



# Juniper NETWORKS QFX5120 Ethernet Switches User Guide

[Home](#) » [JUNIPER NETWORKS](#) » Juniper NETWORKS QFX5120 Ethernet Switches User Guide 

## Juniper NETWORKS QFX5120 Ethernet Switches



### Contents

- 1 IN THIS SECTION**
- 2 Meet the QFX5120 Line of Ethernet Switches**
- 3 What's in the Box?**
- 4 What Else Do I Need?**
- 5 Install the QFX5120 in a Four-Post Rack**
- 6 Power On**
- 7 Plug and Play**
- 8 Customize the Basic Configuration**
- 9 What's Next?**
- 10 General Information**
- 11 Learn With Videos**
- 12 Documents / Resources**
  - 12.1 References**
- 13 Related Posts**

### IN THIS SECTION

In this guide, we provide a simple, three-step path, to quickly get you up and running with your new QFX5120-48 switch. We've simplified and shortened the installation and configuration steps, and included how-to videos. You'll learn how to install an AC-powered QFX5120-48 switch in a rack, power it up, and deploy it on your network.

There's a separate Day One+ guide for the QFX5120-32C switch (see QFX5120-32C on the Day One+ webpage). For details on installing a DC powered QFX5120-48, see QFX5120 Switch Hardware Guide.

**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 Junes Day One Experience sandbox in the stand alone category.

## Meet the QFX5120 Line of Ethernet Switches

The Juniper Networks® QFX5120-48T, QFX5120-48Y, and QFX5120-48YM switches are compact, 1-U fixed configuration switches ideal for top-of-rack and spine-and-leaf deployments. You can also use the QFX5120 line of switches for high-density server connectivity, with an option to channelize the QSFP28 ports into multiple interfaces. In addition, you can deploy the QFX5120 line of switches as campus distribution and core switches. Dual hot-swappable AC or DC power supplies provide 1+1 redundancy. Five hot-swappable fan trays maintain high system availability.

The QFX5120 supports many network automation features and plug-and-play features, including zero touch provisioning (ZTP), making it simple to deploy on your network.



QFX5120-48T



QFX5120-48Y



QFX5120-48YM

Here are some details about the port configurations for the QFX5120 line of switches:

Model	Access Ports
QFX5120- 32C	<ul style="list-style-type: none"> <li>• Two 10GbE or 1GbE SFP+ ports</li> <li>• Thirty-two 100GbE or 40GbE QSFP28 ports</li> </ul>
QFX5120- 48T	<ul style="list-style-type: none"> <li>• Six 100GbE or 40GbE QSFP28 ports</li> <li>• Forty-eight 10GbE or 1GbE BASE-T ports</li> </ul>
QFX5120- 48Y	<ul style="list-style-type: none"> <li>• Eight 100GbE or 40GbE QSFP28 ports</li> <li>• Forty-eight 25GbE, 10GbE, or 1GbE SFP28 ports</li> </ul>
QFX5120- 48YM	<ul style="list-style-type: none"> <li>• Eight 100GbE or 40GbE QSFP28 ports that support MACsec</li> <li>• Forty-eight 25GbE, 10GbE, or 1GbE SFP28 ports that support MACsec</li> </ul>

## What's in the Box?

- QFX5120 switch with five preinstalled fan modules and two preinstalled AC power supplies
- Two AC power cords appropriate for your geographical location
- A four-post rack mounting kit that contains:
  - Two front mounting brackets for mounting the switch flush with the front posts of a rack
  - Twelve flat head 4×6-mm Phillips screws for attaching the front mounting brackets to the switch
  - Two rear mounting brackets

The kit also contains two recessed mounting brackets for mounting the switch in a recessed position from the front posts of a rack.

**NOTE:** We no longer include a DB-9 to RJ-45 cable or a DB-9 to RJ-45 adapter with a CAT5E copper cable as part of the device package. If you require a console cable, you can order it separately with the part number JNP-CBL-RJ45-DB9 (DB-9 to RJ-45 adapter with a CAT5E copper cable).

## What Else Do I Need?

You'll need to provide the following:

- Someone to help you secure the switch to the rack
- Eight mounting screws 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
- An Ethernet cable
- An RJ-45 to DB-9 serial port adapter
- A serial-to-USB adapter (if your laptop or desktop PC doesn't have a serial port)

- A grounding cable: 14 AWG (1.5 mm<sup>2</sup>), minimum 90° C wire, or as permitted by the local code, with a Panduit LCD10-10A-L or equivalent lug attached.



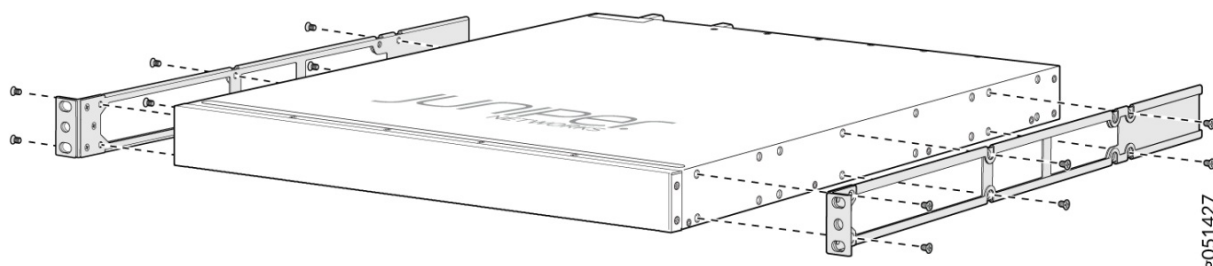
**CAUTION:** Ensure that a licensed electrician has attached the appropriate grounding lug to the grounding cable that you supply. Using a grounding cable with an incorrectly attached lug can damage the switch.

- Two 10-32 x .25-in. screws with #10 split-lock washers to secure the grounding lug

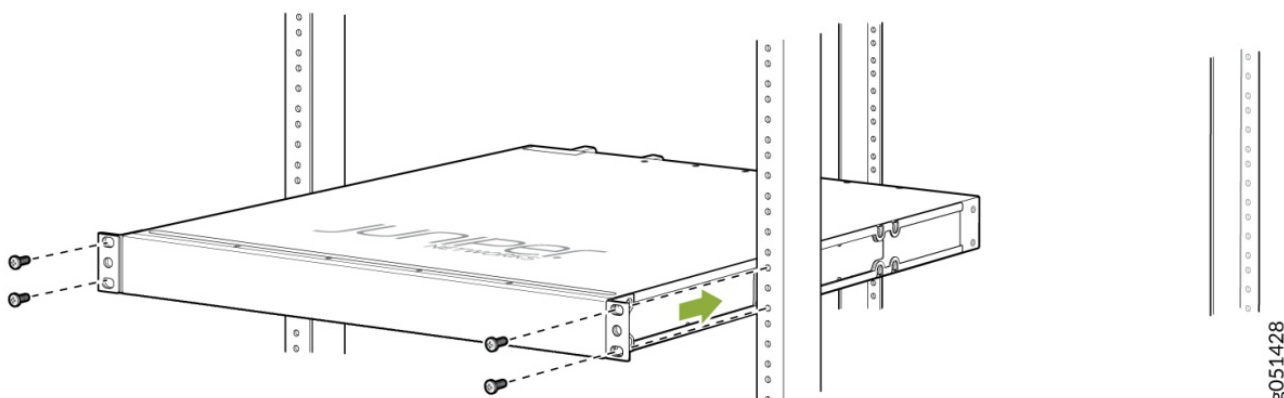
## Install the QFX5120 in a Four-Post Rack

You can mount the QFX5120-48T, QFX5120-48Y, and QFX5120-48YM switches in a four-post 19-in. rack or in a cabinet that contains a four-post 19-in. rack. In this guide, we'll walk you through how to mount the switch in a four-post rack.

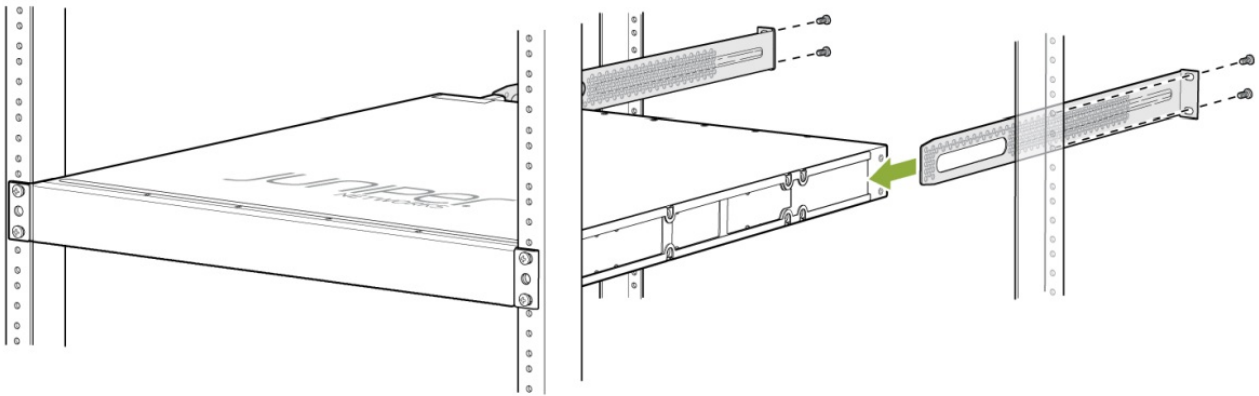
1. Review the General Safety Guidelines and Warnings.
2. Wrap and fasten one end of the ESD grounding strap around your bare wrist, and connect the other end to a site ESD point.
3. Position the switch so that the AIR IN labels on the fan modules are facing the cold aisle, or the AIR OUT labels on the fan modules are facing the hot aisle.
4. Attach the front mounting brackets to the switch.



5. Lift the switch and position it in the rack. Line up the bottom hole in each mounting bracket with a hole in each rack post, making sure the switch is level.
6. While you're holding the switch in place, have a second person insert and tighten the rack mounting screws to secure the mounting rails 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.



7. Continue holding the switch in place, and have the second person slide the rear mounting brackets into the side mounting rails.
8. Secure the rear mounting brackets to the rack posts using the rack mount screws.



g051429

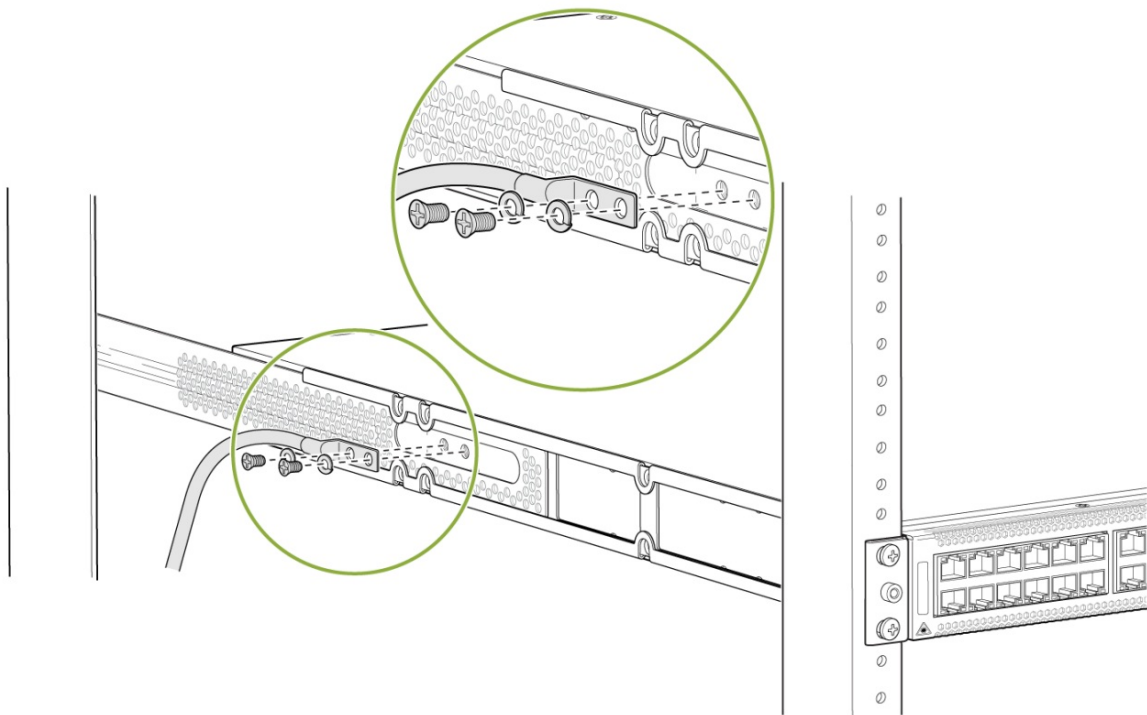
9. Verify that the mounting brackets on each side of the rack are level.

## Power On

Now that you've mounted your switch in the rack, you're ready to connect it to power.

The AC-powered QFX5120-48T, QFX5120-48Y, and QFX5120-48YM switches come with two AC power supplies preinstalled on the rear panel.

1. Wrap and fasten one end of the ESD grounding strap around your bare wrist, and connect the other end to one of the ESD grounding points on the switch.
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 left panel.



g051255

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, and ensure that it doesn't block access to or touch other device components, and

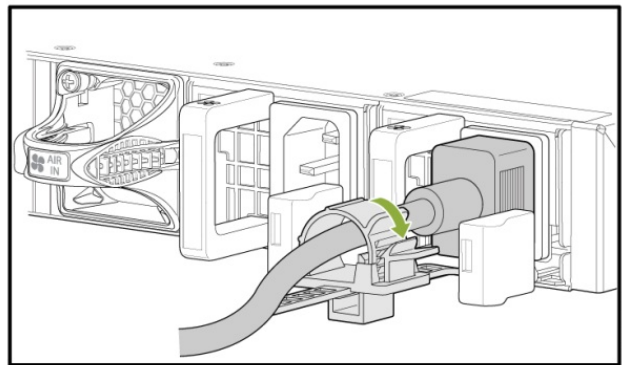
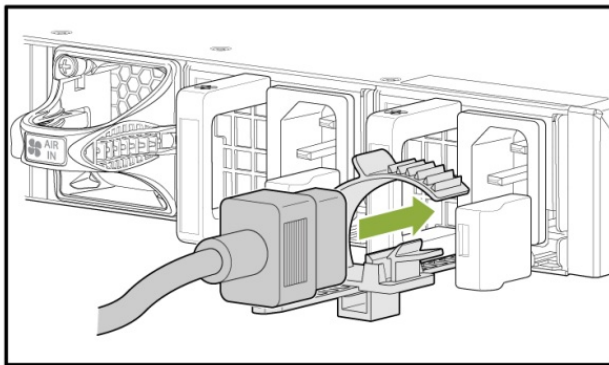


that it doesn't drape where people could trip over it.

6. Ensure that the power supplies are fully inserted in the switch.
7. Connect the power cord to the AC power socket on the power supply. This step is a bit different depending on your model.

For QFX5120-48T and QFX5120-48Y switches:

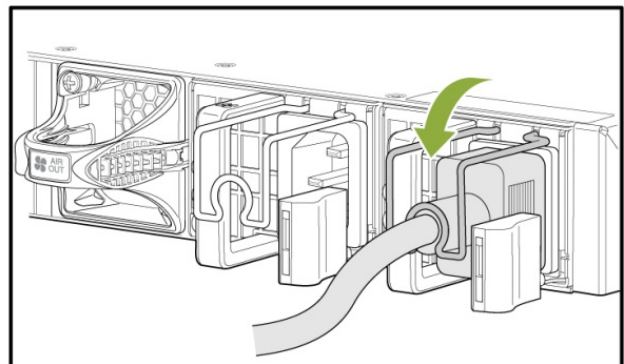
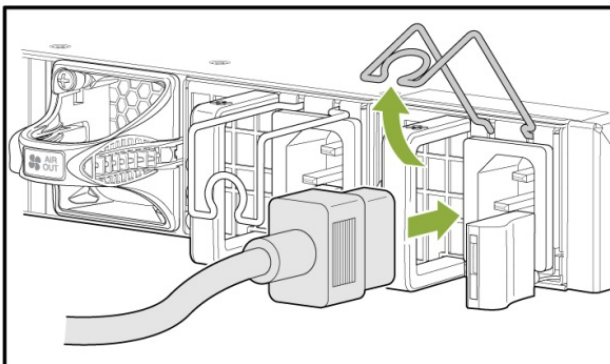
- Push the end of the retainer strip into the hole next to the power supply socket until it snaps into place. Ensure that the loop in the retainer strip faces the power cord.
- Press the small tab on the retainer strip to loosen the loop. Slide the loop until you have enough space to insert the power cord into the power supply socket.
- Plug in the power cord firmly into the power supply socket.
- Slide the loop toward the power supply until it is snug against the base of the power cord coupler.
- Press the tab on the loop, and draw out the loop into a tight circle.



g051241

**For QFX5120-48YM switches:**

- Gently lift up the retainer clip.
- Plug in the power cord coupler firmly into the power supply socket.
- Push the retainer clip down until it is snug against the base of the power cord coupler.



g051354

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. The switch powers on as soon as you plug it in. There is no power switch on the QFX5120.
10. If the AC power source outlet has a power switch, turn it on.
11. Verify that the AC and DC LEDs on the power supply are lit steadily green. If the fault LED (!) is lit, disconnect the power supply from the power source, and replace the power supply (see Maintain the QFX5120 Power System in the QFX5120 Switch Hardware Guide).
12. Repeat steps 7-11 to power on the second power supply.

Now that the QFX5120 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 QFX5120 using the CLI.

## Plug and Play

The QFX5120 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 anytime you want.

1. Verify that your laptop or desktop PC has the following default serial port settings:

- 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 QFX5120 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).

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 the 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. Plain-text password:

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

**Encrypted password:**

```
[edit] root# set system root-authentication encrypted-password encrypted-password
```

**SSH-ECDSA password:**

```
[edit] root# set system root-authentication ssh-ecdsa public-key
```

**SSH-ED25519 password:**

```
[edit] root# set system root-authentication ssh-ed25519 public-key
```

**SSH-RSA password:**

```
[edit] root# set system root-authentication ssh-rsa public-key
```

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 em0 unit 0 family inet address address/prefix-length
```

**NOTE:** The management port em0 (labeled MGMT) is on the rear panel of the QFX5120-48T switch. The management ports em0 (labeled C0) and em1 (labeled C1) are on the rear panel of the QFX5120-48Y and QFX5120-48YM switches.

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 QFX5120* in the *QFX5120 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 the configuration mode.

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

**What's Next?**



If you want to	Then
Download, activate, and manage your software licenses to unlock additional features for your QFX series switch	See <a href="#">Activate Junos OS Licenses</a> in the <a href="#">Juniper Licensing Guide</a>
Configure essential user access features such as login classes, user accounts, access privilege levels, and user authentication methods	See the <a href="#">User Access and Authentication Administration Guide for Junos OS</a>
Configure SNMP, RMON, Destination Class Usage (DCU) and Source Class Usage (SCU) data, and accounting profiles	See the <a href="#">Network Management and Monitoring Guide</a>
Configure essential security services	See the <a href="#">Security Services Administration Guide</a>
Configure time-based protocols for your network devices running Junos OS	See the <a href="#">Time Management Administration Guide</a>
See, automate, and protect your network with Juniper Security	Visit the <a href="#">Security Design Center</a>
Get hands-on experience with the procedures covered in this guide	Visit <a href="#">Juniper Networks Virtual Labs</a> 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 QFX5120	See the <a href="#">QFX5120 Documentation</a> in the Juniper Networks TechLibrary
Find more information about how to install and configure the QFX5120	See the <a href="#">QFX5120 Switch Hardware Guide</a>
Manage software upgrades for your QFX5120	See <a href="#">Installing Software on QFX Series Devices</a>
Stay up-to-date about new and changed features and known and resolved issues	See the <a href="#">Junos OS Release Notes</a>

## 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 QFX5120 and describes how to install and configure it	<a href="#">QFX5120 Ethernet Switch (WBT)</a>
Get short and concise tips and instructions that provide quick answers, clarity, and insight into specific features and functions of Juniper technologies	See <a href="#">Learning with Juniper</a> on Juniper Networks main YouTube page
View a list of the many free technical trainings we offer at Juniper	Visit the <a href="#">Getting Started</a> page on the Juniper Learning Portal

Juniper Networks, the Juniper Networks logo, Juniper, and Junos are registered trademarks of Juniper Networks, Inc. in the United States and other countries. All other trademarks, service marks, registered marks, or registered service marks are the property of their respective owners. Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice. Copyright © 2023 Juniper Networks, Inc. All rights reserved.



## Documents / Resources

	<a href="#">Juniper NETWORKS QFX5120 Ethernet Switches</a> [pdf] User Guide QFX512032C, QFX512048T, QFX512048Y, QFX512048YM, QFX5120 Ethernet Switches, Ethernet Switches, Switches
---	--

## References

- [Juniper Networks Inc. - Sign In](#)
- [QFX5120 Ethernet Switch](#)
- [Get Started with Free Juniper Training](#)
- [Installing Software on QFX Series Devices \(Junos OS\) | Junos OS | Juniper Networks](#)
- [QFX5120 Switch Hardware Guide | Juniper Networks](#)
- [General Safety Guidelines and Warnings | Juniper Networks](#)
- [Juniper Licensing User Guide | Licensing | Juniper Networks](#)
- [Activate Your Licenses | Licensing | Juniper Networks](#)
- [Junos OS Documentation | Juniper Networks](#)
- [QFX5120 Documentation | Juniper Networks](#)
- [Security Design Center | Juniper Networks](#)
- [Cloud-Ready EX and QFX Switches with Mist | Quick Start | Step 1: Begin | Juniper Networks](#)
- [Connect the QFX5120 to Power | Juniper Networks](#)

- [!\[\]\(7e19807c61da14f515588e95cd49886c\_img.jpg\) Maintain the QFX5120 Power System | Juniper Networks](#)
- [!\[\]\(8ff9e60a4b0560d7ec99179ef4779d9e\_img.jpg\) Network Management and Monitoring Guide | Junos OS | Juniper Networks](#)
- [!\[\]\(ab9b69bf5753a01c76b30af859454360\_img.jpg\) Security Services Administration Guide | Junos OS | Juniper Networks](#)
- [!\[\]\(c5af66b13c724ca428497900cdbbc9b3\_img.jpg\) Time Management Administration Guide | Junos OS | Juniper Networks](#)
- [!\[\]\(1fde827780c8f912fd3ae9174d52d155\_img.jpg\) User Access and Authentication Administration Guide for Junos OS | Junos OS | Juniper Networks](#)

Manuals+.