Dell PowerConnect J-Series J-EX4200 Ethernet Switch

Hardware Guide

Dell
501 Dell Way
Round Rock , Texas 78682
United States
www.dell.com

Dell PowerConnect J-Series J-EX4200 Ethernet Switch Hardware Guide

Writing: Appumon Joseph, Aviva Garrett, Greg Houde, Hemraj Rao S, Hareesh Kumar K N, Keldyn West, Shikha Kalra, Steve Levine
Editing: Cindy Martin, Rajan V K, Taffy Everts
Illustration: Faith Bradford Brown

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How to Use This Guide

This guide, the *Dell PowerConnect J-Series J-EX4200 Ethernet Switch Hardware Guide*, covers Dell PowerConnect J-Series J-EX4200 Virtual Chassis switches.

To download the Dell PowerConnect J-EX Series documentation listed in Table 1 on page xiii, see the following Dell support website:

http://www.support.dell.com/manuals

Table 1: List of J-EX Series Guides

Title	Description
Dell PowerConnect J-Series J-EX4200 Ethernet Switch Hardware Guide	Component descriptions, site preparation, installation, replacement, and safety and compliance information for J-EX4200 switches
Dell PowerConnect J-Series J-EX4500 Ethernet Switch Hardware Guide	Component descriptions, site preparation, installation, replacement, and safety and compliance information for J-EX4500 switches
Dell PowerConnect J-Series J-EX8208 Ethernet Switch Hardware Guide	Component descriptions, site preparation, installation, replacement, and safety and compliance information for J-EX8208 switches
Dell PowerConnect J-Series J-EX8216 Ethernet Switch Hardware Guide	Component descriptions, site preparation, installation, replacement, and safety and compliance information for J-EX8216 switches
Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS	Software feature descriptions, configuration examples, and tasks for Juniper Networks Junos Operating System (Junos OS) for J-EX Series switches

To download additional Junos OS documentation for J-EX Series and all other PowerConnect J-Series products, see the following Juniper Networks support website: http://www.juniper.net/techpubs/ .

If the information in the latest release notes differs from the information in the documentation, follow the release notes.

Downloading Software

You can download Junos OS for J-EX Series switches from the Download Software area at https://www.juniper.net/support/csc/swdist-domestic/. To download the software, you must have a Juniper Networks user account. For information about obtaining an account, see http://www.support.dell.com.

Documentation Conventions

Table 2: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.

Table 3: Text and Syntax Conventions

Convention	Description	Examples
Bold text like this	Represents text that you type.	To enter configuration mode, type the **configure** command: user@host> **configure**
`Fixed-width text like this`	Represents output that appears on the terminal screen.	user@host> **show chassis alarms** `No alarms currently active`
Italic text like this	• Introduces important new terms. • Identifies book names. • Identifies RFC and Internet draft titles.	• A policy *term* is a named structure that defines match conditions and actions. • *Junos OS System Basics Configuration Guide* • RFC 1997, *BGP Communities Attribute*
Italic text like this	Represents variables (options for which you substitute a value) in commands or configuration statements.	Configure the machine's domain name: [edit] root@# **set system domain-name** *domain-name*

Table 3: Text and Syntax Conventions *(continued)*

Convention	Description	Examples
Plain text like this	Represents names of configuration statements, commands, files, and directories; IP addresses; configuration hierarchy levels; or labels on routing platform components.	• To configure a stub area, include the **stub** statement at the **[edit protocols ospf area area-id]** hierarchy level. • The console port is labeled **CONSOLE**.
< > (angle brackets)	Enclose optional keywords or variables.	stub <default-metric *metric*>;
| (pipe symbol)	Indicates a choice between the mutually exclusive keywords or variables on either side of the symbol. The set of choices is often enclosed in parentheses for clarity.	broadcast | multicast (*string1* | *string2* | *string3*)
# (pound sign)	Indicates a comment specified on the same line as the configuration statement to which it applies.	rsvp { # Required for dynamic MPLS only
[ ] (square brackets)	Enclose a variable for which you can substitute one or more values.	community name members [*community-ids*]

Indention and braces ({ })	Identify a level in the configuration hierarchy.	[edit]
		routing-options {
		  static {
		    route default {
		      nexthop *address*;
		      retain;
		    }
		  }
		}

; (semicolon)	Identifies a leaf statement at a configuration hierarchy level.	
J-Web GUI Conventions		
Bold text like this	Represents J-Web graphical user interface (GUI) items you click or select.	• In the Logical Interfaces box, select **All Interfaces**. • To cancel the configuration, click **Cancel**.
> (bold right angle bracket)	Separates levels in a hierarchy of J-Web selections.	In the configuration editor hierarchy, select **Protocols>Ospf**.

Repair and Warranty

⚠ CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

For more information, see "Getting Help" on page 161.

Requesting Technical Support

For technical support, see http://www.support.dell.com. For more information, see "Getting Help" on page 161.

Switch and Components Overview and Specifications

Dell PowerConnect J-Series J-EX4200 Switches Overview

J-EX4200 Switches Hardware Overview

J-EX Series Switches provide scalable connectivity for the enterprise market, including branch offices, campus locations, and data centers. The switches run under Juniper Networks Junos operating system (Junos OS), which provides Layer 2 and Layer 3 switching, routing, and security services. The same Junos OS code base that runs on J-EX Series switches also runs on Dell PowerConnect J-SRX Series Services Gateways.

You can interconnect multiple J-EX4200 chassis to form a Virtual Chassis that operates as a single network entity. You can deploy these switches wherever you need a high density of Gigabit Ethernet ports (24 to 480 ports), redundancy, or the ability to span a single switch across several wiring closets. Typically, the switches are used in large branch offices, campus wiring closets, and top-of-rack locations in a data center.

J-EX4200 Switch Types

You can interconnect J-EX4200 switches to form a Virtual Chassis that operates as a single network entity. You can deploy these switches wherever you need a high density of Gigabit Ethernet ports (24 to 480 ports), redundancy, or the ability to span a single switch across several wiring closets. Typically, J-EX4200 switches are used in large branch offices, campus wiring closets, and top-of-rack locations in a data center.

J-EX4200 Ethernet Switches have these features:

- Run under Junos OS for J-EX Series switches

- Have options of 24-port and 48-port models

- Have options of full (all ports) or partial (8 ports) Power over Ethernet (PoE) capability

- Have optional uplink modules that provide connection to distribution switches

J-EX4200 Switches

J-EX4200 switches provide connectivity for medium- and high-density environments and scalability for growing networks. These switches can be deployed wherever you need a high density of Gigabit Ethernet ports (24 to 480 ports) or redundancy. Typically, J-EX4200 switches are used in large branch offices, campus wiring closets, and data centers where they can be positioned as the top device in a rack to provide connectivity for all the devices in the rack.

You can connect individual J-EX4200 switches together to form one unit and manage the unit as a single chassis, called a *Virtual Chassis*. You can add more member switches to the Virtual Chassis as needed, up to a total of 10 members.

J-EX4200 switches are available in models with 24 or 48 ports and with no ports or 8 ports equipped for PoE. All models provide ports that have 10/100/1000Base-T Gigabit Ethernet connectors and optional 1-gigabit small form-factor pluggable (SFP) transceivers or 10-gigabit small form-factor pluggable (SFP+) transceivers.

Additionally, a 24-port model provides 100Base-FX/1000Base-X SFP ports. This model is typically used as a small distribution switch.

All J-EX4200 switches have dedicated 64-Gbps Virtual Chassis ports that allow you to connect the switches to each other. You can also use optional uplink module ports to connect members of a Virtual Chassis across multiple wiring closets.

To provide carrier-class reliability, J-EX4200 switches include:

- Dual redundant power supplies that are field-replaceable and hot-swappable. An optional additional connection to an external power source is also available.

- A field-replaceable fan tray with three fans. The switch remains operational if a single fan fails.

- Redundant Routing Engines in a Virtual Chassis configuration. This redundancy enables GRES (graceful Routing Engine switchover) and nonstop active routing.

- Junos OS with its modular design that enables failed system processes to gracefully restart.

Uplink Modules

Optional uplink modules are available for all J-EX4200 switches. Uplink modules provide four 1-gigabit small form-factor pluggable (SFP) transceivers or two 10-gigabit small form-factor pluggable (SFP+) transceivers. You can use SFP or SFP+ ports to connect

an access switch to a distribution switch or to interconnect member switches of a Virtual Chassis across multiple wiring closets.

Power over Ethernet (PoE) Ports

PoE ports provide electrical current to devices through the network cables so that separate power cords for devices such as IP phones, wireless access points, and security cameras are unnecessary. J-EX4200 switches have partial (8 ports) PoE capability.

Partial PoE models are used in environments where, for example, only a few ports for wireless access points or security cameras are required.

Related Documentation
- J-EX4200 Switch Models on page 5
- Field-Replaceable Units in J-EX4200 Switches on page 16
- Site Preparation Checklist for J-EX4200 Switches on page 57

J-EX4200 Switch Models

The J-EX4200 switch is available with 24 or 48 ports and with partial Power over Ethernet (PoE) capability. Table 4 on page 5 lists the J-EX4200 switch models.

Table 4: J-EX4200 Switch Models

Model	Ports	Number of PoE-enabled Ports	Power Supply (Minimum)
J-EX4200-24T	24 Gigabit Ethernet	First 8 ports	320 W
J-EX4200-48T	48 Gigabit Ethernet	First 8 ports	320 W
J-EX4200-24F	24 small form-factor pluggable (SFP) transceivers	Not applicable	320 W

Related Documentation
- Front Panel of a J-EX4200 Switch on page 6
- Rear Panel of a J-EX4200 Switch on page 7
- J-EX4200 Switches Hardware Overview on page 3

Chassis Physical Specifications for J-EX4200 Switches

The J-EX4200 switch chassis is a rigid sheet-metal structure that houses the hardware components. Table 5 on page 5 summarizes the physical specifications of the J-EX4200 switch chassis.

Table 5: Physical Specifications of the J-EX4200 Switch Chassis

Description	Value
Chassis height	1.75 in. (4.45 cm)

Table 5: Physical Specifications of the J-EX4200 Switch Chassis *(continued)*

Description	Value
Chassis width	• 17.25 in. (43.82 cm) • 19 in. (48.2 cm) with mounting brackets attached

Chassis depth	• Without power supply installed—17 in. (43.18 cm)
	• With power supply installed:
	  • 320 W AC power supply installed—17 in. (43.18 cm)
	  • 600 W or 930 W AC power supply installed—19.25 in. (48.9 cm)

Weight	• J-EX4200 switch with 1 power supply: 16–18 lb (7.2–8.2 kg) • 320 W AC power supply: 2.5 lb (1.1 kg) • 600 W and 930 W AC power supplies: 3.1 lb (1.4 kg)

Related Documentation

- Rack Requirements for J-EX4200 Switches on page 63

- Cabinet Requirements for J-EX4200 Switches on page 64

- Mounting a J-EX4200 Switch on page 90

- Installing and Connecting a J-EX4200 Switch on page 87

- Installing and Removing J-EX4200 Switch Hardware Components on page 105

Front Panel of a J-EX4200 Switch

The front panel of a J-EX4200 switch consists of the following components:

- Network ports—depending on the switch model, either of:

  - 10/100/1000Base-T Gigabit Ethernet ports, some or all of which are enabled for Power over Ethernet (PoE)

  - 100Base-FX/1000Base-X SFP ports for use with fiber-optic connections

- Uplink module ports—SFP or SFP+ ports (The uplink module is an optional feature.)

- LCD panel and the LCD navigation buttons

- Chassis status LEDs

- Network port LEDs

Figure 1 on page 7 shows the front panel of a J-EX4200 switch with 48 Gigabit Ethernet ports. Figure 2 on page 7 shows the front panel of a J-EX4200 switch with 24 Gigabit Ethernet ports. Figure 3 on page 7 shows the front panel of a J-EX4200-24F switch with 24 SFP ports for use with fiber-optic connectors.

Figure 1: J-EX4200 Switch with 48 Gigabit Ethernet Ports
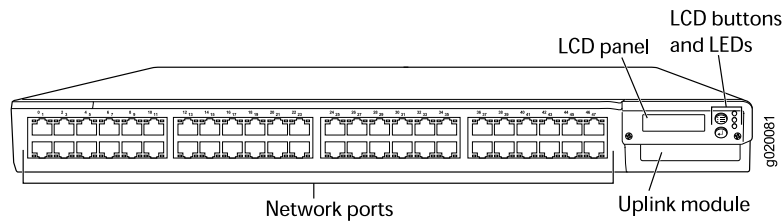
Figure 2: J-EX4200 Switch with 24 Gigabit Ethernet Ports
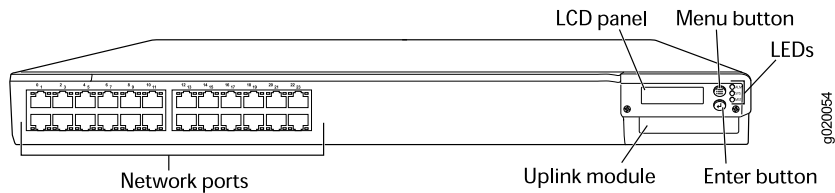
Figure 3: J-EX4200-24F Switch with 24 SFP Ports
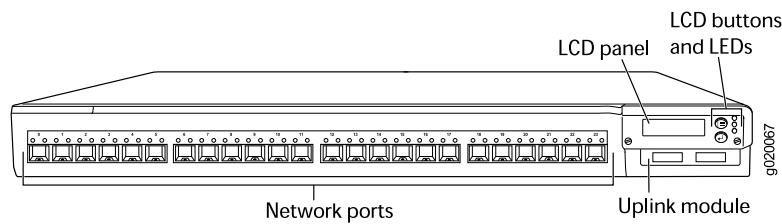
Related Documentation

- Chassis Status LEDs in J-EX4200 Switches on page 16

- Rear Panel of a J-EX4200 Switch on page 7

- Network Port LEDs in J-EX4200 Switches on page 18

- Network Port Connector Pinout Information for a J-EX4200 Switch on page 30

- LCD Panel in J-EX4200 Switches on page 11

- Optical Interface Support in J-EX4200 Switches on page 32

- Installing and Removing J-EX4200 Switch Hardware Components on page 105

- Installing an Uplink Module in a J-EX4200 Switch on page 108

- Removing an Uplink Module from a J-EX4200 Switch on page 142

Rear Panel of a J-EX4200 Switch

The rear panel of the J-EX4200 switch consists of the following components:

- Fan tray

- Virtual Chassis ports (VCPs)

- USB port

- Temperature shutdown LED

- Management Ethernet port

- Console port

- ESD point

- Power supply or power supplies

Figure 4 on page 8 shows the rear panel of a J-EX4200 switch. All J-EX4200 switches have the same rear panel. The 320 W AC power supply is flush with the chassis. The 600 W AC power supply and 930 W AC power supply extend out of the chassis by 2.25 in. Power cord retainer clips extend out of the power supply by 3 in.

Figure 4: J-EX4200 Switch Rear Panel
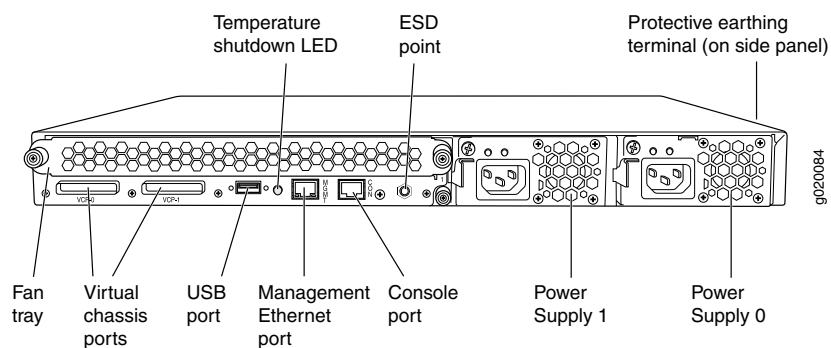
Related Documentation

- Field-Replaceable Units in J-EX4200 Switches on page 16

- Front Panel of a J-EX4200 Switch on page 6

- USB Port Specifications for a J-EX Series Switch on page 29

- Cooling System and Airflow in a J-EX4200 Switch on page 24

- Power Supply in J-EX4200 Switches on page 21

- Prevention of Electrostatic Discharge Damage on J-EX Series Switches on page 198

- Connecting Earth Ground to a J-EX Series Switch on page 115

- Installing and Removing J-EX4200 Switch Hardware Components on page 105

- Understanding Virtual Chassis Hardware Configuration on a J-EX4200 Switch on page 75

J-EX4200 Switch Hardware and CLI Terminology Mapping

This topic describes the hardware terms used in J-EX4200 switch documentation and the corresponding terms used in the Junos OS command line interface (CLI). See Table 6 on page 9.

Table 6: CLI Equivalents of Terms Used in Documentation for the J-EX4200 Switch

Hardware Item (CLI)	Description (CLI)	Value (CLI)	Item in Documentation	Additional Information
Chassis	One of the following: • Dell J-EX4200-24T • Dell J-EX4200-48T • Dell J-EX4200-24F • EX4200-24T • EX4200-48T • EX4200-48T	–	Switch chassis	"Chassis Physical Specifications for J-EX4200 Switches" on page 5
FPC (*n*)	On a standalone J-EX4200 switches—Abbreviated name of the Flexible PIC Concentrator (FPC) One of the following: • EX4200-48T • EX4200-48T • EX4200-24F	Value of *n* is always 0.	The switch does not have actual FPCs. In this case, the FPC refers to the switch itself.	See the information about interfaces and interface naming conventions on J-EX Series Ethernet switches in the multivolume *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.
	On a J-EX4200 Virtual Chassis—Member ID of the switch within the Virtual Chassis	*n* is a value in the range of 0-9.	In this case, the FPC number refers to the member ID assigned to the switch.	See the information about Virtual Chassis and Virtual Chassis components in the multivolume *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.
PIC (*n*)	Abbreviated name of the Physical Interface Card (PIC).	*n* is a value in the range of 0-1.	The switch does not have actual PIC devices; see entries for PIC 0 through PIC 1 for the equivalent item on the switch.	See the information about interfaces and interface naming conventions on J-EX Series Ethernet switches in the multivolume *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.
	One of the following: • 24x 10/100/1000 Base-T • 24x 100 Base-FX/1000 Base-X • 48x 10/100/1000 Base-T	PIC 0	Built-in network ports on the front panel of the switch	"Front Panel of a J-EX4200 Switch" on page 6

Table 6: CLI Equivalents of Terms Used in Documentation for the J-EX4200 Switch *(continued)*

Hardware Item (CLI)	Description (CLI)	Value (CLI)	Item in Documentation	Additional Information
	One of the following: • 2x 10GE SFP+ • 4x GE SFP	PIC 1	Uplink module installed on the front panel of the switch	"Uplink Modules in J-EX4200 Switches" on page 25
Xcvr (*n*)	Abbreviated name of the transceiver	*n* is a value equivalent to the number of the port in which the transceiver is installed.	Optical transceivers	"Optical Interface Support in J-EX4200 Switches" on page 32
Power supply (*n*)	One of the following: • PS 320W AC • PS 600W AC • PS 930W AC	*n* is a value in the range of 0-1. The value corresponds to the power supply slot number.	AC power supply	"Power Supply in J-EX4200 Switches" on page 21
Fan tray	Fan tray	–	Fan tray	"Cooling System and Airflow in a J-EX4200 Switch" on page 24

CHAPTER 2

Component Descriptions

LCD Panel in J-EX4200 Switches

The LCD panel on the front panel of J-EX4200 switches shows two lines of text, each a maximum of 16 characters in length. The LCD panel displays a variety of information about the switch and also provides a menu to perform basic operations such as initial setup and reboot.

There are two navigation buttons—**Menu** and **Enter**—to the right of the LCD panel.

See Figure 5 on page 11.

Figure 5: LCD Panel in J-EX4200 Switches
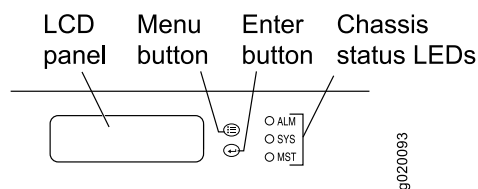
You can configure the second line of the LCD panel to display a custom message. If the LCD panel is configured to display a custom message, the **Menu** button and the **Enter** button are disabled. See the instructions for configuring the LCD panel on J-EX Series switches in the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS: Volume 1* at http://www.support.dell.com/manuals.

The LCD panel has a backlight. If the LCD panel is idle for 60 seconds, the backlight turns off. You can turn on the backlight by pressing the **Menu** or **Enter** button once. After turning on the backlight, you can toggle between the LCD panel menus by pressing the **Menu** button and navigate through the menu options by pressing the **Enter** button.

> NOTE: The chassis viewer in the J-Web interface also displays the LCD panel. From the J-Web interface, you can view real-time status information in the LCD panel. See the information about the dashboard for J-EX Series switches in the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS: Volume 1* at http://www.support.dell.com/manuals.

This topic describes:

- LCD Panel Modes on page 12
- LCD Panel Menus on page 13

LCD Panel Modes

The LCD panel operates in four modes: boot, idle, status, and maintenance.

The LCD panel operates in boot mode during switch reboot. The boot mode displays the key milestones in the switch boot process. The boot mode does not have any menu options. After the boot process is complete, the LCD panel automatically reverts to the Idle menu.

In a J-EX4200 switch that is not a member of a Virtual Chassis, the first line of the LCD panel displays the slot number, the role of the switch, and hostname. For a standalone J-EX4200 switch, the slot number is always **00** and the role is always **RE** (for master).

In a J-EX4200 switch that is a member of a Virtual Chassis, the first line of the LCD panel displays:

- The slot number (the member ID for the Virtual Chassis member)
- Role of the switch in a Virtual Chassis (**RE** for master, **BK** for backup, and **LC** for linecard member)
- Hostname

In the idle mode, the second line displays the mode of the network ports' Status LED and the number of chassis alarms. The number of alarms is updated every second.

In the status mode, the second line displays:

- Virtual Chassis port (VCP) status (for a J-EX4200 switch that is a member of a Virtual Chassis)
- Status of the power supply
- Status of the fan and temperature
- Version of Junos OS for J-EX Series switches loaded on the switch

In the maintenance mode, the second line displays one of the following options that you can use to configure and troubleshoot the switch:

- System halt

- System reboot

- Load rescue

- Request VC port (for a switch that is a member of a Virtual Chassis)

- Factory default

- System EZSetup

LCD Panel Menus

The LCD panel has three menus: Idle, Status, and Maintenance. Toggle between the LCD panel menus by pressing the **Menu** button. Navigate through the menu options by pressing the **Enter** button.

Table 7 on page 13 describes the LCD panel menu options.

Table 7: LCD Panel Menu Options in J-EX4200 Switches

Menu	Description

IDLE	In the Idle menu:
	
	• Press **Enter** to cycle through the Status LED modes:
	  • ADM (administrative status)
	  • DPX (duplex)
	  • Power over Ethernet (PoE)
	  • SPD (speed)
	  See "Network Port LEDs in J-EX4200 Switches" on page 18 for information on the Status LED modes.
	• Press **Menu** to exit the Idle menu and go to the Status menu.

Table 7: LCD Panel Menu Options in J-EX4200 Switches *(continued)*

Menu	Description

STATUS	The Status menu has the following options:
	
	• Show VCP status—Choose one of the following:
	
	  • Press the **Enter** button to display the Virtual Chassis port (VCP) status: Up, Down, Disabled. This menu option is available only for a J-EX4200 switch that is a member of a Virtual Chassis configuration.
	  • Press the **Menu** button to go to the next option in the Status menu.
	
	• Show PSU status—Choose one of the following:
	
	  • Press the **Enter** button to display the status of the power supply: OK, Failed, Absent.
	  • Press the **Menu** button to go to the next option in the Status menu.
	
	• Show Environment status—Choose one of the following:
	
	  • Press the **Enter** button to display the status of the fan and temperature:
	
	    • Fan status: OK, Failed, Absent
	    • Temp status: OK, High, Shutdown
	
	  • Press the **Menu** button to go to the next option in the Status menu.
	
	• Show Junos OS version—Choose one of the following:
	
	  • Press the **Enter** button to version of Junos OS for J-EX Series switches loaded on the switch.
	  • Press the **Menu** button to go to the next option in the Status menu.
	
	• EXIT STAT MENU?—Choose one of the following:
	
	  • Press the **Enter** button to exit the Status menu. Then press the **Menu** button to go to the Maintenance menu.
	  • Press the **Menu** button to return to the Show VCP status option.
	
	If you do not want users to use Status menu options, disable the entire menu or individual menu options. See the instructions for configuring the LCD panel on J-EX Series switches in the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS: Volume 1* at http://www.support.dell.com/manuals.

Table 7: LCD Panel Menu Options in J-EX4200 Switches *(continued)*

Menu	Description
MAINT (Maintenance Menu)	The Maintenance menu has the following options to configure and troubleshoot the switch: • SYSTEM HALT?—Choose one of the following: • Press the **Enter** button to halt the switch. Press the **Enter** button again to confirm the halt. • Press the **Menu** button to go to the next option in the Maintenance menu. • SYSTEM REBOOT?—Choose one of the following: • Press the **Enter** button to reboot the switch. Press the **Enter** button again to confirm the reboot. • Press the **Menu** button to go to the next option in the Maintenance menu. • LOAD RESCUE?—Choose one of the following: • Press the **Enter** button to roll back the switch to the rescue configuration. Press the **Enter** button again to confirm the rollback. • Press the **Menu** button to go to the next option in the Maintenance menu. • REQUEST VC PORT?—Choose one of the following: • Press the **Enter** button to configure an uplink module port or a J-EX4200-24F network port to be a Virtual Chassis port (VCP) or to delete a VCP from the switch configuration (when you delete the VCP, the port is reset to an uplink module port or a J-EX4200-24F network port). • Press the **Menu** button to go to the next option in the Maintenance menu. • FACTORY DEFAULT?—Choose one of the following: • Press the **Enter** button to restore the switch to the factory default configuration. Press the **Enter** button again to confirm the restoration. • Press the **Menu** button to go to the next option in the Maintenance menu. • ENTER EZSETUP?—Choose one of the following: • Press the **Enter** button to launch EZSetup. Press the **Enter** button again to confirm the launch. NOTE: You can use the ENTER EZSETUP option only if the switch is in the factory default configuration. For information about EZSetup, see "Connecting and Configuring a J-EX Series Switch (J-Web Procedure)" on page 133. • Press the **Menu** button to go to the next option in the Maintenance menu. • EXIT MAINT MENU?—Choose one of the following: • Press the **Enter** button to exit the Maintenance menu. Then press the **Menu** button to go to the Idle menu. • Press the **Menu** button to go to the System Halt option. If you do not want users to use Maintenance menu options, disable the entire menu or individual menu options. See the instructions for configuring the LCD panel on J-EX Series switches in the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS: Volume 1* at http://www.support.dell.com/manuals.

Related Documentation

• Front Panel of a J-EX4200 Switch on page 6

• Field-Replaceable Units in J-EX4200 Switches on page 16

• Connecting and Configuring a J-EX Series Switch (CLI Procedure) on page 131

• Connecting and Configuring a J-EX Series Switch (J-Web Procedure) on page 133

Field-Replaceable Units in J-EX4200 Switches

Field-replaceable units (FRUs) are components that you can replace at your site. The field-replaceable units (FRUs) in J-EX4200 switches are:

- Power supply

- Fan tray

- Uplink module

- SFP transceiver

- SFP+ transceiver

> ✎ NOTE: Uplink modules are not part of the standard package and must be ordered separately.

The power supply, fan tray, uplink module, and transceivers are hot-removable and hot-insertable: You can remove and replace them without powering off the switch or disrupting switch functions.

> ✎ NOTE: If you have a service contract, register any addition, change, or upgrade of hardware components at http://www.dell.com. Failure to do so can result in significant delays if you need replacement parts. This note applies if you change the type of power supply or add a new type of uplink module. It does not apply if you replace these components with the same type of component.

Related Documentation
- Uplink Modules in J-EX4200 Switches on page 25

- Installing a Power Supply in a J-EX4200 Switch on page 106

- Removing a Power Supply from a J-EX4200 Switch on page 140

- Installing a Fan Tray in a J-EX4200 Switch on page 107

- Removing a Fan Tray from a J-EX4200 Switch on page 141

- Installing an Uplink Module in a J-EX4200 Switch on page 108

- Removing an Uplink Module from a J-EX4200 Switch on page 142

- Installing a Transceiver in a J-EX Series Switch on page 110

- Removing a Transceiver from a J-EX Series Switch on page 144

Chassis Status LEDs in J-EX4200 Switches

The front panel of a J-EX4200 switch has three LEDs on the far right side of the panel, next to the LCD panel (see Figure 6 on page 17).

Figure 6: Chassis Status LEDs in a J-EX4200 Switch
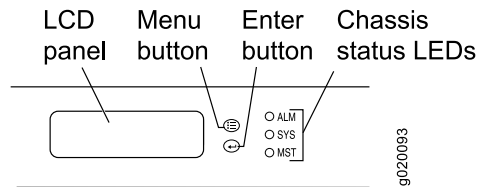
Table 8 on page 17 describes the chassis status LEDs in a J-EX4200 switch, their colors and states, and the status they indicate. You can view the colors of the three LEDs remotely through the CLI by issuing the operational mode command **show chassis lcd**.

Table 8: Chassis Status LEDs in a J-EX4200 Switch

LED Label	Color	State and Description
ALM (Alarm)	Unlit	There is no alarm.
	Red	There is a major alarm. NOTE: When you connect power to the switch, the Alarm (ALM) LED lights red to indicate that the network link is disconnected. This behavior is normal. Plugging an active Ethernet cable into the management (MGMT) port on the switch completes the network link and turns off the ALM LED. (See "Connecting a J-EX Series Switch to a Network for Out-of-Band Management" on page 120.) Connecting the switch to a dedicated management console instead of a network does not affect the ALM LED. The LED remains red until the switch is connected to a network.
	Amber	There is a minor alarm. NOTE: The Alarm (ALM) LED lights amber if you commit a configuration to make it active on the switch and do not also create a rescue configuration to back it up. To save the most recently committed configuration as the rescue configuration, enter the operational mode command **request system configuration rescue save**. For more information, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.
SYS (System)	Green	• On steadily—Junos OS for J-EX Series switches has been loaded on the switch. • Blinking—The switch is booting.
MST (Master)	Green	• On steadily—The switch is the master in the Virtual Chassis configuration. • Blinking—The switch is the backup in the Virtual Chassis configuration. • Off—The switch is a linecard member in the Virtual Chassis configuration.

A major alarm (red) indicates a critical error condition that requires immediate action.

A minor alarm (amber) indicates a noncritical condition that requires monitoring or maintenance. A minor alarm that is left unchecked might cause interruption in service or performance degradation.

NOTE: The amber glow of the Alarm LED that indicates a minor alarm closely resembles the red glow that indicates a major alarm.

All three LEDs can be lit simultaneously.

Related Documentation

- Front Panel of a J-EX4200 Switch on page 6
- For information about active alarms, alarm types, and alarm severity levels, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

Network Port LEDs in J-EX4200 Switches

Each network port on a J-EX4200 switch has two LEDs. The four figures in this topic show the location of those LEDs:

- Figure 7 on page 18 shows the location of the LEDs on the network ports on the front panel.
- Figure 8 on page 19 shows the location of the LEDs on the uplink module ports on the SFP uplink module.
- Figure 9 on page 19 shows the location of the LEDs on the uplink module ports on the SFP+ uplink module.

Figure 7: LEDs on the Network Ports on the Front Panel
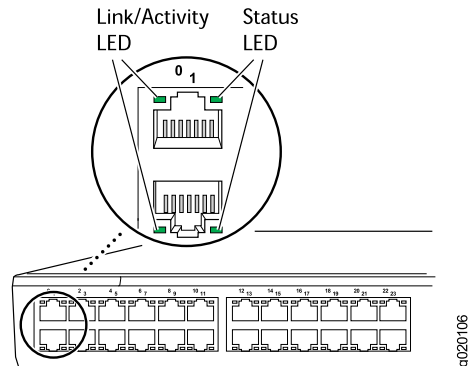
Figure 8: LEDs on the Uplink Module Ports on the SFP Uplink Module
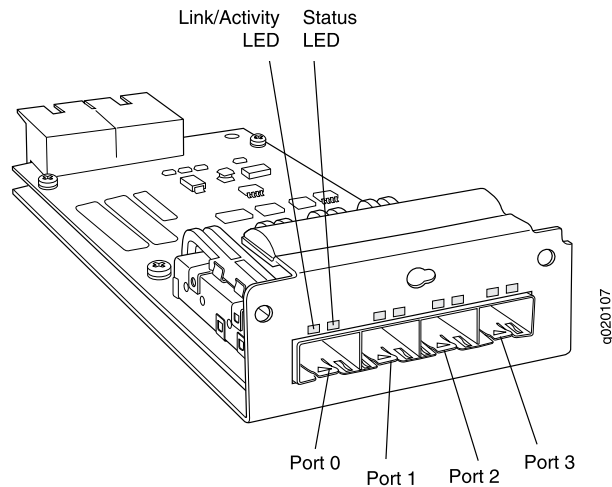
Figure 9: LEDs on the Uplink Module Ports on the SFP+ Uplink Module
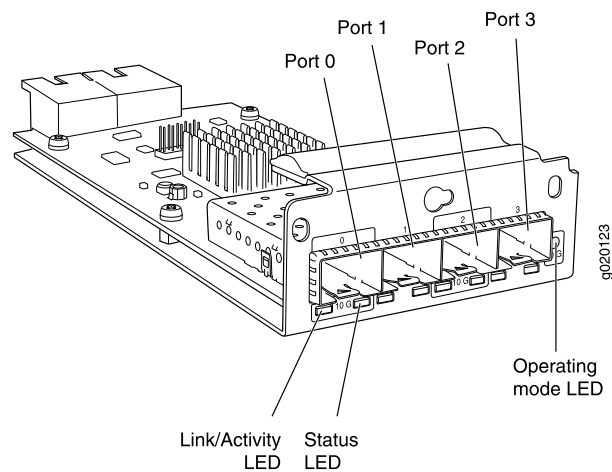
The LEDs labeled **Link/Activity LED** in Figure 7 on page 18, Figure 8 on page 19, and Figure 9 on page 19 indicate link activity. The LEDs labeled **Status LED** indicate the status of one of the four port parameters. The port parameters are administrative status, duplex mode, Power over Ethernet (PoE) status, and speed.

Table 9 on page 19 describes the Link/Activity LED.

Table 9: Link/Activity LED on Network Ports in J-EX4200 Switches

LED	Color	State and Description
Link/Activity	Green	• Blinking—The port and the link are active, and there is link activity. • On steadily—The port and the link are active, but there is no link activity. • Off—The port is not active.

Table 10 on page 20 describes the Status LED. From the Idle menu of the LCD, use the **Enter** button on the LCD panel to toggle between the ADM, DPX, POE, and SPD indicators.

Table 10: Status LED on Network Ports in J-EX4200 Switches

LED	LCD Indicator	State and Description
Status	LED: ADM	Indicates the administrative status (enabled or disabled). The status indicators are: • Green—Administrative status enabled. • Unlit—Administrative status disabled.
	LED: DPX	Indicates the duplex mode. The uplink module ports are always set to full-duplex; therefore, the LED is always green. The status indicators for network ports on the front panel are: • Green—Port is set to full-duplex mode. • Unlit—Port is set to half-duplex mode.

	LED: POE	Indicates the PoE status.
		
		PoE is not enabled on uplink module ports; therefore, the LED for those ports is always unlit.
		
		The status indicators for network ports on the front panel are:
		
		• Green—PoE is enabled on the port.
		• Amber—PoE is enabled on the port, but no power is drawn from the port because of one of the following:
		  ◦ No device that draws power from the port is connected to the port.
		  ◦ A device that draws power from the port is connected to the port, but the device is not drawing any power from the port.
		• Unlit—PoE is not enabled on the port.

	LED: SPD	Indicates the speed. The speed indicators for network ports on the front panel are: • One blink per second—10 Mbps • Two blinks per second—100 Mbps • Three blinks per second—1000 Mbps The speed indicators for network ports on the SFP uplink module are: • Green—1000 Mbps • Unlit—10/100 Mbps The speed indicators for network ports on the SFP+ uplink module are: • Green—The speed of the transceiver installed in the port is the same as the speed at which the uplink module port is configured to operate. • Unlit—The speed of the transceiver installed in the port is not the same as the speed at which the uplink module port is configured to operate.

Related Documentation

- Front Panel of a J-EX4200 Switch on page 6

- Uplink Modules in J-EX4200 Switches on page 25

- LCD Panel in J-EX4200 Switches on page 11

Management Port LEDs in J-EX4200 Switches

The management port on J-EX4200 switches has two LEDs that indicate link/activity and port status (see Figure 10 on page 21). The management port is set to full-duplex and the speed is set to 100 Mbps.

Figure 10: LEDs on the Management Port on a J-EX4200 Switch
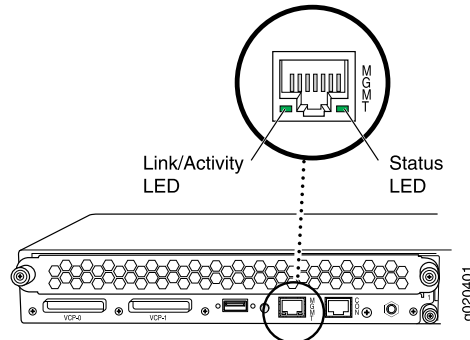
Table 11 on page 21 describes the Link/Activity LED.

Table 11: Link/Activity LED on the Management Port on J-EX4200 Switches

LED	Color	State and Description
Link/Activity	Green	• Blinking—The port and the link are active, and there is link activity. • On steadily—The port and the link are active, but there is no link activity. • Off—The port is not active.

Table 12 on page 21 describes the Status LED (administrative status).

Table 12: Status LED on the Management Port on J-EX4200 Switches

LED	Color	State and Description
Status	Green	• On steadily—Administrative status is enabled. • Off—Administrative status is disabled.

Related Documentation
- See Rear Panel of a J-EX4200 Switch on page 7 for port location.
- Connecting a J-EX Series Switch to a Network for Out-of-Band Management on page 120

Power Supply in J-EX4200 Switches

The power supply in J-EX4200 switches (see Figure 11 on page 22 and Figure 12 on page 22) is a hot-removable and hot-insertable field-replaceable unit (FRU) that you can install on the rear panel without powering off the switch or disrupting the switching function. J-EX4200 switches have an internal redundant power supply, making the power supply in J-EX4200 switches fully redundant.

J-EX4200 switches use power that provides two DC output voltages: 12 V for system and logic power and 48–51 V (or higher, to compensate for voltage drops along the path from the power supplies to the RJ-45 connector) for PoE ports.

The AC power supply in J-EX4200 switches is available in 320 W, 600 W, and 930 W models. The exterior of the 600 W model is identical to that of the 930 W model. The 320 W power supply is flush with the chassis. The 600 W power supply and 930 W power supply extend out of the chassis by 2.25 in. The power cord retainer clips extend out of the power supply by 3 in. The number of ports on which PoE is enabled determines the minimum power requirements.

Figure 11: 320 W AC Power Supply in J-EX4200 Switches
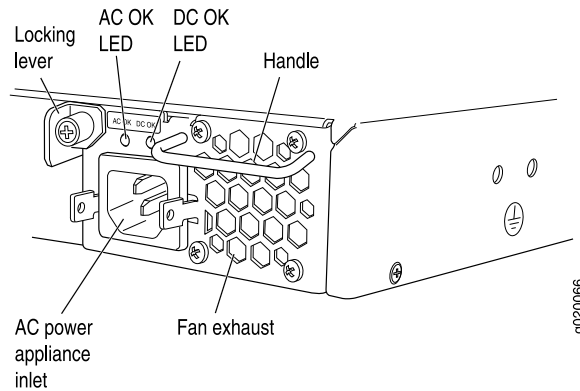
Figure 12: 600 W and 930 W AC Power Supplies in J-EX4200 Switches
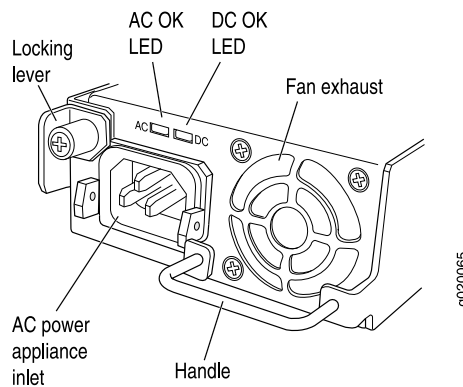
To avoid electrical injury, follow instructions in "Installing a Power Supply in a J-EX4200 Switch" on page 106 and "Removing a Power Supply from a J-EX4200 Switch" on page 140 carefully.

> ✎ NOTE: After powering on a J-EX4200 switch, wait for at least 60 seconds before powering it off. After powering off a J-EX4200 switch, wait for at least 60 seconds before powering it back on.
>
> After a switch has been powered on, it can take up to 60 seconds for status indicators—such as LEDs on the power supply, show chassis command output, and messages on the LCD—to indicate that the power supply is functioning normally. Ignore error indicators that appear during the first 60 seconds.

PoE Power Budget and AC Power Supplies

The PoE power budget for a PoE switch model is determined by the capacity of its power supply. For a J-EX4200 switch, the capacity of the power supply provided with the switch is sufficient to supply each PoE-capable port with up to 15.4 W in compliance with the IEEE 802.3af PoE standard.

Table 13 on page 23 lists the J-EX4200 power supply ratings and associated PoE power budgets.

Starting with Junos OS Release 11.1, a J-EX Series Ethernet switch supports enhanced PoE, a Juniper Networks extension to the IEEE 302.3af PoE standard. Enhanced PoE permits up to 18.6 W per PoE port. Because the power supply provided with a switch is designed to supply a maximum of 15.4 W per PoE port, if you connect a powered device that draws more than 15.4 W, the PoE power budget might not be sufficient to supply a full 15.4 W to the remaining PoE ports.

> ✎ NOTE: To enable enhanced PoE support, switches upgraded to Junos OS Release 11.1 from a previous release require a separate upgrade of the PoE controller software.

Table 13: Minimum Power Requirements for a J-EX4200 Switch

Model Number	Number of PoE-enabled Ports	Minimum Power Requirement
J-EX4200-24T	8	320 W
J-EX4200-48T	8	320 W
J-EX4200-24F	–	320 W

Related Documentation
- AC Power Cord Specifications for J-EX4200 Switches on page 71
- AC Power Supply LEDs in J-EX4200 Switches on page 24
- Rear Panel of a J-EX4200 Switch on page 7
- Field-Replaceable Units in J-EX4200 Switches on page 16
- Power Specifications for J-EX4200 Switches on page 71

- Prevention of Electrostatic Discharge Damage on J-EX Series Switches on page 198

- Connecting AC Power to a J-EX4200 Switch on page 117

- Connecting Earth Ground to a J-EX Series Switch on page 115

AC Power Supply LEDs in J-EX4200 Switches

The AC power supply in a J-EX4200 switch is on the rear panel. Table 14 on page 24 describes the LEDs on the AC power supplies in J-EX4200 switches.

Table 14: AC Power Supply LEDs in J-EX4200 Switches

LED	State and Description
AC OK	- Off—Disconnected from power or power is not coming into the power supply. - On—Power is coming into the power supply.
DC OK	- Off—Power supply is not sending out power correctly. - On—Power supply is sending out power correctly.

NOTE: If the AC OK and DC OK LEDs are *both unlit*, either the AC power cord is not installed properly or the power supply fuse has failed. If the AC OK LED is *lit* and the DC OK LED is *unlit*, the AC power supply is not installed properly or the power supply has an internal failure.

Related Documentation
- Power Supply in J-EX4200 Switches on page 21
- Connecting AC Power to a J-EX4200 Switch on page 117

Cooling System and Airflow in a J-EX4200 Switch

The cooling system in a J-EX4200 switch consists of a field-replaceable unit (FRU) fan tray with three fans (see Figure 13 on page 24). The fan tray is located at the rear of the chassis and provides side-to-rear chassis cooling (see Figure 14 on page 25).

Figure 13: Fan Tray Used in a J-EX4200 Switch
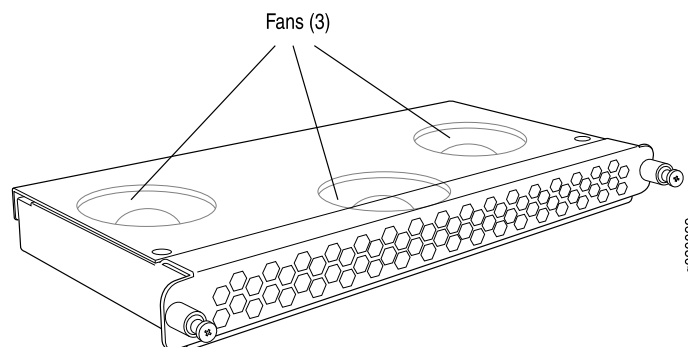
Figure 14: Airflow Through the J-EX4200 Switch Chassis
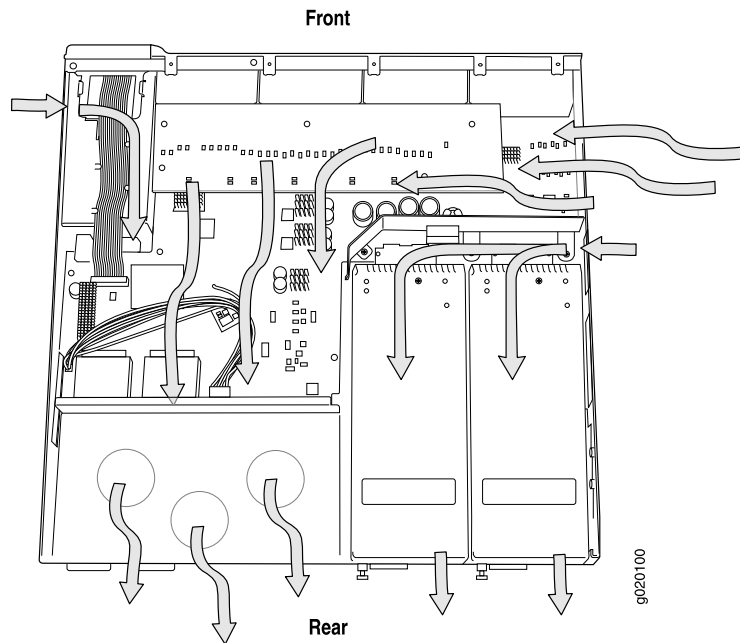
The fan tray used in a J-EX4200 switch comes with load-sharing redundancy that can tolerate a single fan failure at room temperature (below 45º C/113º F) to still provide sufficient cooling.

Temperature sensors in the chassis monitor the temperature within the chassis. The system raises an alarm if the fan fails or if the temperature inside the chassis rises above permitted levels. If the temperature inside the chassis rises above the threshold, the system shuts down automatically and the temperature shutdown LED on the rear panel is lit. You can see the status of fans and the temperature from the **Show Environment Status** option in the Status menu in the LCD panel.

Related Documentation

- Field-Replaceable Units in J-EX4200 Switches on page 16

- Rear Panel of a J-EX4200 Switch on page 7

- Prevention of Electrostatic Discharge Damage on J-EX Series Switches on page 198

- Installing a Fan Tray in a J-EX4200 Switch on page 107

- Removing a Fan Tray from a J-EX4200 Switch on page 141

Uplink Modules in J-EX4200 Switches

J-EX4200 switches support the following types of uplink modules:

- SFP uplink module—Provides four ports for 1-gigabit small form-factor pluggable (SFP) transceivers.

- SFP+ uplink module—Provides two ports for 10-gigabit small form-factor pluggable (SFP+) transceivers when configured to operate in 10-gigabit mode or four ports for

1-gigabit small form-factor pluggable (SFP) transceivers when configured to operate in 1-gigabit mode.

![NOTE icon] NOTE: When a new uplink module is installed in the switch or an existing uplink module is replaced with another uplink module, the switch detects the newly installed uplink module. The switch creates the required interfaces if the uplink module has transceivers in its ports and when new transceivers are installed in those ports.

You can use the optional uplink module ports to connect an access switch to a distribution switch. You can also use these ports to connect members of a Virtual Chassis across multiple wiring closets.

When connecting uplink module ports, you can install an SFP uplink module at one end of the connection and install an SFP+ uplink module configured to operate in the 1-gigabit mode at the other end.

This topic describes:

- SFP Uplink Module on page 26
- SFP+ Uplink Module on page 26

SFP Uplink Module

Figure 15 on page 26 shows the SFP uplink module, which provides four ports for 1-gigabit SFP transceivers.

Figure 15: SFP Uplink Module
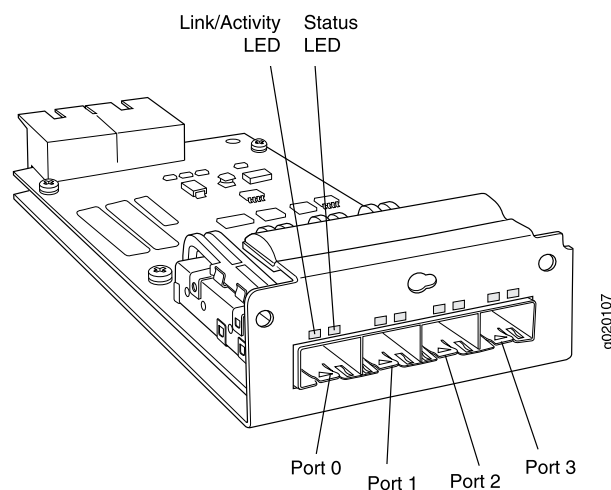
SFP uplink modules are shipped with dust covers preinstalled in the ports.

SFP+ Uplink Module

SFP+ uplink modules can be used for either SFP+ or SFP transceivers. You configure the operating mode on the module to match the type of transceiver you want to use—for

SFP+ transceivers, you configure the 10-gigabit operating mode, and for SFP transceivers, you configure the 1-gigabit operating mode. See "Setting the Mode on an SFP+ Uplink Module (CLI Procedure)" on page 135.

By default, the SFP+ uplink module operates in the 10-gigabit mode and supports only SFP+ transceivers. If you have not changed the module from the default setting and you want to use SFP+ transceivers, you do not need to configure the operating mode.

If the operating mode and the configured mode for an SFP+ uplink module are different, it is shown in the output of **show chassis pic fpc-slot** *slot number* **pic-slot 1**.

Figure 16 on page 27 shows the SFP+ uplink module.

Figure 16: SFP+ Uplink Module
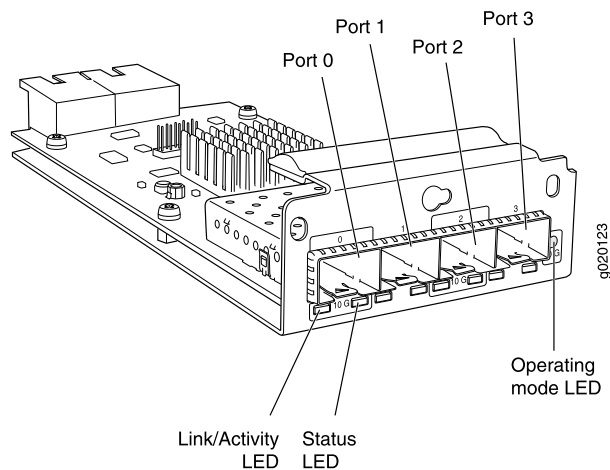
Transceivers are supported in the uplink module's ports as follows:

- SFP+ transceivers are supported in ports 0 and 2.
- SFP transceivers are supported in all four ports.

The ports that support SFP+ transceivers are labeled 10 G on the uplink module's faceplate (see Figure 16 on page 27).

> ✏️ NOTE: When an SFP+ uplink module is operating in 10-gigabit mode:
>
> - Only the 10-gigabit ports (ports 0 and 2) are enabled.
> - You can use only SFP+ transceivers in those ports.
>
> When an SFP+ uplink module is operating in 1-gigabit mode:
>
> - All four ports are enabled.
> - You can use only SFP transceivers in all four ports.

The SFP+ uplink module has an LED on the faceplate (labeled **Operating mode LED** in Figure 16 on page 27) that indicates the operating mode. If the uplink module is operating

in the 10-gigabit mode, the LED is lit. If the uplink module is operating in the 1-gigabit mode, the LED is unlit.

SFP+ uplink modules are shipped with dust covers preinstalled in the ports.

Related Documentation

- Network Port LEDs in J-EX4200 Switches on page 18

- Uplink Modules Connector Pinout Information for J-EX4200 Switches on page 41

- Optical Interface Support in J-EX4200 Switches on page 32

- For information about configuring aggregated Ethernet high-speed uplinks between Virtual Chassis access and distribution switches, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS: Volume 1* at http://www.support.dell.com/manuals.

- Installing an Uplink Module in a J-EX4200 Switch on page 108

- Troubleshooting Uplink Module Installation or Replacement on J-EX4200 Switches on page 158

Component Specifications

USB Port Specifications for a J-EX Series Switch

The following Dell USB flash drives have been tested and are officially supported for the USB port on all J-EX Series switches:

- 1-GB USB flash drive (WFXDH)
- 2-GB USB flash drive (T8GCH)
- 4-GB USB flash drive (7XMF7)

> **CAUTION:** Any USB memory product not listed as supported for J-EX Series switches has not been tested. The use of any unsupported USB memory product could expose your switch to unpredictable behavior. Dell can provide only limited support for issues related to unsupported hardware. We strongly recommend that you use only supported USB flash drives.

All USB flash drives used on the switches must have the following features:

- USB 2.0 or later
- Formatted with a FAT or MS-DOS file system

Related Documentation
- See Front Panel of a J-EX4500 Switch for port location.
- For information about booting the switch from a software package stored on a USB flash drive, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

Network Port Connector Pinout Information for a J-EX4200 Switch

A network port on a J-EX4200 switch uses an RJ-45 connector to connect to a device.

The port uses an autosensing RJ-45 connector to support a 10/100/1000Base-T connection. Two LEDs on the port indicate link/activity on the port and the port status. See "Network Port LEDs in J-EX4200 Switches" on page 18.

Table 15 on page 30 provides the pinout information for the RJ-45 connector. An RJ-45 cable, with a connector attached, is supplied with the switch.

Table 15: Network Port Connector Pinout Information for a J-EX4200 Switch

Pin	Signal	Description
1	TRP1+	Transmit/receive data pair 1
		Negative Vport (in PoE models)
2	TRP1-	Transmit/receive data pair 1
		Negative Vport (in PoE models)
3	TRP2+	Transmit/receive data pair 2
		Positive Vport (in PoE models)
4	TRP3+	Transmit/receive data pair 3
5	TRP3-	Transmit/receive data pair 3
6	TRP2-	Transmit/receive data pair 2
		Positive Vport (in PoE models)
7	TRP4+	Transmit/receive data pair 4
8	TRP4-	Transmit/receive data pair 4

Related Documentation
- Front Panel of a J-EX4200 Switch on page 6

Console Port Connector Pinout Information for a J-EX Series Switch

The console port on a J-EX Series switch is an RS-232 serial interface that uses an RJ-45 connector to connect to a console management device. The default baud rate for the console port is 9600 baud.

Table 16 on page 31 provides the pinout information for the RJ-45 console connector. An RJ-45 cable and an RJ-45 to DB-9 serial port adapter are supplied with the switch.

> **NOTE:** If your laptop or PC does not have a DB-9 male connector pin and you want to connect your laptop or PC directly to a J-EX Series switch, use a combination of the RJ-45 to DB-9 female adapter supplied with the switch and a USB to DB-9 male adapter. You must provide the USB to DB-9 male adapter.

Table 16: J-EX Series Switches Console Port Connector Pinout Information

Pin	Signal	Description
1	RTS Output	Request to send
2	DTR Output	Data terminal ready
3	TxD Output	Transmit data
4	Signal Ground	Signal ground
5	Signal Ground	Signal ground
6	RxD Input	Receive data
7	CD Input	Data carrier detect
8	CTS Input	Clear to send

Related Documentation

- See Rear Panel of a J-EX4200 Switch on page 7 for port location.

- Connecting a J-EX Series Switch to a Management Console on page 121

Management Port Connector Pinout Information for a J-EX4200 Switch

The management port on a J-EX4200 switch uses an RJ-45 connector to connect to a management device for out-of-band management.

The port uses an autosensing RJ-45 connector to support a 10/100/1000Base-T connection. Two LEDs on the port indicate link/activity on the port and the administrative status of the port. See "Management Port LEDs in J-EX4200 Switches" on page 21.

Table 17 on page 31 provides the pinout information of the RJ-45 connector. An RJ-45 cable, with a connector attached, is supplied with the switch.

Table 17: Management Port Connector Pinout Information for J-EX4200 Switches

Pin	Signal	Description
1	TRP1+	Transmit/receive data pair 1
2	TRP1-	Transmit/receive data pair 1

Table 17: Management Port Connector Pinout Information for J-EX4200 Switches *(continued)*

Pin	Signal	Description
3	TRP2+	Transmit/receive data pair 2
4	TRP3+	Transmit/receive data pair 3
5	TRP3-	Transmit/receive data pair 3
6	TRP2-	Transmit/receive data pair 2
7	TRP4+	Transmit/receive data pair 4
8	TRP4-	Transmit/receive data pair 4

Related Documentation

- See Rear Panel of a J-EX4200 Switch on page 7 for port location.
- Connecting a J-EX Series Switch to a Network for Out-of-Band Management on page 120

Optical Interface Support in J-EX4200 Switches

Optional uplink modules for J-EX4200 switches support SFP or SFP+ transceivers. This topic describes the optical interfaces supported for those transceivers. It also lists the copper interface supported for the SFP transceivers.

> ✎ NOTE: For your J-EX4200 switch, use only the optical transceivers and optical connectors described in this manual. For more information, contact Dell.

The Gigabit Ethernet SFP or SFP+ transceivers installed in J-EX4200 switches support digital optical monitoring (DOM): you can view the diagnostic details for these transceivers by issuing the operational mode CLI command **show interfaces diagnostics optics** . The command does not give any output for copper transceivers, Fast Ethernet transceivers, or transceivers not purchased from Dell.

The following tables describe the optical interface support over single-mode fiber-optic (SMF) and multimode fiber-optic (MMF) cables for SFP and SFP+ transceivers and over the copper interface for SFP transceivers:

- Table 18 on page 33—Optical interface support and copper interface support for Gigabit Ethernet SFP transceivers.
- Table 19 on page 38—Optical interface support for Fast Ethernet SFP transceivers.
- Table 20 on page 39—Optical interface support for Gigabit Ethernet SFP+ transceivers.

Table 18: Optical Interface Support and Copper Interface Support for Gigabit Ethernet SFP Transceivers in J-EX4200 Switches

Ethernet Standard	Specifications	
1000Base-T	Model Number	EX-SFP-1GE-T
	Rate	10/100/1000 Mbps
	Connector Type	RJ-45
	Fiber Count	Copper
	Transmitter Wavelength	–
	Minimum Launch Power	–
	Maximum Launch Power	–
	Minimum Receiver Sensitivity	–
	Maximum Input Power	–
	Fiber Type	Copper
	Core/Cladding Size	–
	Modal Bandwidth	–
	Distance	100 m (328 ft)
	DOM Support	Not available
	Software required	Junos OS for J-EX Series switches

Table 18: Optical Interface Support and Copper Interface Support for Gigabit Ethernet SFP Transceivers in J-EX4200 Switches *(continued)*

Ethernet Standard	Specifications				
1000Base-SX	Model Number	EX-SFP-1GE-SX			
	Rate	1000 Mbps			
	Connector Type	LC			
	Fiber Count	Dual			
	Transmitter Wavelength	850 nm			
	Minimum Launch Power	−9.5 dBm			
	Maximum Launch Power	−3 dBm			
	Minimum Receiver Sensitivity	−21 dBm			
	Maximum Input Power	0 dBm			
	Fiber Type	MMF			
	Core/Cladding Size	62.5/125 μm	62.5/125 μm	50/125 μm	50/125 μm
	Fiber Grade	FDDI	OM1	–	OM2
	Modal Bandwidth	160 MHz/km	200 MHz/km	400 MHz/km	500 MHz/km
	Distance	220 m (722 ft)	275 m (902 ft)	500 m (1640 ft)	550 m (1804 ft)
	DOM Support	Available			
	Software required	Junos OS for J-EX Series switches			

Table 18: Optical Interface Support and Copper Interface Support for Gigabit Ethernet SFP Transceivers in J-EX4200 Switches *(continued)*

Ethernet Standard	Specifications	
1000Base-LX	Model Number	EX-SFP-1GE-LX
	Rate	1000 Mbps
	Connector Type	LC
	Fiber Count	Dual
	Transmitter Wavelength	1310 nm
	Minimum Launch Power	−9.5 dBm
	Maximum Launch Power	−3 dBm
	Minimum Receiver Sensitivity	−25 dBm
	Maximum Input Power	−3 dBm
	Fiber Type	SMF
	Core/Cladding Size	9/125 μm
	Modal Bandwidth	−
	Distance	10 km (6.2 miles)
	DOM Support	Available
	Software required	Junos OS for J-EX Series switches

Table 18: Optical Interface Support and Copper Interface Support for Gigabit Ethernet SFP Transceivers in J-EX4200 Switches *(continued)*

Ethernet Standard	Specifications	
1000Base-LX	Model Number	EX-SFP-1GE-LX40K
	Rate	1000 Mbps
	Connector Type	LC
	Fiber Count	Single
	Transmitter Wavelength	1310 nm
	Minimum Launch Power	−14 dBm
	Maximum Launch Power	−8 dBm
	Minimum Receiver Sensitivity	−45 dBm
	Maximum Input Power	−3 dBm
	Fiber Type	SMF
	Core/Cladding Size	9/125 μm
	Modal Bandwidth	–
	Distance	40 km (24.8 miles)
	DOM Support	Available
	Software required	Junos OS for J-EX Series switches

Table 18: Optical Interface Support and Copper Interface Support for Gigabit Ethernet SFP Transceivers in J-EX4200 Switches *(continued)*

Ethernet Standard	Specifications	
1000Base-LH (or 1000Base-ZX)	Model Number	EX-SFP-1GE-LH
	Rate	1000 Mbps
	Connector Type	LC
	Fiber Count	Dual
	Transmitter Wavelength	1550 nm
	Minimum Launch Power	−2 dBm
	Maximum Launch Power	5 dBm
	Minimum Receiver Sensitivity	−25 dBm
	Maximum Input Power	−3 dBm
	Fiber Type	SMF
	Core/Cladding Size	9/125 µm
	Modal Bandwidth	−
	Distance	70 km (43.5 miles)
	DOM Support	Available
	Software required	Junos OS for J-EX Series switches

Table 19: Optical Interface Support for Fast Ethernet SFP Transceivers in J-EX4200 Switches

Ethernet Standard	Specifications	
100Base-FX	Model Number	EX-SFP-1FE-FX
	Rate	100 Mbps
	Connector Type	LC
	Fiber Count	Dual
	Transmitter Wavelength	1310 nm
	Minimum Launch Power	−20 dBm
	Maximum Launch Power	−14 dBm
	Minimum Receiver Sensitivity	−32.5 dBm
	Maximum Input Power	−8 dBm
	Fiber Type	MMF
	Core/Cladding Size	62.5/125 μm
	Fiber Grade	FDDI/OM1
	Modal Bandwidth	500 Mhz/km
	Distance	2 km (1.2 miles)
	DOM Support	Not available
	Software required	Junos OS for J-EX Series switches

Table 20: Optical Interface Support for Gigabit Ethernet SFP+ Transceivers in J-EX4200 Switches

Ethernet Standard	Specifications					
10GBase-SR	Model Number	EX-SFP-10GE-SR				
	Rate	10 Gbps				
	Connector Type	LC				
	Fiber Count	Dual				
	Transmitter Wavelength	850 nm				
	Minimum Launch Power	−7.3 dBm				
	Maximum Launch Power	−1 dBm				
	Minimum Receiver Sensitivity	−9.9 dBm				
	Maximum Input Power	−1 dBm				
	Fiber Type	MMF				
	Core/Cladding Size	62.5/125 µm	62.5/125 µm	50/125 µm	50/125 µm	50/125 µm
	Fiber Grade	FDDI	OM1	−	OM2	OM3
	Modal Bandwidth	160 MHz/km	200 MHz/km	400 MHz/km	500 MHz/km	1500 MHz/km
	Distance	26 m (85 ft)	33 m (108 ft)	66 m (216 ft)	82 m (269 ft)	300 m (984 ft)
	DOM Support	Available				
	Software required	Junos OS for J-EX Series switches				

Table 20: Optical Interface Support for Gigabit Ethernet SFP+ Transceivers in J-EX4200 Switches *(continued)*

Ethernet Standard	Specifications			
10GBase-LRM	Model Number	EX-SFP-10GE-LRM		
	Rate	10 Gbps		
	Connector Type	LC		
	Fiber Count	Dual		
	Transmitter Wavelength	1310 nm		
	Minimum Launch Power	−6.5 dBm		
	Maximum Launch Power	0.5 dBm		
	Minimum Receiver Sensitivity	−21 dBm		
	Maximum Input Power	0.5 dBm		
	Fiber Type	MMF		
	Core/Cladding Size	62.5/125 μm	50/125 μm	50/125 μm
	Fiber Grade	FDDI/OM1	OM2	OM3
	Modal Bandwidth	500 MHz/km	500 MHz/km	500 MHz/km
	Distance	220 m (722 ft)	220 m (722 ft)	220 m (722 ft)
	DOM Support	Available		
	Software required	Junos OS for J-EX Series switches		

Table 20: Optical Interface Support for Gigabit Ethernet SFP+ Transceivers in J-EX4200 Switches *(continued)*

Ethernet Standard	Specifications	
10GBase-LR	Model Number	EX-SFP-10GE-LR
	Rate	10 Gbps
	Connector Type	LC
	Fiber Count	Dual
	Transmitter Wavelength	1310 nm
	Minimum Launch Power	−8.2 dBm
	Maximum Launch Power	0.5 dBm
	Minimum Receiver Sensitivity	−18 dBm
	Maximum Input Power	0.5 dBm
	Fiber Type	SMF
	Core/Cladding Size	9/125 μm
	Modal Bandwidth	–
	Distance	10 km (6.2 miles)
	DOM Support	Available
	Software required	Junos OS for J-EX Series switches

Related Documentation

- Uplink Modules in J-EX4200 Switches on page 25

- For **show interfaces diagnostics optics** command syntax, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- Installing a Transceiver in a J-EX Series Switch on page 110

- Removing a Transceiver from a J-EX Series Switch on page 144

Uplink Modules Connector Pinout Information for J-EX4200 Switches

J-EX4200 switches have a field-replaceable unit (FRU) uplink module on the front panel. Table 21 on page 42 provides the uplink modules connector pinout information.

> **NOTE:** You can use these ports to connect an access switch to a distribution switch. You can also use optional uplink module ports to connect members of a Virtual Chassis across multiple wiring closets.

Table 21: Uplink Modules Connector Pinout Information for J-EX4200 Switches

Pin Number	Pin Name
A1	GND
A2	GND
A3	GND
A4	GND
A5	GND
A6	GND
A7	GND
A8	GND
A9	GND
A10	GND
A11	GND
A12	GND
A13	GND
A14	GND
A15	Uplink_I2C_SCK
A16	GND
A17	Uplink_PD
A18	GND
A19	POWER (12V)
A20	GND
B1	GND

Table 21: Uplink Modules Connector Pinout Information for J-EX4200 Switches *(continued)*

Pin Number	Pin Name
B2	XAUI0_RX0N
B3	GND
B4	XAUI0_RX2N
B5	Uplink_P25_LED2
B6	XAUI1_RX0N
B7	Uplink_P27_LED2
B8	XAUI1_RX2N
B9	GND
B10	SRX28N
B11	Uplink_XAUI_XMDIO
B12	SRX26N
B13	GND
B14	SGMIIRXN
B15	Uplink_I2C_Rst
B16	Uplink_Intr
B17	Uplink_Pwr_En
B18	Uplink_P26_LED0
B19	POWER (12V)
B20	POWER (12V)
C1	GND
C2	XAUI0_RX0P
C3	GND
C4	XAUI0_RX2P
C5	GND

Table 21: Uplink Modules Connector Pinout Information for J-EX4200 Switches *(continued)*

Pin Number	Pin Name
C6	XAUI1_RX0P
C7	GND
C8	XAUI1_RX2P
C9	GND
C10	SRX28P
C11	GND
C12	SRX26P
C13	GND
C14	SGMIIRXP
C15	CPU_UPLINK_MDC
C16	Uplink_I2C_SDA
C17	CPU_UPLINK_MDIO
C18	Uplink_P26_LED1
C19	UPLNK_PWR_OK
C20	POWER (12V)
D1	GND
D2	GND
D3	XAUI0_TX1N
D4	GND
D5	XAUI0_TX3N
D6	GND
D7	XAUI1_TX1N
D8	GND
D9	XAUI1_TX3N

Table 21: Uplink Modules Connector Pinout Information for J-EX4200 Switches *(continued)*

Pin Number	Pin Name
D10	GND
D11	STX27N
D12	GND
D13	STX25N
D14	GND
D15	Uplink_Rst
D16	GND
D17	Uplink_Status_LED0
D18	GND
D19	POWER (12V)
D20	GND
E1	GND
E2	XAUI0_TX0N
E3	XAUI0_TX1P
E4	XAUI0_TX2N
E5	XAUI0_TX3P
E6	XAUI1_TX0N
E7	XAUI1_TX1P
E8	XAUI1_TX2N
E9	XAUI1_TX3P
E10	STX28N
E11	STX27P
E12	STX26N
E13	STX25P

Table 21: Uplink Modules Connector Pinout Information for J-EX4200 Switches *(continued)*

Pin Number	Pin Name
E14	SGMIITXN
E15	Uplink_Hotswap_LED
E16	Uplink_Spare_Intr
E17	Uplink_Status_LED1
E18	Uplink_P27_LED0
E19	POWER (12V)
E20	POWER (12V)
F1	GND
F2	XAUI0_TX0P
F3	GND
F4	XAUI0_TX2P
F5	GND
F6	XAUI1_TX0P
F7	GND
F8	XAUI_TX2P
F9	GND
F10	STX28P
F11	GND
F12	STX26P
F13	GND
F14	SGMIITXP
F15	GND
F16	Uplink_Expander_Intr
F17	GND

Table 21: Uplink Modules Connector Pinout Information for J-EX4200 Switches *(continued)*

Pin Number	Pin Name
F18	Uplink_P27_LED1
F19	GND
F20	POWER (12V)
G1	GND
G2	GND
G3	XAUI0_RX1N
G4	GND
G5	XAUI0_RX3N
G6	GND
G7	XAUI1_RX1N
G8	GND
G9	XAUI1_RX3N
G10	GND
G11	SRX27N
G12	GND
G13	SRX25N
G14	GND
G15	GND
G16	GND
G17	Uplink_P25_LED0
G18	GND
G19	POWER (12V)
G20	GND
H1	Uplink_PD_Loopback

Table 21: Uplink Modules Connector Pinout Information for J-EX4200 Switches *(continued)*

Pin Number	Pin Name
H2	GND
H3	XAUI0_RX1P
H4	GND
H5	XAUI0_RX3P
H6	Uplink_P26_ LED2
H7	XAUI1_RX1P
H8	Uplink_P28_ LED2
H9	XAUI1_RX3P
H10	GND
H11	SRX27P
H12	Uplink_XAUI_MDC
H13	SRX25P
H14	GND
H15	Serial_RX
H16	GND
H17	Uplink_P25_LED1
H18	Uplink_P28_LED0
H19	POWER (12V)
H20	POWER (12V)
I1	GND
I2	GND
I3	GND
I4	GND
I5	GND

Table 21: Uplink Modules Connector Pinout Information for J-EX4200 Switches *(continued)*

Pin Number	Pin Name
I6	GND
I7	GND
I8	GND
I9	GND
I10	GND
I11	GND
I12	GND
I13	GND
I14	GND
I15	GND
I16	Serial_TX
I17	GND
I18	Uplink_P28_LED1
I19	GND
I20	POWER (12V)

Related Documentation

- Uplink Modules in J-EX4200 Switches on page 25
- Front Panel of a J-EX4200 Switch on page 6
- Installing an Uplink Module in a J-EX4200 Switch on page 108
- Removing an Uplink Module from a J-EX4200 Switch on page 142

Virtual Chassis Ports Connector Pinout Information for J-EX4200 Switches

J-EX4200 switches use a 68-pin connector cable to interconnect switches to form a Virtual Chassis. The cable is provided with the switch. Table 22 on page 50 provides connector pinout information for the Virtual Chassis ports (VCPs).

Table 22: Virtual Chassis Ports (VCPs) Connector Pinout Information

Pin Number	Pin Name
A1	GND
A2	P1TXP0
A3	P1TXN0
A4	GND
A5	P1TXP1
A6	P1TXN1
A7	GND
A8	P1TXP2
A9	P1TXN2
A10	GND
A11	P1TXP3
A12	P1TXN3
A13	GND
A14	NC
A15	NC
A16	GND
A17	NC
A18	NC
A19	NC
A20	NC
A21	NC
A22	GND
A23	P2TXP0
A24	P2TXN0

Table 22: Virtual Chassis Ports (VCPs) Connector Pinout Information *(continued)*

Pin Number	Pin Name
A25	GND
A26	P2TXP1
A27	P2TXN1
A28	GND
A29	P2TXP2
A30	P2TXN2
A31	GND
A32	P2TXP3
A33	P2TXN3
A34	GND
B1	GND
B2	P1RXP0
B3	P1RXN0
B4	GND
B5	P1RXP1
B6	P1RXN1
B7	GND
B8	P1RXP2
B9	P1RXN2
B10	GND
B11	P1RXP3
B12	P1RXN3
B13	GND
B14	NC

Table 22: Virtual Chassis Ports (VCPs) Connector Pinout Information *(continued)*

Pin Number	Pin Name
B15	NC
B16	NC
B17	NC
B18	NC
B19	NC
B20	NC
B21	NC
B22	GND
B23	P2RXP0
B24	P2RXN0
B25	GND
B26	P2RXP1
B27	P2RXN1
B28	GND
B29	P2RXP2
B30	P2RXN2
B31	GND
B32	P2RXP3
B33	P2RXN3
B34	GND

Related Documentation

- Virtual Chassis Cabling Configuration Examples for J-EX4200 Switches on page 77
- Planning the Virtual Chassis on page 76
- For information about Virtual Chassis components, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- Understanding Virtual Chassis Hardware Configuration on a J-EX4200 Switch on page 75

- Connecting a Virtual Chassis Cable to a J-EX4200 Switch on page 112

Planning for Switch Installation

CHAPTER 4

Site Preparation

- Site Preparation Checklist for J-EX4200 Switches on page 57
- General Site Guidelines for J-EX Series Switches on page 59
- Site Electrical Wiring Guidelines for J-EX Series Switches on page 59
- Environmental Requirements and Specifications for J-EX Series Switches on page 60

Site Preparation Checklist for J-EX4200 Switches

The checklist in Table 23 on page 57 summarizes the tasks you need to perform when preparing a site for J-EX4200 switch installation.

Table 23: Site Preparation Checklist

Item or Task	For More Information	Performed By	Date
Environment			
Verify that environmental factors such as temperature and humidity do not exceed switch tolerances.	"Environmental Requirements and Specifications for J-EX Series Switches" on page 60		
Power			
Measure distance between external power sources and switch installation site.			
Locate sites for connection of system grounding.			
Calculate the power consumption and requirements.	"Power Specifications for J-EX4200 Switches" on page 71		
Hardware Configuration			
Choose the number and types of switches you want to install.	"J-EX4200 Switches Hardware Overview" on page 3		
Rack or Cabinet			

Table 23: Site Preparation Checklist *(continued)*

Item or Task	For More Information	Performed By	Date
Verify that your rack or cabinet meets the minimum requirements for the installation of the switch.	"Rack Requirements for J-EX4200 Switches" on page 63 "Cabinet Requirements for J-EX4200 Switches" on page 64		
Plan rack or cabinet location, including required space clearances.	"Clearance Requirements for Airflow and Hardware Maintenance for J-EX4200 Switches" on page 66		
Secure the rack or cabinet to the floor and building structure.			
Wall			
Verify that the wall meets the minimum requirements for the installation of the switch.	"Requirements for Mounting a J-EX4200 Switch on a Desktop or Wall" on page 66		
Verify that there is appropriate clearance in your selected location.	"Clearance Requirements for Airflow and Hardware Maintenance for J-EX4200 Switches" on page 66		
Cables			
Acquire cables and connectors: • Determine the number of cables needed based on your planned configuration. • Review the maximum distance allowed for each cable. Choose the length of cable based on the distance between the hardware components being connected.			
Plan the cable routing and management.			

Related Documentation

- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- General Site Guidelines for J-EX Series Switches on page 59
- Installing and Connecting a J-EX4200 Switch on page 87
- Mounting a J-EX4200 Switch on page 90

General Site Guidelines for J-EX Series Switches

Efficient switch operation requires proper site planning and maintenance and proper layout of the equipment, rack or cabinet (if used), and wiring closet.

To plan and create an acceptable operating environment for your J-EX Series switch and prevent environmentally caused equipment failures:

- Keep the area around the chassis free from dust and conductive material, such as metal flakes.

- Follow prescribed airflow guidelines to ensure that the cooling system functions properly and that exhaust from other equipment does not blow into the intake vents of the switch.

- Follow the prescribed ESD prevention procedures to avoid damaging the equipment. Static discharge can cause components to fail completely or intermittently over time.

- Install the switch in a secure area, so that only authorized personnel can access the switch.

Related Documentation
- Prevention of Electrostatic Discharge Damage on J-EX Series Switches on page 198
- Clearance Requirements for Airflow and Hardware Maintenance for J-EX4200 Switches on page 66
- Environmental Requirements and Specifications for J-EX Series Switches on page 60

Site Electrical Wiring Guidelines for J-EX Series Switches

Table 24 on page 59 describes the factors you must consider while planning the electrical wiring at your site.

⚠️ WARNING: It is particularly important to provide a properly grounded and shielded environment and to use electrical surge-suppression devices.

Table 24: Site Electrical Wiring Guidelines

Site Wiring Factor	Guidelines
Signaling limitations	If your site experiences any of the following problems, consult experts in electrical surge suppression and shielding: • Improperly installed wires cause radio frequency interference (RFI). • Damage from lightning strikes occurs when wires exceed recommended distances or pass between buildings. • Electromagnetic pulses (EMPs) caused by lightning damages unshielded conductors and electronic devices.

Table 24: Site Electrical Wiring Guidelines *(continued)*

Site Wiring Factor	Guidelines
Radio frequency interference	To reduce or eliminate radio frequency interference (RFI) from your site wiring, do the following: • Use twisted-pair cable with a good distribution of grounding conductors. • If you must exceed the recommended distances, use a high-quality twisted-pair cable with one ground conductor for each data signal when applicable.
Electromagnetic compatibility	If your site is susceptible to problems with electromagnetic compatibility (EMC), particularly from lightning or radio transmitters, seek expert advice. Some of the problems caused by strong sources of electromagnetic interference (EMI) are: • Destruction of the signal drivers and receivers in the switch • Electrical hazards as a result of power surges conducted over the lines into the equipment

Related Documentation
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- General Electrical Safety Guidelines and Warnings for J-EX Series Switches on page 197
- Prevention of Electrostatic Discharge Damage on J-EX Series Switches on page 198
- Power Supply in J-EX4200 Switches on page 21

Environmental Requirements and Specifications for J-EX Series Switches

The switch must be installed in a rack or cabinet housed in a dry, clean, well-ventilated, and temperature-controlled environment.

Ensure that these environmental guidelines are followed:

- The site must be as dust-free as possible, because dust can clog air intake vents and filters, reducing the efficiency of the switch cooling system.
- Maintain ambient airflow for normal switch operation. If the airflow is blocked or restricted, or if the intake air is too warm, the switch might overheat, leading to the switch temperature monitor shutting down the switch to protect the hardware components.

Table 25 on page 60 provides the required environmental conditions for normal switch operation.

Table 25: J-EX Series Switch Environmental Tolerances

Description	Tolerance
Altitude	No performance degradation to 10,000 feet (3048 meters)

Table 25: J-EX Series Switch Environmental Tolerances *(continued)*

Description	Tolerance
Relative humidity	Normal operation ensured in relative humidity range of 10% through 85%, noncondensing
Temperature	Normal operation ensured in temperature range of 32º F through 113º F (0º C through 45º C)
Seismic	Complies with Zone 4 earthquake requirements as per GR-63, Issue 3.

> **NOTE:** Install J-EX Series switches 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

- Clearance Requirements for Airflow and Hardware Maintenance for J-EX4200 Switches on page 66

Mounting and Clearance Requirements

- Rack Requirements for J-EX4200 Switches on page 63
- Cabinet Requirements for J-EX4200 Switches on page 64
- Requirements for Mounting a J-EX4200 Switch on a Desktop or Wall on page 66
- Clearance Requirements for Airflow and Hardware Maintenance for J-EX4200 Switches on page 66

Rack Requirements for J-EX4200 Switches

You can mount the switch on two-post racks or four-post racks.

Rack requirements consist of:

- Rack type
- Mounting bracket hole spacing
- Rack size and strength
- Rack connection to the building structure

Table 26 on page 63 provides the rack requirements and specifications for the switch.

Table 26: Rack Requirements and Specifications for the Switch

Rack Requirement	Guidelines
Rack type	Use a two-post rack or a four-post rack. You can mount the switch on any two-post or four-post rack that provides bracket holes or hole patterns spaced at 1 U (1.75 in./4.45 cm) increments and that meets the size and strength requirements to support the weight.
	A U is the standard rack unit defined in *Cabinets, Racks, Panels, and Associated Equipment* (document number EIA-310–D) published by the Electronics Industry Association (http://www.eia.org).
	The rack must meet the strength requirements to support the weight of the chassis.
Mounting bracket hole spacing	The holes in the mounting brackets are spaced at 1 U (1.75 in. or 4.45 cm), so that the switch can be mounted in any rack that provides holes spaced at that distance.

Table 26: Rack Requirements and Specifications for the Switch *(continued)*

Rack Requirement	Guidelines
Rack size and strength	• Ensure that the rack complies with one of these standards: • A 19-in. 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). • Ensure that the rack rails are spaced widely enough to accommodate the switch chassis' external dimensions . The outer edges of the front-mounting brackets extend the width of the chassis to 19 in. (48.2 cm). • The rack must be strong enough to support the weight of the switch. A fully configured J-EX4200 switch weighs up to 22 lb (10 kg). If you mount multiple units in one rack, that rack must support the total weight of the units. • Ensure that the spacing of rails and adjacent racks allows for the proper clearance around the switch and rack as specified in "Clearance Requirements for Airflow and Hardware Maintenance for J-EX4200 Switches" on page 66.
Rack connection to building structure	• Secure the rack to the building structure. • If earthquakes are a possibility in your geographical area, secure the rack to the floor. • Secure the rack to the ceiling brackets as well as wall or floor brackets for maximum stability.

One pair of mounting brackets for mounting the switch on two posts of a rack is supplied with each switch. For mounting the switch on four posts of a rack or cabinet, you can order a four-post rack-mount kit separately.

Related Documentation

- Chassis Physical Specifications for J-EX4200 Switches on page 5

- Rack-Mounting and Cabinet-Mounting Warnings for J-EX Series Switches on page 185

- Clearance Requirements for Airflow and Hardware Maintenance for J-EX4200 Switches on page 66

- Mounting a J-EX4200 Switch on Two Posts in a Rack or Cabinet on page 92

- Mounting a J-EX4200 Switch on Four Posts in a Rack or Cabinet on page 96

- Mounting a J-EX4200 Switch in a Recessed Position in a Rack or Cabinet on page 100

Cabinet Requirements for J-EX4200 Switches

You can mount the switch in a cabinet that contains a 19-in. rack.

Cabinet requirements consist of:

- Cabinet size

- Clearance requirements

- Cabinet airflow requirements

Table 27 on page 65 provides the cabinet requirements and specifications for the switch.

Table 27: Cabinet Requirements and Specifications for the Switch

Cabinet Requirement	Guidelines
Cabinet size	• You can mount the switch in a cabinet that contains a 19-in. 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). NOTE: The rack must meet the strength requirements to support the weight of the switch. A fully configured J-EX4200 switch weighs up to 22 lb (10 kg). If you mount multiple units in one rack, that rack must support the total weight of the units. • The minimum cabinet size must be able to accommodate the maximum external dimensions of the switch.
Cabinet clearance	• The outer edges of the mounting brackets extend the width of the chassis to 19 in. (48.3 cm). • The minimum total clearance inside the cabinet is 30 in. (76.2 cm) between the inside of the front door and the inside of the rear door.
Cabinet airflow requirements	When you mount the switch in a cabinet, ensure that ventilation through the cabinet is sufficient to prevent overheating. • Ensure adequate cool air supply to dissipate the thermal output of the switch or switches. • Ensure that the cabinet allows the chassis hot exhaust air to exit the cabinet without recirculating into the switch. An open cabinet (without a top or doors) that employs hot air exhaust extraction from the top allows the best airflow through the chassis. If the cabinet contains a top or doors, perforations in these elements assist with removing the hot air exhaust. • Install the switch in the cabinet in a way that maximizes the open space on the side of the chassis that has the hot air exhaust. This maximizes the clearance for critical airflow. • Route and dress all cables to minimize the blockage of airflow to and from the chassis. • Ensure that the spacing of rails and adjacent cabinets allows for the proper clearance around the switch and cabinet as specified in "Clearance Requirements for Airflow and Hardware Maintenance for J-EX4200 Switches" on page 66. • A cabinet larger than the minimum required provides better airflow and reduces the chance of overheating.

Related Documentation

Requirements for Mounting a J-EX4200 Switch on a Desktop or Wall

You can install the switch on a desktop or wall. When choosing a location, allow at least 6 in. (15.2 cm) of clearance between the front and back of the chassis and adjacent equipment or walls.

Ensure that the wall onto which the switch is installed is stable and securely supported.

If you are mounting the switch in sheetrock (wall board with a gypsum plaster core) or in wall board not backed by wall studs, use hollow wall anchors capable of supporting the combined weight of two fully loaded chassis—up to 44 lb (20 kg). Insert the screws into wall studs wherever possible to provide added support for the chassis.

Use the wall-mount kit from Dell to mount the switch on a wall. The wall-mount kit is not part of the standard package and needs to be ordered separately.

Related Documentation

- Clearance Requirements for Airflow and Hardware Maintenance for J-EX4200 Switches on page 66
- Wall-Mounting Warning for J-EX4200 Switches on page 189
- Mounting a J-EX4200 Switch on a Desk or Other Level Surface on page 91
- Mounting a J-EX4200 Switch on a Wall on page 100

Clearance Requirements for Airflow and Hardware Maintenance for J-EX4200 Switches

When planning the site for installing a J-EX4200 switch, you must allow sufficient clearance around the installed switch (see Figure 17 on page 66).

Figure 17: Clearance Requirements for Airflow and Hardware Maintenance for J-EX4200 Switches
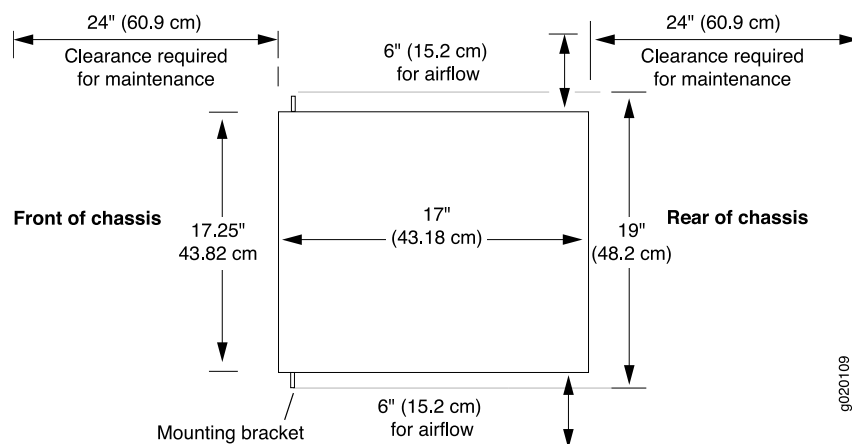
- Allow at least 6 in. (15.2 cm) of clearance on the side between devices that have fans or blowers installed. Allow 2.8 in. (7 cm) between the side of the chassis and any non-heat-producing surface such as a wall. For the cooling system to function properly,

the airflow around the chassis must be unrestricted. Figure 18 on page 67 shows the airflow through the J-EX4200 switch chassis.

- If you are mounting a J-EX4200 switch on a rack or cabinet with other equipment, or if you are placing it on the desktop or floor near other equipment, ensure that the exhaust from other equipment does not blow into the intake vents of the chassis.

- Leave at least 24 in. (61 cm) both in front of and behind the J-EX4200 switch. For service personnel to remove and install hardware components, you must leave adequate space at the front and back of the switch. NEBS GR-63 recommends that you allow at least 30 in. (76.2 cm) in front of the rack or cabinet and 24 in. (61 cm) behind the rack or cabinet.

Figure 18: Airflow Through the J-EX4200 Switch Chassis
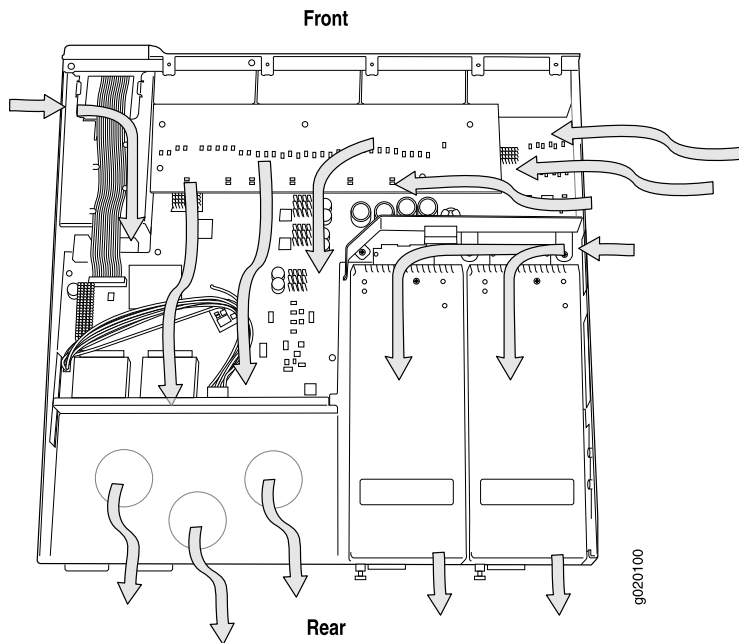
Front

Rear

g020100

Related Documentation

- Rack Requirements for J-EX4200 Switches on page 63

- Cabinet Requirements for J-EX4200 Switches on page 64

- General Site Guidelines for J-EX Series Switches on page 59

- Rack-Mounting and Cabinet-Mounting Warnings for J-EX Series Switches on page 185

- Cooling System and Airflow in a J-EX4200 Switch on page 24

CHAPTER 6

Cable Specifications

- Network Cable Specifications for J-EX4200 Switches on page 69

Network Cable Specifications for J-EX4200 Switches

J-EX4200 switches have interfaces that use various types of network cables.

For instructions on connecting a J-EX4200 switch to a network for out-of-band management using an Ethernet cable with an RJ-45 connector, see "Connecting a J-EX Series Switch to a Network for Out-of-Band Management" on page 120.

For instructions on connecting a J-EX4200 switch to a management console using an Ethernet cable with an RJ-45 connector, see "Connecting a J-EX Series Switch to a Management Console" on page 121.

Related Documentation

- Management Port Connector Pinout Information for a J-EX4200 Switch on page 31
- Console Port Connector Pinout Information for a J-EX Series Switch on page 30
- Rear Panel of a J-EX4200 Switch on page 7

Planning Power Requirements

- Power Specifications for J-EX4200 Switches on page 71
- AC Power Cord Specifications for J-EX4200 Switches on page 71

Power Specifications for J-EX4200 Switches

Table 28 on page 71 provides the AC power supply electrical specifications for J-EX4200 switches.

Table 28: AC Power Supply Electrical Specifications for J-EX4200 Switches

Item	Specification
AC input voltage	100 through 240 VAC
AC input line frequency	50 through 60 Hz
AC system current rating	4 A (for switches with 8 ports equipped for Power over Ethernet (PoE) or the switch with 24 100Base-FX/1000Base-SX SFP ports)

Related Documentation
- AC Power Cord Specifications for J-EX4200 Switches on page 71
- Power Supply in J-EX4200 Switches on page 21
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- General Electrical Safety Guidelines and Warnings for J-EX Series Switches on page 197

AC Power Cord Specifications for J-EX4200 Switches

NOTE: A jumper cable for each power supply was shipped with your switch. If your site uses a power distribution unit (PDU) to distribute power to the rack that houses the switch, you do not have to purchase AC power cords.

If your site does not use a PDU, you need an AC power cord for your geographical location for each power supply on the switch. Detachable AC power cords are separately orderable as a field-replaceable unit (FRU) item. The coupler is type C13 as described by

International Electrotechnical Commission (IEC) standard 60320. The plug at the male end of the power cord fits into the power source outlet that is standard for your geographical location.

⚠️ CAUTION: The AC power cord for the switches is intended for use with that switch only and not for any other use.

📝 NOTE: In North America, AC power cords must not exceed 4.5 meters (approximately 14.75 feet) in length, to comply with National Electrical Code (NEC) Sections 400-8 (NFPA 75, 5-2.2) and 210-52 and Canadian Electrical Code (CEC) Section 4-010(3). The cords separately orderable as FRUs are in compliance.

Table 29 on page 72 lists AC power cord specifications provided for each country or region.

Table 29: AC Power Cord Specifications

Country/Region	Electrical Specification	Plug Standard
Argentina	250 VAC, 10 A, 50 Hz	RA/3, IRAM 2073
Australia	250 VAC, 10 A, 50 Hz	AS/NZ 3112
Brazil	250 VAC, 10 A, 60 Hz	BR/3, NBR 14136
China	250 VAC, 10 A, 50 Hz	GB2099 and GB1002
Europe (except Italy, Switzerland, and United Kingdom)	250 VAC, 10 A, 50 Hz	CEE (7) VII
India	250 VAC, 10 A, 50 Hz or 60 Hz	IND/3, IS 1293
Israel	250 VAC, 10 A, 50 Hz	IL/3G, SI 32/1971
Italy	250 VAC, 10 A, 50 Hz	CEI 23-16
Japan	125 VAC, 12 A, 50 Hz or 60 Hz	JIS C8303
North America	125 VAC, 13 A, 60 Hz	NEMA 5-15
South Africa	250 VAC, 10 A, 50 Hz	ZA/3, SABS 164/1:1992
Switzerland	250 VAC, 10 A, 50 Hz	SEV 1011 SEV 6534/2
Taiwan	125 VAC, 10 A, 60 Hz	CNS 10917 (NEMA 5-15-P)
United Kingdom	250 VAC, 10 A, 50 Hz	BS 1363/A

Figure 19 on page 73 illustrates the plug on the power cord for many of the countries and regions listed in Table 29 on page 72.

Figure 19: AC Plug Types
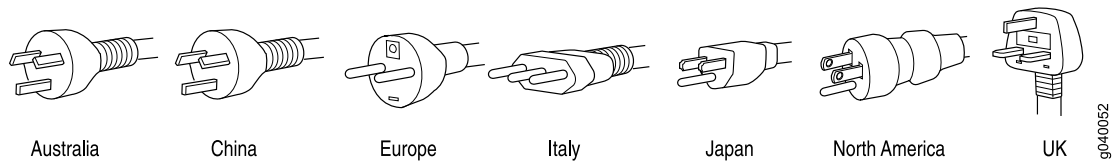
| Australia | China | Europe | Italy | Japan | North America | UK |

Related Documentation

- Power Supply in J-EX4200 Switches on page 21

- General Safety Guidelines and Warnings for J-EX Series Switches on page 171

- General Electrical Safety Guidelines and Warnings for J-EX Series Switches on page 197

- Prevention of Electrostatic Discharge Damage on J-EX Series Switches on page 198

CHAPTER 8

Planning the Virtual Chassis

Understanding Virtual Chassis Hardware Configuration on a J-EX4200 Switch

Virtual Chassis is a feature in Dell PowerConnect J-EX4200 Ethernet Switches that allows you to interconnect two or more switches, enabling them to operate as a unified single high bandwidth switch. You can interconnect a maximum of 10 J-EX4200 switches through the dedicated 64-Gbps Virtual Chassis ports (VCPs) or the uplink module ports configured as VCPs to form a Virtual Chassis. All J-EX4200 switch models support Virtual Chassis, and you can interconnect different models, offering a range of port configurations, within the same Virtual Chassis.

The Virtual Chassis configuration includes designation of a master switch and a backup switch, with all other switches in the configuration designated as "line card" role switches. Virtual Chassis operation is managed through the master switch. Each switch in the Virtual Chassis is assigned a unique identifier that is displayed on the switch LCD.

Related Documentation

- For information about Virtual Chassis components, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- Planning the Virtual Chassis on page 76

- Virtual Chassis Ports Connector Pinout Information for J-EX4200 Switches on page 49

- Virtual Chassis Cabling Configuration Examples for J-EX4200 Switches on page 77

Planning the J-EX4200 and J-EX4500 Virtual Chassis

Before installing J-EX4200 switches and J-EX4500 switches in a Virtual Chassis configuration, you must consider the following factors:

- **Number and Location of Switches in the Virtual Chassis.** You can interconnect two to ten switches to form a Virtual Chassis composed exclusively of J-EX4200 switches.

  Only two J-EX4500 switches can be interconnected into a Virtual Chassis composed exclusively of J-EX4500 switches.

  J-EX4200 switches and J-EX4500 switches can be connected together into the same Virtual Chassis to form a mixed J-EX4200 and J-EX4500 Virtual Chassis. A mixed Virtual Chassis supports up to two J-EX4500 switches and up to eight J-EX4200 switches.

  You can mount the switches in a single rack or install them on multiple racks. For information on the size and strength of racks for a J-EX4200 switch, see "Rack Requirements for J-EX4200 Switches" on page 63. See "Chassis Physical Specifications for J-EX4200 Switches" on page 5 for the dimensions and weights of the switch models. For information on the size and strength of racks for J-EX4500 switches and chassis weights and dimensions, see the *Dell PowerConnect J-Series J-EX4500 Ethernet Switch Hardware Guide* at http://www.support.dell.com/manuals.

- **Cabling Requirements for Virtual Chassis.** You can interconnect the J-EX4200 switches in a Virtual Chassis configuration through Virtual Chassis ports (VCPs) using the 0.5-meter-long Virtual Chassis cable. The Virtual Chassis cable is supplied with a J-EX4200 switch but must be ordered separately for a J-EX4500 switch..

  Depending on the Virtual Chassis configurations you have, you might need cables of different lengths. If you need cables longer than 0.5 meter, you can purchase them separately. The longest Virtual Chassis cable is 5 meters.

  To interconnect J-EX4200 switches that are installed farther apart, you must configure the uplink module ports as Virtual Chassis ports and use them to interconnect the switches.

  To interconnect J-EX4500 switches that are installed farther apart, you must configure either the uplink module ports or the SFP+ network ports as Virtual Chassis ports and use them to interconnect the switches.

  > NOTE: If you order Virtual Chassis cables separately, you must reuse the cable connector retainers provided with the original cable or order Virtual Chassis cable connector retainers separately.

- **Rear Clearance.** You must have access to the rear of the switch if you plan to interconnect switches to form a Virtual Chassis.

- **Power Supply.** You must plan the installation site to meet the power requirements of the J-EX Series switches in a Virtual Chassis. The input power requirements vary depending on the number of Power over Ethernet (PoE) ports in a switch. See "Power

Supply in J-EX4200 Switches" on page 21 for the power requirements for the PoE ports in J-EX4200 switches.

Related Documentation
- For information about Virtual Chassis components, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- Virtual Chassis Ports Connector Pinout Information for J-EX4200 Switches on page 49

- Understanding Virtual Chassis Hardware Configuration on a J-EX4200 Switch on page 75

- Virtual Chassis Cabling Configuration Examples for J-EX4200 Switches on page 77

- Clearance Requirements for Airflow and Hardware Maintenance for J-EX4200 Switches on page 66

Virtual Chassis Cabling Configuration Examples for J-EX4200 Switches

You can install J-EX4200 switches in a single rack or multiple racks, or in different wiring closets, and interconnect them to form a Virtual Chassis. Two dedicated Virtual Chassis ports (VCPs) on the rear panel of the J-EX4200 switch are used exclusively to interconnect J-EX4200 switches as a Virtual Chassis.

The physical location of the switches in a Virtual Chassis is restricted only by the maximum length supported for cables to connect the VCPs. The maximum cable length for interconnecting the dedicated VCPs is 5 meters. To interconnect switches that are located beyond the reach of the dedicated VCP cables, you can install the SFP uplink module or the SFP+ uplink module and set the uplink module ports as VCP interfaces. See the instructions for setting an uplink module as a Virtual Chassis port in the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

NOTE: The interfaces for the two dedicated VCPs are operational by default. However, if you are using the uplink module ports as VCPs, you must explicitly set the uplink module ports to function as VCPs.

The following illustrations describe various Virtual Chassis cabling configuration examples.

NOTE: For increased availability and redundancy, we recommend that you always configure your Virtual Chassis in a ring topology.

Figure 20 on page 78 and Figure 21 on page 78 show five switches stacked vertically in a rack and interconnected in a ring topology using four short Virtual Chassis cables and one long Virtual Chassis cable.

Figure 20: J-EX4200 Switches Mounted on a Single Rack and Connected
in a Ring Topology Using Short and Long Cables: Option 1

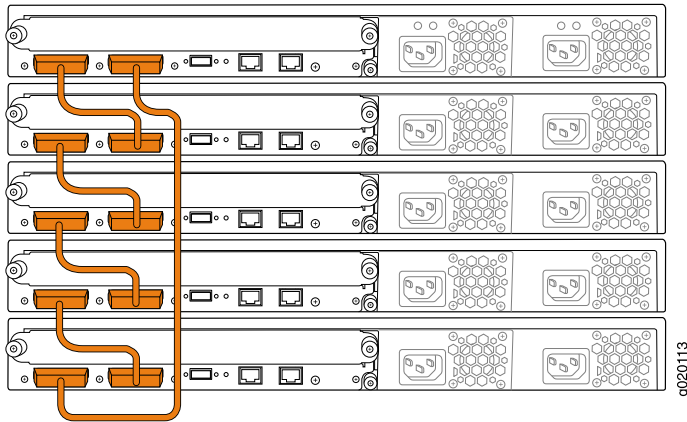Figure 21: J-EX4200 Switches Mounted on a Single Rack and Connected
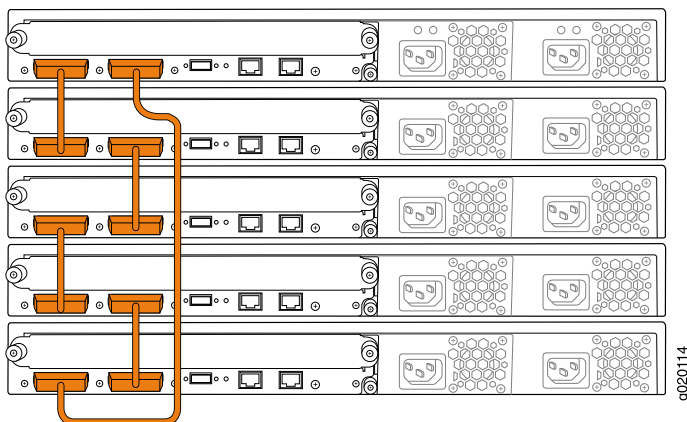in a Ring Topology Using Short and Long Cables: Option 2

Figure 22 on page 78 shows five switches stacked vertically in a rack and interconnected
in a ring topology using short-length and medium-length Virtual Chassis cables.

Figure 22: J-EX4200 Switches Mounted on a Single Rack and Connected
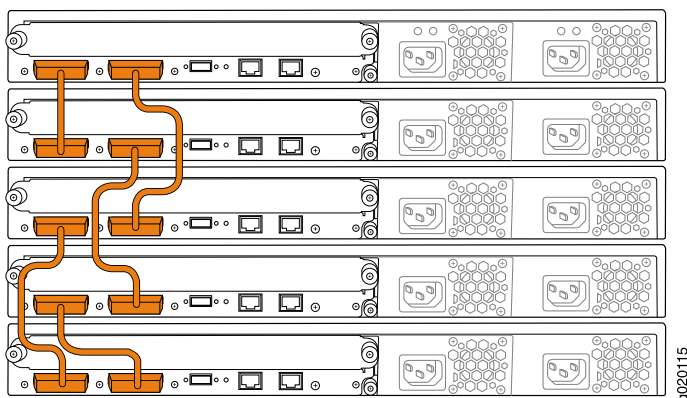in a Ring Topology Using Short and Medium Cables

Figure 23 on page 79 and Figure 24 on page 79 show five switches mounted on the top rows of adjacent racks and interconnected in a ring topology using medium-length and long-length Virtual Chassis cables.

Figure 23: J-EX4200 Switches Mounted on Adjacent Racks and Connected in a Ring Topology Using Medium and Long Cables: Option 1
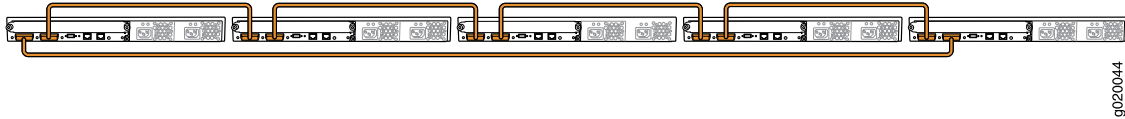
Figure 24: J-EX4200 Switches Mounted on Adjacent Racks and Connected in a Ring Topology Using Medium and Long Cables: Option 2
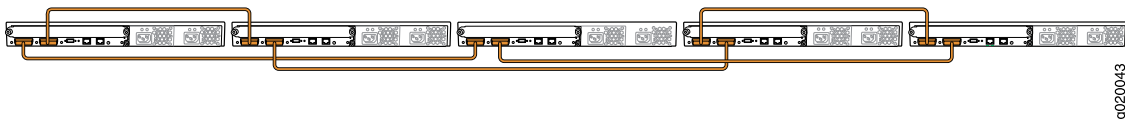
Related Documentation

- Understanding Virtual Chassis Hardware Configuration on a J-EX4200 Switch on page 75

- For information about Virtual Chassis components and an example of Virtual Chassis configuration across multiple wiring closets, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- Planning the Virtual Chassis on page 76

- Virtual Chassis Ports Connector Pinout Information for J-EX4200 Switches on page 49

Adding a New Switch to an Existing Virtual Chassis Configuration (CLI Procedure)

You can add one or more J-EX4200 switches to an existing Virtual Chassis configuration that is nonprovisioned or preprovisioned.

To add a J-EX4200 switch to an existing J-EX4200 Virtual Chassis, use the procedure below that matches what you need to accomplish. For information on adding a switch to other types of Virtual Chassis configurations, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- Adding a New Switch to an Existing Virtual Chassis Configuration Within the Same Wiring Closet on page 79

- Adding a New Switch from a Different Wiring Closet to an Existing Virtual Chassis Configuration on page 81

- Adding a New Switch to an Existing Preprovisioned Virtual Chassis Configuration Using Autoprovisioning on page 82

Adding a New Switch to an Existing Virtual Chassis Configuration Within the Same Wiring Closet

Follow these instructions to add a J-EX4200 switch to a J-EX4200 Virtual Chassis.

Before you begin, be sure you have:

- Mounted the new switch in a rack.

- Confirmed that the new switch is powered off.

- If you are expanding a preprovisioned configuration, made a note of the serial number (on the back of the switch). You will need to edit the Virtual Chassis configuration to include the serial number of the new member switch.

- If you are expanding a preprovisioned configuration, edited the existing Virtual Chassis configuration to include the serial number of the new member switch. You can specify the role of the new member switch when you add its serial number in the Virtual Chassis configuration file. The parameters specified in the master Virtual Chassis configuration file are applied after the new member switch has been interconnected to an existing member switch.

  > NOTE: After you have created a preprovisioned Virtual Chassis configuration, you can use the autoprovisioning feature to add member switches to that configuration.

To add a new member switch to an existing Virtual Chassis configuration within the same wiring closet:

1. If the new member switch has been previously configured, revert that switch's configuration to the factory defaults. For information about reverting to the factory default configuration, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

2. Interconnect the unpowered new switch to at least one member of the existing Virtual Chassis configuration using the dedicated Virtual Chassis ports (VCPs).

3. Power on the new switch.

4. Confirm that the new member switch is now included within the Virtual Chassis configuration by checking the front-panel display for the member ID. It should display a member ID that is higher than 0 (1 through 9), because there is already at least one member of the Virtual Chassis configuration.

   > NOTE: If you are using a preprovisioned configuration, the member ID is automatically assigned to the member's serial number in the configuration file.

Adding a New Switch from a Different Wiring Closet to an Existing Virtual Chassis Configuration

Follow these instructions to add a J-EX4200 switch to a J-EX4200 Virtual Chassis.

To add a new switch from a different wiring closet to an existing Virtual Chassis configuration, you must use a long cable to connect the new member switch across wiring closets. You can use a port on an SFP or SFP+ uplink module, or an SFP network port on a J-EX4200-24F switch, and a fiber-optic cable for this purpose.

Before you begin, be sure you have:

- Installed the uplink modules needed for the Virtual Chassis configuration.

- Mounted the new switch in a rack.

- If the new member switch has been previously configured, reverted its configuration to the factory defaults. For information about reverting to the factory default configuration, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- Powered on the new member switch as a standalone switch and configured its uplink module ports as VCPs. Otherwise, it cannot be recognized as a member switch by the master.

- If you are expanding a preprovisioned configuration, made a note of the serial number (on the back of the switch). You will need to edit the Virtual Chassis configuration to include the serial number of the new member switch.

- If you are expanding a preprovisioned configuration, edited the existing Virtual Chassis configuration to include the serial number of the new member switch. You can specify the role of the new member switch when you add its serial number in the Virtual Chassis configuration file. The parameters specified in the master Virtual Chassis configuration file are applied after the new member switch has been interconnected with its uplink VCP to an existing member switch.

- Confirmed that the new, currently standalone switch is powered off.

- Prepared an existing member switch for interconnecting with the new switch through an uplink module port by configuring an uplink module port as a VCP on the existing member switch.

    > 🖉 NOTE: After you have created a preprovisioned Virtual Chassis configuration, you can use the autoprovisioning feature to add member switches to that configuration.

To add a new member switch that is going to be interconnected with the existing Virtual Chassis configuration across wiring closets:

1. Power on the new switch.

2. Connect a laptop or terminal to the console port of the switch, or use EZSetup on the standalone switch to specify temporary identification parameters. (When you

interconnect the new member switch with the existing Virtual Chassis configuration, the master will overwrite and disable any specified parameters that conflict with the Virtual Chassis parameters or assigned member configuration.)

3. Use the CLI or the J-Web interface to set the uplink module ports as VCPs.

> ✐ NOTE: If you are using a nonprovisioned configuration, you might configure the new member switch with a mastership priority value that is less than that of the existing member switches. Doing so ensures that the new member switch will function in a linecard role when it is included within the Virtual Chassis configuration.

4. Power off the new switch.

5. Interconnect the new member switch to at least one member of the existing Virtual Chassis configuration using the uplink module ports on each of the switches that have been configured as VCPs.

6. Power on the new member switch.

7. Confirm that the new member switch is now included within the Virtual Chassis configuration by checking the front-panel display for the member ID. It should display a member ID that is higher than 0 (1 through 9), because there is already at least one member of the Virtual Chassis configuration.

> ✐ NOTE: If you are using a preprovisioned configuration, the member ID is automatically assigned to the member's serial number in the configuration file.

Adding a New Switch to an Existing Preprovisioned Virtual Chassis Configuration Using Autoprovisioning

Follow these instructions to add a J-EX4200 switch to a J-EX4200 Virtual Chassis.

Before you begin, be sure you have:

- Installed the uplink modules needed for the Virtual Chassis configuration.

- Mounted the new switch in a rack.

- Ensured that the preprovisioned Virtual Chassis configuration has an active master. For information about configuring a Virtual Chassis with a preprovisioned configuration file, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- On the master, configured the Link Level Discovery Protocol (LLDP) on the uplink module ports that will be used as VCPs. LLDP is configured by default but might have been disabled. To configure LLDP, see see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- Ensured that the new member switch has the factory-default configuration. If the new member switch has been previously configured, revert its configuration to the factory defaults. For information about reverting to the factory default configuration, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- Made a note of the serial number (on the back of the switch). You will need to edit the Virtual Chassis configuration to include the serial number of the new member switch.

- Edited the existing Virtual Chassis preprovisioned configuration to include the serial number of the new member switch. You can specify the role of the new member switch when you add its serial number to the Virtual Chassis configuration file. The parameters specified in the master Virtual Chassis configuration file are applied to the new member switch after it has been interconnected through its uplink VCP to an existing member switch.

- Prepared an existing member switch to interconnect with the new switch through an uplink module port by configuring an uplink module port as a VCP on the existing member switch.

- Ensured that the operational modes of the uplink modules on the existing member switch and the new member switch match.

- Confirmed that the new member switch is powered off.

- Interconnected the existing switch with the new switch using the appropriate cable.

If these conditions are not met, autoprovisioning will not work and you will need to manually configure uplink module ports on the switch to be added to the configuration to be VCPs. For information about setting an uplink module as a Virtual Chassis port, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

To add a switch to an existing preprovisioned Virtual Chassis configuration using the autoprovisioning feature:

1. Power on the new member switch.

2. Confirm that the new member switch is now included in the Virtual Chassis configuration by checking the front-panel display for the member ID. It should display a member ID in the range from 0 through 9 because there was already at least one member of the Virtual Chassis configuration. The member ID is automatically assigned to the new member switch's serial number in the configuration file.

Related Documentation
- Replacing a Member Switch of a Virtual Chassis Configuration (CLI Procedure) on page 148

- For more information about Virtual Chassis configuration, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

Installing and Connecting the Switch and Switch Components

Installing the Switch

- Installing and Connecting a J-EX4200 Switch on page 87
- Unpacking a J-EX4200 Switch on page 88
- Mounting a J-EX4200 Switch on page 90
- Mounting a J-EX4200 Switch on a Desk or Other Level Surface on page 91
- Mounting a J-EX4200 Switch on Two Posts in a Rack or Cabinet on page 92
- Mounting a J-EX4200 Switch on Four Posts in a Rack or Cabinet on page 96
- Mounting a J-EX4200 Switch in a Recessed Position in a Rack or Cabinet on page 100
- Mounting a J-EX4200 Switch on a Wall on page 100

Installing and Connecting a J-EX4200 Switch

The J-EX4200 switch chassis is a rigid sheet-metal structure that houses the hardware components.

To install and connect a J-EX4200 switch:

1. Follow instructions in "Unpacking a J-EX4200 Switch" on page 88.

2. Mount the switch by following instructions appropriate for your site:

    - "Mounting a J-EX4200 Switch on Two Posts in a Rack or Cabinet" on page 92 (using the mounting brackets provided)

    - "Mounting a J-EX4200 Switch on Four Posts in a Rack or Cabinet" on page 96 (using the separately orderable four-post rack-mount kit)

    - "Mounting a J-EX4200 Switch in a Recessed Position in a Rack or Cabinet" on page 100 (using the 2-in.-recess front brackets from the separately orderable four-post rack-mount kit)

    - "Mounting a J-EX4200 Switch on a Desk or Other Level Surface" on page 91 (using the rubber feet provided)

    - "Mounting a J-EX4200 Switch on a Wall" on page 100 (using the separately orderable wall-mount kit)

3. Follow instructions in "Connecting Earth Ground to a J-EX Series Switch" on page 115.

4. Follow instructions for connecting power as appropriate for your site:

- Connecting AC Power to a J-EX4200 Switch on page 117

5. Perform initial configuration of the switch by following instructions in "Connecting and Configuring a J-EX Series Switch (CLI Procedure)" on page 131 or "Connecting and Configuring a J-EX Series Switch (J-Web Procedure)" on page 133.

6. Set the switch's management options by following the appropriate instructions:

- Connecting a J-EX Series Switch to a Network for Out-of-Band Management on page 120

- Connecting a J-EX Series Switch to a Management Console on page 121

Related Documentation
- Rack Requirements for J-EX4200 Switches on page 63
- Cabinet Requirements for J-EX4200 Switches on page 64
- Clearance Requirements for Airflow and Hardware Maintenance for J-EX4200 Switches on page 66

Unpacking a J-EX4200 Switch

The J-EX4200 switch chassis is a rigid sheet-metal structure that houses the hardware components. J-EX4200 switches are shipped in a cardboard carton, secured with foam packing material. The carton also contains an accessory box and quick start instructions.

⚠️ CAUTION: **J-EX4200 switches are maximally protected inside the shipping carton. Do not unpack the switches until you are ready to begin installation.**

To unpack a J-EX4200 switch (see Figure 25 on page 89):

1. Move the shipping carton to a staging area as close to the installation site as possible, but where you have enough room to remove the system components.

2. Position the carton so that the arrows are pointing up.

3. Open the top flaps on the shipping carton.

4. Remove the accessory box and verify the contents against the parts inventory on the label attached to the carton.

5. Pull out the packing material holding the switch in place.

6. Verify the chassis components received against the packing list included with the switch. An inventory of parts provided with a J-EX4200 switch is provided in Table 30 on page 89.

   If you have a problem with your order, such as missing parts, wrong parts, or incorrect billing, contact Dell for customer assistance. Have your invoice or packing slip handy

when you call. For the telephone number to call for your region, see "Contacting Dell" on page 165.

7. Save the shipping carton and packing materials in case you need to move or ship the switch later.

Figure 25: Unpacking a J-EX4200 Switch
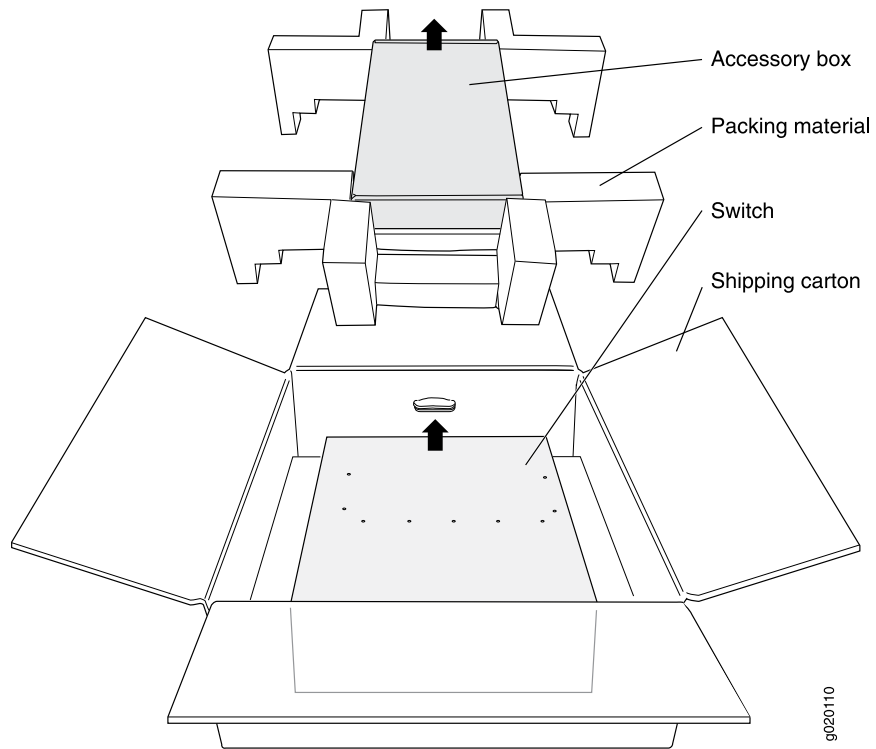
Table 30: Inventory of Components Provided with a J-EX4200 Switch

Component	Quantity
Switch	1
Fan tray (preinstalled)	1
Power supply (preinstalled if your system order includes a 320 W AC power supply; not preinstalled if your system order includes a 600 W AC power supply or a 930 W AC power supply)	1
Power supply jumper cord	1
Power cord retainer	1
Mounting brackets	2
Screws to connect the mounting brackets to the switch	8
Rubber feet	4

Table 30: Inventory of Components Provided with a J-EX4200 Switch *(continued)*

Component	Quantity
Cage nuts for a round-hole rack (clip nuts), #10-32, 0.375-in. (9.525-mm), for mounting the switch in a rack or cabinet	4
Cage nuts for a square-hole rack, #10-32, 0.375-in. (9.525-mm), for mounting the switch in a rack or cabinet	4
Phillips pan-head screws, #10-32 x 5/8-in (15.8-mm), for mounting the switch in a rack or cabinet	4
Phillips pan-head screws, #12-24 x 1/2-in. (12.7-mm), for mounting the switch in a rack or cabinet	4
Washers, #10, for mounting the switch in a rack or cabinet	4
RJ-45 cable and RJ-45 to DB-9 serial port adapter	1
Virtual Chassis cable	1
Virtual Chassis cable connector retainers	2
Dust covers for ports (for a J-EX4200-24F switch)	24
Quick Start installation instructions	1
Dell PowerConnect Safety, Environmental, and Regulatory Information	1
End User License Agreement	1
DellPowerConnect Warranty and Support Information	1
Registration and Software Updates for Your Dell PowerConnect J-Series Product	1
Open Source Code Notice	1

Related Documentation

- Mounting a J-EX4200 Switch on page 90
- Installing and Connecting a J-EX4200 Switch on page 87
- Connecting and Configuring a J-EX Series Switch (CLI Procedure) on page 131
- Connecting and Configuring a J-EX Series Switch (J-Web Procedure) on page 133

Mounting a J-EX4200 Switch

You can mount a J-EX4200 switch:

- On two posts in a 19-in. rack or cabinet by using the mounting brackets provided with the switch.
- On four posts in a 19-in. rack or cabinet by using the separately orderable four-post rack-mount kit.

- In a position recessed 2 in. from the front of a 19-in. rack or cabinet by using the 2-in.-recess front brackets in the separately orderable four-post rack-mount kit. You can mount the switch in this recessed position on two-post or four-post racks and cabinets.

- On a desk or other level surface by using rubber feet. The switch is shipped with four rubber feet to be used to stabilize the chassis on a desk or other level surface.

- On a wall by using the separately orderable wall-mount kit.

The holes in the mounting brackets are placed at 1 U (1.75 in. or 4.45 cm.) apart so that the switch can be mounted in any rack or cabinet that provides holes spaced at that distance.

Related Documentation

- Mounting a J-EX4200 Switch on Two Posts in a Rack or Cabinet on page 92

- Mounting a J-EX4200 Switch on Four Posts in a Rack or Cabinet on page 96

- Mounting a J-EX4200 Switch in a Recessed Position in a Rack or Cabinet on page 100

- Mounting a J-EX4200 Switch on a Desk or Other Level Surface on page 91

- Mounting a J-EX4200 Switch on a Wall on page 100

- Connecting Earth Ground to a J-EX Series Switch on page 115

Mounting a J-EX4200 Switch on a Desk or Other Level Surface

You can mount a J-EX4200 switch on a desk or other level surface by using the 4 rubber feet that are shipped with the switch. The rubber feet stabilize the chassis.

Before mounting a J-EX4200 switch on a desk or other level surface:

- Verify that the site meets the requirements described in "Site Preparation Checklist for J-EX4200 Switches" on page 57.

- Place the desk in its permanent location, allowing adequate clearance for airflow and maintenance, and secure it to the building structure.

- Read "General Safety Guidelines and Warnings for J-EX Series Switches" on page 171, with particular attention to "Chassis Lifting Guidelines for J-EX4200 Switches" on page 184.

- Remove the switch from the shipping carton (see "Unpacking a J-EX4200 Switch" on page 88).

Ensure that you have the following parts and tools available:

- 4 rubber feet to stabilize the chassis on the a desk or other level surface (provided in the accessory box shipped with the switch)

- Dust covers for ports (for J-EX4200-24F switches only; optional)

To mount the switch on a desk or other level surface:

1. Turn the chassis upside down on the desk or the level surface where you intend to mount the switch.

2. Attach the rubber feet to the bottom of the chassis, as shown in Figure 26 on page 92.

3. Turn the chassis right side up on the desk or the level surface.

4. If it is a J-EX4200-24F switch, we recommend you insert dust covers in unused SFP ports.

Figure 26: Attaching Rubber Feet to a J-EX4200 Switch Chassis
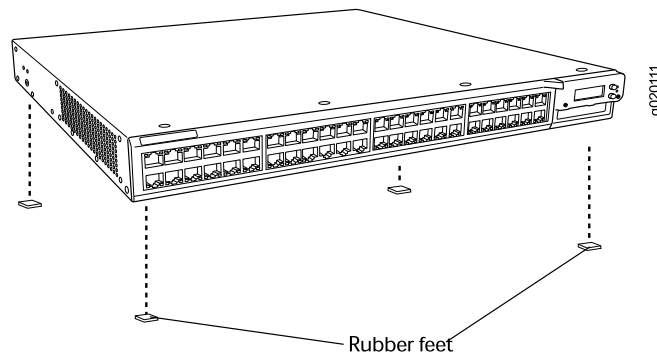
Rubber feet

Related Documentation

- Connecting AC Power to a J-EX4200 Switch on page 117

- Connecting and Configuring a J-EX Series Switch (CLI Procedure) on page 131

- Connecting and Configuring a J-EX Series Switch (J-Web Procedure) on page 133

- Clearance Requirements for Airflow and Hardware Maintenance for J-EX4200 Switches on page 66

Mounting a J-EX4200 Switch on Two Posts in a Rack or Cabinet

You can mount a J-EX4200 switch on two posts of a 19-in. rack or cabinet by using the mounting brackets provided with the switch. (The remainder of this topic uses "rack" to mean "rack or cabinet.")

You can mount the switch on four posts of a four-post rack by using the mounting brackets provided with the separately orderable four-post rack-mount kit. See "Mounting a J-EX4200 Switch on Four Posts in a Rack or Cabinet" on page 96.

> NOTE: If you need to mount the switch in a recessed position on either a two-post rack or a four-post rack, you can use the 2-in.-recess front brackets provided in the separately orderable four-post rack-mount kit.

Before mounting a J-EX4200 switch on two posts in a rack:

- Verify that the site meets the requirements described in "Site Preparation Checklist for J-EX4200 Switches" on page 57.

- Place the rack in its permanent location, allowing adequate clearance for airflow and maintenance, and secure it to the building structure.

- Read "General Safety Guidelines and Warnings for J-EX Series Switches" on page 171, with particular attention to "Chassis Lifting Guidelines for J-EX4200 Switches" on page 184.

- Remove the switch from the shipping carton (see "Unpacking a J-EX4200 Switch" on page 88).

Ensure that you have the following parts and tools available:

- Phillips (+) screwdriver, number 2

- Flat-blade (-) screwdriver if you are installing the switch in a rack with square, nonthreaded holes

- 2 mounting brackets and 8 mounting screws (provided in the accessory box shipped with the switch)

- 4 screws—and 4 cage nuts and washers if your rack requires them—of the appropriate size to secure the chassis to the rack (provided)

- 2-in.-recess front brackets if you will mount the switch in a recessed position (brackets are from the separately orderable four-post rack-mount kit).

- Dust covers for ports (for J-EX4200-24F switches only; optional)

> **NOTE:** One person must be available to lift the switch while another secures the switch to the rack.

> **CAUTION:** If you are mounting multiple switches on a rack, mount a switch in the bottom of the rack first and proceed to mount the rest of the switches from bottom to top.

To mount the switch on two posts in a rack:

1. If your rack has unthreaded round or square holes:

   a. Determine the location on the rack where you want to mount the switch, and install 2 cage nuts in the appropriate holes in each rack post.

   Use Figure 27 on page 94 or Figure 28 on page 94 to help you with cage-nut installation.

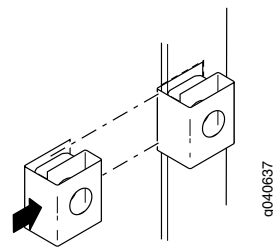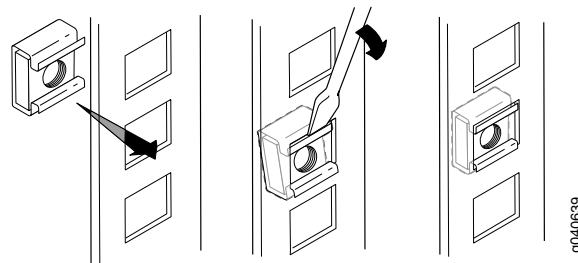Figure 27: Installing a Round-Hole Cage Nut (Clip Nut)

Figure 28: Installing a Square-Hole Cage Nut

    b. To ensure that the switch chassis is level after installation, verify that the cage nuts on one side of the rack are aligned with the cage nuts on the other side.

2. Place the switch on a flat, stable surface.

3. Align the mounting brackets along the front, rear, or center of the side panels of the switch chassis depending on how you want to mount the switch. For example, if you want to center-mount the switch, align the brackets along the centers of the side panel. See Figure 29 on page 94.

Figure 29: Attaching the Mounting Bracket Along the Front of the Switch
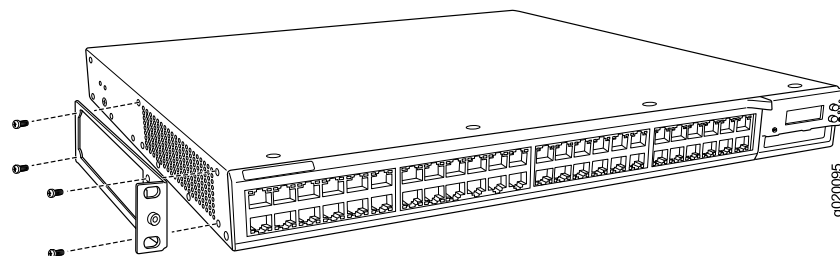

NOTE: To mount the switch in a recessed position, use the 2-in.-recess front mount brackets from the separately orderable four-post rack-mount kit.

4. Align the bottom holes in the mounting brackets with holes on the side panels of the switch chassis.

5. Insert mounting screws into the aligned holes. Tighten the screws.

6. Ensure that the other holes in the mounting brackets are aligned with the holes in the side panels. Insert a screw in each hole and tighten the screws.

7. Have one person grasp both sides of the switch, lift the switch, and position it in the rack. See Figure 30 on page 95.

   • If you installed cage nuts, align the bottom hole in each bracket with the bottom cage nut in each post.

   • If your rack has threaded holes, align the mounting bracket holes with the threaded holes in the rack rail, and align the bottom hole in each bracket with a hole in each post, making sure the chassis is level.

Figure 30: Mounting the Switch on Two Posts in a Rack
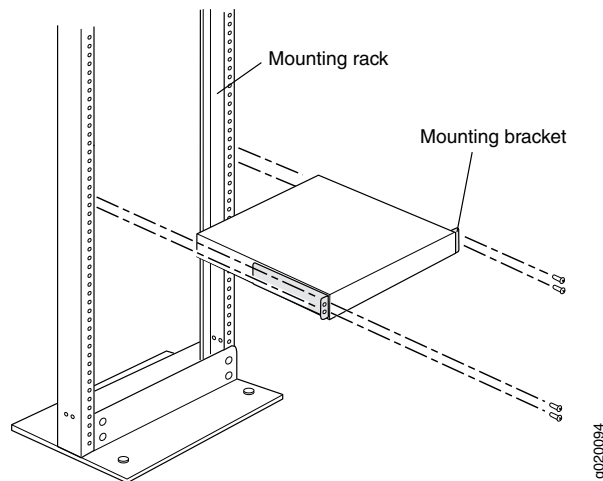
8. Have a second person secure the switch to the rack with the appropriate hardware:

   • If you installed cage nuts, install the appropriate screws with washers through the rack holes and into the cage nuts in each post.

   • If your rack has threaded holes, install screws into the aligned rack holes in each post.

9. Tighten the screws.

10. Ensure that the switch chassis is level by verifying that all screws on one side of the rack are aligned with the screws on the other side.

11. If the switch is a J-EX4200-24F model, we recommend that you insert dust covers in any unused SFP ports.

Related Documentation

• Connecting Earth Ground to a J-EX Series Switch on page 115

• Connecting AC Power to a J-EX4200 Switch on page 117

• Connecting and Configuring a J-EX Series Switch (CLI Procedure) on page 131

• Connecting and Configuring a J-EX Series Switch (J-Web Procedure) on page 133

• Mounting a J-EX4200 Switch in a Recessed Position in a Rack or Cabinet on page 100

• Rack-Mounting and Cabinet-Mounting Warnings for J-EX Series Switches on page 185

Mounting a J-EX4200 Switch on Four Posts in a Rack or Cabinet

You can mount a J-EX4200 switch on four posts of a 19-in. rack or cabinet by using the separately orderable four-post rack-mount kit. (The remainder of this topic uses "rack" to mean "rack or cabinet.")

You can mount the switch on two posts in either a two-post rack or a four-post rack by using the mounting brackets provided with the switch. See "Mounting a J-EX4200 Switch on Two Posts in a Rack or Cabinet" on page 92.

NOTE: If you need to mount the switch in a recessed position on either a two-post rack or a four-post rack, you can use the 2-in.-recess front brackets provided in the separately orderable four-post rack-mount kit.

NOTE: If you are mounting a J-EX4200 switch on four posts, ensure that the rack is 27.5 in. through 30.5 in. deep if you will mount the switch flush with the rack front and that the rack is 29.5 in. through 32.5 in. deep if you will mount the switch 2 in. recessed from the rack front, thus ensuring that the protective earthing terminal is accessible through the opening in the rear bracket.

Before mounting the switch on four posts in a rack:

- Verify that the site meets the requirements described in "Site Preparation Checklist for J-EX4200 Switches" on page 57.

- Place the rack in its permanent location, allowing adequate clearance for airflow and maintenance, and secure it to the building structure.

- Read "General Safety Guidelines and Warnings for J-EX Series Switches" on page 171, with particular attention to "Chassis Lifting Guidelines for J-EX4200 Switches" on page 184.

- Remove the switch from the shipping carton (see "Unpacking a J-EX4200 Switch" on page 88).

Ensure that you have the following parts and tools available:

- Phillips (+) screwdriver, number 2

- Flat-blade screwdriver if you are installing the switch in a rack with square, nonthreaded holes

- 6 flat-head 4-40 mounting screws (provided with the four-post rack-mount kit)

- 12 flat-head 4x6-mm Phillips mounting screws (provided with the four-post rack-mount kit)

- One pair each of flush or 2-in.-recess front brackets

- One pair of side-rail brackets

- One pair of rear brackets

- 8 screws—and 8 cage nuts and washers if your rack requires them—to secure the chassis and the rear brackets to the rack (provided)

- Dust covers for ports (for J-EX4200-24F switches only; optional)

⚠️ CAUTION: If you are mounting multiple units on a rack, mount the heaviest unit at the bottom of the rack and mount the other units from the bottom of the rack to the top in decreasing order of the weight of the units.

To mount the switch on four posts in a rack:

1. If your rack has unthreaded round or square holes:

    a. Determine the location on the rack where you want to mount the switch, and install 2 cage nuts in the appropriate holes in each rack post, front and rear.

       Use Figure 31 on page 97 or Figure 32 on page 97 to help you with cage-nut installation.

**Figure 31: Installing a Round-Hole Cage Nut (Clip Nut)**
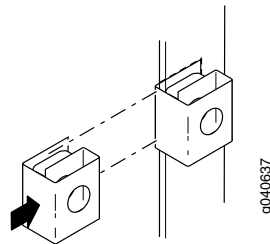
**Figure 32: Installing a Square-Hole Cage Nut**
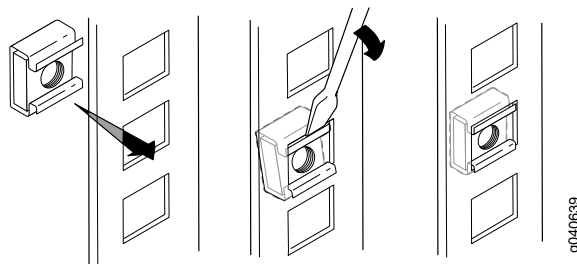
    b. To ensure that the switch chassis is level after installation, verify that the cage nuts on the front of the rack are aligned with the cage nuts in the back.

2. Attach the front brackets (either the flush or the 2-in.-recess brackets) to the side-rail brackets using six 4-40 flat-head Phillips mounting screws. See Figure 33 on page 98.

Figure 33: Attaching the Front Bracket to the Side-Rail Bracket
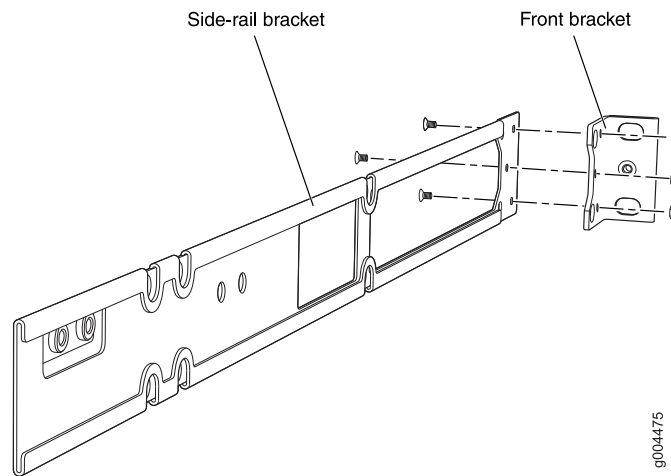

3. Place the switch on a flat, stable surface.

4. Align the side-rail brackets along the side panels of the switch chassis. Align the two holes in the rear of the side-rail brackets with the two holes on the rear of the side panel.

5. Insert 4x6-mm Phillips flat-head mounting screws into the two aligned holes and tighten the screws. Ensure that the remaining four holes in the side-rail brackets are aligned with the four holes in the side panel. See Figure 34 on page 98.

Figure 34: Attaching the Side-Rail Bracket to the Switch Chassis
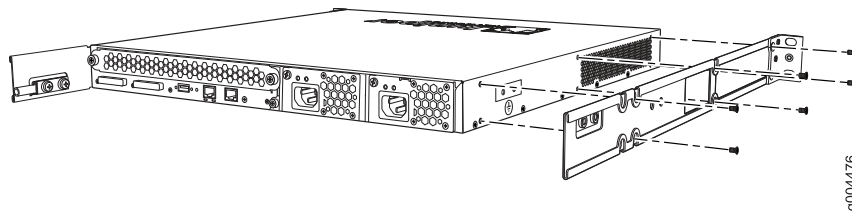
6. Insert the 4x6-mm Phillips flat-head mounting screws into the remaining four holes in the side-rail brackets and tighten the screws.

7. Have one person grasp both sides of the switch, lift the switch, and position it as follows in the rack. See Figure 35 on page 99.

   • If you installed cage nuts, position the switch so that the bottom hole in each mounting bracket is aligned with the bottom cage nut in each post.

   • If your rack has threaded holes, position the switch so that the side-rail bracket holes are aligned with the holes in each front post. Align the bottom hole in each mounting bracket with a hole in each rack post, making sure the chassis is level.

Figure 35: Mounting the Switch to the Front Posts in a Rack
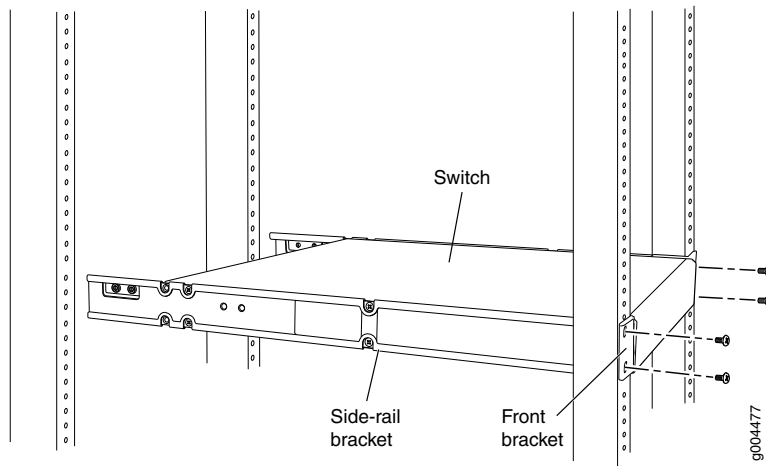
8. Have a second person secure the front of the switch to the rack with the appropriate hardware for your rack:

   • If you installed cage nuts, install the appropriate screws with washers through the rack holes and into the cage nuts in each front post.

   • If your rack has threaded holes, install screws into the aligned rack holes in each front post.

9. Slide the rear brackets into the side-rail brackets. See Figure 36 on page 99.

Figure 36: Sliding the Rear Brackets to the Rear of a Four-Post Rack
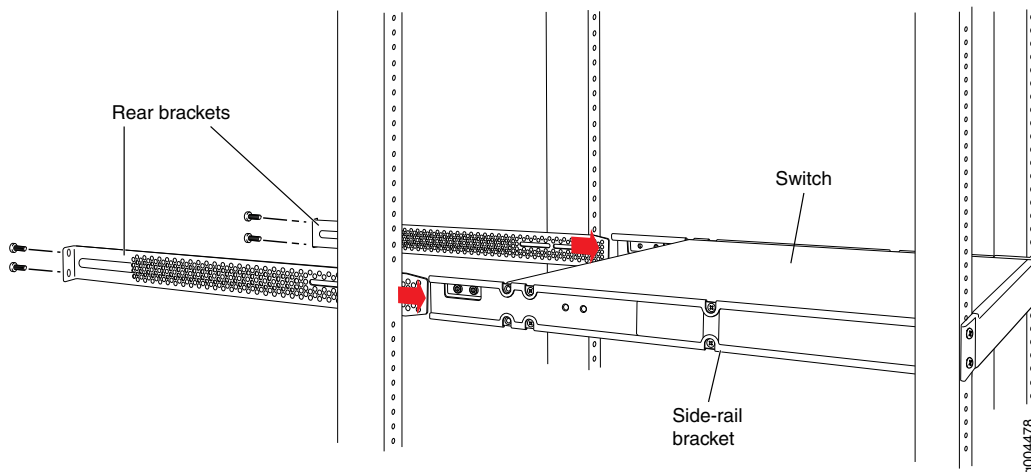
10. Attach the rear brackets to the rear post by using the appropriate hardware for your rack.

    • If you installed cage nuts, install the appropriate screws with washers through the rack holes and into the cage nuts in each rear post.

    • If your rack has threaded holes, install screws into the aligned rack holes in each rear post.

11. Tighten the screws.

12. Ensure that the switch chassis is level by verifying that all the screws on the front of the rack are aligned with the screws at the back of the rack.

13. If the switch is a J-EX4200-24F model, we recommend that you insert dust covers in any unused SFP ports.

Related Documentation

- Connecting Earth Ground to a J-EX Series Switch on page 115

- Connecting AC Power to a J-EX4200 Switch on page 117

- Connecting and Configuring a J-EX Series Switch (CLI Procedure) on page 131

- Connecting and Configuring a J-EX Series Switch (J-Web Procedure) on page 133

- Mounting a J-EX4200 Switch in a Recessed Position in a Rack or Cabinet on page 100

- Rack-Mounting and Cabinet-Mounting Warnings for J-EX Series Switches on page 185

Mounting a J-EX4200 Switch in a Recessed Position in a Rack or Cabinet

You can mount a J-EX4200 switch in a rack or cabinet such that the switch is recessed inside the rack from the rack front by 2 inches. You can use the 2-in.-recess front brackets provided in the separately orderable four-post rack-mount kit to mount the switch in a recessed position.

Reasons that you might want to mount the switch in a recessed position include:

- You are mounting the switch in a cabinet and the cabinet doors will not close completely unless the switch is recessed.

- The switch you are mounting has an uplink module with transceivers installed in it—the transceivers in the uplink module ports protrude from the front of the switch.

To mount the switch in a recessed position on four posts, follow the instructions in "Mounting a J-EX4200 Switch on Four Posts in a Rack or Cabinet" on page 96. To mount the switch in a recessed position on two posts, follow the instructions in "Mounting a J-EX4200 Switch on Two Posts in a Rack or Cabinet" on page 92.

Related Documentation

- Connecting Earth Ground to a J-EX Series Switch on page 115

- Rack-Mounting and Cabinet-Mounting Warnings for J-EX Series Switches on page 185

Mounting a J-EX4200 Switch on a Wall

You can mount a J-EX4200 switch on a wall by using the separately orderable wall-mount kit.

Before mounting a J-EX4200 switch on a wall:

- Verify that the site meets the requirements described in "Site Preparation Checklist for J-EX4200 Switches" on page 57.

- Read "General Safety Guidelines and Warnings for J-EX Series Switches" on page 171, with particular attention to "Chassis Lifting Guidelines for J-EX4200 Switches" on page 184.

- Remove the switch from the shipping carton (see "Unpacking a J-EX4200 Switch" on page 88).

Ensure that you have the following parts and tools available:

- Phillips (+) screwdriver, number 2

- 2 wall-mount brackets (provided with the wall-mount kit)

- 12 wall-mount bracket screws (provided with the wall-mount kit)

- 4 mounting screws (8-32 x 1.25 in. or M4 x 30 mm) (not included)

- Dust covers for ports (for J-EX4200-24F switches only; optional)

- Hollow wall anchors capable of supporting the combined weight of two fully loaded switches, up to 44 lb (20 kg) (not included)—if you are mounting the switch in sheetrock (wall board with a gypsum plaster core) or in wall board not backed by wall studs

⚠ WARNING: When mounted in a vertical position, a J-EX4200 switch must be oriented with the front panel of the chassis pointing down in order to ensure proper airflow and meet safety requirements in the event of a fire.
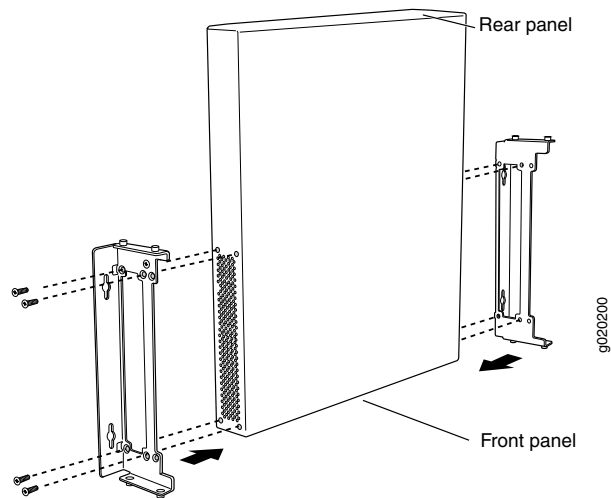
✎ NOTE: For easier lifting, install any additional power supplies only after you mount the switch on the wall.

To mount the switch on a wall:

1. Attach the wall-mount brackets to the sides of the chassis using four of the wall-mount bracket screws on each side, as shown in Figure 37 on page 102.

Figure 37: Attaching Wall-Mount Brackets to a J-EX4200 Switch Chassis

2. If you are mounting two switches together, line the second switch on top of the first and attach it to the mounting brackets using two wall-mount bracket screws on each side (see Figure 38 on page 103).

3. Insert the mounting screws in the wall. Insert the top pair of mounting screws 474.35 mm apart, and insert the second pair of mounting screws 151.81 mm directly below the first set.

    If the mounting screws are inserted in wall board with no stud behind it, you must use dry wall anchors rated to support 75 lb (34 kg). Insert the screws into wall studs wherever possible to provide added support for the chassis.

    Screw the screws only part way in, leaving about 1/4 in. (6 mm) distance between the head of the screw and the wall.

4. Grasp each side of the switch or switches, lift the switch or switches, and hang the brackets from the mounting screws as shown in Figure 38 on page 103.

Figure 38: Mounting a J-EX4200 Switch on a Wall
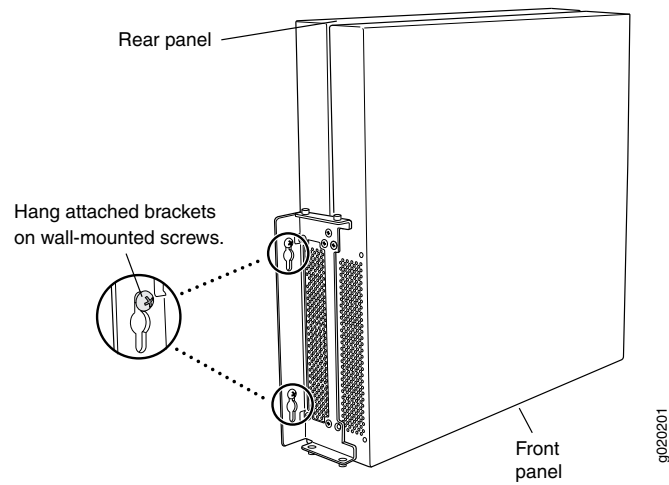
5. Tighten the mounting screws.

6. If it is a J-EX4200-24F switch, we recommend you insert dust covers in unused SFP ports.

Related Documentation

- Connecting AC Power to a J-EX4200 Switch on page 117

- Connecting and Configuring a J-EX Series Switch (CLI Procedure) on page 131

- Connecting and Configuring a J-EX Series Switch (J-Web Procedure) on page 133

- Wall-Mounting Warning for J-EX4200 Switches on page 189

Installing Switch Components

Installing and Removing J-EX4200 Switch Hardware Components

The J-EX4200 switch chassis is a rigid sheet-metal structure that houses the hardware components. The field-replaceable units (FRUs) in J-EX4200 switches are:

- Power supply
- Fan tray
- Uplink module
- SFP transceiver
- SFP+ transceiver

The power supply, fan tray, uplink module, and transceivers are hot-removable and hot-insertable: You can remove and replace them without powering off the switch or disrupting switch functions.

To install a power supply in a J-EX4200 switch, follow instructions in "Installing a Power Supply in a J-EX4200 Switch" on page 106. To remove a power supply, follow instructions in "Removing a Power Supply from a J-EX4200 Switch" on page 140.

To install a fan tray in a J-EX4200 switch, follow instructions in "Installing a Fan Tray in a J-EX4200 Switch" on page 107. To remove a fan tray, follow instructions in "Removing a Fan Tray from a J-EX4200 Switch" on page 141.

To install an uplink module in a J-EX4200 switch, follow instructions in "Installing an Uplink Module in a J-EX4200 Switch" on page 108. To remove an uplink module, follow instructions in "Removing an Uplink Module from a J-EX4200 Switch" on page 142.

To install an SFP or SFP+ transceiver in a J-EX4200 switch, follow instructions in "Installing a Transceiver in a J-EX Series Switch" on page 110. To remove a transceiver, follow instructions in "Removing a Transceiver from a J-EX Series Switch" on page 144.

Related Documentation
- Cooling System and Airflow in a J-EX4200 Switch on page 24
- Power Supply in J-EX4200 Switches on page 21
- Uplink Modules in J-EX4200 Switches on page 25
- Optical Interface Support in J-EX4200 Switches on page 32

Installing a Power Supply in a J-EX4200 Switch

The power supply in J-EX4200 switches is a hot-removable and hot-insertable field-replaceable unit (FRU): You can remove and replace it without powering off the switch or disrupting switch functions.

Ensure that you have the following parts and tools available:

- A Phillips (+) screwdriver, number 2

To install a power supply in a J-EX4200 switch (see Figure 39 on page 107):

1. Taking care not to touch power supply components, pins, leads, or solder connections, remove the power supply from its bag.

2. Loosen the locking lever screw on the left front of the power supply by using the screwdriver.

3. Push down on the locking lever until it is in its lowest position.

4. Using both hands, place the power supply in the power supply slot on the rear panel of the switch and slide it in until it is fully seated.

   > **NOTE:** The handle on the 320 W AC power supply is at the bottom of the power supply faceplate, while the handle on the 600 W and the 930 W AC power supplies is at the top of the faceplate.

5. Push the locking lever up to its highest position (this action might pull the power supply in).

6. Tighten the locking lever screw by using the screwdriver.

Figure 39: Installing a Power Supply in a J-EX4200 Switch

Locking lever   Tighten captive screw.
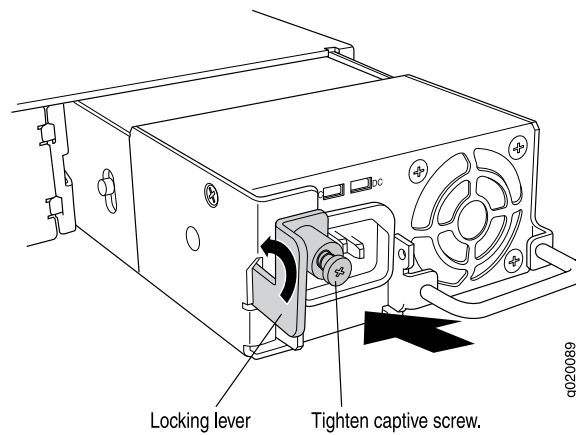
> ✎ **NOTE:** Each power supply must be connected to a dedicated power source outlet.

Related Documentation

- Removing a Power Supply from a J-EX4200 Switch on page 140
- Installing and Removing J-EX4200 Switch Hardware Components on page 105
- Power Supply in J-EX4200 Switches on page 21
- Field-Replaceable Units in J-EX4200 Switches on page 16
- AC Power Cord Specifications for J-EX4200 Switches on page 71
- Rear Panel of a J-EX4200 Switch on page 7

Installing a Fan Tray in a J-EX4200 Switch

J-EX4200 switches have a single fan tray on the rear panel. The fan tray is a hot-removable and hot-insertable field-replaceable unit (FRU): You can remove and replace it without powering off the switch or disrupting switch functions.

Ensure that you have the following parts and tools available:

- A Phillips (+) screwdriver, number 2

To install a fan tray in a J-EX4200 switch chassis (see Figure 40 on page 108):
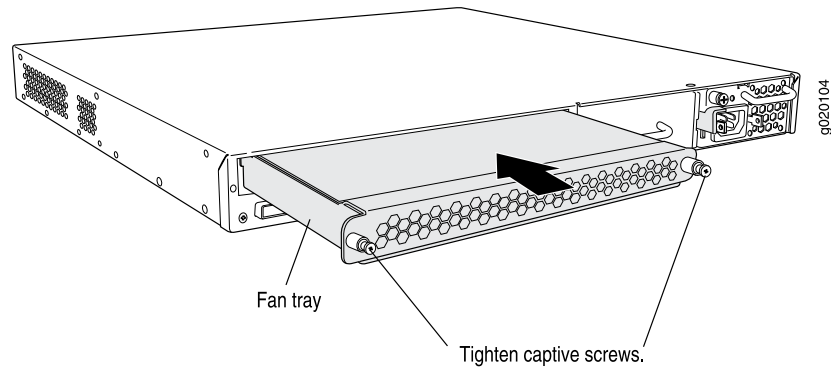
> ⚠ **CAUTION:** When installing the fan tray in the switch, ensure the fans face downwards.

1. Remove the fan tray from its bag. Using both hands, align the tray with the fan tray guides on the fan tray slot on the rear panel of the chassis and slide it in until it is fully seated.

2. Tighten the screw or screws on the fan tray by using the screwdriver.

Figure 40: Installing a Fan Tray in a J-EX4200 Switch

Fan tray

Tighten captive screws.

- Removing a Fan Tray from a J-EX4200 Switch on page 141

- Installing and Removing J-EX4200 Switch Hardware Components on page 105

- Cooling System and Airflow in a J-EX4200 Switch on page 24

- Field-Replaceable Units in J-EX4200 Switches on page 16

- Rear Panel of a J-EX4200 Switch on page 7

Installing an Uplink Module in a J-EX4200 Switch

If your J-EX4200 switch includes an optional uplink module, you install it in the switch's front panel. The different types of uplink modules are described in "Uplink Modules in J-EX4200 Switches" on page 25.

The uplink module in J-EX4200 switches is a hot-removable and hot-insertable unit (FRU): You can remove and replace it without powering off the switch or disrupting switch functions.

> NOTE: If you have set an uplink module port as a Virtual Chassis port (VCP), removing the uplink module breaks the setting. You must reset the port as a VCP after you replace the module. See the instructions for setting an uplink module port as a VCP in the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

Before you begin installing an uplink module in a J-EX4200 switch:

- Ensure that you have taken the necessary precautions to prevent ESD damage (see "Prevention of Electrostatic Discharge Damage on J-EX Series Switches" on page 198).

Ensure that you have the following parts and tools available:

- Electrostatic discharge (ESD) grounding strap (If a grounding strap is not available, follow the alternative grounding method described in Step 1 of the following procedure.)

- Cross-head screwdriver (provided in the uplink module kit)

To install an uplink module in a J-EX4200 switch (see Figure 41 on page 110):

1. Attach the electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to the ESD point on the chassis.

   If a grounding strap is not available, hold the uplink module in its antistatic bag in one hand and touch the exposed, bare metal of the switch with the other hand to ground yourself and the component.

2. Loosen the screws that secure the flip-up door covering the empty uplink module slot on the front panel of the switch by using the cross-head screwdriver, flip the door upward, and remove the blanking panel covering the empty uplink module slot.

   NOTE: If you are removing an uplink module and installing another uplink module, wait for at least 10 seconds after removing the uplink module before installing the new or the same uplink module. If you do not wait for at least 10 seconds, the interfaces on the uplink module might not come up.

3. Taking care not to touch module components, pins, leads, or solder connections, remove the uplink module from its bag.
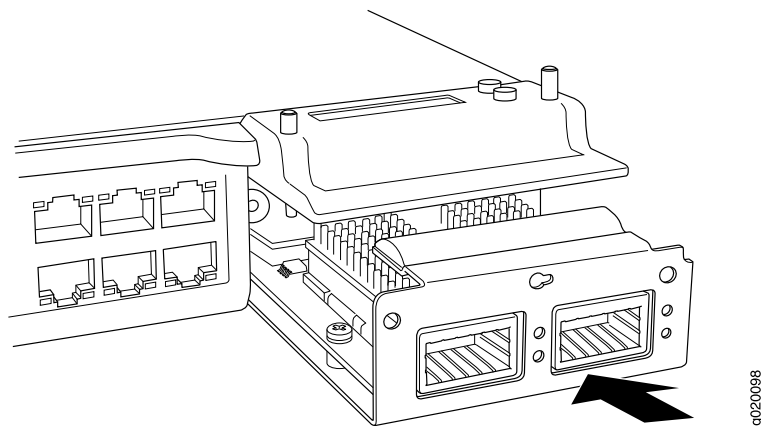
   CAUTION: Before you slide the uplink module into the slot on the switch chassis, ensure the uplink module is aligned correctly. Misalignment might cause the pins to bend, making the uplink module unusable.

4. Using both hands, place the module in the empty slot and slide it in gently until it is fully seated.

5. Flip the door down and tighten the screws by using the cross-head screwdriver.

   NOTE: If the switch does not detect the uplink module, see "Troubleshooting Uplink Module Installation or Replacement on J-EX4200 Switches" on page 158.

Figure 41: Installing an Uplink Module in a J-EX4200 Switch

Installing a Transceiver in a J-EX Series Switch

The transceivers for J-EX Series switches are hot-removable and hot-insertable field-replaceable units (FRUs): You can remove and replace them without powering off the switch or disrupting switch functions.

> 🖉 NOTE: For your J-EX4200 switch, use only the optical transceivers and optical connectors described in this manual. For more information, contact Dell.

Before you begin installing a transceiver in a J-EX Series switch, ensure that you have taken the necessary precautions for safe handling of lasers (see "Laser and LED Safety Guidelines and Warnings for J-EX Series Switches" on page 177).

Ensure that you have a rubber safety cap available to cover the transceiver.

Figure 42 on page 111 shows how to install an SFP transceiver. The procedure is the same for all transceiver types.

To install a transceiver in a J-EX Series switch:

⚠ CAUTION: To avoid electrostatic discharge (ESD) damage to the transceiver, do not touch the connector pins at the end of the transceiver.

1. Remove the transceiver from its bag.

2. Check to see whether the transceiver is covered by a rubber safety cap. If it is not, cover the transceiver with a rubber safety cap.

⚠ WARNING: Do not leave a fiber-optic transceiver uncovered except when inserting or removing a cable. The rubber safety cap keeps the port clean and prevents accidental exposure to laser light.

3. If the port in which you want to install the transceiver is covered with a dust cover, remove the dust cover and save it in case you need to cover the port later. If you are hot-swapping a transceiver, wait for at least 10 seconds after removing the transceiver from the port before installing a transceiver.

4. Using both hands, carefully place the transceiver in the empty port. The connectors must face the switch chassis.

⚠ CAUTION: Before you slide the transceiver into the port, ensure the transceiver is aligned correctly. Misalignment might cause the pins to bend, making the transceiver unusable.

5. Slide the transceiver in gently until it is fully seated.

6. Remove the rubber safety cap when you are ready to connect the cable to the transceiver.

⚠ WARNING: Do not look directly into a fiber-optic transceiver or into the ends of fiber-optic cables. Fiber-optic transceivers and fiber-optic cables connected to transceivers emit laser light that can damage your eyes.

Figure 42: Installing a Transceiver in a J-EX Series Switch

SFP
transceiver
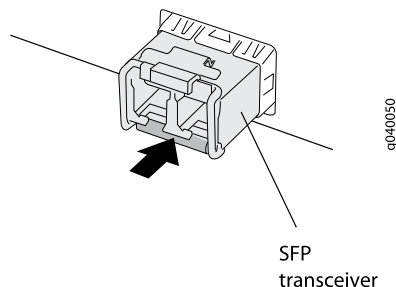
- Removing a Transceiver from a J-EX Series Switch on page 144

- Connecting a Fiber-Optic Cable to a J-EX Series Switch on page 125

- Optical Interface Support in J-EX4200 Switches on page 32

Connecting a Virtual Chassis Cable to a J-EX4200 Switch

J-EX4200 switches have two Virtual Chassis ports on the rear panel. You can use the Virtual Chassis ports to interconnect up to 10 J-EX4200 switches, enabling them to operate as a unified single high bandwidth switch. To see illustrations of a few Virtual Chassis cabling configuration examples, see "Virtual Chassis Cabling Configuration Examples for J-EX4200 Switches" on page 77.

Ensure that you have the following parts and tools available:

- A cross-head screwdriver (provided in the uplink module kit)

> **NOTE:** If you order Virtual Chassis cables separately, you must reuse the cable connector retainers provided with the original cable or order Virtual Chassis cable connector retainers also separately.
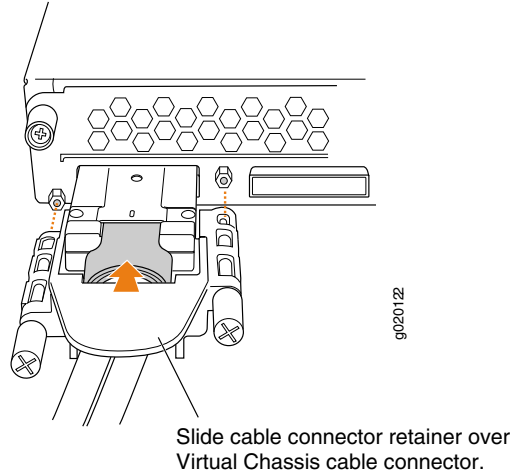
To connect a Virtual Chassis cable to a J-EX4200 switch (see Figure 43 on page 113):

1. Taking care not to touch module components, pins, leads, or solder connections, remove the Virtual Chassis cable from its bag.

2. Using both hands, place the Virtual Chassis cable connector in the empty Virtual Chassis port and slide it in gently until it is fully seated.

3. Slide the cable connector retainer over the Virtual Chassis cable connector.

4. Tighten the screws on the retainer by using the cross-head screwdriver.

Figure 43: Connecting a Virtual Chassis Cable to a J-EX4200 Switch

Slide cable connector retainer over
Virtual Chassis cable connector.

- Disconnecting a Virtual Chassis Cable from a J-EX4200 Switch on page 147

- Understanding Virtual Chassis Hardware Configuration on a J-EX4200 Switch on page 75

- For information about Virtual Chassis components, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- Planning the Virtual Chassis on page 76

- Virtual Chassis Ports Connector Pinout Information for J-EX4200 Switches on page 49

Connecting the Switch

Connecting Earth Ground to a J-EX Series Switch

To meet safety and electromagnetic interference (EMI) requirements and to ensure proper operation, you must connect the switches to earth ground before you connect them to power.

For installations that require a separate grounding conductor to the chassis, use the protective earthing terminal on the J-EX Series switch chassis to connect to the earth ground (see Figure 44 on page 115).

Figure 44: Connecting a Grounding Cable to a J-EX Series Switch
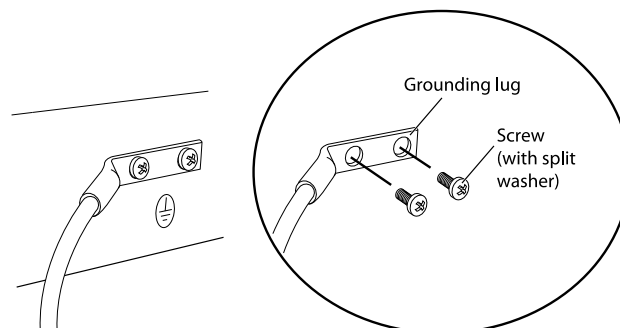
Before you connect earth ground to the protective earthing terminal of a J-EX Series switch, ensure that a licensed electrician has attached an appropriate grounding lug to the grounding cable.

⚠ CAUTION: Using a grounding cable with an incorrectly attached lug can damage the switch.

Follow the procedure that applies to your switch:

- Connecting Earth Ground to a J-EX4200 Switch on page 116

Connecting Earth Ground to a J-EX4200 Switch

The protective earthing terminal is located on the left side of the chassis in a J-EX4200 switch.

An AC-powered J-EX Series switch chassis gets additional grounding when you plug the power supply in the switch into a grounded AC power outlet by using an AC power cord appropriate for your geographical location. See "AC Power Cord Specifications for J-EX4200 Switches" on page 71.

Ensure that you have the following parts and tools available:

- Grounding cable for your J-EX4200 switch—The grounding cable must be minimum 14 AWG (2 mm²), minimum 90ºC wire, or as permitted by the local code.

- Grounding lug for your grounding cable—The grounding lug required is a Panduit LCD6-14BH-L or equivalent.

- Washers and 10-32x.25-in. screws to secure the grounding lug to the protective earthing terminal.

- Phillips (+) screwdriver, number 2.

To connect earth ground to a J-EX4200 switch:

1. Connect one end of the grounding cable to a proper earth ground, such as the rack in which the switch is mounted.

2. Place the grounding lug attached to the grounding cable over the protective earthing terminal. See Figure 44 on page 115.

   If you mounted a J-EX4200 switch on four posts of a rack using the four-post rack-mount kit, the protective earthing terminal on the switch is accessible through the slot on the left rear bracket. See Figure 45 on page 117.

   ✏ NOTE: The protective earthing terminal on a J-EX4200 switch mounted on four posts is available only if the rack is 27.5 in. deep through 30.5 in. deep for a switch mounted flush with the rack front and 29.5 in. deep through 32.5 in. deep for a switch mounted 2 in. recessed from the rack front.

Figure 45: Connecting the Grounding Lug to a J-EX4200 Switch on a Four-Post Rack
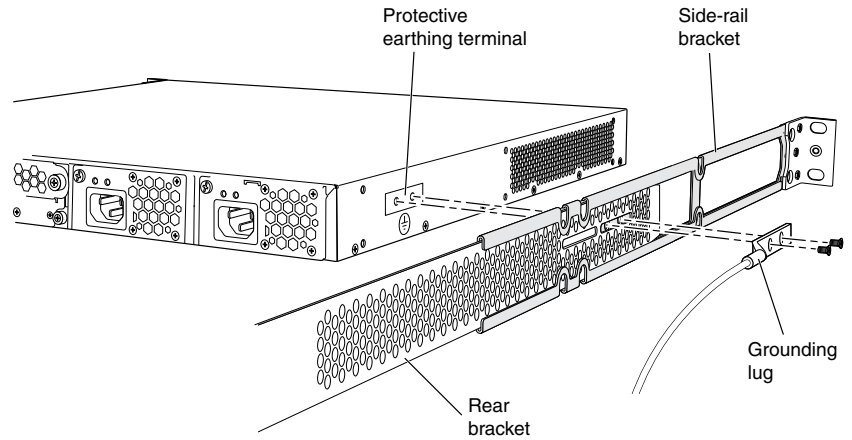
NOTE: The brackets must be attached to the chassis before the grounding lug is attached. (The brackets are shown pulled away from the chassis so that the protective earthing terminal can be seen.)

3. Secure the grounding lug to the protective earthing terminal with screws.

4. Dress the grounding cable and ensure that it does not touch or block access to other switch components and that it does not drape where people could trip over it.

Related Documentation

- Connecting AC Power to a J-EX4200 Switch on page 117
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- Grounded Equipment Warning for J-EX Series Switches on page 190

Connecting AC Power to a J-EX4200 Switch

The power supply in a J-EX4200 switch is a hot-removable and hot-insertable field-replaceable unit (FRU) located on the rear panel: You can remove and replace it without powering off the switch or disrupting switch functions.

Before you begin connecting AC power to a J-EX4200 switch:

- Ensure that you have connected the switch chassis to earth ground.

⚠ **CAUTION:** Before you connect power to the switch, a licensed electrician must attach a cable lug to the grounding and power cables that you supply. A cable with an incorrectly attached lug can damage the switch (for example, by causing a short circuit).

To meet safety and electromagnetic interference (EMI) requirements and to ensure proper operation, you must connect J-EX4200 switches to earth ground before you connect them to power. For installations that require a separate grounding conductor to the chassis, use the protective earthing terminal on the switch chassis to connect to the earth ground. For instructions on connecting earth ground, see "Connecting Earth Ground to a J-EX Series Switch" on page 115. A J-EX4200 switch gets additional 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 (see "AC Power Cord Specifications for J-EX4200 Switches" on page 71).

- Install the power supply in the chassis. For instructions on installing a power supply in a J-EX4200 switch, see "Installing a Power Supply in a J-EX4200 Switch" on page 106.

  NOTE: Each power supply must be connected to a dedicated power source outlet.

Ensure that you have the following parts and tools available:

- An AC jumper cord or a separately orderable AC power cord appropriate for your geographical location (See "AC Power Cord Specifications for J-EX4200 Switches" on page 71.)

To connect AC power to a J-EX4200 switch:

1. Ensure that the power supplies are fully inserted in the chassis and the screws on their faceplates are tightened.

2. Squeeze the two sides of the power cord retainer clip and insert the L-shaped ends of the wire clip into the holes in the bracket on each side of the AC power cord inlet on the AC power supply faceplate (see Figure 46 on page 119).

3. Locate the jumper cord or cords shipped with the switch, or the separately orderable power cord or cords with plugs appropriate for your geographical location. (For power cord information, see "AC Power Cord Specifications for J-EX4200 Switches" on page 71.)

   WARNING: Ensure that the jumper cord or power cord does not block access to switch components or drape where people can trip on it.

4. Insert the coupler end of the jumper cord or power cord into the AC power cord inlet on the AC power supply faceplate.

5. Push the cord into the slot in the adjustment nut of the cord retainer. Turn the nut until it is tight against the base of the coupler and the slot in the nut is turned 90° from the top of the switch (see Figure 47 on page 119).

6. If the AC power source outlet has a power switch, set it to the OFF (0) position.

7. Insert the jumper cord or power cord plug into an AC power source outlet.

8. If the AC power source outlet has a power switch, set it to the ON (|) position.

9. Verify that the AC OK LED on the power supply is lit and is on steadily.

> NOTE: When you connect power to the switch, the Alarm (ALM) LED lights red to indicate that the network link is disconnected. This behavior is normal. Plugging an active Ethernet cable into the management (MGMT) port on the switch completes the network link and turns off the ALM LED. (See "Connecting a J-EX Series Switch to a Network for Out-of-Band Management" on page 120.)
>
> Connecting the switch to a dedicated management console instead of a network does not affect the ALM LED. The LED remains red until the switch is connected to a network.

Figure 46: Connecting the AC Jumper Cord or Power Cord Retainer Clip to an AC Power Supply in a J-EX4200 Switch
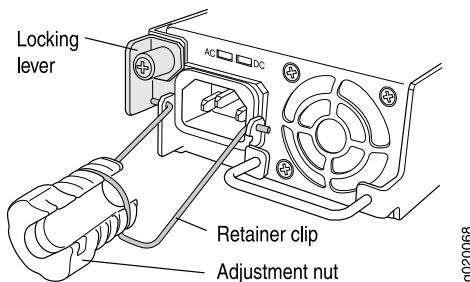
Figure 47: Connecting an AC Jumper Cord or Power Cord to an AC Power Supply in a J-EX4200 Switch
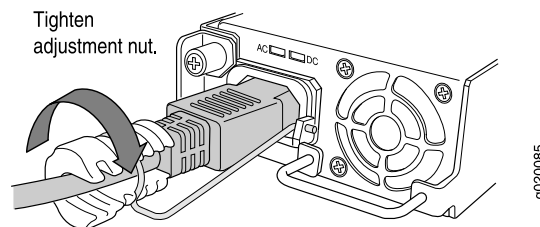

Related Documentation

- Connecting and Configuring a J-EX Series Switch (CLI Procedure) on page 131
- Connecting and Configuring a J-EX Series Switch (J-Web Procedure) on page 133
- Power Supply in J-EX4200 Switches on page 21
- AC Power Supply LEDs in J-EX4200 Switches on page 24

Connecting a J-EX Series Switch to a Network for Out-of-Band Management

You can monitor and manage a J-EX Series switch using a dedicated management channel. J-EX Series switches have a management port with an RJ-45 connector for out-of-band management. Use the management port to connect the J-EX Series switch to the management device.

Ensure that you have an Ethernet cable with an RJ-45 connector available. One such cable is provided with the switch. Figure 48 on page 120 shows the RJ-45 connector of the Ethernet cable supplied with the switch.

Figure 48: Ethernet Cable Connector
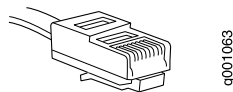
To connect a J-EX Series switch to a network for out-of-band management (see Figure 49 on page 120):

1. Connect one end of the Ethernet cable to the management port (labeled **MGMT**) on the J-EX Series switch.

   For the location of the **MGMT** port, see "Rear Panel of a J-EX4200 Switch" on page 7.

2. Connect the other end of the Ethernet cable to the management device.

Figure 49: Connecting a J-EX Series Switch to a Network for Out-of-Band Management
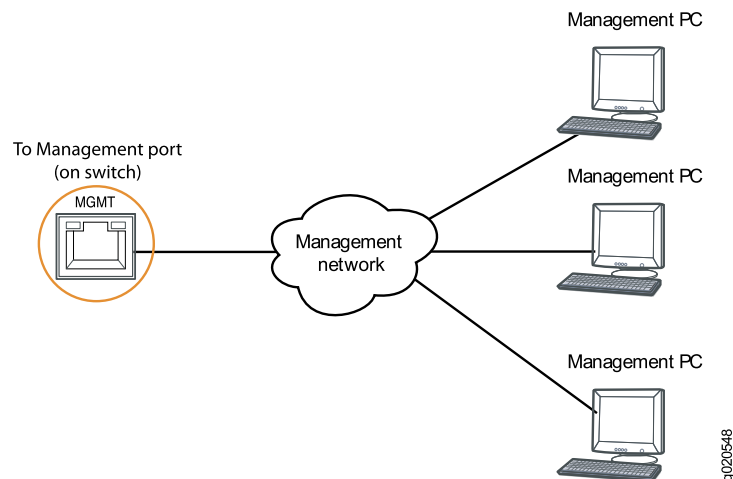
Related Documentation

- Connecting a J-EX Series Switch to a Management Console on page 121

- Management Port Connector Pinout Information for a J-EX4200 Switch on page 31

Connecting a J-EX Series Switch to a Management Console

You can configure and manage a J-EX Series switch using a dedicated console. Every J-EX Series switch has a console port with an RJ-45 connector. Use the console port to connect the J-EX Series switch to the management console or to a console server. The console port accepts a cable with an RJ-45 connector.

Ensure that you have an Ethernet cable with an RJ-45 connector available. An RJ-45 cable and an RJ-45 to DB-9 serial port adapter are supplied with the switch.

Figure 50 on page 121 shows the RJ-45 connector of the Ethernet cable supplied with the switch.

Figure 50: Ethernet Cable Connector
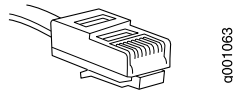
NOTE: If your laptop or PC does not have a DB-9 male connector pin and you want to connect your laptop or PC directly to a J-EX Series switch, use a combination of the RJ-45 to DB-9 female adapter supplied with the switch and a USB to DB-9 male adapter. You must provide the USB to DB-9 male adapter.

To connect a J-EX Series switch to a management console (see Figure 51 on page 121 and Figure 52 on page 122):

1. Connect one end of the Ethernet cable into the console port (labeled **CON** or **CONSOLE**) on the J-EX Series switch.

   For the location of the **CON/CONSOLE** port, see "Rear Panel of a J-EX4200 Switch" on page 7.

2. Connect the other end of the Ethernet cable into the console server (see Figure 51 on page 121) or management console (see Figure 52 on page 122).

To configure the switch from the management console, see"Connecting and Configuring a J-EX Series Switch (CLI Procedure)" on page 131 or "Connecting and Configuring a J-EX Series Switch (J-Web Procedure)" on page 133.

Figure 51: Connecting a J-EX Series Switch to a Management Console Through a Console Server
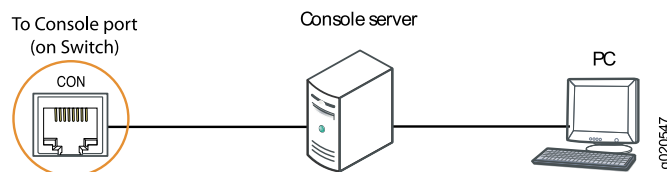
Figure 52: Connecting a J-EX Series Switch Directly to a Management Console
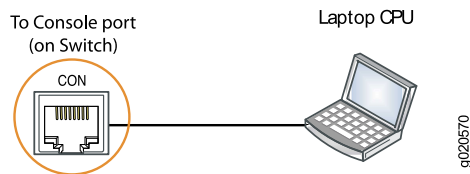
Connecting a J-EX Series Switch to a Modem

You can connect a J-EX Series switch to a modem through the console port on the switch.

Before you connect the switch to a modem:

- Perform the initial setup and configuration of the switch. See "Connecting and Configuring a J-EX Series Switch (CLI Procedure)" on page 131 or "Connecting and Configuring a J-EX Series Switch (J-Web Procedure)" on page 133.

Ensure that you have the following parts available before you begin to connect the switch to the modem:

- A modem (not provided)
- A desktop or notebook computer (not provided)
- An RJ-45 to DB-9 adapter and an Ethernet cable (provided)
- A phone cable (not provided)
- If your computer does not have a DB-9 male connector pin, a USB to DB-9 male adapter (not provided)
- An adapter to connect the RS-232 DB-25 connector on the modem to the RJ-45 to DB-9 adapter on the switch (not provided)

This topic describes:

1. Setting the Serial Console Speed for the Switch on page 122
2. Configuring the Modem on page 123
3. Connecting the Modem to the Console Port on page 124

Setting the Serial Console Speed for the Switch

Before you can connect the switch to a modem, the switch's serial console speed must be set to 115200 baud.

NOTE: The default serial console speed is 9600 baud.

To change the serial console speed:

1. Power on the switch. The loader script starts.

2. You are prompted with:

   ```
   Hit [Enter] to boot immediately, or space bar for command prompt.
   ```

   Press the Spacebar to pause the switch in the loader state (after Junos OS has loaded on the switch but before the software starts).

   The **loader>** prompt appears.

3. Set the baud rate:

   ```
   loader> set baudrate=115200
   ```

   Press Enter.

4. Press Enter when you see the following message:

   ```
   Switch baud rate to 115200 bps and press Enter.
   ```

   The **loader>** prompt reappears.

5. Save the new serial console speed:

   ```
   loader> save
   ```

   Press Enter. The serial console speed is now set to 115200 baud.

6. Boot the software:

   ```
   loader> boot
   ```

   The boot process proceeds as normal and ends with a login prompt.

Configuring the Modem

Before you connect the modem, you must configure the modem with required port settings.

> NOTE: The following procedure uses Hayes-compatible-modem commands to configure the modem. If your modem is not Hayes-compatible, see the documentation for your modem for the equivalent modem commands.

To configure the modem:

1. Connect the modem to the desktop or notebook computer.

2. Power on the modem.

3. From the computer, start your asynchronous terminal emulation application (such as Microsoft Windows HyperTerminal) and select the COM port to which the modem is connected (for example, COM1).

4. Configure the port settings shown in Table 31 on page 124.

Table 31: Port Settings

Port Settings	Value
Bits per second	115200
Data bits	8
Parity	None
Stop bits	1
Flow control	None

5. In the HyperTerminal window, type **at**. Press Enter.

   The modem sends an OK response to verify that it can communicate successfully with the COM port on your desktop or notebook computer.

6. To configure the modem to answer a call on the first ring, type **ats0=1** at the prompt. Press Enter.

7. To configure the modem to accept modem-control DTR signals, type **at&d1** at the prompt. Press Enter.

8. To disable flow control on the modem, type **at&k0** at the prompt. Press Enter.

9. To set the fixed serial port speed on the modem, type **at&b1** at the prompt. Press Enter.

   NOTE: You must set the serial port to the fixed speed so that the modem will not adjust the serial port speed to the negotiated line speed.

10. To save the new modem settings, type **at&w0** at the prompt. Press Enter.

    The modem sends an OK message. The modem is now ready to be connected to the switch.

Connecting the Modem to the Console Port

The console port on every J-EX Series switch accepts a cable with an RJ-45 connector. Figure 53 on page 124 shows the RJ-45 connector of the Ethernet cable supplied with the switch.

Figure 53: Ethernet Cable Connector
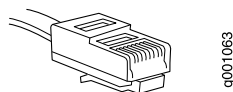
> **NOTE:** If your laptop or PC does not have a DB-9 male connector pin and you want to connect your laptop or PC directly to the switch, use a combination of the RJ-45 to DB-9 female adapter supplied with the switch and a USB to DB-9 male adapter. You must provide the USB to DB-9 male adapter.

> **NOTE:** Most modems have an RS-232 DB-25 connector. You must separately purchase an adapter to connect your modem to the RJ-45 to DB-9 adapter and Ethernet cable supplied with the switch.

To connect a modem to the console port:

1. Turn off power to the switch.

2. Turn off power to the modem.

3. Connect one end of the cable to the console port (labeled **CON** or **CONSOLE**) on the switch.

   For the location of the console port, see "Rear Panel of a J-EX4200 Switch" on page 7.

4. Connect the other end of the cable to the RJ-45 to DB-9 serial port adapter supplied with your switch.

5. Connect the serial port adapter to the DB-9 female to DB-25 male adapter or other adapter appropriate for your modem.

6. Plug the modem adapter into the DB-25 connector on the modem.

7. Connect one end of the phone cable to the modem and the other end to your telephone network.

8. Turn on the power to your modem.

9. Power on the switch.

Related Documentation
- Connecting a J-EX Series Switch to a Management Console on page 121
- Console Port Connector Pinout Information for a J-EX Series Switch on page 30

Connecting a Fiber-Optic Cable to a J-EX Series Switch

J-EX Series switches have field-replaceable unit (FRU) optical transceivers to which you can connect fiber-optic cables.

Before you begin connecting a fiber-optic cable to an optical transceiver installed in a J-EX Series switch, ensure that you have taken the necessary precautions for safe handling of lasers (see "Laser and LED Safety Guidelines and Warnings for J-EX Series Switches" on page 177).

To connect a fiber-optic cable to an optical transceiver installed in a J-EX Series switch:

⚠️ **WARNING:** Do not look directly into a fiber-optic transceiver or into the ends of fiber-optic cables. Fiber-optic transceivers and fiber-optic cables connected to transceivers emit laser light that can damage your eyes.

1. If the fiber-optic cable connector is covered by a rubber safety cap, remove the cap. Save the cap.

2. Remove the rubber safety cap from the optical transceiver. Save the cap.

3. Insert the cable connector into the optical transceiver (see Figure 54 on page 126).

Figure 54: Connecting a Fiber-Optic Cable to an Optical Transceiver Installed in a J-EX Series Switch
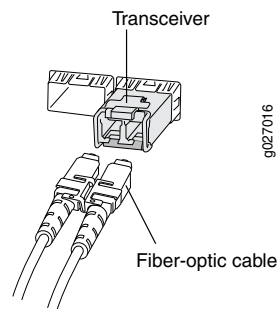
4. Secure the cables so that they are not supporting their own weight. Place excess cable out of the way in a neatly coiled loop. Placing fasteners on a loop helps cables maintain their shape.

△ **CAUTION:** Do not bend fiber-optic cables beyond their minimum bend radius. An arc smaller than a few inches in diameter can damage the cables and cause problems that are difficult to diagnose.

Do not let fiber-optic cables hang free from the connector. Do not allow fastened loops of cables to dangle, which stresses the cables at the fastening point.

Related Documentation

- Disconnecting a Fiber-Optic Cable from a J-EX Series Switch on page 146

- Installing a Transceiver in a J-EX Series Switch on page 110

- Maintaining Fiber-Optic Cables in J-EX Series Switches on page 153

- Optical Interface Support in J-EX4200 Switches on page 32

Performing Initial Configuration

- J-EX4200 Default Configuration on page 127

- Connecting and Configuring a J-EX Series Switch (CLI Procedure) on page 131

- Connecting and Configuring a J-EX Series Switch (J-Web Procedure) on page 133

- Setting the Mode on an SFP+ Uplink Module (CLI Procedure) on page 135

J-EX4200 Default Configuration

Each J-EX Series switch is programmed with a factory default configuration that contains the values set for each configuration parameter when a switch is shipped. The default configuration file sets values for system parameters such as **syslog** and **commit**; configures Power over Ethernet (PoE), storm control, and Ethernet switching on all interfaces; and enables the LLDP and RSTP protocols.

When you commit changes to the configuration, a new configuration file is created that becomes the active configuration. You can always revert to the factory default configuration. For instructions, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

The following factory default configuration file is for a J-EX4200 switch with 24 ports (for models that have more ports, this default configuration file has more interfaces):

> NOTE: In this example, ge-0/0/0 through ge-0/0/23 are the network interface ports. Optional uplink modules provide four 1-gigabit SFP transceivers (ge-0/1/0 through ge-0/1/3). Although you can install only one uplink module, the interfaces for both are shown below.

```
system {
  syslog {
    user * {
      any emergency;
    }
    file messages {
      any notice;
      authorization info;
    }
    file interactive-commands {
```

```
                interactive-commands any;
            }
        }
        commit {
            factory-settings {
                reset-chassis-lcd-menu;
                reset-virtual-chassis-configuration;
            }
        }
    }
}
interfaces {
    ge-0/0/0 {
        unit 0 {
            family ethernet-switching;
        }
    }
    ge-0/0/1 {
        unit 0 {
            family ethernet-switching;
        }
    }
    ge-0/0/2 {
        unit 0 {
            family ethernet-switching;
        }
    }
    ge-0/0/3 {
        unit 0 {
            family ethernet-switching;
        }
    }
    ge-0/0/4 {
        unit 0 {
            family ethernet-switching;
        }
    }
    ge-0/0/5 {
        unit 0 {
            family ethernet-switching;
        }
    }
    ge-0/0/6 {
        unit 0 {
            family ethernet-switching;
        }
    }
    ge-0/0/7 {
        unit 0 {
            family ethernet-switching;
        }
    }
    ge-0/0/8 {
        unit 0 {
            family ethernet-switching;
        }
    }
```

```
ge-0/0/9 {
  unit 0 {
    family ethernet-switching;
  }
}
ge-0/0/10 {
  unit 0 {
    family ethernet-switching;
  }
}
ge-0/0/11 {
  unit 0 {
    family ethernet-switching;
  }
}
ge-0/0/12 {
  unit 0 {
    family ethernet-switching;
  }
}
ge-0/0/13 {
  unit 0 {
    family ethernet-switching;
  }
}
ge-0/0/14 {
  unit 0 {
    family ethernet-switching;
  }
}
ge-0/0/15 {
  unit 0 {
    family ethernet-switching;
  }
}
ge-0/0/16 {
  unit 0 {
    family ethernet-switching;
  }
}
ge-0/0/17 {
  unit 0 {
    family ethernet-switching;
  }
}
ge-0/0/18 {
  unit 0 {
    family ethernet-switching;
  }
}
ge-0/0/19 {
  unit 0 {
    family ethernet-switching;
  }
}
ge-0/0/20 {
```

```
            unit 0 {
                family ethernet-switching;
            }
        }
        ge-0/0/21 {
            unit 0 {
                family ethernet-switching;
            }
        }
        ge-0/0/22 {
            unit 0 {
                family ethernet-switching;
            }
        }
        ge-0/0/23 {
            unit 0 {
                family ethernet-switching;
            }
        }
        xe-0/1/0 {
            unit 0 {
                family ethernet-switching;
            }
        }
        ge-0/1/0 {
            unit 0 {
                family ethernet-switching;
            }
        }
        ge-0/1/1 {
            unit 0 {
                family ethernet-switching;
            }
        }
        ge-0/1/2 {
            unit 0 {
                family ethernet-switching;
            }
        }
        ge-0/1/3 {
            unit 0 {
                family ethernet-switching;
            }
        }
    }
    protocols {
        igmp-snooping{
            vlan all;
        }
        lldp {
            interface all;
        }
        lldp-med {
            interface all;
        }
        rstp;
```

```
    }
    ethernet-switching-options {
      storm-control {
        interface all;
      }
    }
    poe {
      interface all;
    }
```

Related Documentation

- Connecting and Configuring a J-EX Series Switch (CLI Procedure) on page 131
- Connecting and Configuring a J-EX Series Switch (J-Web Procedure) on page 133
- For information about J-EX Series switch configuration files and interfaces and instructions for reverting to the factory default configuration, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

Connecting and Configuring a J-EX Series Switch (CLI Procedure)

There are two ways to connect and configure a J-EX Series switch: one method is through the console using the CLI and the other is using the J-Web interface. This topic describes the CLI procedure.

> NOTE: To run the ezsetup script, the switch must have the factory default configuration as the active configuration. If you have configured anything on the switch and want to run ezsetup, revert to the factory default configuration. For instructions, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

Before you begin connecting and configuring a J-EX Series switch through the console using the CLI:

- Set the following parameter values in the console server or PC:
  - Baud Rate—9600
  - Flow Control—None
  - Data—8
  - Parity—None

- Stop Bits—1

- DCD State—Disregard

To connect and configure the switch from the console:

1. Connect the console port on the rear panel of the switch to a laptop or PC using the RJ-45 to DB-9 serial port adapter. The RJ-45 cable and RJ-45 to DB-9 serial port adapter are supplied with the switch.

2. At the Junos OS shell prompt **root%**, type **ezsetup**.

3. Enter the hostname. This is optional.

4. Enter the root password you plan to use for this device. You are prompted to re-enter the root password.

5. Enter **yes** to enable services like Telnet and SSH. By default, Telnet is not enabled and SSH is enabled.

   > NOTE: When Telnet is enabled, you will not be able to log in to a J-EX Series switch through Telnet using **root** credentials. Root login is allowed only for SSH access.

6. Use the Management Options page to select the management scenario:

   - **Configure in-band management**. In this scenario you have the following two options:

     - Use the default VLAN.

     - Create a new VLAN—If you select this option, you are prompted to specify the VLAN name, VLAN ID, management IP address, and default gateway. Select the ports that must be part of this VLAN.

   - **Configure out-of-band management**. Specify the IP address and gateway of the management interface. Use this IP address to connect to the switch.

7. Specify the SNMP Read Community, Location, and Contact to configure SNMP parameters. These parameters are optional.

8. Specify the system date and time. Select the time zone from the list. These options are optional.

The configured parameters are displayed. Enter **yes** to commit the configuration.

The configuration is committed as the active configuration for the switch. You can now log in with the CLI or the J-Web interface to continue configuring the switch. If you use the J-Web interface to continue configuring the switch, the Web session is redirected to the new management IP address. If the connection cannot be made, the J-Web interface displays instructions for starting a J-Web session.

Related Documentation
- Connecting and Configuring a J-EX Series Switch (J-Web Procedure) on page 133
- Installing and Connecting a J-EX4200 Switch on page 87

Connecting and Configuring a J-EX Series Switch (J-Web Procedure)

There are two ways to connect and configure a J-EX Series switch: one method is through the console using the CLI and the other is using the J-Web interface. This topic describes the J-Web procedure.

> **NOTE:** Before you begin the configuration, enable a DHCP client on the management PC you will connect to the switch so that the switch can obtain an IP address dynamically.

> **NOTE:** Read the following steps before you begin the configuration. You must complete the initial configuration using EZSetup within 10 minutes. The switch exits EZSetup after 10 minutes and reverts to the factory default configuration, and the PC loses connectivity to the switch. The LCD displays a count-down timer when the switch is in initial setup mode.

To connect and configure the switch using the J-Web interface:

1. To transition the switch into initial setup mode, use the **Menu** and **Enter** buttons located to the right of the LCD panel (see Figure 55 on page 133):

Figure 55: LCD Panel in a J-EX4200 Switch
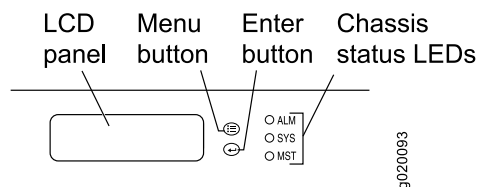
a. Press the **Menu** button until you see **MAINTENANCE MENU**. Then press the **Enter** button.

b. Press **Menu** until you see **ENTER EZSetup**. Then press **Enter**.

If EZSetup does not appear as an option in the menu, select Factory Default to return the switch to the factory default configuration. EZSetup is displayed in the menu only when the switch is set to the factory default configuration.

c. Press **Enter** to confirm setup and continue with EZSetup.

2. Connect the Ethernet cable from the Ethernet port on the PC to port 0 (**ge-0/0/0**) on the front panel of the switch.

The port is configured as the DHCP server with the default IP address, **192.168.1.1**. The switch can assign an IP address to the management PC in the IP address range **192.168.1.2** through **192.168.1.253**.

3. From the PC, open a Web browser, type **http://192.168.1.1** in the address field, and press Enter.

4. On the J-Web login page, type **root** as the username, leave the password field blank, and click **Login**.

5. On the Introduction page, click **Next**.

6. On the Basic Settings page, modify the hostname, the root password, and date and time settings:

   • Enter the hostname. This is optional.

   • Enter a password and reenter the password.

   • Specify the time zone.

   • Synchronize the date and time settings of the switch with the management PC or set them manually by selecting the appropriate option button. This is optional.

7. Click **Next**.

8. Use the Management Options page to select the management scenario:

   • **In-band Management—Use VLAN 'default' for management**.

     Select this option to configure all data interfaces as members of the default VLAN. Click **Next**. Specify the management IP address and the default gateway for the default VLAN.

   • **In-band Management—Create new VLAN for management**.

     Select this option to create a management VLAN. Click **Next**. Specify the VLAN name, VLAN ID, member interfaces, management IP address, and default gateway for the new VLAN.

   • **Out-of-band Management—Configure management port**.

     Select this option to configure only the management interface. Click **Next**. Specify the IP address and default gateway for the management interface.

9. Click **Next**.

10. On the Manage Access page, you may select options to enable Telnet, SSH, and SNMP services. For SNMP, you can configure the read community, location, and contact.

11. Click **Next**. The Summary screen displays the configured settings.

12. Click **Finish**.

🖉 NOTE: After the configuration takes effect, you might lose connectivity between the PC and the switch. To renew the connection, release and renew the IP address by executing the appropriate commands on the management PC or by removing and reinserting the Ethernet cable.

The configuration is committed as the active switch configuration. You can now log in with the CLI or the J-Web interface to continue configuring the switch.

If you use the J-Web interface to continue configuring the switch, the Web session is redirected to the new management IP address. If the connection cannot be made, the J-Web interface displays instructions for starting a J-Web session.

Related Documentation
- Connecting and Configuring a J-EX Series Switch (CLI Procedure) on page 131
- Installing and Connecting a J-EX4200 Switch on page 87

Setting the Mode on an SFP+ Uplink Module (CLI Procedure)

SFP+ uplink modules are supported on J-EX4200 switches. You can use these uplink modules either for two SFP+ transceivers or four SFP transceivers. You configure the operating mode on the module to match the type of transceiver you want to use—for SFP+ transceivers, you configure the 10-gigabit operating mode, and for SFP transceivers, you configure the 1-gigabit operating mode.

By default, the SFP+ uplink module operates in the 10-gigabit mode and supports only SFP+ transceivers. If you have not changed the module from the default setting and you want to use SFP+ transceivers, you do not need to configure the operating mode.

To set the operating mode of an SFP+ uplink module:

1. Change the operating mode to the appropriate mode for the transceiver type you want to use by using one of the following commands:

   [edit]
   user@switch# **set chassis fpc 0 pic 1 sfpplus pic-mode 1g**

   [edit]
   user@switch# **set chassis fpc 0 pic 1 sfpplus pic-mode 10g**

2. Reboot the switch.

If you commit the configuration but then do not reboot the switch, the new configuration does not take effect and the operating mode of the uplink module is not changed.

You can see whether the operating mode has been changed to the new mode you configured by issuing the **show chassis pic fpc-slot** *slot-number* **pic-slot 1** command.

Related Documentation
- Uplink Modules in J-EX4200 Switches on page 25
- Optical Interface Support in J-EX4200 Switches on page 32

Removing Switch Components

Removing Switch Components

Installing and Removing J-EX4200 Switch Hardware Components

The J-EX4200 switch chassis is a rigid sheet-metal structure that houses the hardware components. The field-replaceable units (FRUs) in J-EX4200 switches are:

- Power supply
- Fan tray
- Uplink module
- SFP transceiver
- SFP+ transceiver

The power supply, fan tray, uplink module, and transceivers are hot-removable and hot-insertable: You can remove and replace them without powering off the switch or disrupting switch functions.

To install a power supply in a J-EX4200 switch, follow instructions in "Installing a Power Supply in a J-EX4200 Switch" on page 106. To remove a power supply, follow instructions in "Removing a Power Supply from a J-EX4200 Switch" on page 140.

To install a fan tray in a J-EX4200 switch, follow instructions in "Installing a Fan Tray in a J-EX4200 Switch" on page 107. To remove a fan tray, follow instructions in "Removing a Fan Tray from a J-EX4200 Switch" on page 141.

To install an uplink module in a J-EX4200 switch, follow instructions in "Installing an Uplink Module in a J-EX4200 Switch" on page 108. To remove an uplink module, follow instructions in "Removing an Uplink Module from a J-EX4200 Switch" on page 142.

To install an SFP or SFP+ transceiver in a J-EX4200 switch, follow instructions in "Installing a Transceiver in a J-EX Series Switch" on page 110. To remove a transceiver, follow instructions in "Removing a Transceiver from a J-EX Series Switch" on page 144.

Related Documentation
- Cooling System and Airflow in a J-EX4200 Switch on page 24
- Power Supply in J-EX4200 Switches on page 21
- Uplink Modules in J-EX4200 Switches on page 25
- Optical Interface Support in J-EX4200 Switches on page 32

Removing a Power Supply from a J-EX4200 Switch

The power supply in J-EX4200 switches is a hot-removable and hot-insertable field-replaceable unit (FRU): You can remove and replace it without powering off the switch or disrupting switch functions.

Ensure that you have the following parts and tools available:

- Phillips (+) screwdriver, number 2
- An antistatic bag or an antistatic mat

⚠️ CAUTION: **Do not leave the power supply slot empty for a long time while the switch is on. The power supply must remain in the chassis for proper airflow.**

To remove a power supply from a J-EX4200 switch (see Figure 56 on page 141):

1. Place the antistatic bag or the antistatic mat on a flat, stable surface.

2. To disconnect power to the switch, if the AC power source outlet has a power switch, set it to the OFF (0) position.

   If the AC power source outlet does not have a power switch, gently pull out the male end of the power cord connected to the power source outlet.

3. Gently pull out the female end of the power cord connected to the power supply faceplate.

4. Loosen the locking lever screw on the left front of the power supply by using the screwdriver.

5. Push down on the locking lever until it is in its lowest position.

6. Grasp the power supply handle and pull firmly to slide it halfway out of the chassis.

7. Place one hand under the power supply to support it and slide it completely out of the chassis. Take care not to touch power supply components, pins, leads, or solder connections.

8. Place the power supply in the antistatic bag or on the antistatic mat placed on a flat, stable surface.

Figure 56: Removing a Power Supply from a J-EX4200 Switch

Locking lever   Loosen captive screw.
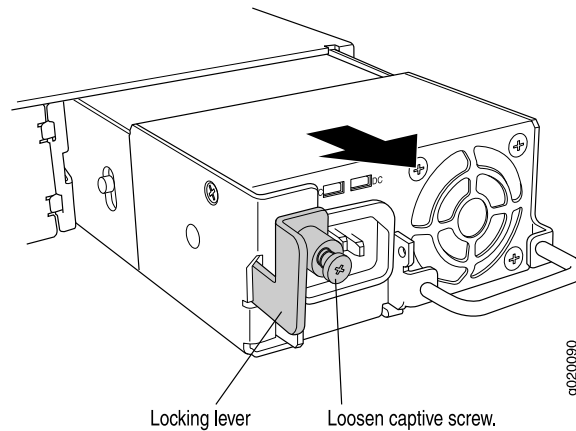
Related Documentation

- Installing a Power Supply in a J-EX4200 Switch on page 106
- Installing and Removing J-EX4200 Switch Hardware Components on page 105
- Power Supply in J-EX4200 Switches on page 21
- Field-Replaceable Units in J-EX4200 Switches on page 16
- AC Power Cord Specifications for J-EX4200 Switches on page 71
- Rear Panel of a J-EX4200 Switch on page 7

Removing a Fan Tray from a J-EX4200 Switch

J-EX4200 switches have a single fan tray on the rear panel. The fan tray is a hot-removable and hot-insertable field-replaceable unit (FRU): You can remove and replace it without powering off the switch or disrupting switch functions.

Ensure that you have the following parts and tools available:

- Phillips (+) screwdriver, number 2
- An antistatic bag or an antistatic mat

To remove a fan tray from a J-EX4200 switch (see Figure 57 on page 142):

1. Place the antistatic bag or the antistatic mat on a flat, stable surface.

2. Loosen the screw or screws securing the fan tray by using the screwdriver.

⚠️ **WARNING:** To avoid injury, do not touch the fan with your hands or any tools as you slide the fan tray out of the chassis—the fan may still be running.

3. Grasp the handle on the fan tray and pull firmly to slide the fan tray halfway out of the chassis.

4. When the fan stops spinning, slide the fan tray completely out of the chassis.

5. Place the fan tray in the antistatic bag or on the antistatic mat placed on a flat, stable surface.

Figure 57: Removing a Fan Tray from a J-EX4200 Switch
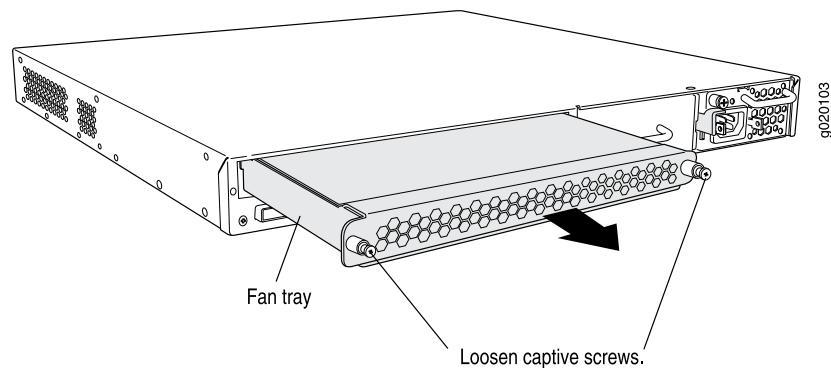
📝 **NOTE:** When a fan tray is removed, **Fan/Blower is Absent** is logged in the system log and the system raises a minor alarm.

Related Documentation
- Installing a Fan Tray in a J-EX4200 Switch on page 107
- Installing and Removing J-EX4200 Switch Hardware Components on page 105
- Cooling System and Airflow in a J-EX4200 Switch on page 24
- Field-Replaceable Units in J-EX4200 Switches on page 16
- Rear Panel of a J-EX4200 Switch on page 7

Removing an Uplink Module from a J-EX4200 Switch

If your J-EX4200 switch includes an optional uplink module, it is installed in the switch's front panel. The different types of uplink modules are described in "Uplink Modules in J-EX4200 Switches" on page 25.

The uplink module in J-EX4200 switches is a hot-removable and hot-insertable unit (FRU): You can remove and replace it without powering off the switch or disrupting switch functions.

NOTE: If you have set an uplink module port as a Virtual Chassis port (VCP), removing the uplink module breaks the setting. You must reset the port as a VCP after you replace the module. For instructions, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

Before you begin removing an uplink module from a J-EX4200 switch:

- Ensure that you have taken the necessary precautions to prevent ESD damage (see "Prevention of Electrostatic Discharge Damage on J-EX Series Switches" on page 198).

- If there are any transceivers installed in the uplink module, remove them before you remove the uplink module. For instructions on removing transceivers, see "Removing a Transceiver from a J-EX Series Switch" on page 144.

Ensure that you have the following parts and tools available:

- Electrostatic discharge (ESD) grounding strap (If a grounding strap is not available, follow the alternative grounding method described in Step 1 of the following procedure.)

- Cross-head screwdriver (provided in the uplink module kit)

- An antistatic bag or antistatic mat

To remove an uplink module from a J-EX4200 switch:

1. Attach the electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to the ESD point on the chassis.

   If a grounding strap is not available, touch the exposed, bare metal of the switch with the other hand to ground yourself and the component.

2. Loosen the screws that secure the flip-up door covering the uplink module slot on the front panel of the switch by using the cross-head screwdriver provided with the uplink module kit and flip the door upward.

3. Insert the ball end of the screwdriver in the keyhole on the front panel of the uplink module and slide the screwdriver to the narrow part of the keyhole (see Figure 58 on page 144).

   CAUTION: Ensure the screwdriver does not slip out of the keyhole when you pull the uplink module out of the switch chassis.

4. Using both hands, gently pull the screwdriver to slide the uplink module halfway out of the chassis (see Figure 59 on page 144).

5. Place one hand under the uplink module to support it and slide it completely out of the chassis.

6. Slide the screwdriver out of the keyhole.

7. Place the uplink module in an antistatic bag or on an antistatic mat placed on a flat, stable surface.

Figure 58: Sliding the Screwdriver to the Narrow Part of the Keyhole
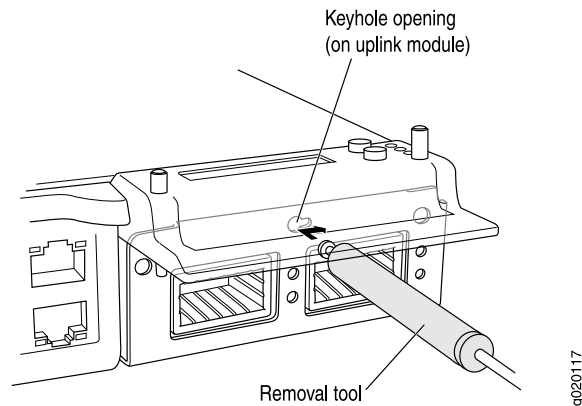
Figure 59: Removing an Uplink Module from a J-EX4200 Switch
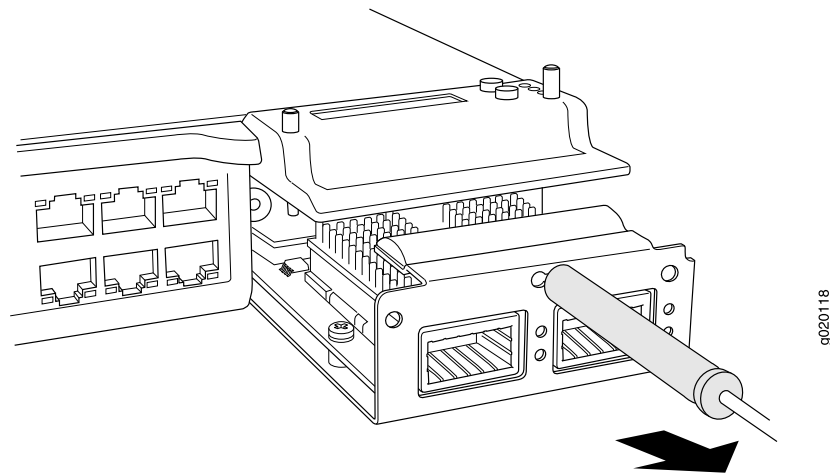
Related Documentation

- Installing an Uplink Module in a J-EX4200 Switch on page 108
- Installing and Removing J-EX4200 Switch Hardware Components on page 105
- Field-Replaceable Units in J-EX4200 Switches on page 16
- Front Panel of a J-EX4200 Switch on page 6

Removing a Transceiver from a J-EX Series Switch

The transceivers for J-EX Series switches are hot-removable and hot-insertable field-replaceable units (FRUs): You can remove and replace them without powering off the switch or disrupting switch functions.

Before you begin removing a transceiver from a J-EX Series switch, ensure that you have taken the necessary precautions for safe handling of lasers (see "Laser and LED Safety Guidelines and Warnings for J-EX Series Switches" on page 177).

Ensure that you have the following parts and tools available:

- An antistatic bag or an antistatic mat

- Needlenose pliers

- Rubber safety caps to cover the transceiver and fiber-optic cable connector

- A dust cover to cover the port

Figure 60 on page 146 shows how to remove an SFP transceiver. The procedure is the same for all transceiver types.

To remove a transceiver from a J-EX Series switch:

1. Place the antistatic bag or antistatic mat on a flat, stable surface.

2. Label the cable connected to the transceiver so that you can reconnect it correctly.

⚠️ WARNING: **Do not look directly into a fiber-optic transceiver or into the ends of fiber-optic cables. Fiber-optic transceivers and fiber-optic cables connected to transceivers emit laser light that can damage your eyes.**

⚠️ WARNING: **Do not leave a fiber-optic transceiver uncovered except when inserting or removing a cable. The rubber safety cap keeps the port clean and prevents accidental exposure to laser light.**

⚠️ CAUTION: **Do not bend fiber-optic cables beyond their minimum bend radius. An arc smaller than a few inches in diameter can damage the cables and cause problems that are difficult to diagnose.**

3. Remove the cable connected to the transceiver (see "Disconnecting a Fiber-Optic Cable from a J-EX Series Switch" on page 146). Cover the transceiver and the end of each fiber-optic cable connector with a rubber safety cap immediately after disconnecting the fiber-optic cables.

4. Using your fingers, pull the ejector lever on the transceiver to unlock the transceiver.

⚠️ CAUTION: **Before removing the transceiver, make sure you open the ejector lever completely until you hear it click. This prevents damage to the transceiver.**

5. Using the needlenose pliers, pull the ejector lever out from the transceiver.

6. Grasp the transceiver ejector lever and gently slide the transceiver approximately 0.5 in. (1.3 cm) straight out of the port.

> ⚠ **CAUTION:** To avoid electrostatic discharge (ESD) damage to the transceiver, do not touch the connector pins at the end of the transceiver.

7. Using your fingers, grasp the body of the transceiver and pull it straight out of the port.

8. Place the transceiver in the antistatic bag or on the antistatic mat placed on a flat, stable surface.

9. Place the dust cover over the empty port.

Figure 60: Removing a Transceiver from a J-EX Series Switch

Ejector lever   SFP transceiver
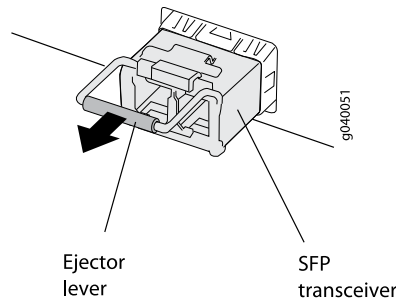
Related Documentation

- Installing a Transceiver in a J-EX Series Switch on page 110
- Optical Interface Support in J-EX4200 Switches on page 32

Disconnecting a Fiber-Optic Cable from a J-EX Series Switch

J-EX Series switches have field-replaceable unit (FRU) optical transceivers to which you can connect fiber-optic cables.

Before you begin disconnecting a fiber-optic cable from an optical transceiver installed in a J-EX Series switch, ensure that you have taken the necessary precautions for safe handling of lasers (see "Laser and LED Safety Guidelines and Warnings for J-EX Series Switches" on page 177).

Ensure that you have the following parts and tools available:

- A rubber safety cap to cover the transceiver
- A rubber safety cap to cover the fiber-optic cable connector

To disconnect a fiber-optic cable from an optical transceiver installed in the switch:

1. Disable the port in which the transceiver is installed by issuing the command:

   ```
   [edit interfaces]
   user@switch# set interface-name disable
   ```

   ⚠️ WARNING: Do not look directly into a fiber-optic transceiver or into the ends of fiber-optic cables. Fiber-optic transceivers and fiber-optic cables connected to transceivers emit laser light that can damage your eyes.

2. Carefully unplug the fiber-optic cable connector from the transceiver.

3. Cover the transceiver with a rubber safety cap.

   ⚠️ WARNING: Do not leave a fiber-optic transceiver uncovered except when inserting or removing a cable. The rubber safety cap keeps the port clean and prevents accidental exposure to laser light.

4. Cover the fiber-optic cable connector with the rubber safety cap.

Related Documentation

- Connecting a Fiber-Optic Cable to a J-EX Series Switch on page 125
- Removing a Transceiver from a J-EX Series Switch on page 144
- Maintaining Fiber-Optic Cables in J-EX Series Switches on page 153
- Optical Interface Support in J-EX4200 Switches on page 32

Disconnecting a Virtual Chassis Cable from a J-EX4200 Switch

If you need to disconnect a J-EX4200 switch from a Virtual Chassis configuration, you need to disconnect the Virtual Chassis cable from the Virtual Chassis ports (VCPs).

Ensure that you have the following parts and tools available:

- A cross-head screwdriver (provided in the uplink module kit)

To disconnect a Virtual Chassis cable from a J-EX4200 switch (see Figure 61 on page 148):

1. Loosen the screws on the cable connector retainer by using the cross-head screwdriver.

2. Slide the retainer back.

3. Gently pull the release pull tab on the Virtual Chassis cable connector to release the lock holding the Virtual Chassis cable connector in the Virtual Chassis port.

4. Gently pull the Virtual Chassis cable connector out of the Virtual Chassis port.

Figure 61: Virtual Chassis Cable Connector in a J-EX4200 Switch
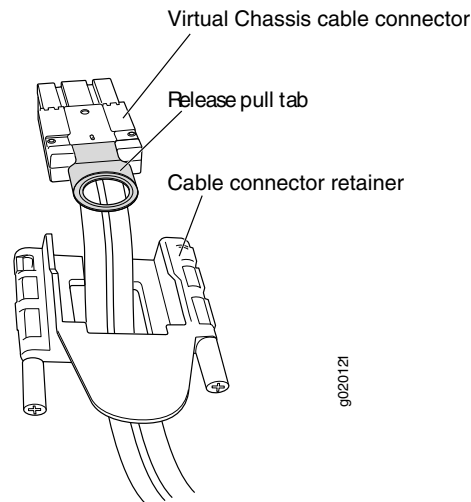
Virtual Chassis cable connector

Release pull tab

Cable connector retainer

g020121

> ![NOTE icon]
>
> **NOTE:** If you order Virtual Chassis cables separately, you must reuse the cable connector retainers provided with the original cable or order Virtual Chassis cable connector retainers also separately.

Related Documentation

- Connecting a Virtual Chassis Cable to a J-EX4200 Switch on page 112

- Understanding Virtual Chassis Hardware Configuration on a J-EX4200 Switch on page 75

- For information about Virtual Chassis components, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- Planning the Virtual Chassis on page 76

- Virtual Chassis Ports Connector Pinout Information for J-EX4200 Switches on page 49

Replacing a Member Switch of a Virtual Chassis Configuration (CLI Procedure)

You can replace a member switch of a J-EX4200 Virtual Chassis, a J-EX4500 Virtual Chassis, or a mixed J-EX4200 and J-EX4500 Virtual Chassis without disrupting network service for the other members. You can retain the existing configuration of the member switch and apply it to a new member switch, or you can free up the member ID and make it available for assignment to a new member switch.

To replace a member switch, use the procedure that matches what you need to accomplish:

- Remove, Repair, and Reinstall the Same Switch on page 149
- Remove a Member Switch, Replace with a Different Switch, and Reapply the Old Configuration on page 149
- Remove a Member Switch and Make Its Member ID Available for Reassignment to a Different Switch on page 150

Remove, Repair, and Reinstall the Same Switch

If you need to repair a member switch, you can remove it from the Virtual Chassis configuration without disrupting network service for the other members. The master stores the configuration of the member ID so that it can be reapplied when the member switch (with the same base MAC address) is reconnected.

1. Power off and disconnect the member switch to be repaired.

2. Repair, as necessary.

3. Reconnect and power on the member switch.

Remove a Member Switch, Replace with a Different Switch, and Reapply the Old Configuration

If you are unable to repair a member switch, you can replace it with a different member switch and retain the old configuration. The master stores the configuration of the member that was removed. When you connect a different member switch, the master assigns a new member ID. But the old configuration is still stored under the previous member ID of the previous member switch.

> **NOTE:** If you have used a preprovisioned configuration, use the replace command to change the serial number in the Virtual Chassis configuration file. Substitute the serial number of the replacement member switch (on the back of the switch) for the serial number of the member switch that was removed.

1. Power off and disconnect the member switch to be replaced.

2. If the replacement member switch has been previously configured, revert that switch's configuration to the factory defaults. For instructions, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

3. Connect and power on the replacement member switch.

4. Note the member ID displayed on the front panel.

5. Issue the **request virtual-chassis renumber** command from the Virtual Chassis master to change the member switch's current member ID to the member ID that belonged to the member switch that was removed from the Virtual Chassis configuration).

Remove a Member Switch and Make Its Member ID Available for Reassignment to a Different Switch

When you remove a member switch from the Virtual Chassis configuration, the master keeps its member ID on reserve. To make that member switch's member ID available for reassignment, issue the **request virtual-chassis recycle** command from the Virtual Chassis master.

> 📝 NOTE: When you add or delete members in a Virtual Chassis configuration, internal routing changes might cause temporary traffic loss for a few seconds.

Related Documentation
- For information about monitoring a Virtual Chassis configuration, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- Adding a New Switch to an Existing Virtual Chassis Configuration (CLI Procedure) on page 79

Removing a Cage Nut from a Rack

Ensure that you have the following parts and tools available:

- A flat-blade (-) screwdriver for square-hole cage nuts

To remove a round-hole cage nut from a rack, see Figure 62 on page 150.

Figure 62: Removing a Round-Hole Cage Nut (Clip Nut)
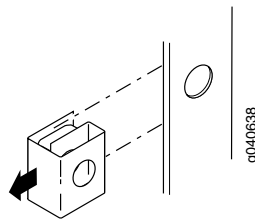
To remove a square-hole cage nut from a rack, see Figure 63 on page 150.

Figure 63: Removing a Square-Hole Cage Nut
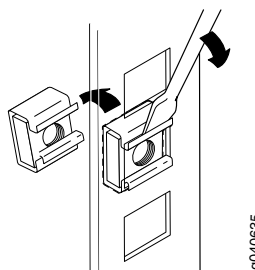
PART 5

Switch and Component Maintenance

- Routine Maintenance on page 153

Routine Maintenance

Maintaining Fiber-Optic Cables in J-EX Series Switches

Fiber-optic cables connect to optical transceivers that are installed in J-EX Series switches.

To maintain fiber-optic cables:

- When you unplug a fiber-optic cable from a transceiver, place rubber safety caps over the transceiver and on the end of the cable.

- Anchor fiber-optic cables to avoid stress on the connectors. When attaching a fiber-optic cable to a transceiver, be sure to secure the fiber-optic cable so that it is not supporting its own weight as it hangs to the floor. Never let a fiber-optic cable hang free from the connector.

- Avoid bending fiber-optic cables beyond their minimum bend radius. Bending fiber-optic cables into arcs smaller than a few inches in diameter can damage the cables and cause problems that are difficult to diagnose.

- Frequent plugging and unplugging of fiber-optic cables in and out of optical instruments can damage the instruments, which are expensive to repair. Attach a short fiber extension to the optical equipment. Any wear and tear due to frequent plugging and unplugging is then absorbed by the short fiber extension, which is easier and less expensive to replace than the instruments.

- Keep fiber-optic cable connections clean. Micro-deposits of oil and dust in the canal of the transceiver or cable connector can cause loss of light, reduction in signal power, and possibly intermittent problems with the optical connection.

  To clean the transceiver canal, use an appropriate fiber-cleaning device such as RIFOCS Fiber Optic Adaptor Cleaning Wands (part number 946). Follow the directions in the cleaning kit you use.

  After cleaning the transceiver, make sure that the connector tip of the fiber-optic cable is clean. Use only an approved alcohol-free fiber-optic cable cleaning kit such as the Opptex Cletop-S® Fiber Cleaner. Follow the directions in the cleaning kit you use.

Related Documentation

- Connecting a Fiber-Optic Cable to a J-EX Series Switch on page 125

- Laser and LED Safety Guidelines and Warnings for J-EX Series Switches on page 177

- Optical Interface Support in J-EX4200 Switches on page 32

Troubleshooting Switch Components

Troubleshooting Switch Components

- Troubleshooting Network Interfaces on J-EX4200 Switches on page 157
- Troubleshooting Uplink Module Installation or Replacement on J-EX4200 Switches on page 158

Troubleshooting Network Interfaces on J-EX4200 Switches

This topic provides troubleshooting information for specific problems related to interfaces on J-EX4200 switches.

- The interface on the port in which an SFP or SFP+ transceiver is installed in an SFP+ uplink module is down on page 157

The interface on the port in which an SFP or SFP+ transceiver is installed in an SFP+ uplink module is down

Problem   The interface on the port in which an SFP or SFP+ transceiver is installed in an SFP+ uplink module installed in a J-EX4200 switch is down.

When you check the status with the CLI command **show interfaces ge-** or with the J-Web user interface, the disabled port is not listed.

Cause   By default, the SFP+ uplink module operates in the 10-gigabit mode and supports only SFP+ transceivers. The operating mode for the module is incorrectly set.

Solution   Either SFP+ or SFP transceivers can be installed in SFP+ uplink modules. You must configure the operating mode of the SFP+ uplink module to match the type of transceiver you want to use. For SFP+ transceivers, configure the 10-gigabit operating mode and for SFP transceivers, configure the 1-gigabit operating mode. See "Setting the Mode on an SFP+ Uplink Module (CLI Procedure)" on page 135.

Related Documentation
- Troubleshooting Uplink Module Installation or Replacement on J-EX4200 Switches on page 158

- For information about J-EX4200 switch interfaces, interface configuration, and interface monitoring, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- Removing a Transceiver from a J-EX Series Switch on page 144

- Uplink Modules in J-EX4200 Switches on page 25

Troubleshooting Uplink Module Installation or Replacement on J-EX4200 Switches

This topic provides troubleshooting information for specific problems related to uplink module ports on J-EX4200 switches.

1. Virtual Chassis port (VCP) connection does not work on page 158

Virtual Chassis port (VCP) connection does not work

Problem The Virtual Chassis port (VCP) connection configured in a J-EX4200 switch does not work.

A port of the uplink module is set as a VCP.

Cause The uplink module installed in the switch was replaced.

Solution Set a port in the uplink module as a VCP. For instructions, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

Related Documentation
- For information about J-EX4200 switch interfaces, interface configuration, and interface monitoring, see the *Dell PowerConnect J-Series Ethernet Switch Complete Software Guide for Junos OS* at http://www.support.dell.com/manuals.

- Installing an Uplink Module in a J-EX4200 Switch on page 108

- Removing a Transceiver from a J-EX Series Switch on page 144

- Uplink Modules in J-EX4200 Switches on page 25

- Understanding Virtual Chassis Hardware Configuration on a J-EX4200 Switch on page 75

Returning Hardware

CHAPTER 16

Getting Help

This chapter contains information about getting help for questions about the PowerConnect J–EX Series switches. The topics covered in this section include:

- Obtaining Assistance on page 161
- Dell Enterprise Training and Certification on page 163
- Problems With Your Order on page 163
- Product Information on page 163
- Returning Items for Warranty Repair or Credit on page 163
- Before You Call on page 164
- Contacting Dell on page 165
- Locating a J-EX Series Switch Component Serial Number and Agency Labels on page 165
- Packing a J-EX4200 Switch or Component for Shipping on page 166
- Dell Support on page 168

Obtaining Assistance

If you experience a problem with your switch, you can complete the following steps to diagnose and troubleshoot the problem:

1. Fill out the diagnostics checklist. See "Diagnostics Checklist" on page 164.

2. Use Dell's extensive suite of online services available at Dell Support (http://www.support.dell.com) for help with installation and troubleshooting procedures. See "Online Services" on page 162 for a more extensive list of Dell Support

3. If the preceding steps have not resolved the problem, see "Contacting Dell" on page 165.

NOTE: Call Dell Support from a telephone near or at the computer so that the support staff can assist you with any necessary procedures.

NOTE: Dell's Express Service Code system may not be available in all countries.

When prompted by Dell's automated telephone system, enter your Express Service Code to route the call directly to the proper support personnel. For instructions on using the Dell Support, see "Support Service" on page 163.

> 📝 **NOTE:** Some of the following services are not always available in all locations outside the continental U.S. Call your local Dell representative for information on availability.

Online Services

You can learn about Dell products and services on the following websites:

- http://www.dell.com
- http://www.dell.com/ap (Asian/Pacific countries only)
- http://www.dell.com/jp (Japan only)
- http://www.euro.dell.com (Europe only)
- http://www.dell.com/la (Latin American and Caribbean countries)
- http://www.dell.ca (Canada only)

You can access Dell Support through the following websites and e-mail addresses:

- Dell Support websites
  - http://www.support.dell.com
  - http://support.jp.dell.com (Japan only)
  - http://support.euro.dell.com (Europe only)
- Dell Support e-mail addresses
  - mobile_support@us.dell.com
  - support@us.dell.com
  - la-techsupport@dell.com (Latin America and Caribbean countries only)
  - apsupport@dell.com (Asian/Pacific countries only)
- Dell Marketing and Sales e-mail addresses
  - apmarketing@dell.com (Asian/Pacific countries only)
  - sales_canada@dell.com (Canada only)
- Anonymous file transfer protocol (FTP)
  - ftp://ftp.dell.com

  Log in as **user: anonymous**, and use your e-mail address as your password.

Automated Order-Status Service

To check on the status of any Dell products that you have ordered, you can go to http://www.support.dell.com, or you can call the automated order-status service. A recording prompts you for the information needed to locate and report on your order. For the telephone number to call for your region, see "Contacting Dell" on page 165.

Support Service

Dell's support service is available 24 hours a day, 7 days a week, to answer your questions about Dell hardware. Our support staff use computer-based diagnostics to provide fast, accurate answers. To contact Dell's support service, see "Before You Call" on page 164 and then see the contact information for your region.

Dell Enterprise Training and Certification

Dell Enterprise Training and Certification is available; see http://www.dell.com/training for more information. This service may not be offered in all locations.

Problems With Your Order

If you have a problem with your order, such as missing parts, wrong parts, or incorrect billing, contact Dell for customer assistance. Have your invoice or packing slip handy when you call. For the telephone number to call for your region, see "Contacting Dell" on page 165.

Product Information

If you need information about additional products available from Dell, or if you would like to place an order, visit the Dell website at http://www.dell.com. For the telephone number to call for your region or to speak to a sales specialist, see "Contacting Dell" on page 165.

Returning Items for Warranty Repair or Credit

Prepare all items being returned, whether for repair or credit, as follows:

1. Call Dell to obtain a Return Material Authorization (RMA) Number, and write it clearly and prominently on the outside of the box. For the telephone number to call for your region, see "Contacting Dell" on page 165.

2. Include a copy of the invoice and a letter describing the reason for the return.

3. Include a copy of the Diagnostics Checklist (see "Diagnostics Checklist" on page 164), indicating the tests that you have run and any error messages reported by the Dell Diagnostics.

4. Include any accessories that belong with the item(s) being returned (such as power cables and guides) if the return is for credit.

5. Pack the equipment to be returned in the original (or equivalent) packing materials. See "Packing a J-EX4200 Switch or Component for Shipping" on page 166.

You are responsible for paying shipping expenses. You are also responsible for insuring any product returned, and you assume the risk of loss during shipment to Dell. Collect On Delivery (C.O.D.) packages are not accepted.

Returns that are missing any of the preceding requirements will be refused at Dell's receiving dock and returned to you.

Before You Call

NOTE: Have your Express Service Code ready when you call. The code helps Dell's automated-support telephone system direct your call more efficiently.

Remember to fill out the Diagnostics Checklist (see "Diagnostics Checklist" on page 164). If possible, turn on your computer before you call Dell for assistance and call from a telephone at or near the computer. You may be asked to type some commands at the keyboard, relay detailed information during operations, or try other troubleshooting steps possible only at the computer itself. Ensure that the computer documentation is available.

WARNING: Before working inside your switch, follow the safety instructions in the Safety, Environmental, and Regulatory Information that shipped with your system.

Diagnostics Checklist

Name:

Date:

Address:

Phone number:

Service Tag (bar code on the back or bottom of the device):

Express Service Code:

Return Material Authorization Number (if provided by Dell support technician):

Operating system and version:

Devices:

Expansion cards:

Are you connected to a network? Yes No

Network, version, and network adapter:

Programs and versions:

See your operating system documentation to determine the contents of the system's start-up files. If the switch is connected to a printer, print each file. Otherwise, record the contents of each file before calling Dell.

Error message, beep code, or diagnostic code:

Description of problem and troubleshooting procedures you performed:

Contacting Dell

For customers in the United States, call 800-WWW.DELL (800.999.3355).

> ✎ NOTE: If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Visit http://www.support.dell.com.

2. Click your country or region at the bottom of the page. For a full listing of countries and regions, click **All**.

3. In the Support menu, click **All Support**.

4. Choose the method of contacting Dell that is convenient for you.

Locating a J-EX Series Switch Component Serial Number and Agency Labels

Before contacting Dell to request an RMA, you must find the serial number and agency label on the switch or component.

- Locating the Serial Number on a J-EX4200 Switch or Component on page 165
- Locating the Chassis Serial Number and Agency Labels on page 166
- Locating the Serial Number ID Labels on FRUs in a J-EX4200 Switch on page 166

Locating the Serial Number on a J-EX4200 Switch or Component

To list the switch and switch components and their serial numbers, enter the following command-line interface (CLI) command:

user@host> **show chassis hardware**

You see output similar to the following:

```
user@switch> show chassis hardware
Hardware inventory:
Item              Version  Part number  Serial number     Description
Chassis                                 BR0209472294      DELL J-EX4200-24F
Routing Engine 0  REV 00A  750-034182   BR0209472294      EX4200-24F
FPC 0             REV 00A  750-034182   BR0209472294      EX4200-24F
  CPU                      BUILTIN      BUILTIN           FPC CPU
```

```
    PIC 0                        BUILTIN       BUILTIN        24x 100 Base-FX/1000
Base-X
Power Supply 0    REV 04   740-020957   AT0509398043    PS 320W AC
Fan Tray                                                 Fan Tray
```

> **NOTE:** Most components also have a serial number ID label attached to the component body.

Locating the Chassis Serial Number and Agency Labels

J-EX4200 switches have serial number ID labels located on the rear panel of the chassis (see Figure 64 on page 166).

Figure 64: Location of the Serial Number ID Label on a J-EX4200 Switch
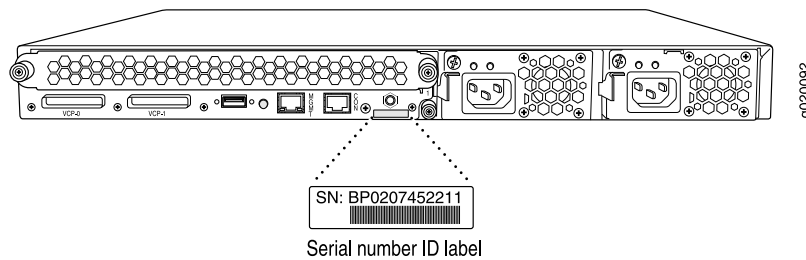
Locating the Serial Number ID Labels on FRUs in a J-EX4200 Switch

The power supplies, fan trays, and uplink modules installed in J-EX Series switches are field-replaceable units (FRUs).

For each of these FRUs, you must remove the FRU from the switch chassis to see the FRU's serial number ID label.

- **Power Supply**—The serial number ID label is on the top of the power supply. See "Removing a Power Supply from a J-EX4200 Switch" on page 140.

- **Fan tray**—The serial number ID label is on the back of the fan tray. See "Removing a Fan Tray from a J-EX4200 Switch" on page 141.

- **Uplink module**—The serial number ID label is on the circuit board. See "Removing an Uplink Module from a J-EX4200 Switch" on page 142.

Packing a J-EX4200 Switch or Component for Shipping

If you are returning a J-EX4200 switch or component for repair or replacement, pack the item as described in this topic.

Before you begin packing the switch or component:

- Ensure that you have retrieved the original shipping carton and packing materials. Contact Dell if you do not have these materials, to learn about approved packing materials. See "Returning Items for Warranty Repair or Credit" on page 163.

Ensure that you have the following parts and tools available:

- Antistatic bag, one for each switch or component
- Phillips (+) screwdriver, number 2

This topic describes:

- Packing a J-EX4200 Switch for Shipping on page 167
- Packing J-EX4200 Switch Components for Shipping on page 168

Packing a J-EX4200 Switch for Shipping

1. On the console or other management device connected to the switch (to the master switch in a Virtual Chassis configuration), enter the CLI operational mode and issue the following command to shut down the switch software:

   ```
   user@switch> request system halt
   ```

   Wait until a message appears on the console confirming that the operating system has halted.

2. Disconnect power from the switch by performing one of the following:

   - If the power source outlet has a power switch, set it to the OFF (0) position.
   - If the power source outlet does not have a power switch, gently pull out the male end of the power cord connected to the power source outlet.

3. Remove the cables that connect the switch to all external devices. See "Disconnecting a Fiber-Optic Cable from a J-EX Series Switch" on page 146.

4. Remove all field-replaceable units (FRUs) from the switch.

5. If the switch is installed on a wall, rack, or cabinet, have one person support the weight of the switch while another person unscrews and removes the mounting screws.

6. Remove the switch from the wall, rack, cabinet, or desk (see "Chassis Lifting Guidelines for J-EX4200 Switches" on page 184) and place the switch in an antistatic bag.

7. Place the switch in the shipping carton.

8. Place the packing foam on top of and around the switch.

9. If you are returning accessories or FRUs with the switch, pack them as instructed in "Packing J-EX4200 Switch Components for Shipping" on page 168.

10. Replace the accessory box on top of the packing foam.

11. Close the top of the cardboard shipping box and seal it with packing tape.

12. Write the RMA number on the exterior of the box to ensure proper tracking.

Packing J-EX4200 Switch Components for Shipping

△ CAUTION: **Do not stack switch components. Return individual components in separate boxes if they do not fit together on one level in the shipping box.**

To pack and ship switch components:

- Place individual boards in antistatic bags.

- Ensure that the components are adequately protected with packing materials and packed so that the pieces are prevented from moving around inside the carton.

- Close the top of the cardboard shipping box and seal it with packing tape.

- Write the RMA number on the exterior of the box to ensure proper tracking.

Dell Support

If you need assistance while troubleshooting a switch, please go to the Dell Support website at http://www.support.dell.com.

Safety Information

- General Safety Information on page 171
- Radiation and Laser Warnings on page 177
- Installation and Maintenance Safety Information on page 183
- Power and Electrical Safety Information on page 197

General Safety Information

- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- Definitions of Safety Warning Levels for J-EX Series Switches on page 172
- Fire Safety Requirements for J-EX Series Switches on page 174
- Qualified Personnel Warning for J-EX Series Switches on page 175
- Warning Statement for Norway and Sweden for J-EX Series Switches on page 176

General Safety Guidelines and Warnings for J-EX Series Switches

The following guidelines help ensure your safety and protect the J-EX Series switch 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 product. Make sure that only authorized service personnel perform other system services.
- Keep the area around the chassis 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 chassis.
- 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 J-EX Series switch only when it is properly grounded.
- Ensure that the separate protective earthing terminal provided on this product 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 product. 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 J-EX Series switch chassis or onto any switch component. Such an action could cause electrical shock or damage the switch.

- 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.

Related Documentation
- AC Power Electrical Safety Guidelines for J-EX Series Switches on page 200

- General Electrical Safety Guidelines and Warnings for J-EX Series Switches on page 197

- Maintenance and Operational Safety Guidelines and Warnings for J-EX Series Switches on page 190

- Laser and LED Safety Guidelines and Warnings for J-EX Series Switches on page 177

- Installation Instructions Warning for J-EX Series Switches on page 183

- Grounded Equipment Warning for J-EX Series Switches on page 190

Definitions of Safety Warning Levels for J-EX Series Switches

The documentation for J-EX Series switches 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 J-EX Series switch.

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.

⚠ WARNING: **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.

⚠ WARNING: **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.

⚠ WARNING: **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.

⚠ WARNING: **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.

⚠ WARNING: **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.

⚠ WARNING: **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.

⚠️ WARNING: **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.

⚠️ WARNING: **¡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.

⚠️ WARNING: **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

- Warning Statement for Norway and Sweden for J-EX Series Switches on page 176
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- Installation Instructions Warning for J-EX Series Switches on page 183
- Maintenance and Operational Safety Guidelines and Warnings for J-EX Series Switches on page 190
- Grounded Equipment Warning for J-EX Series Switches on page 190
- Laser and LED Safety Guidelines and Warnings for J-EX Series Switches on page 177

Fire Safety Requirements for J-EX Series Switches

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. The switch 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 installing and operating 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 switch running Junos OS. 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.

Related Documentation
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- General Electrical Safety Guidelines and Warnings for J-EX Series Switches on page 197
- In Case of Electrical Accident: Action to Take on a J-EX Series Switch on page 203

Qualified Personnel Warning for J-EX Series Switches

WARNING: Only trained and qualified personnel should install or replace the J-EX Series switch.

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
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- General Electrical Safety Guidelines and Warnings for J-EX Series Switches on page 197
- AC Power Electrical Safety Guidelines for J-EX Series Switches on page 200

Warning Statement for Norway and Sweden for J-EX Series Switches

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.

Related Documentation
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171

Radiation and Laser Warnings

- Laser and LED Safety Guidelines and Warnings for J-EX Series Switches on page 177
- Radiation from Open Port Apertures Warning for J-EX Series Switches on page 180

Laser and LED Safety Guidelines and Warnings for J-EX Series Switches

J-EX Series switches are equipped with laser transmitters, which are considered a Class 1 Laser Product by the U.S. Food and Drug Administration and are evaluated as a Class 1 Laser Product per EN 60825–1 requirements.

Observe the following guidelines and warnings:

- General Laser Safety Guidelines on page 177
- Class 1 Laser Product Warning on page 177
- Class 1 LED Product Warning on page 178
- Laser Beam Warning on page 178

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.

⚠️ 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

⚠️ 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.

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

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.

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

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

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

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

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

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

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

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

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

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

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

Related Documentation

- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- Radiation from Open Port Apertures Warning for J-EX Series Switches on page 180
- Installation Instructions Warning for J-EX Series Switches on page 183
- Grounded Equipment Warning for J-EX Series Switches on page 190
- Optical Interface Support in J-EX4200 Switches on page 32

Radiation from Open Port Apertures Warning for J-EX Series Switches

⚠️ 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.

⚠️ WARNING: **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.

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

⚠️ WARNING: **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.

⚠️ WARNING: **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!

⚠️ WARNING: **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.

⚠️ WARNING: **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.

⚠️ WARNING: **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.

⚠ WARNING: **¡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.

⚠ WARNING: **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
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- Laser and LED Safety Guidelines and Warnings for J-EX Series Switches on page 177
- Installation Instructions Warning for J-EX Series Switches on page 183
- Grounded Equipment Warning for J-EX Series Switches on page 190

Installation and Maintenance Safety Information

Installation Instructions Warning for J-EX Series Switches

WARNING: Read the installation instructions before you connect the switch 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
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- Laser and LED Safety Guidelines and Warnings for J-EX Series Switches on page 177
- Grounded Equipment Warning for J-EX Series Switches on page 190
- Connecting AC Power to a J-EX4200 Switch on page 117

Chassis Lifting Guidelines for J-EX4200 Switches

The weight of a fully loaded J-EX4200 switch chassis is approximately 22 lb (10 kg). Observe the following guidelines for lifting and moving a or J-EX4200 switch:

- Before installing a J-EX4200 switch, read the guidelines in "Site Preparation Checklist for J-EX4200 Switches" on page 57 to verify that the intended site meets the specified power, environmental, and clearance requirements.
- Before lifting or moving the J-EX4200 switch, 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 Safety Guidelines and Warnings for J-EX Series Switches on page 171
- Installation Instructions Warning for J-EX Series Switches on page 183
- Mounting a or J-EX4200 Switch on page 90

Ramp Warning for J-EX Series Switches

WARNING: When installing the switch, 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
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- Laser and LED Safety Guidelines and Warnings for J-EX Series Switches on page 177
- Installation Instructions Warning for J-EX Series Switches on page 183
- Grounded Equipment Warning for J-EX Series Switches on page 190

Rack-Mounting and Cabinet-Mounting Warnings for J-EX Series Switches

Ensure that the rack or cabinet in which the J-EX Series switch 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 switch in a rack, take the following precautions to ensure that the system remains stable. The following directives help maintain your safety:

- The switch must be installed in a rack that is secured to the building structure.
- The switch should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting the switch 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 devices, install the stabilizers before mounting or servicing the switch in the rack.

⚠ **WARNING:** **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 switch 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.

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

- Switch 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.

⚠ WARNING: **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 switch 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.

⚠ WARNING: **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 switch 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.

⚠ WARNING: **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 switch 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.

⚠ WARNING: **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:

- Switch 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.

⚠️ WARNING: **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 switch deverá ser instalado numa prateleira fixa à estrutura do edifício.

- 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.

⚠️ WARNING: **¡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 switch 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.

⚠️ WARNING: **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:

- Switch 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
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- Installation Instructions Warning for J-EX Series Switches on page 183
- Grounded Equipment Warning for J-EX Series Switches on page 190
- Mounting a J-EX4200 Switch on page 90

Wall-Mounting Warning for J-EX4200 Switches

⚠️ WARNING: When mounted in a vertical position, a J-EX4200 chassis must be oriented with the front panel of the chassis pointing down to ensure proper airflow and meet safety requirements in the event of a fire.

⚠️ WARNING: Avertissement: lorsqu'installé en position verticale, un châssis de commutation J-EX4200 doit être orienté avec le panneau avant dirigé vers le bas.

⚠️ WARNING: Warnhinweis: Bei der Befestigung in vertikaler Position muss ein J-EX4200-Switch-Gehäuse so ausgerichtet werden, dass das vordere Bedienfeld des Switch-Gehäuses nach unten zeigt.

Related Documentation
- Mounting a J-EX4200 Switch on a Wall on page 100

Grounded Equipment Warning for J-EX Series Switches

⚠️ WARNING: The switch is intended to be grounded. During normal use, ensure that you have connected earth ground to the switch 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
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- Connecting Earth Ground to a J-EX Series Switch on page 115

Maintenance and Operational Safety Guidelines and Warnings for J-EX Series Switches

While performing the maintenance activities for J-EX Series switches, observe the following guidelines and warnings:

- Jewelry Removal Warning on page 191
- Lightning Activity Warning on page 192
- Operating Temperature Warning on page 193
- Product Disposal Warning on page 195

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.

WARNING: **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.

WARNING: **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.

WARNING: **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.

WARNING: **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.

WARNING: **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.

WARNING: **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.

WARNING: **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.

WARNING: **¡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.

WARNING: **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.

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

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

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

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

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

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

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

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

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

Operating Temperature Warning

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

⚠ WARNING: **Waarschuwing** Om te voorkomen dat welke switch van de switch dan ook oververhit raakt, dient u deze niet te bedienen op een plaats waar de maximale aanbevolen omgevingstemperatuur van 40º C wordt overschreden. Om te voorkomen dat de luchtstroom wordt beperkt, dient er minstens 15,2 cm speling rond de ventilatie-openingen te zijn.

⚠ WARNING: **Varoitus** Ettei switch-sarjan reititin ylikuumentuisi, sitä ei saa käyttää tilassa, jonka lämpötila ylittää korkeimman suositellun ympäristölämpötilan 40º C. Ettei ilmanvaihto estyisi, tuuletusaukkojen ympärille on jätettävä ainakin 15,2 cm tilaa.

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

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

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

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

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

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

WARNING: **Varning!** Förhindra att en switch överhettas genom att inte använda den i ett område där den maximalt rekommenderade omgivningstemperaturen på 40º 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 product must be handled according to all national laws and regulations.

⚠️ WARNING: **Waarschuwing** Dit produkt dient volgens alle landelijke wetten en voorschriften te worden afgedankt.

⚠️ WARNING: **Varoitus** Tämän tuotteen lopullisesta hävittämisestä tulee huolehtia kaikkia valtakunnallisia lakeja ja säännöksiä noudattaen.

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

⚠️ WARNING: **Warnung** Dieses Produkt muß den geltenden Gesetzen und Vorschriften entsprechend entsorgt werden.

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

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

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

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

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

Related
Documentation

- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- General Electrical Safety Guidelines and Warnings for J-EX Series Switches on page 197
- AC Power Electrical Safety Guidelines for J-EX Series Switches on page 200
- Laser and LED Safety Guidelines and Warnings for J-EX Series Switches on page 177
- Installation Instructions Warning for J-EX Series Switches on page 183
- Grounded Equipment Warning for J-EX Series Switches on page 190

Power and Electrical Safety Information

- General Electrical Safety Guidelines and Warnings for J-EX Series Switches on page 197
- Prevention of Electrostatic Discharge Damage on J-EX Series Switches on page 198
- AC Power Electrical Safety Guidelines for J-EX Series Switches on page 200
- AC Power Disconnection Warning for J-EX Series Switches on page 201
- Multiple Power Supplies Disconnection Warning for J-EX Series Switches on page 202
- Power Sources for Redundant Power Supplies Warning for J-EX4200 Switches on page 202
- TN Power Warning for J-EX Series Switches on page 202
- Action to Take After an Electrical Accident on page 203

General Electrical Safety Guidelines and Warnings for J-EX Series Switches

WARNING: Certain ports on the switch 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 comply with NEBS requirements and 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 switch 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.

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

If a grounding strap is not available, hold the component in its antistatic bag (see Figure 65 on page 199) in one hand and touch the exposed, bare metal of the switch with the other hand immediately before inserting the component into the switch.

- Install the J-EX Series switch 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 J-EX Series switch within marked electrical ratings and product usage instructions.

- To ensure that the J-EX Series switch 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 switch components without powering off or disconnecting power to the switch, as detailed elsewhere in the hardware documentation for this product. Never install equipment if it appears damaged.

Related Documentation

- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- AC Power Electrical Safety Guidelines for J-EX Series Switches on page 200

Prevention of Electrostatic Discharge Damage on J-EX Series Switches

Switch 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 65 on page 199) in one hand and touch the exposed, bare metal of the switch with the other hand immediately before inserting the component into the switch.

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

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

  If no grounding strap is available, touch the exposed, bare metal of the switch 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 65 on page 199). If you are returning a component, place it in an antistatic bag before packing it.

Figure 65: Place a Component into an Antistatic Bag
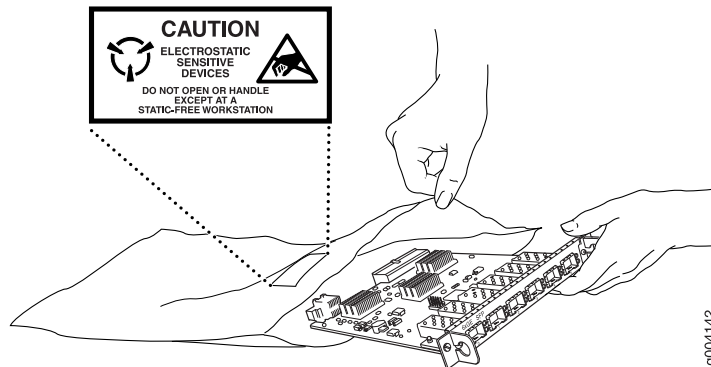
> △ **CAUTION:** ANSI/TIA/EIA-568 cables such as category 5e and category 6 can get electrostatically charged. In order to dissipate this charge, always ground the cables to a suitable and safe earth ground before connecting them to the system.

Related Documentation

- General Safety Guidelines and Warnings for J-EX Series Switches on page 171

- See Rear Panel of a J-EX4200 Switch on page 7 for the ESD point location.

AC Power Electrical Safety Guidelines for J-EX Series Switches

⚠ CAUTION: For switches 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 switches:

- Note the following warnings printed on the chassis:

  "**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 switches 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 switch. The socket outlet must be near the switch and be easily accessible.

- For J-EX Series switches that have more than one power supply connection, you must ensure that all power connections are fully disconnected so that power to the switch 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。

g017253

Related Documentation
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- General Electrical Safety Guidelines and Warnings for J-EX Series Switches on page 197
- Multiple Power Supplies Disconnection Warning for J-EX Series Switches on page 202
- Connecting AC Power to a J-EX4200 Switch on page 117

AC Power Disconnection Warning for J-EX Series Switches

⚠️ WARNING: Before working on the switch or near power supplies, unplug all the power cords from an AC switch.

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.

Related Documentation

- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- General Electrical Safety Guidelines and Warnings for J-EX Series Switches on page 197
- AC Power Electrical Safety Guidelines for J-EX Series Switches on page 200

Multiple Power Supplies Disconnection Warning for J-EX Series Switches

⚠️ WARNING: For J-EX Series switches that have more than one power supply connection, you must ensure that all power connections are fully disconnected so that power to the switch is completely removed.

Related Documentation
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- General Electrical Safety Guidelines and Warnings for J-EX Series Switches on page 197
- AC Power Electrical Safety Guidelines for J-EX Series Switches on page 200

Power Sources for Redundant Power Supplies Warning for J-EX4200 Switches

J-EX4200 switches have a redundant power supply. When you have redundant power supplies in a switch, you must connect each power supply to a different input power source. Failure to do so makes the switch susceptible to total power failure if one of the power supplies fails.

冗余电源

如果 Juniper Networks 设备包含一个可选的冗余电源 请将两个电源连接到不同的输入电源。不这样做的结果是 Juniper Networks 设备一路供电出问题时导致全部的电源故障

Related Documentation
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- General Electrical Safety Guidelines and Warnings for J-EX Series Switches on page 197
- AC Power Electrical Safety Guidelines for J-EX Series Switches on page 200

TN Power Warning for J-EX Series Switches

⚠️ WARNING: The switch 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.

Related Documentation
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- General Electrical Safety Guidelines and Warnings for J-EX Series Switches on page 197
- Grounded Equipment Warning for J-EX Series Switches on page 190
- Multiple Power Supplies Disconnection Warning for J-EX Series Switches on page 202

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 switch.

3. If possible, send another person to get medical aid. Otherwise, assess the condition of the victim, then call for help.

Related Documentation
- General Safety Guidelines and Warnings for J-EX Series Switches on page 171
- General Electrical Safety Guidelines and Warnings for J-EX Series Switches on page 197
- AC Power Electrical Safety Guidelines for for J-EX Series Switches on page 200

PART 9

Compliance Information

Compliance Information

Agency Approvals for J-EX Series Switches

J-EX Series switches comply with the following standards:

- Safety

  - CAN/CSA-22.2 No. 60950–1–03/UL 60950–1. Safety of Information Technology Equipment

  - EN 60950–1:2001. Safety of Information Technology Equipment

  - EN 60825–1 Safety of Laser Products – Part 1: Equipment Classification, Requirements and User's Guide

- 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

Related Documentation
- Compliance Statements for EMC Requirements for J-EX Series Switches on page 208
- Compliance Statements for Acoustic Noise for J-EX Series Switches on page 210

Compliance Statements for EMC Requirements for J-EX Series Switches

This topic describes the EMC requirements for J-EX Series switches for:

- Canada on page 208
- European Community on page 209
- Japan on page 209
- United States on page 209
- FCC Part 15 Statement on page 209
- Non-Regulatory Environmental Standards on page 210

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 may be extended by means of a certified connector assembly. The customer should be aware that compliance with the above conditions may 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, may 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 may be particularly important in rural areas.

European Community

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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 product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

VCCI-A

United States

The J-EX Series switch 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, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his 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, may 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.

Non-Regulatory Environmental Standards

NEBS compliance—These J-EX Series switch models are Network Equipment Building System (NEBS) compliant:

- J-EX4200-24F, J-EX4200-24T, and J-EX4200-48T

Those switch models meet the following NEBS compliance standards:

- SR-3580 NEBS Criteria Levels (Level 3 Compliance)

- GR-1089-CORE: EMC and Electrical Safety for Network Telecommunications Equipment

- GR-63-CORE: NEBS, Physical Protection

  - 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 (DC-I), as defined in GR-1089-CORE.

Related Documentation
- Agency Approvals for J-EX Series Switches on page 207
- Compliance Statements for Acoustic Noise for J-EX Series Switches on page 210

Compliance Statements for Acoustic Noise for J-EX Series Switches

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 J-EX Series Switches on page 207
- Compliance Statements for EMC Requirements for J-EX Series Switches on page 208

Declarations of Conformity for J-EX4200 Switches

JUNIPER
NETWORKS

Declaration of Conformity
Low Voltage Directive 2006/95/EC
EMC Directive 2004/108/EC
according to EN 45014

CE

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

declares under our sole responsibility that the products:
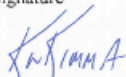
EX4200-24T, EX4200-24F, EX4200-48T, EX8208, EX8216
Dell PowerConnect J- EX4200-24T, J-EX4200-24F, J-EX4200-48T, J-EX8208, J-EX8216

are in conformity with the provisions of the Low Voltage Directive 2006/95/EC and
EMC Directive 2004/108/EC.

The following harmonized standards were applied:

EMC	EN 300 386 v1.3.3: 2005	**Immunity**	EN 61000-4-2:1995+A1+A2
	EN 55022 Class A: 2006		EN 61000-4-3: 2002+A1+A2
	EN 55024 +A1+A2: 1998		EN 61000-4-4: 2004
	EN 61000-3-2:2006,		EN 61000-4-5: 2006,
	EN 61000-3-3: 1995+A1+A2+A3		EN 61000-4-6: 2007
Safety	EN 60950-1: 2001 1st Edition		EN 61000-4-11: 2004
	EN 60825-1 +A1+A2: 1994		

This product carries the CE Mark, which was first affixed in 2008.

Place	Signature	Date
Sunnyvale, CA		03/24/2010

Kevin Kimma
Compliance Manager
1194 N. Mathilda Ave
Sunnyvale, CA 94089 USA

DoC: EXDellJ_1

JUNIPER
NETWORKS

SUPPLIERS DECLARATION OF CONFORMITY

- section 182 of the Australian Radiocommunications Act 1992
- section 134 of the New Zealand Radiocommunications Act 1989

i/We
Juniper Australia Pty Ltd.
Level 1, 181 Miller Street North Sydney NSW 2060

Australian Business number ABN: ABN: 36 091 016 312
Supplier code number: N10070

Declare that the following customer equipment

Ethernet Switch, Models: EX4200-24F, EX4200-24T, EX4200-48T, EX8208, EX8216

Dell PowerConnect J-EX4200-24F
Dell PowerConnect J-EX4200-24T
Dell PowerConnect J-EX4200-48T
Dell PowerConnect J-EX8208
Dell PowerConnect J-EX8216

to which this declaration relates complies with all applicable standards as listed below

AS / NZS 60950-1: 2001   Telecommunications Technical Standard Safety of Information Technology
                                Equipment

AS / NZS CISPR22: 2006   Information technology equipment – Radio disturbance characteristics –
                                Limits and methods of measurement

(details of applicable standards, including number, title and date of publication)

(signature of declarant)

Matt Miller
(full name of declarant)

Director, Systems Engineering A/NZ
(position held in the manufacturing or importing organization)

29 April 2010
(date of declaration)

Related Documentation

- Agency Approvals for J-EX Series Switches on page 207

- Compliance Statements for EMC Requirements for J-EX Series Switches on page 208

- Compliance Statements for Acoustic Noise for J-EX Series Switches on page 210

PART 10

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