Juniper Networks | Engineering Simplicity

EX4400 Quick Start

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RELEASE

Table of Contents

Step 1: Begin

Meet the EX4400 Ethernet Switches | 1

Install the EX4400 | 3

What's in the Box? | 3

What Else Do I Need? | 4

Install the EX4400 in a Rack | 5

Power On | 6

Step 2: Up and Running

Plug and Play | 8

Customize the Basic Configuration | 8

Step 3: Keep Going

What's Next? | 11

General Information | 12

Learn With Videos | 13

Step 1: Begin

IN THIS SECTION

- Meet the EX4400 Ethernet Switches | 1
- Install the EX4400 | 3
- Power On | 6

In this guide, we provide a simple, three-step path, to quickly get you up and running with your new EX4400. We've simplified and shortened the installation and configuration steps, and included how-to videos. You'll learn how to install an AC-powered EX4400, power it up, and configure basic settings.

NOTE: Are you interested in getting hands-on experience with the topics and operations covered in this guide? Visit Juniper Networks Virtual Labs and reserve your free sandbox today! You'll find the Junos Day One Experience sandbox in the stand alone category. EX Series switches are not virtualized. In the demonstration, focus on the virtual QFX Series device. Both the EX Series and QFX Series switches are configured with the same Junos commands.

Meet the EX4400 Ethernet Switches

Juniper Networks® EX4400 Ethernet Switches are our first cloud-ready switches. You can manage EX4400 switches deployed in a cloud network by using Juniper Mist™. EX4400 switches support Virtual Chassis technology, making it easy for you to scale the network without increasing the number of devices to manage. You can also channelize the QSFP28 ports to increase the number of interfaces.

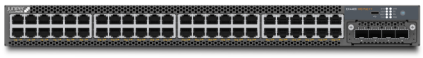
The EX4400 switches are available in 24-port and 48-port models, with AC or DC power supplies, and with different airflow directions. The RJ-45 ports in EX4400-24P, EX4400-24MP, EX4400-48P, and EX4400-48MP switches support IEEE 802.3bt (PoE-bt), providing up to 90 W per port. All switch models have a slot for installing an optional extension module.

In this guide, we show you how to install an AC-powered EX4400 switch with the fan modules and a power supply preinstalled. If you need instructions for installing fans, power supplies, and optional extension modules, see the EX4400 Switch Hardware Guide.

EX4400-24T

EX4400-48T

EX4400-24P

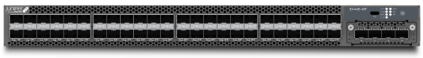


EX4400-48P

EX4400-24MP

EX4400-48MP

EX4400-24X



EX4400-48F

Here are the port configuration details for the EX4400 switch models:

Models	Access Ports
EX4400-24T and EX4400-24P	• 24 10/100/1000-Mbps RJ-45 ports on the front panel • 2 100GbE QSFP28 ports on the rear panel
EX4400-24MP	• 24 100/1000/2500/5000/10000-Mbps RJ-45 ports on the front panel • 2 100GbE QSFP28 ports on the rear panel
EX4400-24X	• 24 1GbE/10GbE SFP/SFP+ ports on the front panel • 2 100GbE QSFP28 ports on the front panel
EX4400-48T and EX4400-48P	• 48 10/100/1000-Mbps RJ-45 ports on the front panel • 2 100GbE QSFP28 ports on the rear panel

(Continued)

Models	Access Ports
EX4400-48MP	• 36 100/1000/2500-Mbps RJ-45 ports on the front panel • 12 100/1000/2500/5000/10000-Mbps RJ-45 ports on the front panel • 2 100GbE QSFP28 ports on the rear panel
EX4400-48F	• 36 SFP ports and 12 SFP+ ports on the front panel • 2 100GbE QSFP28 ports on the rear panel

Install the EX4400

IN THIS SECTION

- What's in the Box? | **3**
- What Else Do I Need? | **4**
- Install the EX4400 in a Rack | **5**

What's in the Box?

- EX4400 switch with two preinstalled fan modules and one preinstalled AC power supply
- One AC power cord appropriate for your geographical location
- Two brackets to mount the switch in a two-post rack or on two posts of a 19-in. four-post rack
- Eight screws to attach the mounting brackets to the chassis
- Four rubber feet to mount the switch on a desktop or other level surface
- Covers for the empty extension module slot and the empty power supply slot

What Else Do I Need?

- Someone to help you secure the switch to the rack
- Four rack mount screws appropriate for your rack to secure the switch to the rack
- A number 2 Phillips (+) screwdriver
- An electrostatic discharge (ESD) grounding strap
- A management host such as a laptop or desktop PC
- A serial-to-USB adapter (if your laptop or desktop PC doesn't have a serial port)
- An Ethernet cable with RJ-45 connectors attached and an RJ-45 to DB-9 serial port adapter

> **NOTE**: We no longer include the RJ-45 console cable with the DB-9 adapter as part of the device package. If the console cable and adapter are not included in your device package, or if you need a different type of adapter, you can order the following separately:
>
> - RJ-45 to DB-9 adapter (JNP-CBL-RJ45-DB9)
> - RJ-45 to USB-A adapter (JNP-CBL-RJ45-USBA)
> - RJ-45 to USB-C adapter (JNP-CBL-RJ45-USBC)
>
> If you want to use RJ-45 to USB-A or RJ-45 to USB-C adapter you must have X64 (64-Bit) Virtual COM port (VCP) driver installed on your PC. See, https://ftdichip.com/drivers/vcp-drivers/ to download the driver.

- Two 10-32 x .25-in. screws with #10 split-lock washers to secure the grounding lug
- A grounding cable:
  - EX4400 switches shipped before March 2023: 14 AWG (1.5 mm^2), minimum 90° C wire, or as permitted by the local code, with a Panduit LCD10-10AF-L or equivalent lug attached
  - EX4400 switches shipped after March 2023: 8 AWG (6 mm^2), minimum 90° C wire, or as permitted by the local code, with a Panduit LCD8-10AF-L or equivalent lug attached

> ⚠ **CAUTION**: Ensure that a licensed electrician has attached the appropriate grounding lug to the grounding cable that you supply. Using a grounding cable with an incorrectly attached lug can damage the switch.

Install the EX4400 in a Rack

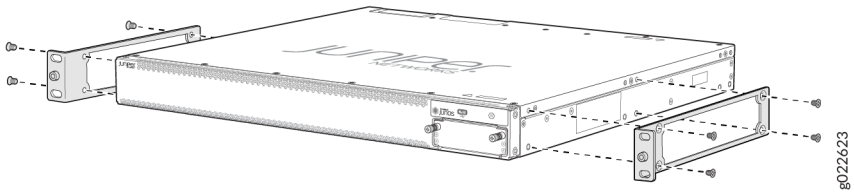
Before you start the installation, be sure to review the General Safety Guidelines and Warnings. Also, have someone available to help you secure the switch to the rack.

You can install the EX4400 switch on a desktop or other level surface, in a two-post or four-post rack, or on a wall. The mounting kit that ships in the box has the brackets you need to install the EX4400 switch in a two-post rack or on the front posts of a 19-in four-post rack. We'll walk you through how to install the switch in a two-post rack.

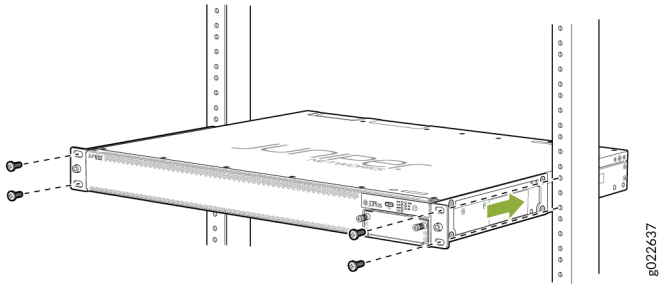
> **NOTE**: If you want to install the switch in a four-post rack or on the wall , you'll need to order separate mounting kits. The four-post rack mount kit also has brackets for mounting the EX4400 switch in a recessed position in the rack.

Let's get going and start the installation!

1. Place the switch on a flat, stable surface.
2. Wrap and fasten one end of the ESD grounding strap around your bare wrist, and connect the other end to a site ESD point.
3. Attach the mounting brackets to the sides of the EX4400 switch using the eight screws in the rack mount kit and a screwdriver.



4. Lift the switch and position it in the rack. Position the switch so that the **AIR IN** labels on the fan modules are facing the cold aisle, or the **AIR OUT** labels on the fan modules are facing the hot aisle. Line up the bottom hole in each mounting bracket with a hole in each rack post, making sure the switch is level.
5. While you're holding the switch in place, have a second person insert and tighten the rack mount screws to secure the mounting brackets to the rack posts. Make sure to tighten the screws in the two bottom holes first, and then tighten the screws in the two top holes.



6. Check that the mounting brackets on each side of the rack are lined up with each other.
7. Cover the empty extension module and the power supply slots by using the covers that came with the switch.

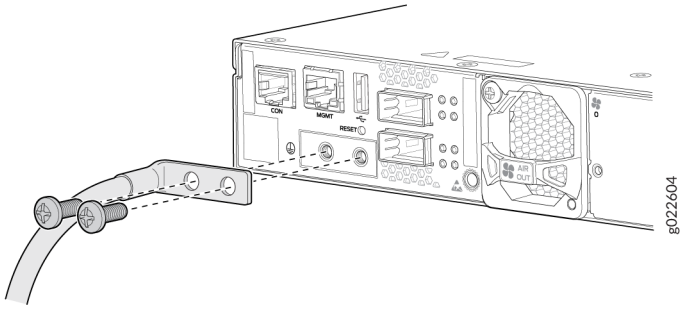
NOTE: The slot covers reduce the risk of objects or substances entering the chassis. They also ensure optimal cooling for the switch.

Power On

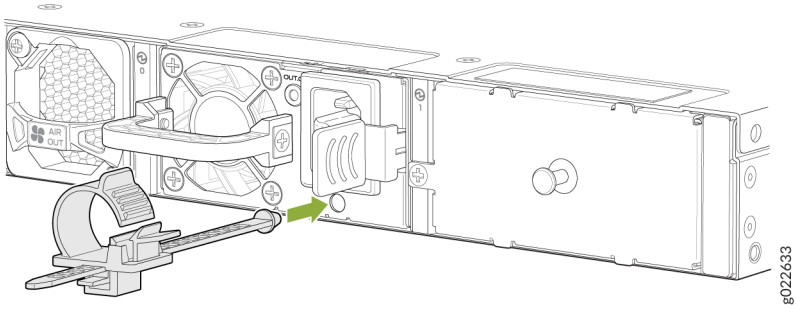
Now you're ready to connect the EX4400 switch to a dedicated AC power source. The switch comes with the AC power cord for your geographic location.

Here's how to connect the EX4400 switch to AC power:

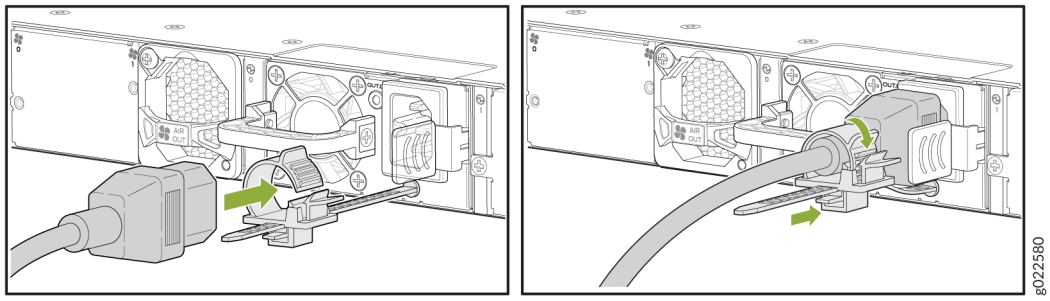
1. Wrap and fasten one end of the ESD grounding strap around your bare wrist, and connect the other end of the strap to a site ESD point.
2. Connect one end of the grounding cable to a proper earth ground, such as the rack.
3. Place the grounding lug attached to the grounding cable over the protective earthing terminal on the rear panel.



4. Secure the grounding lug to the protective earthing terminal using the 10-32 x .25-in. screws with #10 split-lock washers.
5. Dress the grounding cable. Be sure that the cable doesn't block access to or touch other device components, and that it doesn't drape where people could trip over it.
6. Ensure that the power supply is fully inserted in the rear panel of the switch.
7. On the rear panel, connect the retainer strip and power cord to the AC power socket:
   a. Push the end of the retainer strip into the hole next to the AC power socket until it snaps into place. Ensure that the loop in the retainer strip points upward.



   b. Press the small tab on the retainer strip to loosen the loop.
   c. Slide the loop until you have enough space to insert the power cord into the AC power socket.
   d. Firmly plug in the power cord to the AC power socket on the switch.
   e. Slide the loop toward the power supply until it is snug against the base of the power cord coupler.
   f. Press the tab on the loop, and draw out the loop into a tight circle.



8. If the AC power source outlet has a power switch, turn it off.
9. Plug in the power cord to the AC power source outlet.
10. If the AC power source outlet has a power switch, turn it on. The switch powers on as soon as you plug it in. The EX4400 doesn't have a power switch.

11. Check to see that the **OUT.OK** LED on the power supply is lit steadily green. If not, disconnect the power supply from the power source. You'll need to replace the power supply (see Maintain the EX4400 Power System in the EX4400 Switch Hardware Guide).

Step 2: Up and Running

IN THIS SECTION

- Plug and Play | 8
- Customize the Basic Configuration | 8

Now that the EX4400 is powered on, let's do some initial configuration to get it up and running on the network. It's simple to configure and manage the EX4400 using the CLI.

Plug and Play

The EX4400 switch ships with factory-default settings that enable plug-and-play operation. These settings load as soon as you power on the switch.

Customize the Basic Configuration

Have the following information ready before you begin customizing the switch:

- Root authentication password
- Management port IP address
- Default gateway IP address
- DNS server IP address

You can easily customize the factory-default configuration with just a few commands. When you commit changes to the configuration, a new configuration file is created. This becomes the active configuration. You can always revert to the factory-default configuration whenever you want.

1. Verify that the serial port settings for your laptop or desktop PC are set to the default values:
   - Baud Rate—9600
   - Data—8
   - Flow Control—None
   - Parity—None
   - Stop Bits—1
   - DCD State—Disregard
2. Connect the console port (labeled **CON**) on the switch to a serial port on your laptop or desktop PC using the Ethernet cable and RJ-45 to DB-9 adapter (not provided). If your laptop or desktop PC doesn't have a serial port, use a serial-to-USB adapter (not provided). On EX4400 switch models except EX4400-24X, the console port is on the rear panel. On the EX4400-24X model, the console port is on the front panel.
3. At the Junos OS login prompt, type **root** to log in. You don't need to enter a password. If the software boots before you connect your laptop or desktop PC to the console port, you might need to press the Enter key for the prompt to appear.

```
login: root
```

4. Start the CLI.

```
root@:RE:0% cli
root>
```

5. Enter configuration mode.

```
root> configure
[edit]
root#
```

6. Add a password to the root administration user account. Enter a plain-text password, an encrypted password, or an SSH public key string. In this example, we show you how to enter a plain-text password.

```
[edit]
root# set system root-authentication plain-text-password
```

```
New password: password
Retype new password: password
```

7. Configure the default gateway.

```
[edit]
root# set routing-options static route 0/0 next-hop address
```

8. Configure the IP address and prefix length for the management interface on the switch.

```
[edit]
root# set interfaces me0 unit 0 family inet address address/prefix-length
```

> **NOTE**: The management port `me0` (labeled **MGMT**) is on the rear panel of the EX4400 switch.

The management interface provides a dedicated out-of-band management channel to manage devices on the network. If you need to configure in-band management, see Configure Junos OS on the EX4400 in the EX4400 Switch Hardware Guide.

9. Configure the IP address of a DNS server.

```
[edit]
root# set system name-server address
```

10. Configure the SSH service.

```
[edit]
root# set system services ssh root-login allow
```

11. Commit the configuration to activate it on the switch.

```
[edit]
root# commit
```

12. When you've finished configuring the switch, exit configuration mode.

```
[edit]
root# exit
root>
```

Step 3: Keep Going

IN THIS SECTION

- What's Next? | 11
- General Information | 12
- Learn With Videos | 13

Congratulations! Now that you've done the initial configuration, your EX4400 switch is ready to use. Here are some things you can do next:

What's Next?

If you want to	Then
Download, activate, and manage your software licenses to unlock additional features for your EX series switch	See Activate Junos OS Licenses in the Juniper Licensing Guide
Configure essential user access features such as login classes, user accounts, access privilege levels, and user authentication methods	See the User Access and Authentication Administration Guide for Junos OS

(Continued)

If you want to	Then
Configure SNMP, RMON, Destination Class Usage (DCU) and Source Class Usage (SCU) data, and accounting profiles	See the Network Management and Monitoring Guide
Configure essential security services	See the Security Services Administration Guide
Configure time-based protocols for your network devices running Junos OS	See the Time Management Administration Guide
See, automate, and protect your network with Juniper Security	Visit the Security Design Center
Get hands-on experience with the procedures covered in this guide	Visit Juniper Networks Virtual Labs and reserve your free sandbox. You'll find the Junos Day One Experience sandbox in the stand alone category. EX switches are not virtualized. In the demonstration, focus on the virtual QFX device. Both the EX and QFX switches are configured with the same Junos commands.

General Information

If you want to	Then
See all documentation available for the EX4400	See the EX4400 Documentation in the Juniper Networks TechLibrary
Find more information about how to install and configure the EX4400	See the EX4400 Switch Hardware Guide
Stay up-to-date on new and changed features and known and resolved issues	See Junos OS Release Notes

(Continued)

If you want to	Then
Manage software upgrades on your EX Series switch	See Installing Software on EX Series Switches

Learn With Videos

Our video library continues to grow! We've created many, many videos that demonstrate how to do everything from install your hardware to configure advanced Junos OS network features. Here are some great video and training resources that will help you expand your knowledge of Junos OS.

If you want to	Then
View a Web-based training video which provides an overview of the EX4400 and describes how to install and deploy it	Watch the EX4400 Ethernet Switch Overview and Deployment (WBT) video
Get short and concise tips and instructions that provide quick answers, clarity, and insight into specific features and functions of Juniper technologies	See Learning with Juniper on Juniper Networks main YouTube page
View a list of the many free technical trainings we offer at Juniper	Visit the Getting Started page on the Juniper Learning Portal

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