

QFX5220-128C Quick Start Guide

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RELEASE

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System Overview

The QFX5220-128C offers 128 ports of 100-Gigabit Ethernet in a 4 U form factor. With 12.8 Tbps bandwidth, the QFX5220-128C is optimally designed as data aggregation or top of rack switch in small to medium size data centers and MSDC (Massively Scalable Data Center) deployments. The 100 Gigabit Ethernet ports can be configured either for 100-Gbps or 40-Gbps speeds. The 100-Gbps ports can also be channelized into 2 x 50 Gbps, 4 x 25 Gbps, or 4 x 10 Gbps. There are two dedicated small form factor plus (SFP+) for 10-Gigabit Ethernet support.

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 QFX5220-128C is available with ports-to-FRUs airflow, (airflow out), and with AC or DC 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: Inventory of Components Supplied with a QFX5220-128C Device

Component	Provided/Not Provided
Chassis, including 4 power supply modules and 6 fans	Provided
Rack mount kit for QFX5220-128C, including 2 mounting rails (right and left), 2 mounting blades, 2 flanges, 6 Phillips M4 x 8 mm flathead screws, and 24 Phillips M4 x 6 mm flathead screws	Provided
RJ-45 cable and RJ-45 to DB-9 adapter	Not provided
C13 AC power cords with plugs appropriate to your geographical location (AC systems only)	Provided

Table 1: Inventory of Components Supplied with a QFX5220-128C Device (Continued)

Component	Provided/Not Provided
Electrostatic discharge (ESD) grounding strap	Not Provided
A Phillips (+) screwdriver, number 2	Not Provided
Sixteen 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
A Management host, such as a laptop or PC, with an Ethernet port	Not Provided

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.

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 QFX5220-128C 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 or use a mechanical lift.



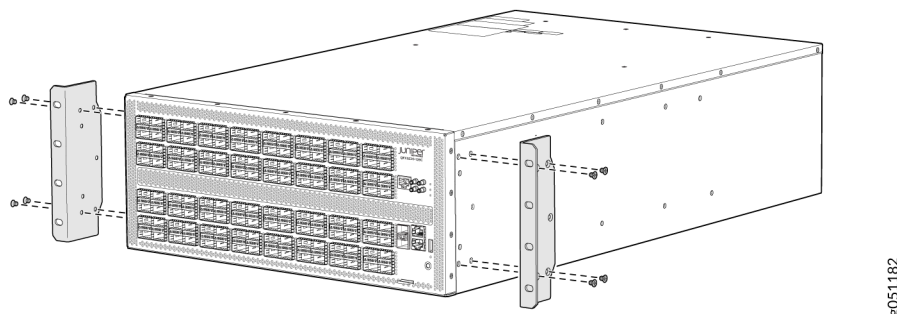
CAUTION: If you are mounting multiple devices on a rack, mount the device in the lowest position of the rack first. Proceed to mount the rest of the devices from the bottom to the top of the rack to minimize the risk of the rack toppling.

You can mount QFX5220 switches on a four-post 19-in. rack or cabinet using the rack mount kit provided with the switch.

To mount the QFX5220-128C 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 flange with the holes closest to the port panel.

Figure 1: Attaching the Flange to the QFX5220-128C Chassis

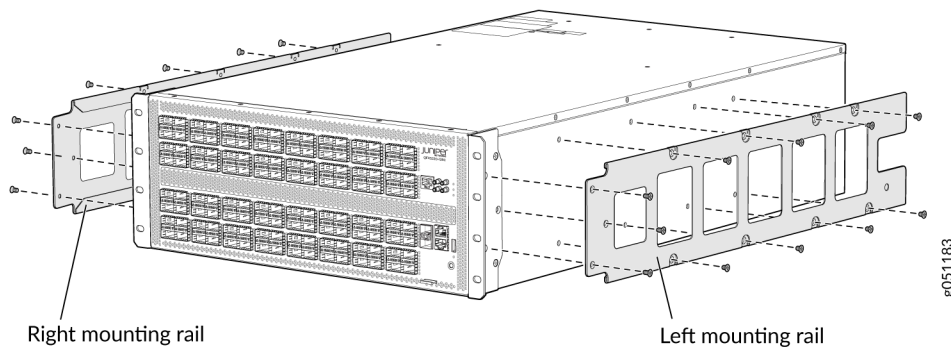


4. Use the Phillips number 2 screwdriver to attach the flange to the chassis using two M4 x 6 mm flathead screws in the top and bottom holes. Tighten the screws. See [Figure 1 on page 3](#).
5. Repeat steps 3 and 4 and attach the second flange to the opposite side of the chassis.

6. Align the holes in the left mounting rail with the holes on the side of the chassis and in the flange. See [Figure 2 on page 4](#) to see the proper alignment for the QFX5220-128C.

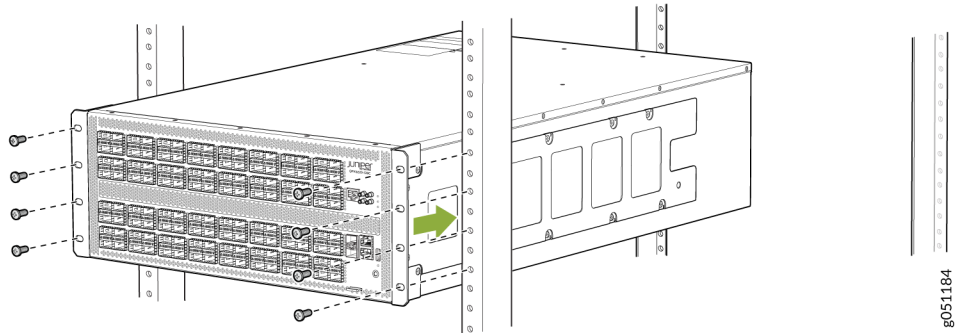
NOTE: There is a left mounting rail, stamped LEFT, and a right mounting rail, stamped RIGHT. The mounting rails are not interchangeable.

Figure 2: Attaching Mounting Rails to the QFX5220-128C Chassis



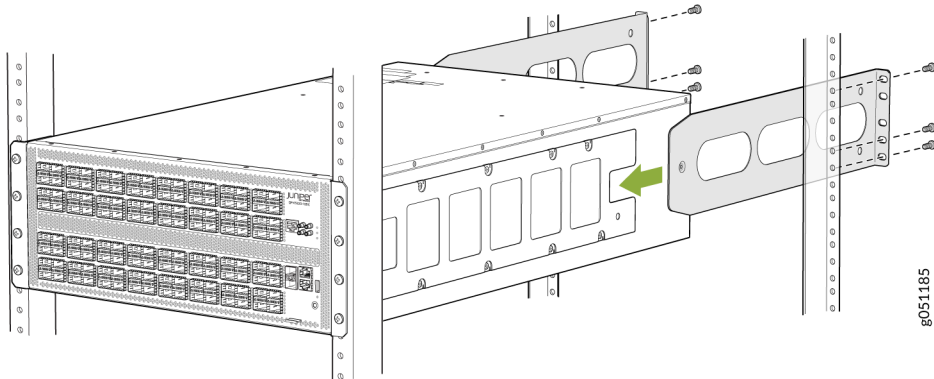
7. Use the Phillips number 2 screwdriver to attach the front of the mounting rail to the flange and chassis using three M4 x 8 mm flathead screws. These slightly longer screws are needed to attach the mounting bracket through the flange to the chassis. Tighten the screws.
8. Use eight of the shorter, M4 x 6 mm, flathead screws to complete the attachment of the mounting rail to chassis. Tighten the screws using the Phillips number 2 screwdriver.
9. Repeats steps 6 through 8 for the right mounting bracket on the opposite side of the switch.
10. Use a mechanical lift or have one person grasp both sides of the switch, lift it, and position it in the rack so that the front bracket is aligned with the rack holes.
11. Have a second person secure the front of the switch to the rack using eight mounting screws (and cage nuts and washers if your rack requires them.) Tighten the screws. See [Figure 3 on page 5](#) for an example of connecting the mounting rails and mounting blades to a QFX5220-128C.

Figure 3: Attach QFX5220-128C to Rack



12. Continue to support the switch while sliding the two mounting blades into the two mounting rails. Secure the mounting blades to the rack using the eight remaining mounting screws (and cage nuts and washers if your rack requires them). Tighten the screws. See [Figure 4 on page 5](#).

Figure 4: Slide Mounting Blade into Mounting Rail



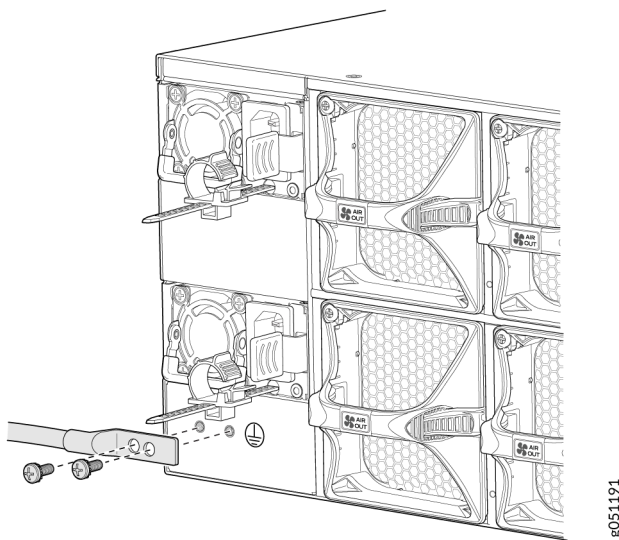
13. Ensure that the switch chassis is level by verifying that all the screws on the front of the rack are aligned with the screws at the back of the rack.
14. We recommend that you insert dust covers in any unused ports.

Part 2: Ground the Chassis and Connect Power

To connect earth ground to a QFX5220-128C:

1. Use two 10-32 x 0.25 screws with #10 split-lock washers (not provided) to secure the grounding lug and attached cable (not provided) to the FRU panel of the chassis. The posts on the grounding lug should point to the right. See [Figure 5 on page 6](#).

Figure 5: Connecting a Grounding Cable to a QFX5220-128C



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 QFX5220-128C is shipped from the factory with four 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.

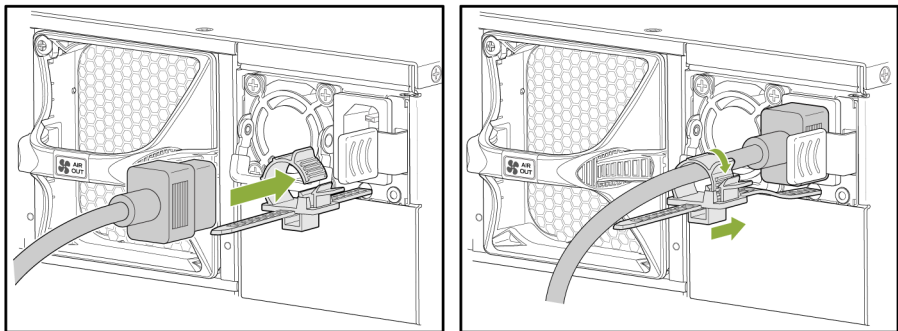
To connect AC power to a QFX5220-128C:

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.

For each power supply:

- a. 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.
- b. Thread the power cord coupler through the power cord retainer loop.
- c. Insert the power cord coupler firmly into the AC inlet on the power supply faceplate.
- d. Slide the power cord retainer loop towards the power supply until it is snug against the base of the coupler.
- e. Press the tab on the loop and draw out the loop to enclose the power cord. See [Figure 6 on page 7](#).

Figure 6: 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 (I) 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.

Part 3: Connect the QFX5220-128C 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 QFX5220-128C to your network for out-of-band management:

1. Connect one end of the Ethernet cable to the management port (labeled **Mgmt**) on the QFX5220-128C.
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*.

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)
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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.

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 QFX5220-128C, 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
```

QFX5220-128C 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/qfx5220.



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 QFX5220-128C weighs approximately 76 lbs (34.5 kg.) We recommend using a mechanical lift for installations above 60 inches (152.4 cm). Manually installing the QFX5220-128C in a rack or cabinet at a height above 60 in. (152.4 cm) requires two people to lift the switch and a third person to install the 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.

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。

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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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