, y tendrán que sujetar tanto el aislante como el conductor.

Varning! När flertrådiga ledningar krävs måste godkända ledningskontakter användas, t.ex. kabelsko av sluten eller öppen typ med uppåtvänd tapp. Storleken på dessa kontakter måste vara avpassad till ledningarna och måste kunna hålla både isoleringen och ledaren fastklämda.

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Multiple Power Supplies Disconnection Warning

WARNING: For a device that has more than one power supply connection, you must ensure that all power connections are fully disconnected so that power to the device is completely removed.

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TN Power Warning

WARNING: The device is designed to work with a TN power system.

Waarschuwing Het apparaat is ontworpen om te functioneren met TN energiesystemen.

Varoitus Koje on suunniteltu toimimaan TN-sähkövoimajärjestelmien yhteydessä.

Attention Ce dispositif a été conçu pour fonctionner avec des systèmes d'alimentation TN.

Warnung Das Gerät ist für die Verwendung mit TN-Stromsystemen ausgelegt.

Avvertenza Il dispositivo è stato progettato per l'uso con sistemi di alimentazione TN.

Advarsel Utstyret er utfomet til bruk med TN-strømsystemer.

Aviso O dispositivo foi criado para operar com sistemas de corrente TN.

¡Atención! El equipo está diseñado para trabajar con sistemas de alimentación tipo TN.

Varning! Enheten är konstruerad för användning tillsammans med elkraftssystem av TN-typ.

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Action to Take After an Electrical Accident

If an electrical accident results in an injury, take the following actions in this order:

1. Use caution. Be aware of potentially hazardous conditions that could cause further injury.
2. Disconnect power from the device.
3. If possible, send another person to get medical aid. Otherwise, assess the condition of the victim, then call for help.

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CHAPTER 9

Compliance Statements

IN THIS CHAPTER

Compliance Statements for EMC Requirements for JSA

IN THIS SECTION

This topic describes the EMC requirements for the Juniper Secure Analytics (JSA) appliances:

Canada

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. Industry Canada does not guarantee the equipment will operate to the users' satisfaction.

Before installing this equipment, users should ensure that it is permissible to connect the equipment to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the inside wiring associated with a single line individual service can be extended by means of a certified connector assembly. The customer should be aware that compliance with the above conditions might not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, might give the telecommunications company cause to request the user to disconnect the equipment.

CAUTION: Users should not attempt to make electrical ground connections by themselves, but should contact the appropriate inspection authority or an electrician, as appropriate.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution might be particularly important in rural areas.

European Community

This is a Class A device. In a domestic environment this device might cause radio interference, in which case the user needs to take adequate measures.

Japan

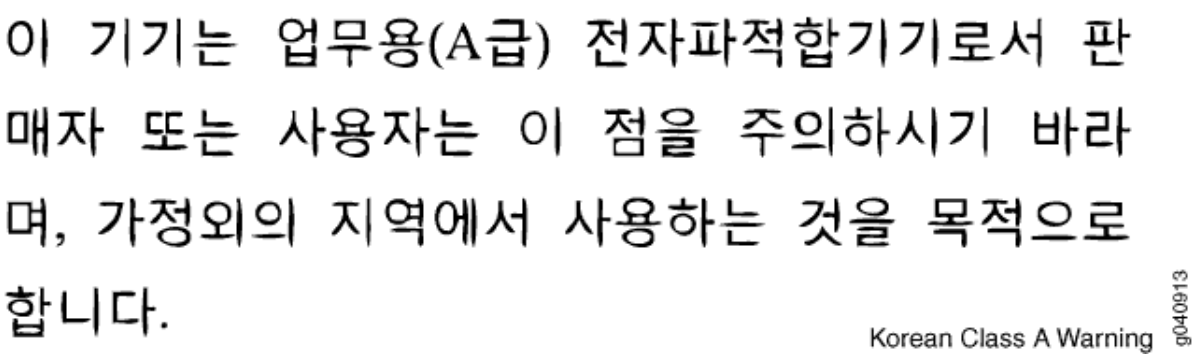
この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

The preceding translates as follows:

This is a Class A device. In a domestic environment this device might cause radio interference, in which case the user needs to take adequate measures.

VCCI-A

Korea



The preceding translates as follows:

This equipment is Industrial (Class A) electromagnetic wave suitability equipment and seller or user should take notice of it, and this equipment is to be used in the places except for home

United States

The device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, might cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users need to correct the interference at their own expense.

FCC Part 15 Statement

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, might cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or TV technician for help.

RELATED DOCUMENTATION

Installation Instructions Warning | 32

Compliance Statements for Acoustic Noise for JSA

This topic applies to JSA7500 in the Juniper Secure Analytics (JSA) product family.

Maschinenlärminformations-Verordnung - 3. GPSGV, der höchste Schalldruckpegel beträgt 70 dB(A) oder weniger gemäss EN ISO 7779

Translation:

The emitted sound pressure is below 70 dB(A) per EN ISO 7779.

RELATED DOCUMENTATION

Agency Approvals for JSA | 25
Compliance Statements for EMC Requirements for JSA | 62
Compliance Statements for NEBS Standards for JSA7500 | 65

Compliance Statements for NEBS Standards for JSA7500

JSA7500 complies with the following Network Equipment Building System (NEBS) standards:

- GR-1089-Core: EMC and Electrical Safety for Network Telecommunications Equipment.
- The equipment is suitable for installation as part of the Common Bonding Network (CBN).
- The equipment is suitable for installation in locations where the National Electrical Code (NEC) applies.
- The battery return connection is to be treated as an isolated DC return (that is, DC-I) as defined in GR-1089-CORE.

WARNING: The intrabuilding port(s) (40G DACS and USB ports) of the equipment or subassembly must use shielded intrabuilding cabling/wiring that is grounded at both ends.

RELATED DOCUMENTATION

- Compliance Statements for Acoustic Noise for JSA | **65**
- Compliance Statements for EMC Requirements for JSA | **62**
- Agency Approvals for JSA | **25**

PART 5

Installation

CHAPTER 10

Hardware Installation Overview

IN THIS CHAPTER

Rack-Mount Installation Overview

The rack-mount system is flexible and offers several options for rack-mounting the hardware. The different options include:

- "Front-and-Rear-Mounting the JSA Appliance Flush to a Rack" on page 84
- "Front-and-Rear-Mounting the JSA Appliance Recessed in a Rack" on page 85
- "Mid-Mounting the JSA Appliance in a Two-Post Rack" on page 91

The following rack type is supported for the Juniper Secure Analytics (JSA) appliance:

- 19-in. 4-post rack
- 19-in. 2-post rack

RELATED DOCUMENTATION

Required Tools and Parts for Installing the JSA Appliance

Table 8 on page 69 lists the tools and equipment required for installing and maintaining the JSA.

Table 8: Required Tools and Parts for Installing the JSA Appliance

Task	Tools and Parts
Installing the JSA Appliance	• Phillips (+) screwdriver, number 1 • Phillips (+) screwdriver, number 3 • Tie wrap
Connecting the JSA Appliance	ESD grounding wrist strap
Grounding the JSA Appliance	Phillips (+) screwdriver, number 1
Packing the JSA Appliance	• Electrostatic bag or antistatic mat, for each component • ESD grounding wrist strap

RELATED DOCUMENTATION

Rack-Mount Installation Overview | 68

Mid-Mounting the JSA Appliance in a Two-Post Rack | 91

CHAPTER 11

Software Installation Overview

IN THIS CHAPTER

JSA Components

Juniper Secure Analytics (JSA) includes the following deployment components:

NOTE: When deploying a Juniper Secure Analytics (JSA) appliance with image 2013.2.r3.607582, you must reimage the appliance to the common image 2013.2.r3.615469 or above. For more information, see *Installing JSA Using a Bootable USB Flash-Drive Technical Note*.

- **Flow Processor**—Collects data from devices, and various live and recorded feeds, such as network taps, span/mirror ports, NetFlow, and JSA flow logs. When the data is collected, the Flow Processor groups related individual packets into a flow. JSA defines these flows as a communication session between two pairs of unique IP address and ports that use the same protocol.

  A flow starts when the Flow Processor detects the first packet with a unique source IP address, destination IP address, source port, destination port, and other specific protocol options that determine the start of a communication. Each additional packet is evaluated. Counts of bytes and packets are added to the statistical counters in the flow record. At the end of an interval, a status record of the flow is sent to an Event Collector and statistical counters for the flow are reset. A flow ends when no activity for the flow is detected within the configured period of time.

  Flow reporting generates records of all active or expired flows during a specified period of time. If the protocol does not support port-based connections, JSA combines all packets between the two hosts into a single flow record. However, a Flow Processor does not record flows until a connection is made to another JSA component and data is retrieved.

- **Event Collector**—Collects security events from various types of security devices, known as log sources, in your network. The Event Collector gathers events from local and remote log sources. The Event Collector then normalizes the events and sends the information to the Event Processor. The Event Collector also bundles all virtually identical events to conserve system usage.

- **Event Processor**—Processes event and flow data from the Event Collector. The events are bundled to conserve network usage. When received, the Event Processor correlates the information from JSA and distributes to the appropriate area, depending on the type of event. The Event Processor also includes information gathered by JSA to indicate any behavioral changes or policy violations for that event. Rules are then applied to the events that allow the Event Processor to process according to the configured rules. When complete, the Event Processor sends the events to the Magistrate.

  A non-Console Event Processor can be connected to the Event Processor on the Console or connected to another Event Processor in your deployment. The Accumulator is responsible for gathering flow and event information from the Event Processor.

  The Event Processor on the Console is always connected to the magistrate. This connection cannot be deleted.

- **Off-site Source**—Indicates an off-site event or flow data source that forwards normalized data to an Event Collector. You can configure an off-site source to receive flows or events and allows the data to be encrypted before forwarding.

- **Off-site Target**—Indicates an off-site device that receives event or flow data. An off-site target can only receive data from an Event Collector.

- **Magistrate**—The Magistrate component provides the core processing components of the security information and event management (SIEM) system. You can add one Magistrate component for each deployment. The Magistrate provides views, reports, alerts, and analysis of network traffic and security events.

  The Magistrate processes the events or flows against the defined custom rules to create an offense. If no custom rules exist, the Magistrate uses the default rule set to process the offending event or flow. An offense is an event or flow that has been processed through JSA using multiple inputs, individual events or flows, and combined events or flows with analyzed behavior and vulnerabilities. The Magistrate prioritizes the offenses and assigns a magnitude value based on several factors, including the amount of offenses, severity, relevance, and credibility.

RELATED DOCUMENTATION

Preparing the Network Hierarchy | 72

Identifying Network Settings | 95

Identifying Security Monitoring Devices and Flow Data Sources | 96

Identifying Network Assets | 96

Browser Support

To access the Juniper Secure Analytics (JSA) interface, you must have a Web browser installed on your client system. JSA supports the following browsers:

- Microsoft® Windows Internet Explorer, with Compatibility View Enabled - 8.0 and 9.0
- Mozilla Firefox - 10.0 ESR and 17.0 ESR

> **NOTE:** Due to Mozilla's short release cycle, we cannot commit to testing on the latest versions of the Mozilla Firefox web browser. However, we are fully committed to investigating any issues that are reported.

RELATED DOCUMENTATION

JSA Components | 70
Preparing the Network Hierarchy | 72
Identifying Network Settings | 95
Identifying Security Monitoring Devices and Flow Data Sources | 96
Identifying Network Assets | 96

Preparing the Network Hierarchy

IN THIS SECTION

Juniper Secure Analytics (JSA) uses the network hierarchy to understand your network traffic and provides you with the ability to view network activity for your entire deployment. JSA supports any network hierarchy that can be defined by a range of IP addresses.

You can create your network based on many different variables, including geographical or business units. For example, your network hierarchy might include corporate IP address ranges (internal or external), physical departments or areas, mail servers, and webservers.

Once you define the components you want to add to your network hierarchy, you can install JSA, and then configure the network hierarchy using the JSA interface. For each component you want to add to the network hierarchy, use Table 9 on page 73 to indicate each component in your network map.

At a minimum, we recommend that you define objects in the network hierarchy for:

- Internal/external demilitarized zone (DMZ)
- VPN
- All internal IP address space (for example, 0.0.0.0/8)
- Proxy servers
- Network Address Translation (NAT) IP address range
- Server network subnets
- Voice-over-IP (VoIP) subnets

Table 9: Network Hierarchy

Description	Name	IP/CIDR Value	Color	Weight
Example for NAT	NAT_Ranges	0.0.0.5/32	#00FF33	50
Example for DMZ	Internal	0.0.0.1/32	#000099	50

For more information, see the *Juniper Secure Analytics Administration Guide*.

The following sections explain how to set your network before you install the JSA software:

Identifying Network Settings

Before you install Juniper Secure Analytics (JSA), you must have the following information for each system you want to install:

NOTE: When you configure the network setting such as hostname and IP address using the **qchange_netsetup** script, the JSA appliance hangs while rebooting. This issue is seen in 2013.2.r3.607582 and it will be fixed in the future releases. You need to manually power cycle the JSA appliance to overcome this issue.

- Hostname
- IP address
- Network mask address
- Subnet mask
- Default gateway
- Primary DNS server
- Secondary DNS server (optional)
- Public IP address for networks using Network Address Translation (NAT)
- E-mail server
- NTP server (Console only) or Time server

Identifying Security Monitoring Devices and Flow Data Sources

Juniper Secure Analytics (JSA) can collect and correlate events received from external sources such as security equipment (for example, firewalls, VPNs, or IDSs) and host or application security logs, such as Windows logs. Device Support Modules (DSMs) and Flow Collectors allow you to integrate JSA with this external data. JSA automatically discovers sensor devices that are sending system log (syslog) messages to an Event Collector. The sensor devices that are automatically discovered by JSA appear in the Sensor Devices window within the JSA Administration Console. Once autodiscovery is completed, you should disable the Auto Detection Enabled option in the Event Collector configuration. For more information, see the *Juniper Secure Analytics Administration Guide* and *Log Sources Users Guide*.

Identifying Network Assets

Juniper Secure Analytics (JSA) can learn about your network and server infrastructure based on flow data. The Server Discovery function uses the JSA Asset Profile database to discover many types of servers.

Defining certain additional server and IP address types also improves tuning results. Table 10 on page 75 provides a list of possible servers. See the *Juniper Secure Analytics Users Guide* for information on defining servers within JSA. If your network includes a large number of servers, you can use CIDR or IP subnet addresses within the server networks category.

Table 10: Asset Identification

Server	IP Address(es)	QTY	Name
NAT address range			
Vulnerability scanners			
Network management			
Proxy			
Virus definition and other updates			
Windows Server networks, such as domain controllers or exchange servers			

RELATED DOCUMENTATION

- JSA Components | **70**
- Browser Support | **72**
- Identifying Network Settings | **95**
- Identifying Security Monitoring Devices and Flow Data Sources | **96**
- Identifying Network Assets | **96**

CHAPTER 12

Connecting the JSA Appliance

IN THIS CHAPTER

Grounding the JSA7500 Appliance

To meet safety and electromagnetic interference (EMI) requirements and to ensure proper operation, you must adequately ground the JSA7500 appliance before connecting it to the power source.

You can ground the JSA7500 appliance either from the side of the chassis or from the rear panel. If you use the grounding lug, then we recommend that you use the grounding points available on the side of the chassis.

NOTE: A ground connection to the protective earthing terminal is not required for an AC-powered JSA7500. The AC power cords provide adequate grounding when you plug the power supply in the switch into a grounded AC power outlet by using the AC power cord appropriate for your geographical location.

Table 11 on page 76 lists the specifications of the grounding cable and grounding lug used with the JSA7500 appliance.

Table 11: Grounding Cable and Grounding Lug Specifications for the JSA7500 Appliance

Grounding Requirement	Specification
Grounding cable	8 AWG wire

Table 11: Grounding Cable and Grounding Lug Specifications for the JSA7500 Appliance *(Continued)*

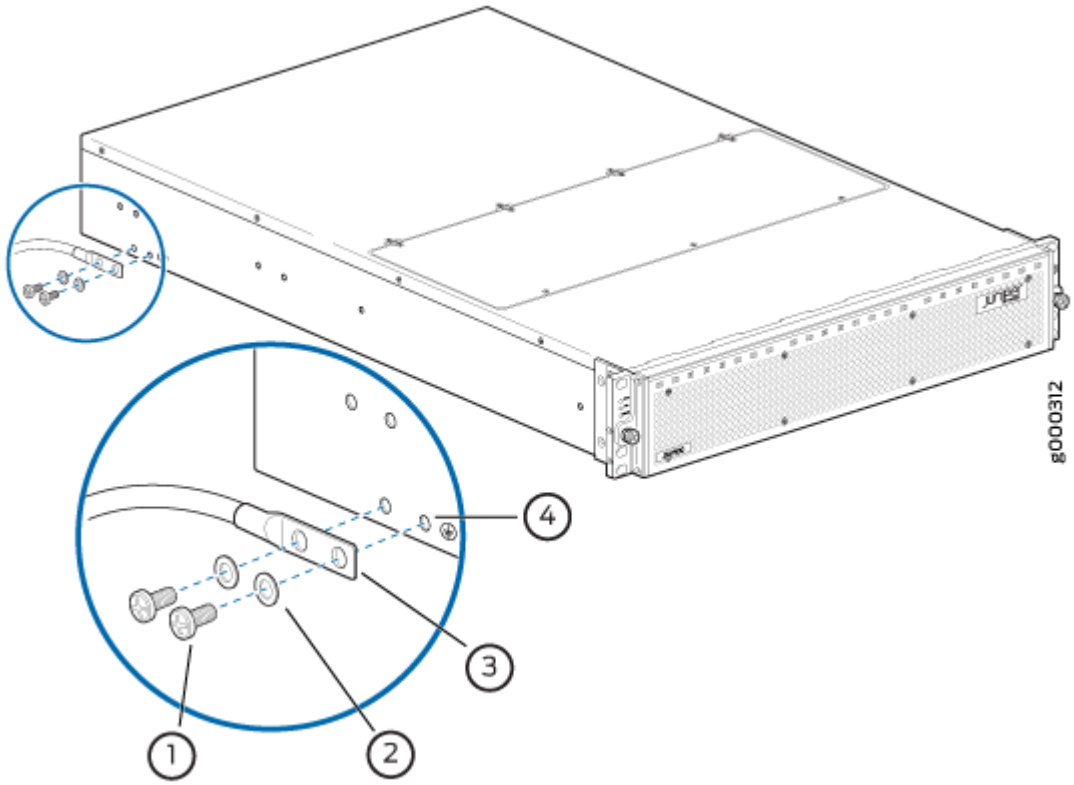
Grounding Requirement	Specification
Amperage of grounding cable	Up to 50 A
Grounding kit	Two 10-32 x 1/4-in. pan-head screws with two 1 mm washers and one grounding lug The grounding kit is shipped with the JSA7500 appliance.

CAUTION: Before you install the appliance, a licensed electrician must attach a grounding cable and a grounding lug to the grounding points with the 10-32 x 1/4-in. pan-head screws and 1 mm washers. A grounding cable with an incorrectly attached lug or screws can damage the appliance (for example, by causing a short circuit).

To ground the JSA7500 appliance:

1. Connect the grounding cable to a proper earth ground.
2. Verify that a licensed electrician has attached the grounding lug to the grounding cable.
3. Place the grounding cable lug over the grounding points on the side of the chassis as shown in Figure 4 on page 78.

Figure 4: Grounding the JSA7500 Appliance



1– 10-32 x 1/4-in. Pan-head screws	3– Grounding lug
2– 1 mm washer	4– Grounding points

4. Secure the grounding cable lug to the grounding points with the screws and washers as shown in Figure 4 on page 78.

5. Dress the grounding cable, and verify that it does not touch or block access to the JSA7500 components and that it does not cause a tripping hazard.

RELATED DOCUMENTATION

Connecting JSA7500 to a DC Power Source | 79

Installing the JSA Hardware | 82

Connecting JSA7500 to a DC Power Source

Before connecting your Juniper Secure Analytics (JSA) appliance to a DC power source:

- Ensure that you have taken the necessary precautions to prevent ESD damage.
- Ensure that you have connected the JSA appliance chassis to earth ground.

Required tools and parts:

- DC power source cables (12-14 AWG) with ends of the wire stripped ~12mm and twisted
- Phillips (+) screwdriver, number 1

CAUTION: Before you connect power to the JSA appliance, attach ground wire in one of the below configurations to meet the safety requirements and to ensure proper operation:

- Both power supply ground terminals
- One or both of the chassis ground terminal(s) located to the left of the power supply modules
- Both power supply ground terminals and one or both chassis ground terminals

You connect DC source power to the JSA appliance by attaching power cables from the external DC power sources to the terminal studs on the DC power feed faceplates.

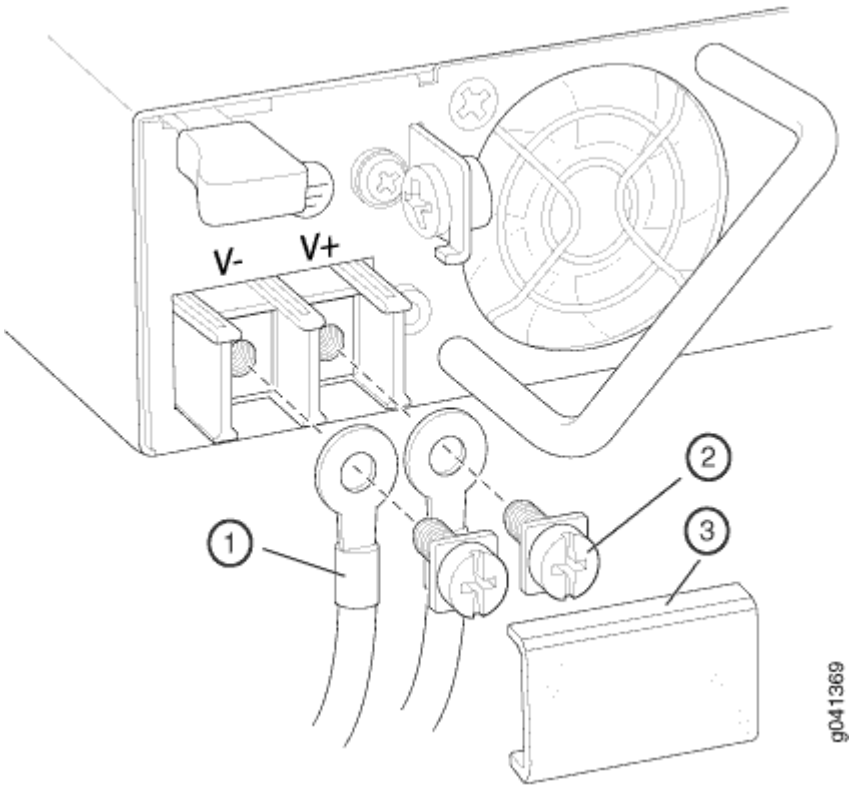
WARNING: DC-powered JSA appliances are intended for installation only in restricted access locations.

WARNING: Before you perform the following procedure, ensure that power is removed from the DC circuit. To ensure that all power is off, 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.

To connect the DC source power to the JSA appliance:

1. Ensure that the input circuit breaker is open so that the voltage across the DC power source cable leads is 0 V, so that the cable leads will not become active while you are connecting DC power.
2. Connect the stripped and twisted wires to wire clamps under DC terminal screws as shown in Figure 5 on page 80.

Figure 5: Connecting JSA to a DC Power Source



1– DC ring lug	3– Safety cover
2– Screw	

3. Use the terminal screws to secure the power source cables to the power feed on the JSA appliance by attaching the twisted wires that are attached to the cables to the appropriate terminals.

> **NOTE**: The red cable should be connected to the V+ terminal, and the black cable should be connected to the V- terminal, respectively, as shown in Figure 5 on page 80.

4. Attach the plastic safety cover.

RELATED DOCUMENTATION

Connecting to a Management Device | 81

Installing the CNA Module on the JSA7500 Appliance | 92

Installing the JSA Hardware | 82

Grounding the JSA7500 Appliance | 76

Connecting to a Management Device

You can control the Juniper Secure Analytics (JSA) appliance through a connected management device (such as a desktop or laptop). Use the RJ-45 serial port and console port to connect your laptop and desktop respectively.

RELATED DOCUMENTATION

- Grounding the JSA7500 Appliance | **76**
- Connecting JSA7500 to a DC Power Source | **79**
- Installing the CNA Module on the JSA7500 Appliance | **92**
- Installing the JSA Hardware | **82**

CHAPTER 13

Installing the JSA Appliance

IN THIS CHAPTER

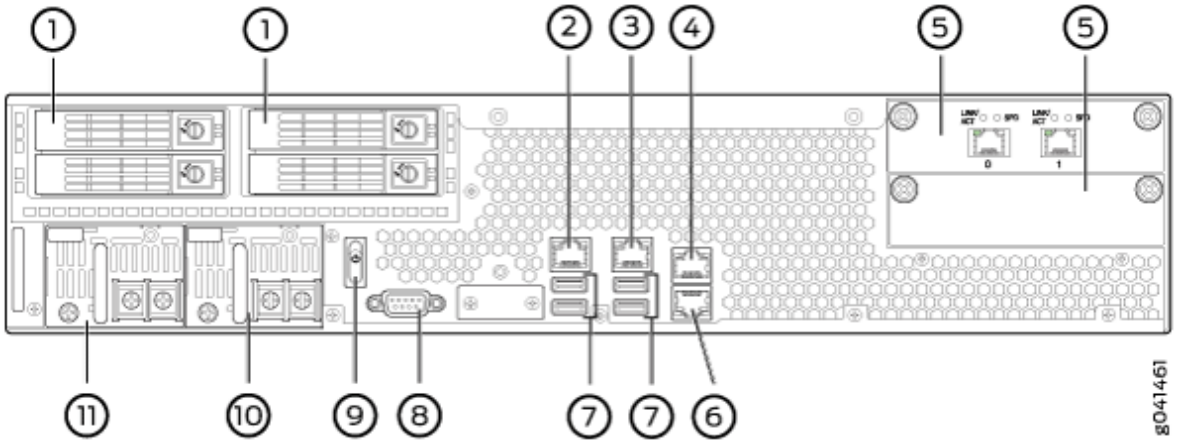
Installing the JSA Hardware

Place the shipping container on a flat surface and carefully remove the hardware components.

To install the Juniper Secure Analytics (JSA) appliance:

1. Mount the JSA appliance in your server rack using the attached mounting brackets.
2. Plug the power cord into the AC receptacle on the rear panel. See Figure 6 on page 83. If your JSA contains two power supplies, plug a power cord into each of the AC receptacles.

Figure 6: JSA7500 Back Panel

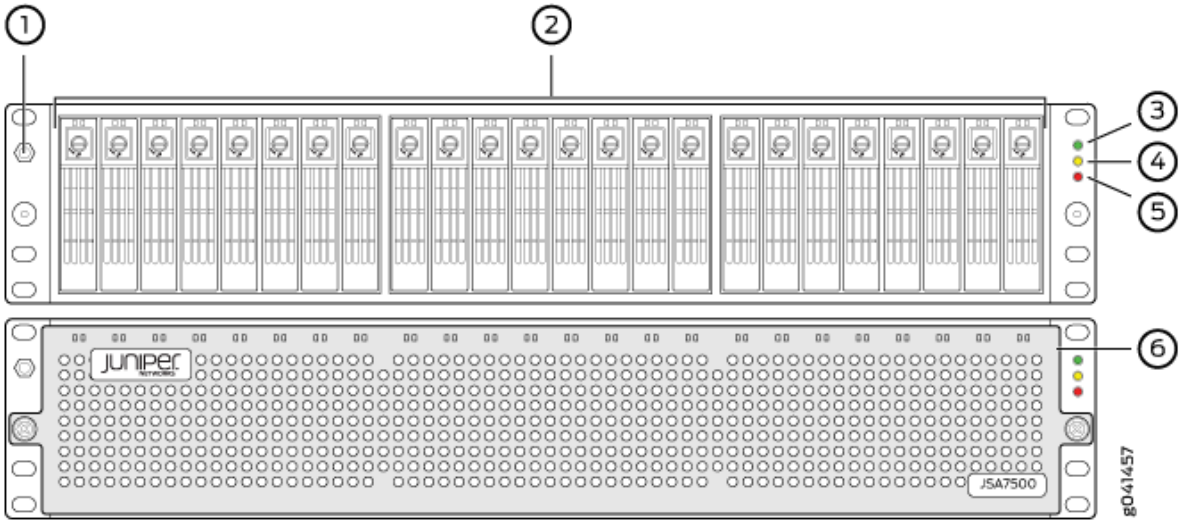


1– Hard drive	7– USB ports
2– Network port 0	8– DB-9 Serial Console port
3– Network port 1	9– Power switch
4– Network port 2	10– Redundant power supply
5– IOC expansion slots	11– Redundant power supply
6– Network port 3	

3. Plug the other end of the power cord into a wall socket. If your JSA appliance 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.
4. Plug the Ethernet cable into the port labeled **0** on the front panel. See Figure 7 on page 84.

   When you turn on the power, the internal port uses two LEDs to indicate the LAN connection status.

Figure 7: JSA7500 Front Panel



1– ESD wrist strap grounding jack	4– Chassis LED
2– Hard drives	5– Chassis LED
3– Chassis LED	6– Front bezel with air filter

5. Plug straight-through or crossover cable into the console port. This cable is shipped with your JSA appliance. It is a console cable and DB-9 connector with 1-8 pinouts.
6. Push the power button on the back panel.

   The green LED below the power button turns on. The JSA hard disk LED turns on whenever the appliance reads data from or writes data to the JSA hard disk.

RELATED DOCUMENTATION

Connecting to a Management Device | **81**

Installing the CNA Module on the JSA7500 Appliance | **92**

Grounding the JSA7500 Appliance | **76**

Connecting JSA7500 to a DC Power Source | **79**

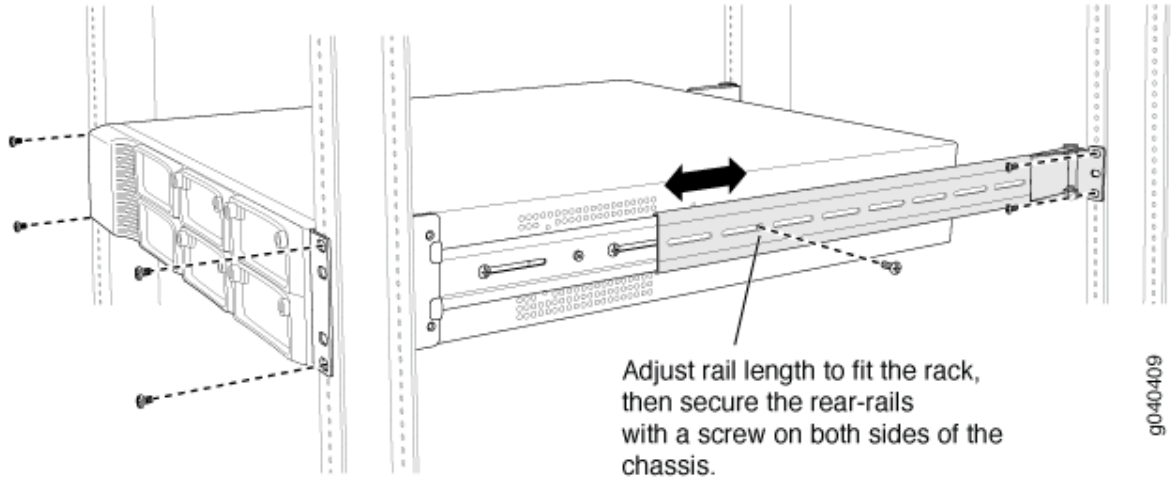
Front-and-Rear-Mounting the JSA Appliance Flush to a Rack

This option is used for larger chassis that require additional support when mounted on the rack-mount system. The JSA7500 appliance use this mounting option as its default configuration.

To mount JSA7500 using this option:

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 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 8 on page 85.

Figure 8: Front-Rear Mounting Flush to Rack



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.

RELATED DOCUMENTATION

Rack-Mount Installation Overview | 68

Front-and-Rear-Mounting the JSA Appliance Recessed in a Rack | 85

Mid-Mounting the JSA Appliance in a Two-Post Rack | 91

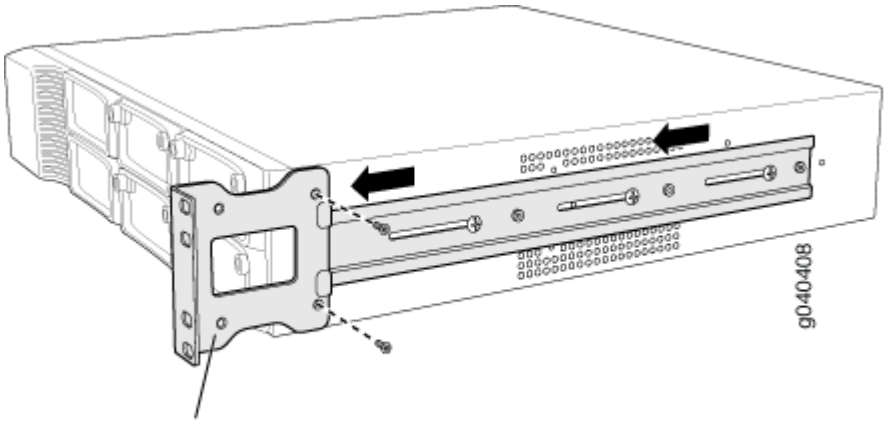
Front-and-Rear-Mounting the JSA Appliance Recessed in a Rack

This option provides additional front clearance in the equipment rack. It is used for a larger chassis, like the JSA7500 appliance, that requires additional support when mounted on the rack-mount system.

To mount the appliance using this option:

1. Remove the rear screws on each side of the system's front rails and the two small screws toward the front of the chassis.
2. Loosen the side-rail screws of the chassis and slide the front rails of the system backward, as far as they will move.
3. Tighten the side-rail screws. Insert the two small screws in the recessed holes on the front rails and tighten.
4. Slide the rear-mount rail brackets into the backs of the front rails on either side of the chassis and align with your rear equipment rack posts. Secure the rear-mount rail brackets to your equipment rack with two rack mount screws each. See Figure 9 on page 86.

Figure 9: Front-Rear-Mounting Recessed in Rack



5. Insert locking screws on the sides of the rear-mount brackets to secure the front and rear mounting brackets in place.
6. 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.

The recessed position allows network and console cables to be routed through the sides of the equipment rack and through the holes of the recessed front rails on either side of the unit. This enables easy cable routing on the racks with limited cable management.

RELATED DOCUMENTATION

Rack-Mount Installation Overview | 68

Front-and-Rear-Mounting the JSA Appliance Flush to a Rack | 84

Mid-Mounting the JSA Appliance in a Two-Post Rack | 91

Required Tools and Parts for Installing the JSA Appliance | 68

Front-and-Rear-Mounting the JSA7500 in a 4-Post Sliding Rail Rack

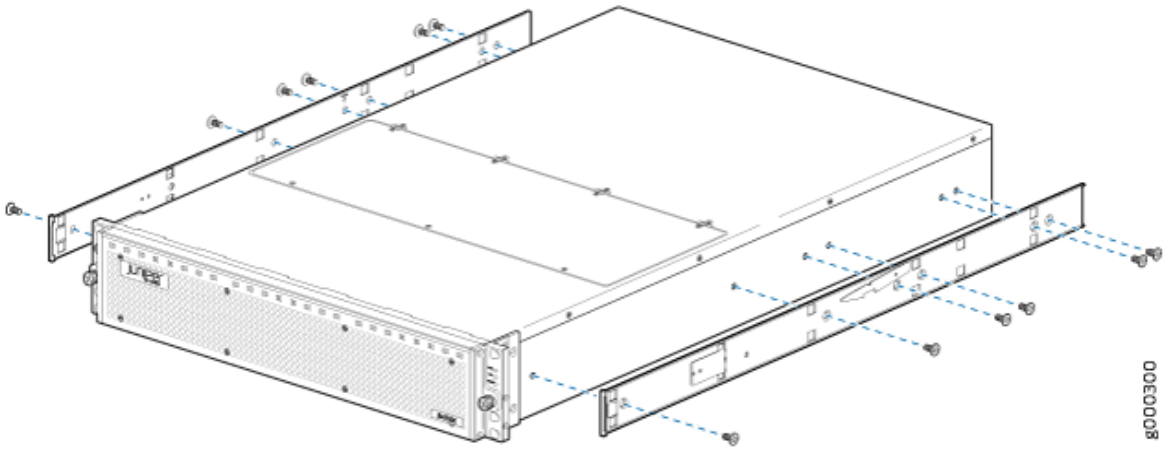
This option is used for the chassis that can easily pulled out from the rack when mounted on the rack-mount system. The JSA7500 appliance is mounted using this option because of the fan door available on the top of the appliance.

NOTE: The front-to-back rail spacing must be at least 48.3 cm (19-in.) from the outside face of the front rail to the outside face of the back rail.

To mount JSA7500 using this option:

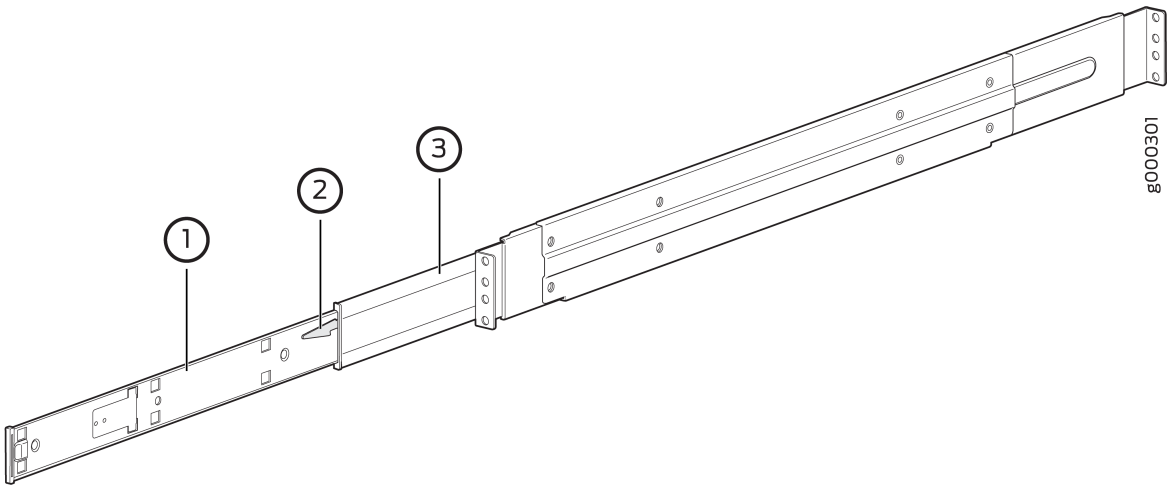
1. Insert four rack-mount screws on each side of the appliance to secure the mounting brackets to the sides of the chassis as shown in Figure 10 on page 87.

Figure 10: Securing Mounting Brackets



2. On the slide assembly, press the button on each slide and pull the glide completely out of the slide as shown in Figure 11 on page 88.

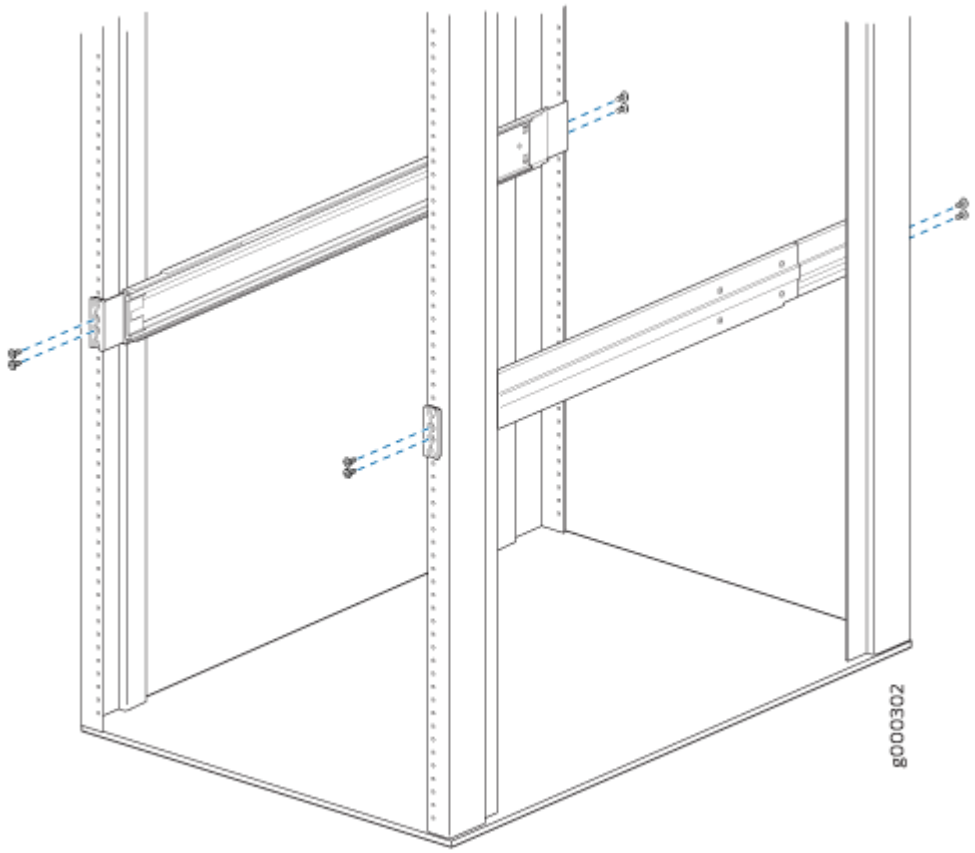
Figure 11: Slide Assembly



1– Glide	3– Slide
2– Button	

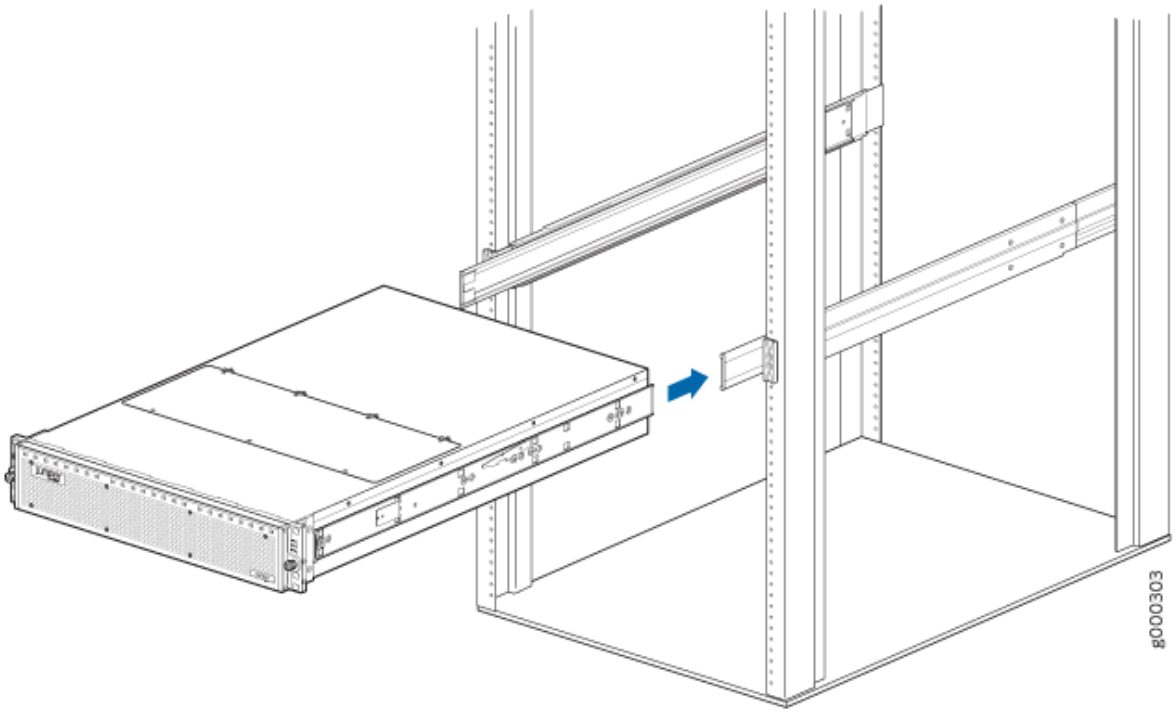
3. Attach the glide to the sides of the appliance as shown in Figure 10 on page 87.
4. Attach the slide sets to the desired position of front and rear of the rack cabinet as shown in Figure 12 on page 89.

Figure 12: Attaching the Slide Sets



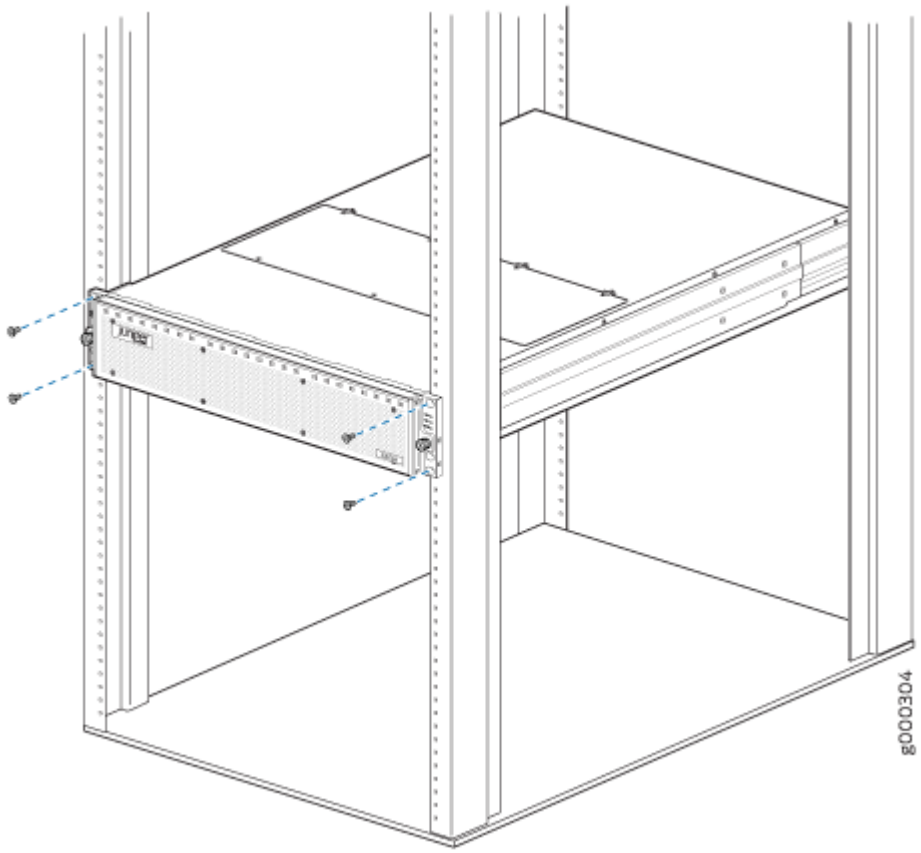
5. Push the slide buttons and slide the appliance all the way into the rack enclosure as shown in Figure 13 on page 90.

Figure 13: Sliding the Appliance into the Rack



6. Secure the front-mount rail brackets to your equipment rack with two rack mount screws each as shown in Figure 14 on page 91.

Figure 14: Securing the Front-Mount Rail Brackets



RELATED DOCUMENTATION

Rack-Mount Installation Overview | 68

Mid-Mounting the JSA Appliance in a Two-Post Rack | 91

Required Tools and Parts for Installing the JSA Appliance | 68

Mid-Mounting the JSA Appliance in a Two-Post Rack

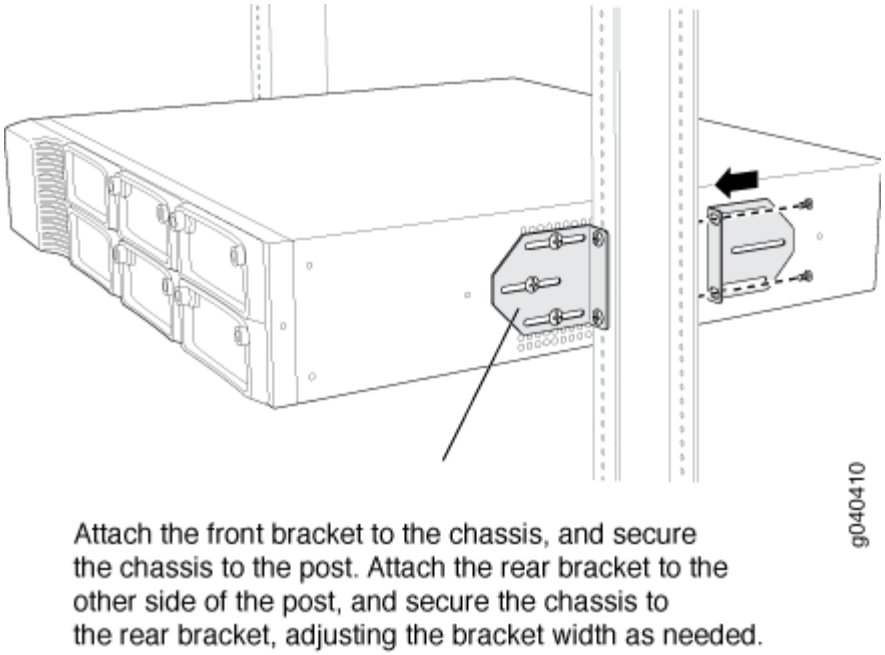
This option is suitable for a two-post equipment rack. It allows the appliance to be mid-mounted so that there is even clearance on the front and rear of the rack.

To mount the appliance using this option:

1. Remove the two front-mount rails from either side of the chassis.
2. Insert one mid-mount bracket to the center on either side of the chassis.

3. Attach the chassis to the equipment rack and insert the other two mid-mount brackets on either side of the system to secure the chassis to the backs of the post. See Figure 15 on page 92.

Figure 15: Mid-Mount in Two-Post Equipment Rack



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.

RELATED DOCUMENTATION

Rack-Mount Installation Overview | 68

Front-and-Rear-Mounting the JSA Appliance Flush to a Rack | 84

Front-and-Rear-Mounting the JSA Appliance Recessed in a Rack | 85

Installing the CNA Module on the JSA7500 Appliance

To install the Converged Network Adapter (CNA) module on a JSA7500:

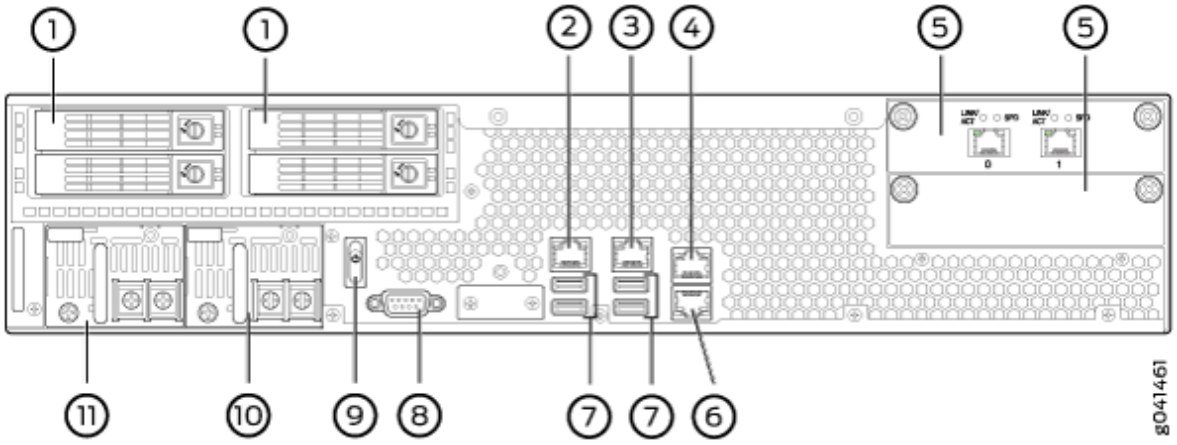
1. Power down the JSA7500 unit.
2. Unscrew the two thumbscrews on the right-most blank IOC modules and remove the dummy tray.

NOTE:

- The IOC module supports 10G connectivity with SFP+ transceivers. It supports only 1G connectivity using dual-rate optics: UNIV-SFPP-DUAL-SR and UNIV-SFPP-DUAL-LR.
- The JSA7500 supports only the 2-port 10G IOC module in a one-half height tray.

3. Insert the 2-port 10G IOC module firmly and screw in the two thumbscrews. See Figure 16 on page 93.

Figure 16: JSA7500 with the CNA Card Inserted



1– Hard drive	7– USB ports
2– Network port 0	8– DB-9 Serial Console port
3– Network port 1	9– Power switch
4– Network port 2	10– Redundant power supply
5– IOC expansion slots	11– Redundant power supply
6– Network port 3	

4. Power on the JSA7500 unit and watch it boot on the serial console.
5. Verify that the link and activity LED on the new 2-port 10G IOC module light up when you connect the ports to your Ethernet switch with a duplex multi mode LC/LC MMF fiber optic cable.
6. Log in to the admin console. You should now see four more Ethernet interfaces appear as 2-5. The four ports are labeled 0, 1, 2, and 3 and should map to Ethernet interfaces as follows (default in Linux):
   - 0 = eth0
   - 1 = eth1

- 2 = eth2
- 3 = eth3

RELATED DOCUMENTATION

Connecting to a Management Device | **81**

Grounding the JSA7500 Appliance | **76**

Connecting JSA7500 to a DC Power Source | **79**

Installing the JSA Hardware | **82**

CHAPTER 14

Configuring Basic Settings

IN THIS CHAPTER

Identifying Network Settings

Before you install Juniper Secure Analytics (JSA), you must have the following information for each system you want to install:

NOTE: When you configure the network setting such as hostname and IP address using the **qchange_netsetup** script, the JSA appliance hangs while rebooting. This issue is seen in 2013.2.r3.607582 and it will be fixed in the future releases. You need to manually power cycle the JSA appliance to overcome this issue.

- Hostname
- IP address
- Network mask address
- Subnet mask
- Default gateway
- Primary DNS server
- Secondary DNS server (optional)
- Public IP address for networks using Network Address Translation (NAT)
- E-mail server

- NTP server (Console only) or Time server

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Browser Support | 72
Preparing the Network Hierarchy | 72
Identifying Security Monitoring Devices and Flow Data Sources | 96
Identifying Network Assets | 96

Identifying Security Monitoring Devices and Flow Data Sources

Juniper Secure Analytics (JSA) can collect and correlate events received from external sources such as security equipment (for example, firewalls, VPNs, or IDSs) and host or application security logs, such as Windows logs. Device Support Modules (DSMs) and Flow Collectors allow you to integrate JSA with this external data. JSA automatically discovers sensor devices that are sending system log (syslog) messages to an Event Collector. The sensor devices that are automatically discovered by JSA appear in the Sensor Devices window within the JSA Administration Console. Once autodiscovery is completed, you should disable the Auto Detection Enabled option in the Event Collector configuration. For more information, see the *Administration Guide* and *Log Sources Users Guide*.

RELATED DOCUMENTATION

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Identifying Network Assets

Juniper Secure Analytics (JSA) can learn about your network and server infrastructure based on flow data. The Server Discovery function uses the JSA Asset Profile database to discover many types of servers.

Defining certain additional server and IP address types also improves tuning results. Table 12 on page 97 provides a list of possible servers. See the *Users Guide* for information on defining servers within JSA. If your network includes a large number of servers, you can use CIDR or IP subnet addresses within the server networks category.

Table 12: Asset Identification

Server	IP Address(es)	QTY	Name
NAT address range			
Vulnerability scanners			
Network management			
Proxy			
Virus definition and other updates			
Windows Server networks, such as domain controllers or exchange servers			

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- JSA Components | 70
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- Preparing the Network Hierarchy | 72
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- Identifying Security Monitoring Devices and Flow Data Sources | 96

CHAPTER 15

Configuring Secure Web Access

IN THIS CHAPTER

Configuring the Basic Settings

NOTE: When deploying a Juniper Secure Analytics (JSA) appliance with image 2013.2.r3.607582, you must reimage the appliance to the common image 2013.2.r3.615469 or above. For more information, see *Installing JSA Using a Bootable USB Flash-Drive* Technical Note.

To configure the basic setting using the JSA interface:

NOTE: When using a laptop to connect to the appliance, you must use a terminal program, such as HyperTerminal, to connect to the appliance.

1. Power on the system.
2. Select the appropriate COM port to use.
3. Configure the following port settings:
   - Bits per second = **9600**
   - Stop bits = **1**
   - Data bits = **8**
   - Parity = **None**
4. At the console prompt, log in as root (default username). No password is required when you log in for the first time.

Username: `root`

> **NOTE**: The username is case sensitive.

5. Press **Enter**. The End User License Agreement (EULA) appears.
6. Read the information in the window. Press the **Spacebar** to advance each window until you have reached the end of the document. Type **YES** to accept the agreement, then press **Enter**. The Appliance ID selection window appears.

   > **NOTE**: Although your current position is not highlighted, use up or down arrow keys and spacebar to select an option. Use left or right arrow keys to select **Next**.

7. Select the appliance ID and then press **Enter** to select **Next**.

   For more information on the appliance ID, see the KB article KB14832 at https://kb.juniper.net/KB14832.
8. Select **normal** from the following types of setup:
   - *normal*—Default setup
   - *recovery*—HA recovery setup
9. Select **Next**. The Tuning Template window appears.
10. Select **Enterprise** to tune your appliance.
11. Select **Next**. The Date and Time window appears.
12. Select the method you want to use to set the date and time:
    - *Manual*–Allows you to manually input the time and date. Use the Spacebar to select the option, and then use Tab to select **Next**. Press **Enter**. Go to Step 13.
    - *Server*–Allows you to specify your time server. Use the Spacebar to select the option, and then use Tab to select **Next**. Press **Enter**. Go to Step 14.
13. Enter the current date and time and then select **Next**. Press **Enter**. The Time Zone Continent window appears.
14. Select your time zone region, and select **Next**. The options appearing in this window are regions associated with the continent or area previously selected.
15. Select one of the following Internet protocols:
    - *IPv6*—Internet Protocol version 6
    - *IPv4*—Internet Protocol version 4
16. Select **Next**. The Management Interface window appears.
17. Select the interface you want to specify as the management interface and select **Next**.

18. To configure the JSA network settings, enter the values for the following parameters. Use the up or down arrow keys to navigate the fields:

    NOTE: When you configure the network setting such as hostname and IP address using the **qchange_netsetup** script, the JSA appliance hangs while rebooting. This issue is seen in 2013.2.r3.607582 and it will be fixed in the future releases. You need to manually power cycle the JSA appliance to overcome this issue.

    - *Hostname*—Type a fully qualified domain name (FQDN) as the system hostname.
    - *IP Address*—Specify the IP address of the system.
    - *Netmask*—Specify the network mask address for the system.
    - *Gateway*—Specify the default gateway for the system.
    - *Primary DNS*—Specify the primary DNS server.
    - *Secondary DNS*—Optional. Specify the secondary DNS server.
    - *Public IP*—Optional. Specify the public IP address of the server. The server uses this IP address to communicate with another server that belongs to a different network using Network Address Translation (NAT). NAT translates an IP address in one network to a different IP address in another network.
    - *Email Server*—Specify the e-mail server. If you do not have an e-mail server, specify the local host in this field.

19. Use Tab to select **Next**. Press **Enter**. The New Root Password window appears.
20. To configure the JSA root password:
    a. Type a new password.
    b. Select **Next** and then press **Enter**. The Confirm New Root Password window appears.
    c. Retype your new password to confirm it and select **Finish**.

    A series of messages appears as JSA continues with the installation. This is typically a three-to-five-minute process. When the JSA installation process is complete, the message window appears.
21. Press **Enter** and select **OK** to complete the installation.

    You are now ready to access JSA. For more information, see "Accessing the JSA Interface" on page 101.
22. Type **exit** and press **Enter**.

RELATED DOCUMENTATION

Accessing the JSA Interface

IN THIS SECTION

Purpose

To access a Juniper Secure Analytics (JSA) interface:

Action

1. Open your Web browser.
2. Log in to JSA:
   `https://<IP Address>`

   `<IP Address>` is the IP address of the JSA system.
   The default values are:
   Username: `admin`
   Password: `<root password>`
   `<root password>` is the new root password you set during the installation process.
3. Click *Login To JSA*.

   The JSA interface appears. You are now ready to start tuning JSA and high availability (HA) settings. For more information, see the *Juniper Secure Analytics Administration Guide*.

NOTE: You will need a permanent license for the JSA appliance to upgrade to a higher version. If you have a temporary license, the upgrade will fail; re-run the installer to upgrade to a higher version.

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Browser Support | **72**

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6

PART

Maintenance

CHAPTER 16

Maintaining the Hardware

IN THIS CHAPTER

Field-Replaceable Units on the JSA Appliance

Field-replaceable units (FRUs) are Juniper Secure Analytics (JSA) hardware components that can be replaced at the customer site. Hot-swappable FRUs are the components that you can remove and replace without powering off the device or disrupting the functions of the device.

FRUs supported by the JSA appliances include:

- Cooling fans
- Air filter
- Power supply
- Hard drive

RELATED DOCUMENTATION

Replacing the Fan on the JSA Appliance | 105

Replacing the Air Filter on the JSA7500 Appliance | 108

Replacing an AC Power Supply on the JSA Appliance | 109

Replacing the Fan on the JSA Appliance

The JSA7500 has eight cooling fans. The fans are hot-swappable.

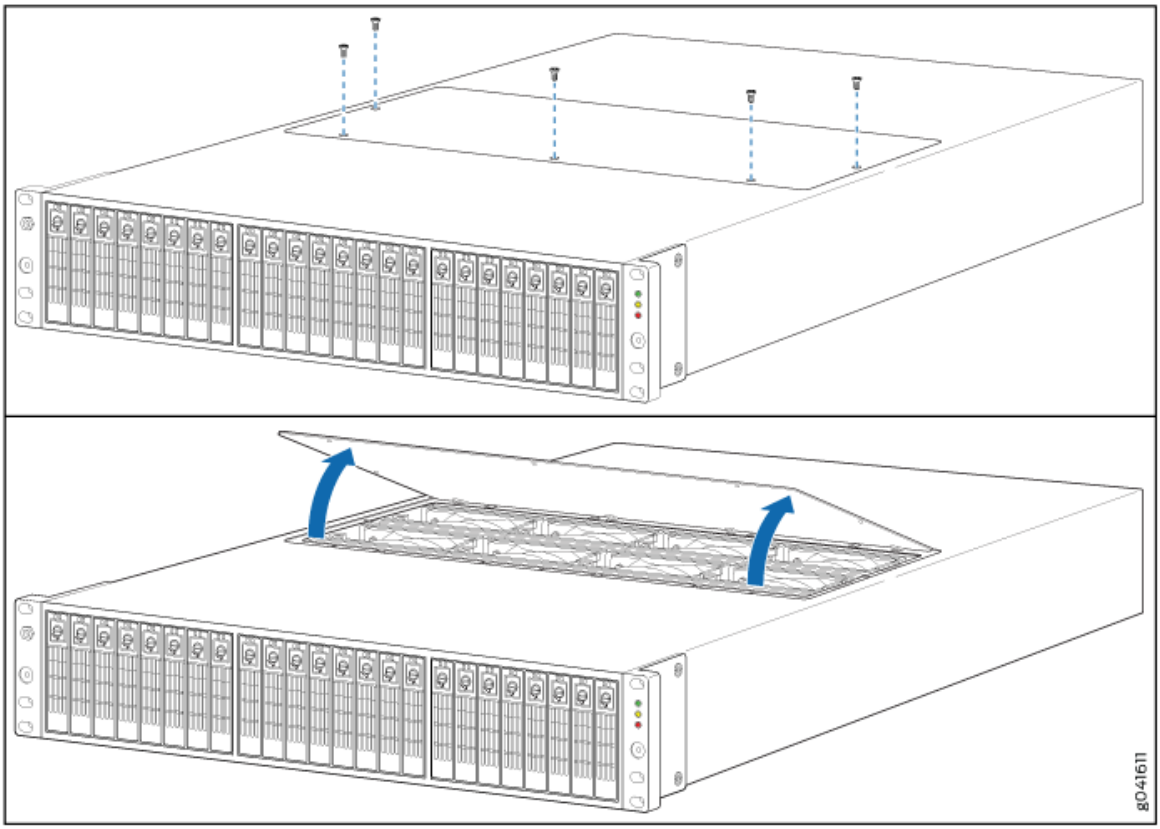
NOTE:

- JSA7500 has internal hot-swappable cooling fans. These cooling fans are removed and installed from the top of the JSA7500.

To remove and install the fan for JSA7500:

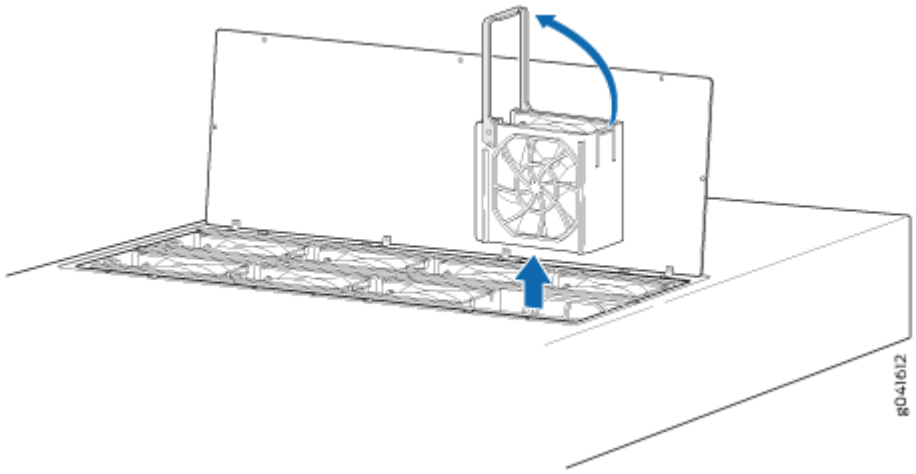
1. Attach an ESD grounding strap to your bare wrist and connect the strap to the ESD point on the chassis.
2. Turn the screws to the left on the fan door at the top of the device as shown in Figure 17 on page 106.

Figure 17: Opening the Chassis Lid



3. Open the lid as shown in Figure 17 on page 106.
4. Pull the lever out as shown in Figure 18 on page 107.
5. Grasp the fan protected with the cover and pull it out to disengage its power connection as shown in Figure 18 on page 107.

Figure 18: Removing the Fan

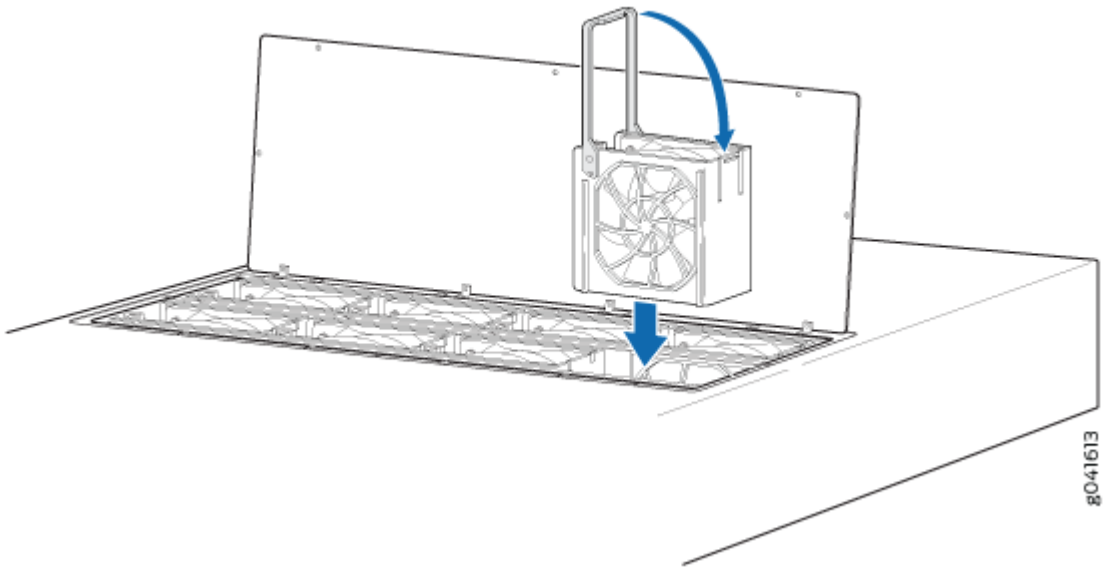


6. Wait for the fan to stop spinning.

> **WARNING**: To avoid injury, do not proceed until the fan has stopped spinning.

7. Replace the fan and then close the lever as shown in Figure 19 on page 107.

Figure 19: Replacing the Fan



8. Install the fan in the device as shown in Figure 19 on page 107.
9. Engage the fan lever to secure the fan in place.

10. Close the fan lid and tighten the screws to secure it in the chassis.

RELATED DOCUMENTATION

- Field-Replaceable Units on the JSA Appliance | 104
- Replacing the Air Filter on the JSA7500 Appliance | 108
- Replacing an AC Power Supply on the JSA Appliance | 109
- Replacing AC Power Supply Cables on the JSA Appliance | 109
- Replacing a DC Power Supply on the JSA Appliance | 110
- Replacing DC Power Supply Cables on the JSA Appliance | 111

Replacing the Air Filter on the JSA7500 Appliance

The JSA7500 ships with a front bezel with air filter to provide optimum cooling to the appliance.

CAUTION: Always keep the air filter in place while the JSA7500 appliance is operating. Running the appliance without the air filter in place could cause of small bits of dirt or other materials could be blown into the appliance. This could damage the appliance components.

Perform the following steps to remove and install the air filter for JSA7500:

1. To remove the air filter:
   a. Attach an ESD grounding strap to your bare wrist and connect the strap to the ESD point on the chassis.
   b. Loosen the captive screws on the air filter cover.
   c. Remove the air filter cover.
2. To install the air filter:
   a. Keep the air filter straight on the chassis.
   b. Align the captive screws of the air filter cover with the mounting holes on the chassis.
   c. Tighten the captive screws on the air filter cover.

RELATED DOCUMENTATION

JSA7500 Front Panel | 9

Field-Replaceable Units on the JSA Appliance | 104

Replacing the Fan on the JSA Appliance | 105

Replacing an AC Power Supply on the JSA Appliance

To replace an AC power supply:

1. Attach an ESD grounding strap to your bare wrist and connect the strap to one of the ESD points on the chassis.
2. Remove the power cord from the power supply.
3. Push the tab on the left edge of the power supply to the right.
4. Pull the power supply straight out of the chassis using the provided handle. Use one hand to support underneath the supply as you remove it.
5. Orient the replacement power supply so that the tab is on the left side.
6. Using both hands, slide the replacement power supply straight into the chassis until the power supply is fully seated in the chassis slot. Make sure the tab on the left edge of the power supply clicks into place.
7. Attach the power cord to the power supply. If the power supply is correctly installed and functioning normally, the power supply powers up immediately.

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Field-Replaceable Units on the JSA Appliance | 104

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Replacing the Air Filter on the JSA7500 Appliance | 108

Replacing AC Power Supply Cables on the JSA Appliance | 109

Replacing a DC Power Supply on the JSA Appliance | 110

Replacing DC Power Supply Cables on the JSA Appliance | 111

Replacing AC Power Supply Cables on the JSA Appliance

To replace an AC power supply cord:

1. Unplug the power cord from the power source receptacle.
2. Attach an ESD grounding strap to your bare wrist and connect the strap to one of the ESD points on the chassis.
3. Unplug the power cord from the appliance inlet on the power supply.
4. Locate a replacement power cord with the type of plug appropriate for your geographical location.
5. Insert the power cord plug into an external AC power source receptacle.
6. Connect the power cord to the power supply.
7. Verify that the power cord does not block the air exhaust and access to device components, or drape where people could trip on it.
8. If the power supply is correctly installed and functioning normally, the supply automatically powers up.

RELATED DOCUMENTATION

Field-Replaceable Units on the JSA Appliance | 104

Replacing the Fan on the JSA Appliance | 105

Replacing the Air Filter on the JSA7500 Appliance | 108

Replacing an AC Power Supply on the JSA Appliance | 109

Replacing a DC Power Supply on the JSA Appliance | 110

Replacing DC Power Supply Cables on the JSA Appliance | 111

Replacing a DC Power Supply on the JSA Appliance

To replace a DC power supply:

1. Switch off the dedicated facility circuit breaker for the power supply being removed.
2. 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.
3. Attach an ESD grounding strap to your bare wrist and connect the strap to one of the ESD points on the chassis.
4. Remove the clear plastic cover protecting the terminal studs on the faceplate.
5. Remove the screws from the terminals. Use a number-2 Phillips screwdriver to loosen and remove the screws.
6. Remove the cable lugs from the terminals.
7. Carefully move the power cables out of the way.
8. Push the tab on the left edge of the power supply to the left.

9. Pull the power supply straight out of the chassis.
10. Using both hands, slide the replacement power supply straight into the chassis until the power supply is fully seated in the chassis slot. Make sure the tab on the left edge of the power supply clicks into place.
11. To connect the DC source power to the JSA appliance, see "Connecting JSA7500 to a DC Power Source" on page 79.

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Replacing DC Power Supply Cables on the JSA Appliance

To replace a DC power supply cable connected to a JSA appliance:

1. Attach an ESD grounding strap to your bare wrist and connect the strap to one of the ESD points on the chassis.
2. Switch off the external circuit breakers for all the cables attached to the power supply. 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.
3. Remove the clear plastic cover over the terminal studs on the faceplate.
4. Remove the power cable from the DC power source.

> **NOTE**: Ensure the cable is not touching or in the way of any components, and that it does not drape where people could trip on it.

5. Attach the power cable to the DC power source. For more information, see "Connecting JSA7500 to a DC Power Source" on page 79.
6. Replace the clear plastic cover over the terminal studs on the faceplate.

7. If the power supply is correctly installed and functioning normally, the supply automatically powers up.

RELATED DOCUMENTATION

- Field-Replaceable Units on the JSA Appliance | **104**
- Replacing the Fan on the JSA Appliance | **105**
- Replacing the Air Filter on the JSA7500 Appliance | **108**
- Replacing an AC Power Supply on the JSA Appliance | **109**
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- Connecting JSA7500 to a DC Power Source | **79**

PART 7

Troubleshooting

CHAPTER 17

Monitoring Hardware Components

IN THIS CHAPTER

RAID Array

The JSA appliance ships with hot-swappable hard disks to offer component redundancy. JSA7500 have RAID10 configuration. You can hot-swap the disk if any one of the disks fails.

Redundant array of independent disk (RAID) is an organization of multiple disks of fault tolerance and performance. A RAID array is used in the servers for data storage and to replicate data among multiple hark disk drives. There are different RAID levels designed to increase data reliability and I/O performance.

The key concepts in RAID are:

- Mirroring—copy data to more than one disk
- Striping—split data across more than one disk
- Error correction—redundant data storage to detect and resolve problems

JSA7500 uses RAID10. RAID1 uses mirroring and duplex techniques to copy data to the redundant disk. In RAID10, drives are duplicated for fault tolerance.

To monitor the RAID array, use the following commands:

- For JSA7500, create a symlink. For example, ln –s /opt/MegaRAID/MegaCli/MegaCli64 /bin/MegaCli
  - For drive status: /opt/MegaRAID/MegaCli/MegaCli64 -PDlist -a 0

    - For RAID10 status: /opt/MegaRAID/MegaCli/MegaCli64 -LDInfo -LAll –a 0

- For JSA7500 RAID consistency check, schedule through cron or use, /opt/MegaRAID/MegaCli/MegaCli64 -LDCC -Start -Lall -a 0

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JSA7500 Front Panel | 9

JSA7500 Back Panel | 10

Power Supply

The JSA7500 appliance ships with redundant DC power supplies and also supports AC power supply option if you need AC power.

To maintain the power supplies, follow these guidelines:

- Ensure that the power and grounding cables are arranged so that they do not obstruct access to other components.
- Routinely check the power LED on the power supply module. The status of the power LED is as follows:
    - If the LED status is green, the power supply is functioning normally.
    - If the LED status is amber, the power supply is in standby mode.
    - If there is no color for the LED, the power supply module is not functioning normally.
- Periodically inspect the site to ensure that the grounding and power cables connected to the JSA appliance are securely in place and that there is no moisture accumulating near the appliance.

To monitor the power supply modules, execute the following files which are available at the Juniper Customer Support website, www.juniper.net/support/downloads:

- Install rpm –ivh i2c-tools-3.1.0-1.el6.x86_64.rpm
- ./pwr_status_jnpr.sh

RELATED DOCUMENTATION

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JSA7500 Front Panel | 9

JSA7500 Back Panel | 10

Cooling Fans

The JSA7500 has eight cooling fans. The fans are hot-swappable.

NOTE: JSA7500 has internal hot-swappable cooling fans.

Fans work in unison to cool the JSA components. A red alarm is triggered when a fan fails.

To monitor the fan:

- For JSA7500, use the following commands:
  - To enable IPMI and boot, use `# chkconfig ipmi on`
  - To start IPMI service, use `service ipmi start`
  - For fan status, use `# ipmitool sdr`

RELATED DOCUMENTATION

Hardware Specifications | 6

JSA7500 Front Panel | 9

Maintaining the JSA7500 Air Filter

The JSA7500 ships with a front bezel with air filter to provide optimum cooling to the appliance.

For optimum cooling, maintain the air filter, as follows:

- Regularly inspect the air filter.
- A dirty air filter restricts airflow in the appliance, producing a negative effect on the ventilation of the chassis. The filter degrades over time. You must replace the filter every six months.

> **CAUTION**: Always keep the air filter in place while the JSA7500 appliance is operating. Running the appliance without the air filter in place could cause of small bits of dirt or other materials could be blown into the appliance. This could damage the appliance components.

- Use spare filters within the period defined by the manufacturer. Check the date of manufacture printed on the filter. Store spare air filters in a dark, cool, and dry place. Storing air filters at higher temperatures, or where they can be exposed to ultraviolet (UV) radiation, hydrocarbon emissions, or vapors from solvents, can significantly reduce their life.

RELATED DOCUMENTATION

Cooling Fans | **116**

RAID Array | **114**

Power Supply | **115**

CHAPTER 18

Juniper Networks Technical Assistance Center

IN THIS CHAPTER

Contacting Juniper Networks Technical Assistance Center

If you need assistance while troubleshooting a JSA appliance, open a support case using the Case Manager link at https://www.juniper.net/support/, or call 1-888-314-JTAC (within the United States) or 1-408-745-9500 (from outside the United States).

CHAPTER 19

Knowledge Base