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Juniper NETWORKS QFX5220-32CD Ethernet Switch User Guide

Contents

Juniper NETWORKS QFX5220-32CD Ethernet Switch

Product Information

Specifications

- Product Name: QFX5220-32CD

- Published Date: 2023-10-20
- Release Version: ii

System Overview

The QFX5220-32CD is a switch designed for network connectivity. It provides high-performance and reliable networking capabilities.

Tools and Parts Required for Installation

To install the QFX5220-32CD, you will need the following tools and equipment:

Tools and Equipment	Provided/Not Provided
Electrostatic discharge (ESD) grounding strap	Not provided
A Phillips (+) screwdriver, number 2	Not provided
One pair of mounting blades	Provided
One pair of mounting rails	Provided
Twelve flathead screws to secure the mounting rails to the chassis	Provided
Eight screws to secure the chassis and rear installation blades to the rack	Not provided
Grounding lug, Panduit LCD10-10A-L or equivalent, two 10-32 x 0.25 screws with #10 split-lock washers to secure the grounding lug to the grounding lug bracket protective earthing terminal	Not provided
Two power cords with plugs appropriate to your geographical location	Provided
RJ-45 cable and RJ-45 to DB-9 serial port adapter	Not provided
A Management host, such as a laptop or PC, with an Ethernet port	Not provided
An Ethernet cable with an RJ-45 connector attached	Provided

## Part 1: Mount the Switch into a 4-Post Rack

CAUTION: A QFX5220 requires two people for installation, one person to lift the device into place and another person to attach the device to the rack. If you are installing the QFX5220 above 60 in. (152.4 cm) from the floor, you can remove the
power supplies and fan modules to minimize the weight before attempting to install the device.

CAUTION: If you are mounting multiple devices on a rack, mount the device in the lowest position of the rack first. Proceed to mount the rest of the devices from the bottom to the top of the rack to minimize the risk of the rack toppling.

1. Position the 4-post rack so that it is accessible from the front.
2. Place the QFX5220-32CD at the front of the rack. Position the device in such a manner that the AIR IN labels

on components are next to the cold aisle and AIR OUT labels on components are next to the hot aisle.

3. Align the holes in the mounting rail with the holes on the side of the chassis. See Figure 1 below to see the proper alignment for the QFX5220-32CD.
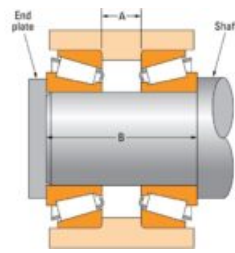
4. Attach the mounting rail to the switch using six flathead screws. Tighten the screws using a Phillips #2 screwdriver.

FAQ (Frequently Asked Questions)

- **Q: Do I need to provide my own grounding strap for installation?**
  A: No, the electrostatic discharge (ESD) grounding strap is not provided. You will need to obtain one separately.
- **Q: Are the rear installation blades screws provided?**
  A: No, you will need to provide your own eight screws to secure the chassis and rear installation blades to the rack.

System Overview

- The QFX5220-32CD offers 32 ports of 400-Gigabit Ethernet in a low-profile 1 U form factor. With 12.8 Tbps bandwidth, the QFX5220-32CD is optimally designed for spine-leaf deployments in enterprise, service provider, and cloud data centers. The high-speed ports support a wide variety of port configurations that include 400-Gbps, 100-Gbps, 25-Gbps, 40-Gbps, and 10-Gbps.
- An Intel® Xeon® D-1500 processor drives the QFX5220 control plane, which runs the Junos OS Evolved software. The Junos OS Evolved software image is stored on two internal 50 GB solid-state drives (SSDs). The QFX5220-32CD is available with either ports-to-FRUs or FRUs-to-ports airflow and with AC power supplies.

Tools and Parts Required for Installation

The Quick Start Guide is designed to show the basic installation and startup procedures. For complete instructions see the QFX5220 Hardware Guide at QFX5220 Switch Hardware Guide.
Gather the tools and equipment listed in Table 1 on page 1 for installing the switch in a 4 post rack. Table 1: Tools and Equipment Needed to Install QFX5220-32CD

Tools and Equipment	Provided/Not
Electrostatic discharge (ESD) grounding strap	Not provided
A Phillips (+) screwdriver, number 2	Not provided
One pair of mounting blades	Provided
One pair of mounting rails	Provided
Twelve flathead screws to secure the mounting rails to the chassis	Provided
Eight screws to secure the chassis and rear installation blades to the rack	Not provided

Tools and Equipment	Provided/Not
Grounding lug, Panduit LCD10-10A-L or equivalent, two 10-32 x 0.25 screws with #10 split-lock washers to secure the grounding lug to the grounding lug bracket protective earthing terminal	Not provided
Two power cords with plugs appropriate to your geographical location	Provided
RJ-45 cable and RJ-45 to DB-9 serial port adapter	Not provided
A Management host, such as a laptop or PC, with an Ethernet port	Not Provided
An Ethernet cable with an RJ-45 connector attached	Provided

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).

Register product serial numbers on the Juniper Networks website and update the installation base data if there is any addition or change to the installation base or if the installation base is moved. Juniper Networks will not be held accountable for not meeting the hardware replacement service-level agreement for products that do not have registered serial numbers or accurate installation base data.

- Register your product(s) at **https://tools.juniper.net/svcreg/SRegSerialNum.jsp**.
- Update your install base at **https://www.juniper.net/customers/csc/management/updateinstallbase.jsp**.

Part 1: Mount the Switch into a 4-Post Rack

CAUTION: A QFX5220 requires two people for installation, one person to lift the device into place and another person to attach the device to the rack. If you are installing the QFX5220 above 60 in. (152.4 cm) from the floor, you can remove the power supplies and fan modules to minimize the weight before attempting to install the device.
CAUTION: If you are mounting multiple devices on a rack, mount the device in the lowest position of the rack first. Proceed to mount the rest of the devices from the bottom to the top of the rack to minimize the risk of the rack toppling.

You can mount QFX5220 switches on a four-post 19-in. rack or cabinet using the rack mount kit provided with the switch. The rack mount kit can be adapted for either a 4-post rack-only or a rack and cabinet installation. A four-post installation is the preferred installation method because the switch is evenly supported by all four corners. Using the two-post mounting method, the switch is two-thirds cantilevered in the rack.

To mount the QFX5220-32CD on a four post rack using the provided rack mount kit:

1. Attach the ESD grounding strap to your bare wrist and to a site ESD point.
2. Decide whether the Field Replaceable Unit (FRU) end of the switch or the port end is to be placed at the front of the rack. Position the device in such a manner that the AIR IN labels on components are next to the cold aisle and AIR OUT labels on components are next to the hot aisle.
3. Align the holes in the mounting rail with the holes on the side of the chassis. See Figure 1 on page 3 to see the proper alignment for the QFX5220-32CD.
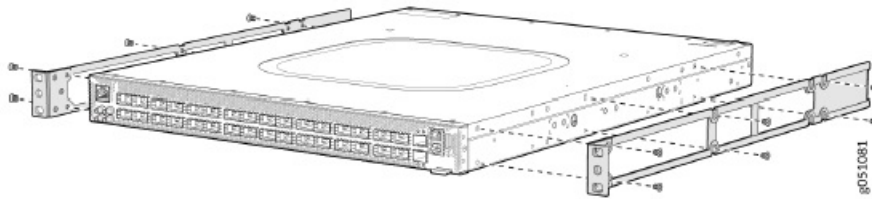

Figure 1: Attaching Mounting Rails to the QFX5220-32CD

4. Attach the mounting rail to the switch using six flathead screws. Tighten the screws using a Phillips # 2 screwdriver.
5. Repeats steps 3 and 4 on the opposite side of the switch.
6. Have one person grasp both sides of the switch, lift it, and position it in the rack so that the front rail is aligned with the rack holes.
7. Have a second person secure the front of the switch to the rack using four mounting screws (and cage nuts and washers if your rack requires them.) Tighten the screws. See Figure 2 on page 4 for an example of connecting the mounting rails and mounting blades to a QFX5220-32CD.
   Figure 2: Attach QFX5220-32CD to Rack
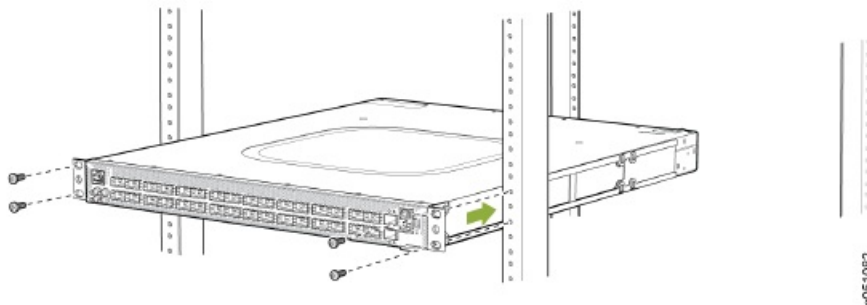
8. Continue to support the switch while sliding the mounting blades into the channel of the mounting rails and securing the blades to the rack. Use the four mounting screws (and cage nuts and washers if your rack requires them) to attach each blade to the rack. Tighten the screws. See Figure 3 on page 4.
   Figure 3: Slide Mounting Blade into Mounting Rail
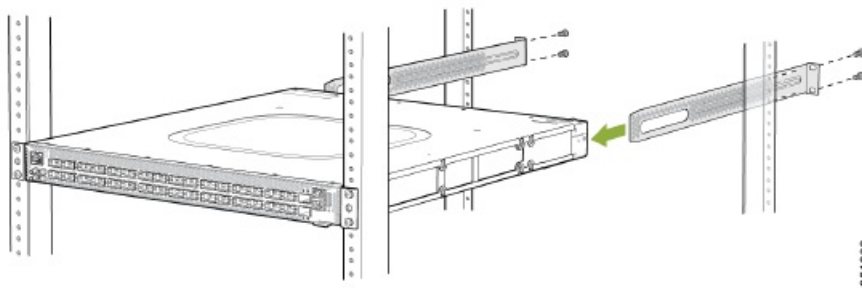
9. Ensure that the switch chassis is level by verifying that all the screws on the front of the rack are aligned with

the screws at the back of the rack.

10. We recommend that you insert dust covers in any unused ports.

Ground the Chassis and Connect Power

To connect earth ground to a QFX5220-32CD:

1. Use two 10-32 x 0.25 screws with #10 split-lock washers to secure the grounding lug and attached cable to the chassis. Attach the lug through the left rail and blade assembly to the chassis. The posts on the grounding lug should point to the left. See Figure 4 on page 5.

Figure 4: Connecting a Grounding Cable to a QFX5220-32CD
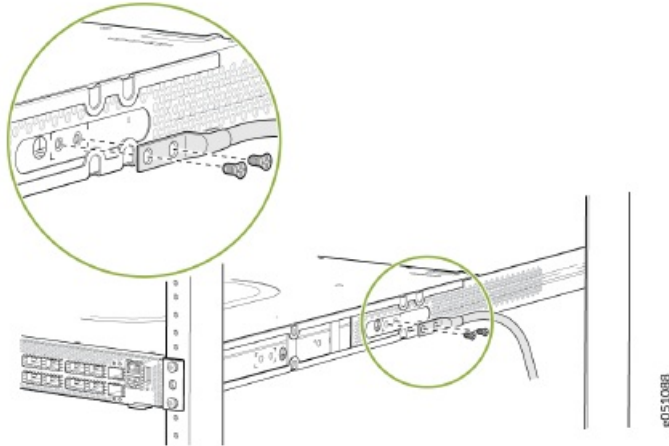
2. Connect the remaining end of the grounding cable to a proper earth ground, such as the rack in which the switch is mounted.

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

Connect Power to the Switch

The QFX5220 is shipped from the factory with two power supplies. Each power supply is a hot-removable and hot-insertable field-replaceable unit (FRU) when the second power supply is installed and running. You can install a replacement power supply in either of the two slots next to the fan modules without powering off the switch or disrupting the switching function.

To connect AC power to a QFX5220:

1. Attach the grounding strap to your bare wrist and to a site ESD point.

2. Ensure that the power supplies are fully inserted in the chassis and the latches are secure. .

3. Locate the power cords shipped with the switch; the cords have plugs appropriate for your geographical location. See AC Power Cord with Type C15 Coupler Specifications.

   For each power supply:

   1. Ensure the loop on the power cord retainer is open and there is enough space to insert the power cord coupler into the inlet. If the loop is closed, press the small tab on the retainer to loosen the loop.

   2. Thread the power cord coupler through the power cord retainer loop.

   3. Insert the power cord coupler firmly into the AC inlet on the power supply faceplate.

   4. Slide the power cord retainer loop towards the power supply until it is snug against the base of the

coupler.

5. Press the tab on the loop and draw out the loop to enclose the power cord. See Figure 5 on page 6.

Figure 5: Attaching the Power Cord Retainer
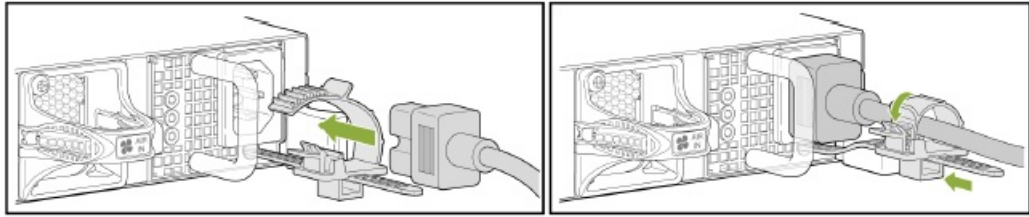
WARNING: Ensure that the power cord does not block access to device components or drape where people can trip on it.

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

   NOTE: The switch powers on as soon as power is provided to the power supply. There is no power switch on the device.

5. Insert the power cord plug into an AC power source outlet.

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

7. Verify that the AC and DC LEDs on each power supply are lit green.

   If the amber fault LED is lit, remove power from the power supply, and replace the power supply (see How to Remove a Power Supply from a QFX5220). Do not remove the power supply until you have a replacement power supply ready: the power supplies must be installed in the switch to ensure proper airflow.

   CAUTION: Replace a failed power supply with a new power supply within three minutes of removal to prevent chassis overheating.

Connect the QFX5220-32CD to the Network and Perform the Initial Configuration

Before you begin connecting and configuring a QFX5220, set the following parameter values on the console server or PC:

- Baud Rate—9600
- Flow Control—None
- Data—8
- Parity—None
- Stop Bits—1
- DCD State—Disregard

Connect the QFX5220-32CD to your network for out-of-band management:

1. Connect one end of the Ethernet cable to the management port (labeled Mgmt) on the QFX5220-32CD.

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

You must perform the initial configuration of the QFX5220 through the console port using the CLI or through Zero Touch Provisioning (ZTP). In order to use ZTP to provision the device, you must have access to a Dynamic Host Control Protocol (DHCP) server, and a File Transfer Protocol (anonymous FTP), Hypertext Transfer Protocol (HTTP), or Trivial File Transfer Protocol (TFTP) server on which the software image and configuration files are stored. For more information about using ZTP for provisioning the device, see Understanding Zero Touch

Provisioning in the Installation and Upgrade Guide.

To connect and configure the switch from the console:

1. Connect the console port to a laptop or PC using an RJ-45 cable and RJ-45 to DB-9 adapter (not provided). The console (CON) port is located on the top right corner of the port panel.

2. Log in as root. There is no password. If the software booted before you connected to the console port, you might need to press the Enter key for the prompt to appear.

   login: root

3. Start the CLI.

   root@% cli

4. Enter configuration mode.

   root> configure

5. Add a password to the root administration user account.

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

   New password: password

   Retype new password: password

6. (Optional) Configure the name of the switch. If the name includes spaces, enclose the name in quotation marks (" ").

   [edit] root@# set system host-name host-name

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

   [edit] root@# set interfaces re0:mgmt-0 unit 0 family inet address address/prefix-length

   CAUTION: Although the CLI permits you to configure two management Ethernet interfaces within the same subnet, only one interface is usable and supported.

   NOTE: On the QFX5220-32CD, the management port re0:mgmt-0 is the bottom RJ-45 port on the right side of the port panel and is labeled MGMT.

8. Create the mgmt_junos routing instance.

   [edit] root@# set routing-instances mgmt_junos

9. Configure the static routes to remote prefixes with access to the management port.

   [edit] root@# set routing-options static route remote-prefix next-hop destination-ip

10. Enable the management instance.

    [edit] root@# set system management-instance

11. Enable telnet service.

    [edit] root@# set system services telnet

    NOTE: When Telnet is enabled, you cannot log in to a QFX5220 switch through Telnet using root credentials. Root login is allowed only for SSH access.

12. Enable SSH service for root login.

    [edit] root@# set system services SSH

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

    [edit] root@# commit

QFX5220-32CD Safety Warning Summary

This is a summary of safety warnings. For a complete list of warnings, including translations, see the QFX5220

hardware documentation at **https://www.juniper.net/documentation/product/en_US/qfx522**.
WARNING: Failure to observe these safety warnings can result in personal injury or death.

- Permit only trained and qualified personnel to install or replace switch components
- Perform only the procedures described in this quick start and the QFX5220 documentation. Other services must be performed only by authorized service personnel.
- Before installing the switch, read the planning instructions in the QFX5220 documentation to make sure that the site meets power, environmental, and clearance requirements for the switch.
- Before connecting the switch to a power source, read the installation instructions in the QFX5220 documentation.
- The QFX5220-32CD weighs approximately 24.5 lbs (11.11 kg. Manually installing the QFX5220-32CD in a rack or cabinet at a height above 60 in. (152.4 cm) requires two people to lift the switch and install mounting screws. To prevent injury, keep your back straight and lift with your legs, not your back.
- If the rack or cabinet has stabilizing devices, install them in the rack before mounting or servicing the switch in the rack or cabinet.
- Before installing or after removing an electrical component, always place it component-side up on a flat antistatic mat or in an antistatic bag.
- Do not work on the switch or connect or disconnect cables during electrical storms
- 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 become welded to the terminals.

Power Cable Warning (Japanese)
WARNING: The attached power cable is only for this product. Do not use the cable for another product

In the event of a hardware failure, please contact Juniper Networks, Inc. to obtain a Return Material Authorization (RMA) number. This number is used to track the returned material at the factory and to return repaired or new components to the customer as needed.
For more information about return and repair policies, see the customer support Web page at
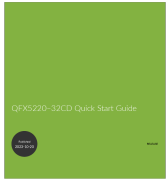**https://www.juniper.net/support/guidelines.html**.
For product problems or technical support issues, contact the Juniper Networks Technical Assistance Center (JTAC) by using the Case Manager link at **https://www.juniper.net/support/** or at 1-888-314- JTAC (within the United States) or 1-408-745-9500 (from outside the United States).

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Documents / Resources

Juniper NETWORKS QFX5220-32CD Ethernet Switch [pdf] User Guide
QFX5220 32CD Ethernet Switch, QFX5220 32CD, Ethernet Switch, Switch

References

- 🍃 **Guidelines & Policies - Support - Juniper Networks**
- 🌐 **Juniper Networks - Maintenance**
- 🍃 **Juniper Networks Inc. - Sign In**
- 🍃 **Zero Touch Provisioning | Junos OS | Juniper Networks**
- 🍃 **QFX5220 Switch Hardware Guide | Juniper Networks**
- 🍃 **QFX5220 Documentation | Juniper Networks**
- 🍃 **Support**
- 🍃 **Guidelines & Policies - Support - Juniper Networks**
- **User Manual**