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Juniper NETWORKS EX2300 Ethernet Switch



Specifications

- **Model:** EX2300
- **Power Source:** AC or DC depending on model
- **Ports:** Front-panel 10/100/1000BASE-T access ports and 10GbE uplink ports
- **Support:** Small form-factor pluggable plus (SFP+) transceivers
- **Features:** Power over Ethernet (PoE) and Power over Ethernet Plus (PoE+)

Product Usage Instructions

Step 1: Begin

In this section, you will learn how to install the EX2300 in a rack and connect it to power.

Meet the EX2300 Line of Ethernet Switches

The EX2300 switch models come with various access ports and uplink ports for connectivity. Note that the EX2300-24T-DC switch is DC-powered.

Install the EX2300 in a Rack

To install the EX2300 in a two-post rack, use the brackets provided in the accessory kit. For wall or four-post rack installations, additional mounting kits may be required.

Connect to Power

Ensure the power cord is securely connected to the EX2300 switch before powering it on.

Step 2: Up and Running

This step covers plug and play setup and customizing basic configurations using the CLI.

Step 3: Keep Going

Explore further configuration options and additional resources to enhance your experience with the EX2300 switch.

Begin

In this guide, we provide a simple, three-step path, to quickly get you up and running with your new EX2300. We've simplified and shortened the installation and configuration steps, and included how-to videos. You'll learn how to install an AC-powered EX2300 in a rack, 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 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.

Meet the EX2300 Line of Ethernet Switches

- The Juniper Networks® EX2300 line of Ethernet switches provide a flexible, high-performance solution for supporting today's converged network access deployments.
- You can use Juniper Routing Director (formerly Juniper Paragon Automation) or Juniper Paragon Automation or the device CLI to deploy the EX2300 switch to the network.
- You can interconnect up to four EX2300 switches to form a Virtual Chassis, enabling these switches to be managed as a single device.
- The EX2300 switches are available in 12-port, 24-port and 48-port models with AC power supplies.

NOTE: The EX2300-24T-DC switch is DC-powered.

Each EX2300 switch model has front-panel 10/100/1000BASE-T access ports and 10GbE uplink ports for connecting to higher-level devices. The uplink ports support small form-factor pluggable plus (SFP+) transceivers. All switches except the EX2300-C-12T, EX2300-24T, and EX2300-48T support Power over Ethernet (PoE) and Power over Ethernet Plus (PoE+) for powering attached network devices.

NOTE: There's a separate Day One+ guide for the 12-port EX2300-C switch models. See [EX2300-C](#) on the Day One+ webpage.

This guide covers the following AC-powered switch models:

- EX2300-24T: 24 10/100/1000BASE-T ports
- EX2300-24P: 24 10/100/1000BASE-T PoE/PoE+ ports
- EX2300-24MP: 16 10/100/1000BASE-T PoE+ ports, 8 10/100/1000/2500BASE-T PoE+ ports
- EX2300-48T: 48 10/100/1000BASE-T ports
- EX2300-48P: 48 10/100/1000BASE-T PoE/PoE+ ports
- EX2300-48MP: 32 10/100/1000BASE-T PoE/PoE+ ports, 16 100/1000/2500/5000/10000BASE-T PoE/PoE+ ports



EX2300-24T



EX2300-48T



EX2300-24P



EX2300-48P



EX2300-24MP



EX2300-48MP

Install the EX2300 in a Rack

You can install the EX2300 switch on a desk or table, on a wall, or in a two-post or four-post rack. The accessory kit that ships in the box has the brackets you need to install the EX2300 switch in a two-post rack. We'll walk you through how to do that.

NOTE: If you want to mount the switch on the wall or in a four-post rack, you'll need to order a wall mount or rack mount kit. The four-post rack mount kit also has brackets for mounting the EX2300 switch in a recessed position in the rack.

What's in the Box?

- An AC power cord appropriate for your geographical location
- Two mounting brackets and eight mounting screws
- Power cord retainer clip

What Else Do I Need?

- An electrostatic discharge (ESD) grounding strap
- Someone to help you secure the router to the rack
- Mounting screws to secure the EX2300 to the rack
- Number two Phillips (+) screwdriver
- Serial-to-USB adapter (if your laptop 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)

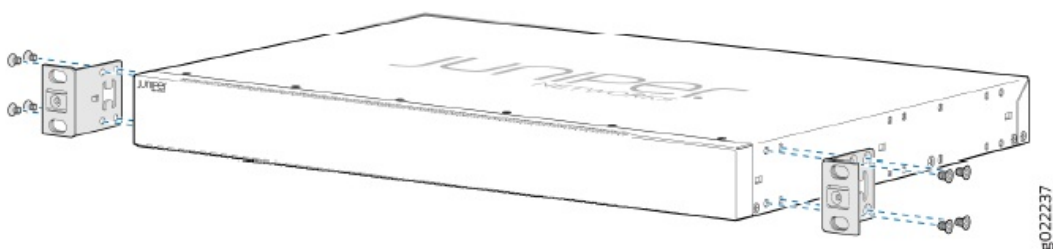
If you want to use RJ-45 to USB-A or RJ-45 to USB-C adapter you must have X64 (64-Bit) Virtual COM port (VCP) driver installed on your PC. See, <https://ftdichip.com/drivers/vcp-drivers/> to download the driver.

Rack It!

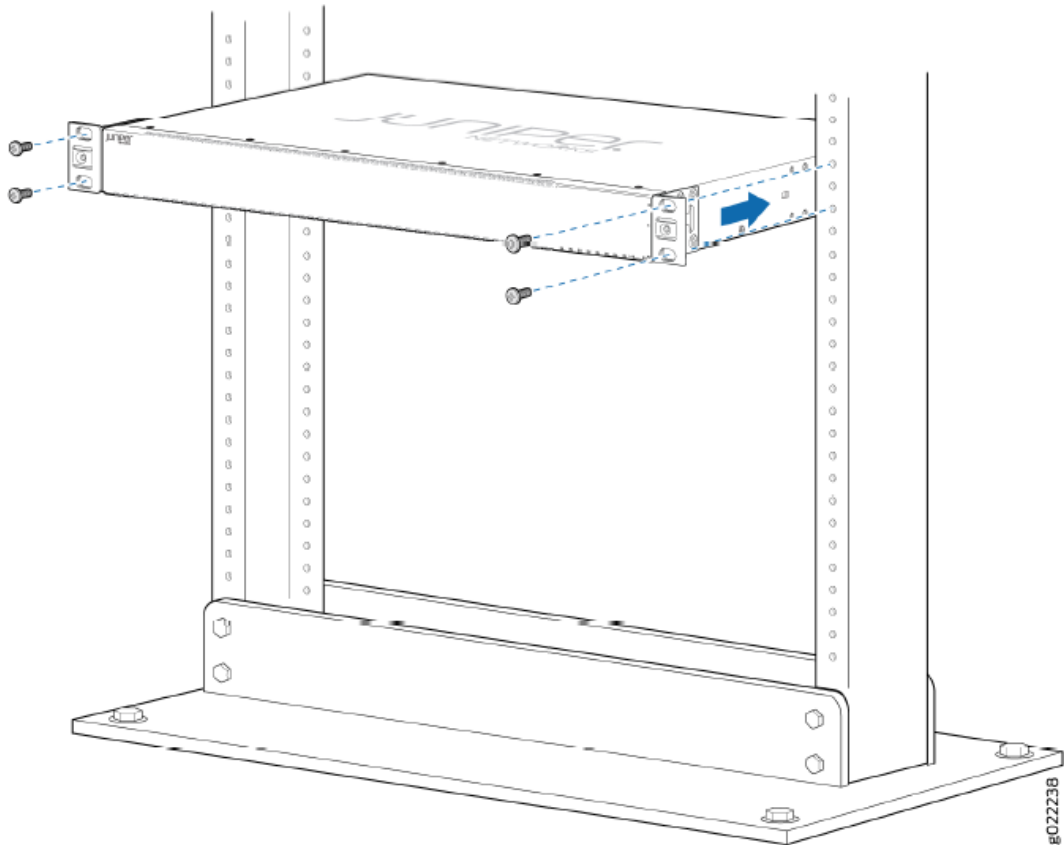
Here's how to install the EX2300 switch in a two-post rack:

1. Review the General Safety Guidelines and Warnings provided in the [Juniper Networks Safety Guide](#).
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 EX2300 switch using the eight mounting screws and a screwdriver.

You'll notice there are three locations on the side panel where you can attach the mounting brackets: front, center, and rear. Attach the mounting brackets to the location that best suits where you want the EX2300 switch to sit in the rack.



4. Lift the EX2300 switch and position it in the rack. Line up the bottom hole in each mounting bracket with a hole in each rack rail, making sure the EX2300 switch is level.



5. While you're holding the EX2300 switch in place, have someone insert and tighten the rack mount screws to secure the mounting brackets to the rack rails. 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.

Connect to Power

Now you're ready to connect the EX2300 switch to a dedicated AC power source. The switch comes with the AC power cord for your geographic location.

To connect the EX2300 switch to AC power, you must do the following:

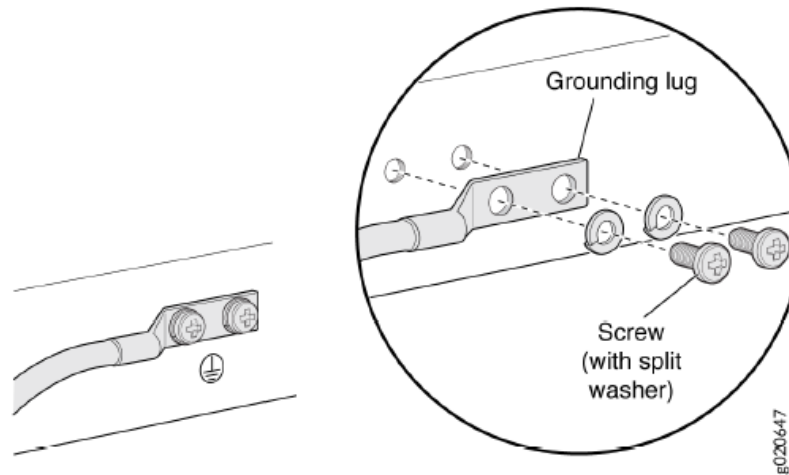
- "Ground the EX2300 Switch"
- "Connect the Power Cord to EX2300 Switch and Power On"

Ground the EX2300 Switch

To ground the EX2300 switch, do the following:

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.

Figure 1: Connecting a Grounding Cable to an EX Series Switch

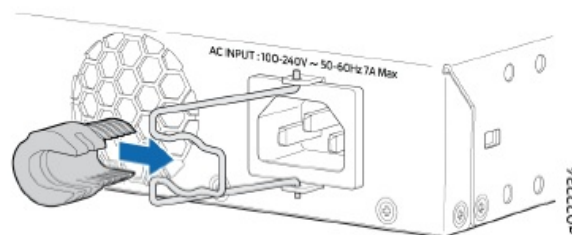


3. Secure the grounding lug to the protective earthing terminal with the washers and screws.
4. Dress the grounding cable and ensure that it does not touch or block access to other switch components and that it does not drape where people could trip over it.

Connect the Power Cord to EX2300 Switch and Power On

Here's how to connect an EX2300 switch to AC power:

1. On the rear panel, connect the power cord retainer clip to the AC power supply:

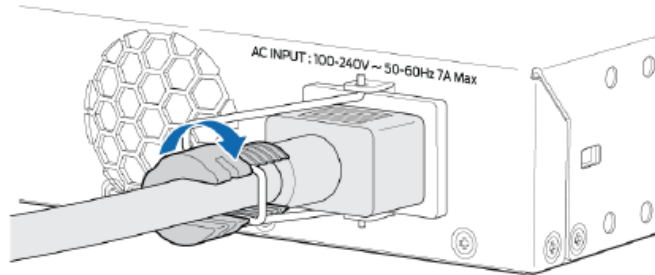


NOTE: The EX2300-24-MP and the EX2300-48-MP switches don't need a power cord retainer clip. You can simply plug in the power cord to the AC power socket on the switch and then skip to step 5.

- Squeeze the two sides of the power cord retainer clip.
- Insert the L-shaped ends into the holes in the bracket above and below the AC power socket. The power cord retainer clip extends out of the chassis by 3 in.

(7.62 cm).

2. Plug in the power cord to the AC power socket on the switch.
3. Push the power cord into the slot in the adjustment nut for the retainer clip.
4. Turn the nut clockwise until it's snug against the base of the coupler. The slot in the coupler should be 90 degrees from the power supply socket.



5. If the AC power outlet has a power switch, turn it off.
6. Plug in the power cord to the AC power outlet.
7. If the AC power outlet has a power switch, turn it on.
8. Verify that the AC OK LED above the power inlet is steadily lit.

The EX2300 switch powers up as soon you connect it to the AC power source. When the SYS LED on the front panel is steadily green, the switch is ready to use.

Up and Running

Now that the EX2300 switch is powered on, let's do some initial configuration to get the switch up and running on your network. It's simple to provision and manage the EX2300 switch and other devices on your network. Choose the configuration tool that's right for you:

- Juniper Mist. To use Mist, you'll need an account on the Juniper Mist Cloud platform. See [Overview of Connecting Mist Access Points and Juniper EX Series Switches](#).
- Juniper Networks Contrail Service Orchestration (CSO). To use CSO, you'll need an authentication code. See [SD-WAN Deployment Overview](#) in the [Contrail Service Orchestration \(CSO\) Deployment Guide](#).
- CLI commands
- You can also onboard and manage the EX2300 switch by using Juniper Routing Director (formerly Juniper Paragon Automation) or Juniper Paragon Automation. See [Onboard Devices to Juniper Routing Director](#) or [Onboard Devices to Juniper Paragon Automation](#).

Plug and Play

The EX2300 switches already have factory-default settings configured right out of the box to make them plug-and-play devices. The default settings are stored in a configuration file that:

- Sets Ethernet switching and storm control on all interfaces
- Sets PoE on all RJ-45 ports of models that provide PoE and PoE+
- Enables the following protocols:
 - Internet Group Management Protocol (IGMP) snooping
 - Rapid Spanning Tree Protocol (RSTP)
 - Link Layer Discovery Protocol (LLDP)
 - Link Layer Discovery Protocol Media Endpoint Discovery (LLDP-MED)

These settings are loaded as soon as you power on the EX2300 switch. If you want to see what's in the factory-default configuration file for your EX2300 switch, see [EX2300 Switch Default Configuration](#).

Customize the Basic Configuration Using the CLI

Have these values handy before you begin customizing settings for the switch:

- Hostname
 - Root authentication password
 - Management port IP address
 - Default gateway IP address
 - (Optional) DNS server and SNMP read community
1. Verify that the serial port settings for your laptop or desktop PC are set to the default:
 - Baud rate—9600
 - Flow control—None
 - Data—8
 - Parity—None
 - Stop bits—1
 - DCD state—Disregard
 2. Connect the console port on the EX2300 switch to a laptop or desktop PC using

the Ethernet cable and the RJ-45 to DB-9 serial port adapter (not provided). If your laptop or desktop PC doesn't have a serial port, use a serial-to-USB adapter (not provided).

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.
NOTE: EX switches running current Junos software are enabled for Zero Touch Provisioning (ZTP). However, when you configure an EX switch for the very first time, you'll need to disable ZTP. We show you how to do that here. If you see any ZTP-related messages on the console, just ignore them.

```
FreeBSD/arm (w) (ttyu0):  
login: root
```

4. Start the CLI.

```
root@RE:0% cli  
{master:0} root>
```

5. Enter configuration mode.

```
{master:0} root> configure  
{master:0}[edit]  
root#
```

6. Delete the ZTP configuration. Factory default configurations can vary over different releases. You may see a message that the statement does not exist. Don't worry, it's safe to proceed.

```
{master:0}[edit]  
root# delete chassis auto-image-upgrade
```

7. 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.

```
{master:0}[edit]
root# set system root-authentication plain-text-password
New password: password
Retype new password: password
```

8. Activate the current configuration to stop ZTP messages on the console.

```
{master:0}[edit]
root# commit
configuration check succeeds
commit complete
```

9. Configure the hostname.

```
{master:0}[edit]
root# set system host-name name
```

10. Configure the IP address and prefix length for the management interface on the switch. As part of this step, you remove the factory default DHCP setting for the management interface.

```
{master:0}[edit]
root# delete interfaces vme unit 0 family inet dhcp
root# set interfaces vme unit 0 family inet address address/prefix-length
```

NOTE: The management port vme (labeled MGMT) is on the front panel of the EX2300 switch.

11. Configure the default gateway for the management network.

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

12. Configure the SSH service. By default the root user cannot login remotely. In this step you enable the SSH service and also enable root login via SSH.

```
{master:0}[edit]
root# set system services ssh root-login allow
```

13. Optional: Configure the IP address of a DNS server.

```
{master:0}[edit]
root# set system name-server address
```

14. Optional: Configure an SNMP read community.

```
{master:0}[edit]
root# set snmp community community_name
```

15. **Optional:** Continue customizing the configuration using the CLI. See the [Getting Started Guide for Junos OS](#) for more details.

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

```
{master:0}[edit]
root# commit
```

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

```
{master:0}[edit]
root# exit
{master:0}
root@name
```

Keep Going

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

Jump in and start configuring your EX Series switch with the Junos OS CLI	Start with the Day One+ for Junos OS guide
Configure Ethernet Interfaces	See Configuring Gigabit Ethernet Interfaces (J-Web Procedure)
Configure Layer 3 Protocols	See Configuring Static Routing (J-Web Procedure)
Administer the EX2300 switch	See J-Web Platform Package User Guide for EX Series Switches
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.
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General Information

If you want to	Then
See all documentation available for the EX2300 routers	Visit the EX2300 page in the Juniper Tech Library
Find more in-depth information about installing and maintaining your EX2300 switch	Browse through the EX2300 Switch Hardware Guide

Stay up-to-date on new and changed features and known and resolved issues	See Junos OS Release Notes
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 EX2300 and describes how to install and deploy it	Watch the EX2300 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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FAQ

What if I don't have the RJ-45 console cable with the DB-9 adapter?

If the console cable and adapter are not included in your device package, you may need to acquire them separately for console connections.

Documents / Resources

	Juniper NETWORKS EX2300 Ethernet Switch [pdf] User Guide EX2300 Ethernet Switch, EX2300, Ethernet Switch, Switch
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References

- [User Manual](#)

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◆ Ethernet Switch, EX2300, EX2300 Ethernet Switch, JUNIPER NETWORKS,
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