JUNIPER NETWORKS | Engineering Simplicity

Quick Start

QFX10016 Quick Start

IN THIS GUIDE

Step 1: Begin

IN THIS SECTION

In this guide, we provide a simple, three-step path, to quickly get you up and running with the Juniper Networks® QFX10016 switch. You'll learn how to install, power on, and configure basic settings for both AC-powered and DC-powered QFX10016 switches.

Meet the QFX10016

The QFX10016 is a rigid sheet-metal switch-chassis that houses field -replaceable units (FRUs) such as control boards, Switch Interface Boards (SIBs), power supplies, fan trays, and line cards. The switch chassis ships in a cardboard box that has a two-layer wooden pallet base. The switch chassis is bolted to the pallet base. You can install a QFX10016 switch in a standard 19 in. (48.26 cm) equipment rack by using the supplied rack-mounting kit and the front-mounting bracket that is attached to the chassis.

Before you install the QFX10016, make sure the site meets all the power, cooling, and clearance requirements. See the site preparation guidelines and power requirements in the QFX10016 Switch Hardware Guide.

Prepare the Site for the QFX10016

IN THIS SECTION

Rack-Mounting Requirements

The QFX10016 switch chassis is designed to be installed in standard 19-in. wide four-post racks that are spaced at 1 U (1.75 in. or 4.45 cm) increments.

You can stack two QFX10016 chassis in a four-post rack if:

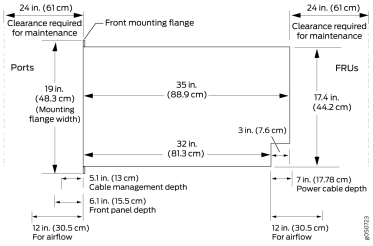
- The rack is 42 U or greater.
- The rack meets the strength requirements to support the weight.
- The facility can provide adequate power and cooling.

Before installing the chassis, ensure that:

- The rack rails are spaced widely enough to accommodate the switch chassis' external dimensions. The outer edges of the front-mounting brackets extend the chassis width to 19 in. (48.26 cm).
- The rack is strong enough to support the weight of the switch and cabling.
- The spacing of rails and adjacent racks allows for proper clearance around the switch and rack.

Clearance Requirements

For the cooling system to function properly, the airflow around the chassis must be unrestricted. You must allow sufficient clearance around the installed chassis for cooling and maintenance.

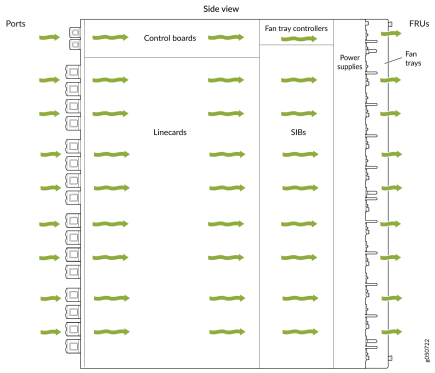


If you are mounting a QFX10016 in a rack with other equipment, ensure that the exhaust from other equipment does not blow into the intake vents of the chassis.

Cooling and Airflow Requirements

The cooling system in a QFX10016 chassis consists of dual fan trays and dual fan tray controllers. There is no air filter in a QFX10016.

The air intake to cool the chassis is located on the port (line card) side of the chassis. Air flows into the chassis from the ports in the control boards and line cards, through the Switch Interface Boards (SIBs), and exits from the fan trays and the power supplies. This airflow is called port-to-FRU cooling or airflow out (AFO).

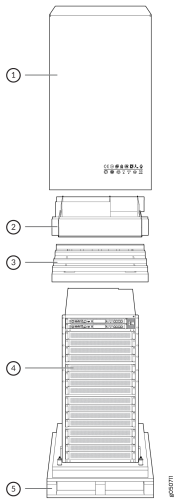


Follow these guidelines:

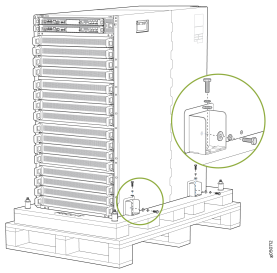
- For the cooling system to function properly, the airflow around the chassis must be unrestricted.
- If you are mounting a QFX10016 in a rack with other equipment, ensure that the exhaust from other equipment does not blow into the intake vents of the chassis.
- Leave at least 24 in. (61 cm) both in front of and behind the QFX10016 for service personnel to remove and install hardware components. To be NEBS GR-63 compliant, allow at least 30 in. (76.2 cm) in front of the rack and 24 in. (61 cm) behind the rack.

Unpack the QFX10016

Here's how to unpack the chassis for QFX10016:



1. Move the shipping box to a staging area as close to the installation site as possible. While the chassis is bolted to the pallet, you can use a forklift or pallet jack to move it. Make sure there is enough space to remove components from the chassis.
2. Position the shipping box with the arrows pointing up.
3. Slice the nylon straps with the box cutter that hold the shipping boxes to the pallet.
4. Lift the shipping box off the chassis.
5. Remove the cardboard accessory box.
6. Remove the foam padding from the top of the box.
7. Remove the plastic cover from the switch chassis.
8. Use a 13/32 in. (10 mm) open-end or socket wrench to remove the four sets of bracket bolts that secure the chassis to the shipping pallet.



9. Unpack the accessory box and lay out the contents so that they are ready for use.
10. Verify that your order includes all appropriate parts.
11. Store the brackets and bolts inside the accessory box.
12. Save the shipping box and packing materials in case you need to move or ship the switch at a later time.

Mount the Switch Chassis

IN THIS SECTION

To install the QFX10016, first install the mounting hardware and then use a mechanical lift to load the chassis into the rack.

- "Install the Mounting Hardware" on page 5
- "Mount the QFX10016 using a Mechanical Lift" on page 6

Install the Mounting Hardware

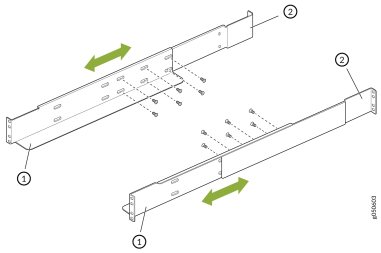
Install the mounting hardware on the rack before installing the switch. The QFX10016 comes with a four-piece set of mounting brackets that support the chassis in the rack.

NOTE: Two-post installation racks are not supported.

When you install the mounting brackets, the adjustable portion of the brackets overlap. Use the overlap area to adjust the total bracket length to fit any of the four standard rack sizes: 19 in. (483 mm), 23.62 in. (600 mm), 30 in. (762 mm), or 31.5 in. (800 mm).

To install the mounting brackets in a four-post rack:

1. Remove the mounting brackets from the accessory box.
2. Decide where to place the chassis in the rack. If the rack is empty, mount the switch in the lowest possible location. See "Rack-Mounting Requirements" on page 2.
3. Position the left front adjustable mounting bracket at the desired position in the left side of the rack and line up its front screw holes with the holes in the rack. Use four mounting screws appropriate for your rack to attach the left front bracket to the rack.
4. Position one of the rear brackets at the left rear of the rack on the same level as the left front bracket, so that the rear bracket overlaps with the left front bracket. The screw holes for connecting the front and rear brackets should overlap. Use four mounting screws appropriate for your rack to attach the rear bracket to the rack.
5. Connect left front and rear brackets.
   a. Insert six of the screws provided with the mounting brackets into the overlapping bracket holes.
   b. Hand-tighten the screws fully (to 12–16 in.-lb torque) using a number 2 Phillips screwdriver.



6. Position the right front adjustable mounting bracket at the desired position in the right side of the rack opposite the installed left front bracket, so that it is on the same rack level as the left bracket. If the right and left front brackets are not on the same level, the chassis will rest at an angle in the rack instead of resting flat and level. Line up the right bracket's front screw holes with the holes in the rack. Use four mounting screws appropriate for your rack to attach the right front bracket to the rack.
7. Position the other rear bracket at the right rear of the rack on the same level as the right front bracket, so that the rear bracket overlaps with the right front bracket. The screw holes for connecting the front and rear brackets should overlap. Use four mounting screws appropriate for your rack to attach the rear bracket to the rack.
8. Connect the right front and rear brackets.
   a. Insert six of the screws provided with the mounting brackets into the overlapping bracket holes.
   b. Hand-tighten the screws fully (to 12–16 in.-lb torque) using a number 2 Phillips screwdriver.

Mount the QFX10016 using a Mechanical Lift

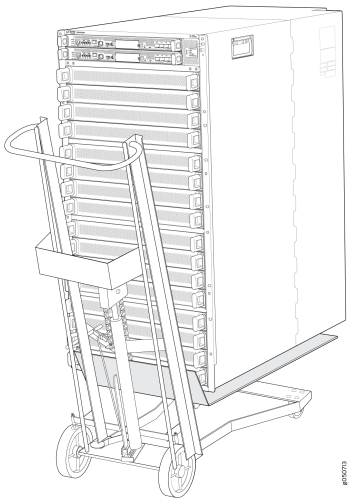
Because of the switch's size and weight, the QFX100016 can safely be installed only by using a mechanical lift.

CAUTION: Do not install line cards in the chassis until after you mount the chassis securely on a rack or cabinet.

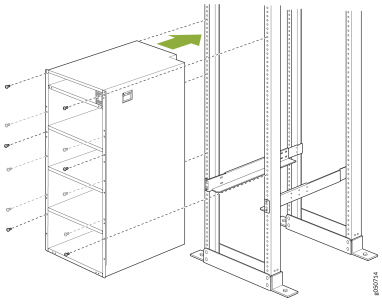
CAUTION: Before front-mounting the switch on a rack or cabinet, have a qualified technician verify that the rack or cabinet is strong enough to support the switch's weight and is adequately supported at the installation site.

To install the switch using a mechanical lift:

1. Ensure that the rack or cabinet is placed in its permanent location and is secured to the building. Ensure that the installation site allows adequate clearance for both airflow and maintenance. For details, see "Cooling and Airflow Requirements" on page 3.
2. Load the switch onto the lift, making sure it rests securely on the lift platform.



3. Using the lift, align the switch in front of the rack, centering it in front of the mounting brackets.
4. Lift the chassis approximately 0.75 in. (1.9 cm) above the surface of the mounting brackets. Align the chassis as close as possible to the mounting brackets.
5. Carefully slide the chassis onto the adjustable mounting brackets until the front-mounting brackets attached to the chassis contact the rack rails. The mounting brackets ensure that the holes in the front-mounting brackets align with the holes in the rack rails.



6. Move the lift away from the rack.
7. Install a mounting screw into each of the open front-mounting holes aligned with the rack, starting from the bottom.
8. Visually inspect the alignment of the switch. If the switch is installed properly in the rack, all the mounting screws on one side of the rack are aligned with the mounting screws on the opposite side and the switch is level.
9. After ensuring that the switch is aligned properly, tighten the screws.

Install the QFX10016

IN THIS SECTION

What's in the Box?

Along with your QFX10016, you'll also find:

- An accessory kit which includes:
  - AC Power cord (country specific).
  - Power cord retainer clips.
  - Electrostatic discharge (ESD) wrist strap with cable.
  - A Phillips (+) screwdriver, number 1, 2, or 3, depending on the size of your rack-mounting screws.
  - Mounting brackets. These support the chassis in the rack and are as follows:
    - 1 left front mounting bracket. The bracket is labeled "LEFT FRONT" on the side of the bracket that faces the interior of the rack, near the holes for attaching the bracket to the rack.
    - 1 right front mounting bracket. The bracket is labeled "RIGHT FRONT" on the side of the bracket that faces the interior of the rack, near the holes for attaching the bracket to the rack.
    - 2 rear mounting brackets. These brackets are labeled "REAR" on the side of the bracket that faces the interior of the rack, near the holes for attaching the bracket to the rack. The rear brackets are interchangeable; you can use either of the rear brackets with the right or left front-mounting bracket.
  - Cable lug.
  - Chassis. The chassis ships in a cardboard box that has a two-layer wooden pallet base with foam cushioning between the layers. The switch chassis is bolted to the pallet base. The shipper has the option to either ship the front panel separately or to ship along with the chassis. If the front panel arrives with the chassis, set aside the front panel box until you are ready to verify the contents of the order.

> **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.

NOTE: If your laptop or PC does not have a DB-9 male connector pin and you want to connect your laptop or PC directly to the device, use a combination of the RJ-45 to DB-9 female adapter supplied with the device and a USB to DB-9 male adapter. You must provide the USB to DB-9 male adapter.

What Else Do I Need?

You'll need:

To Unpack the QFX10016

- A 13/32 in. (10 mm) open-end or socket wrench to remove the bracket bolts from the shipping pallet.
- A box cutter or packing knife to slice open the nylon straps and tape that seal the crate and boxes.

To Install the Mounting Brackets

- A Phillips (+) screwdriver, number 2, to install the screws that connect the rear-mounting and front-mounting brackets.
- 16 mounting screws appropriate for your rack to attach the 4 mounting bracket pieces to the rack.

To Install using a Mechanical Lift

- A mechanical lift rated for 1000 lbs. (453.6 kg).
- 12 mounting screws appropriate for your rack.

CAUTION: If you are installing more than one switch in a rack or cabinet, install the first switch at the bottom of the rack.

To Install the Front Panel

- A Phillips (+) screwdriver, number 2.
- Front panel (provided with the switch chassis).
- Right base bracket (provided).
- Left base bracket (provided).
- 2 interchangeable latch brackets (provided).
- 8 Phillips flat head mounting screws (provided).

To Ground the Chassis

- Protective earthing terminal lug (provided).
- Grounding cable for your QFX10016 (not provided)—The grounding cable must be 6 AWG (13.3 mm^2), minimum 90° C wire, or as permitted by the local code.
- Grounding lug for your grounding cable (provided)—This bracket attaches to the lower left corner of the QFX10016 switch chassis next to PSU 9, providing a protective earthing terminal for the switch. The grounding lug required is a Panduit LCD6-10A-L or equivalent.
- Any Phillips screwdriver to tighten the two screws that are mounted on the chassis.

To Install a DC Power Supply

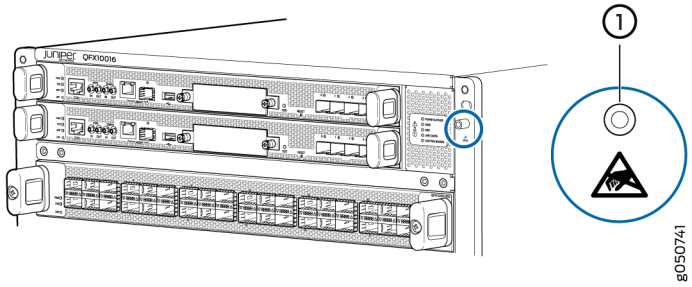
- DC power source cables (not provided) with the cable lugs (provided) attached. The provided terminal lugs in a QFX10016 are sized for 4 AWG (21.1 mm2) power source cables. The DC power source cables that you provide must be 4 AWG (21.1 mm2), minimum 60°C wire. We recommend that you install heat-shrink tubing insulation around the crimped section of the power cables and lugs.
- 13/32 in. (10 mm) nut driver or socket wrench.
- Phillips (+) screwdrivers, numbers 1 and 2.
- Multimeter.

Install the Line Cards

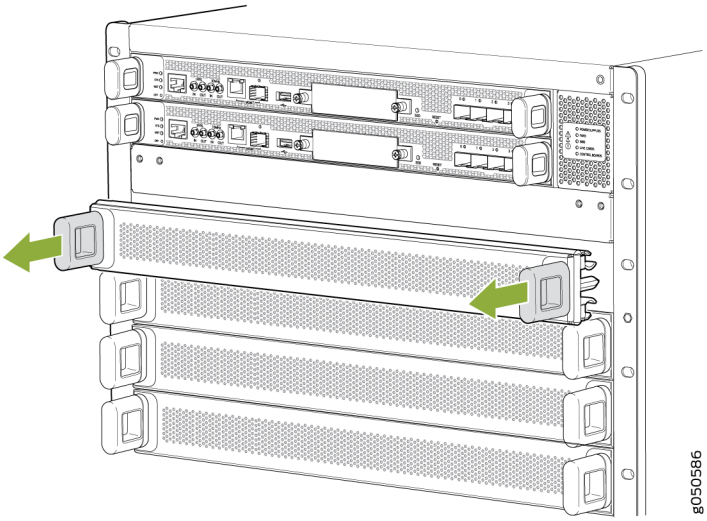
QFX10000 line cards are field-replaceable units (FRUs) that can be installed in any of the line card slots on the front of the chassis. The line cards are hot-insertable and hot-removable: You can remove and replace them without powering off the switch or disrupting switch functions.

To install a line card in the switch chassis:

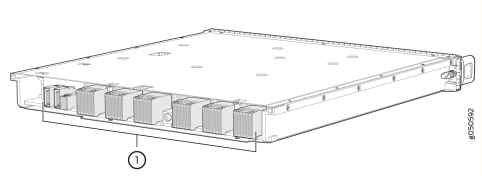
1. Attach the ESD grounding strap to your bare wrist and connect the strap to the ESD point on the switch chassis. The ESD point is located above the status LED panel on the front of the switch chassis.



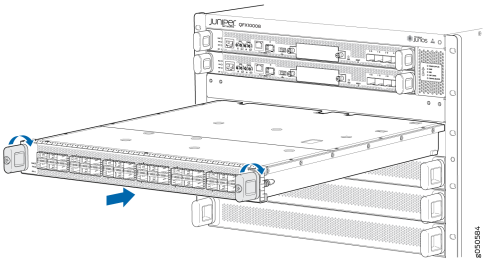
2. Remove the cover panel by grasping the handles and pulling straight out to expose the slot for the line card.



CAUTION: Do not lift the line card by holding the edge connectors or the handles on the faceplate. Neither the handles or the edge connectors can support the weight of the line card. Lifting the line card by the handles or edge connectors might bend them, which would prevent the line cards from being properly seated in the chassis.



3. Remove the line card from the electrostatic bag and inspect it for any damage before installing it into the chassis.
4. Grasp and lift the line card by the sides.
5. Slide the line card all the way into the slot until the handle holes align.



6. Screw the line card into the chassis by rotating the handles until the card is fully seated and the handles are vertical.
7. Bring the line card online:

```
user@switch>
request chassis fpc slot slot-number online
```

You can install the optional cable management kit after the card is installed.

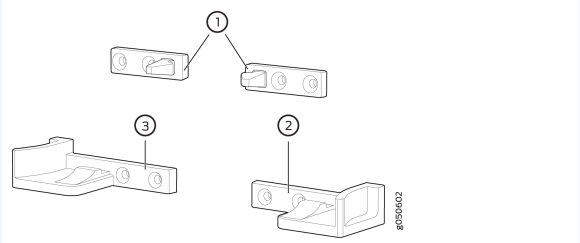
Install the Front Panel

The front panel is required on the QFX10016 to protect fiber optic cabling and to provide additional protection from electromagnetic interference (EMI). The front panel can be installed with or without the optional cable management system.

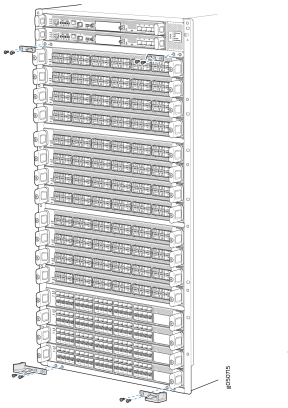
To install the front panel:

1. Remove the plastic bag that is taped to the front panel, which holds the brackets and screws.
2. Use the Phillips screwdriver to attach two mounting screws to the left base bracket at the bottom left side of the chassis frame. The base brackets are larger than the latch brackets.

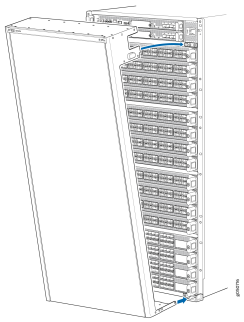
NOTE: The right and left base brackets cannot be interchanged.



3. Use the Phillips screwdriver to attach two mounting screws to the right base bracket at the bottom right side of the chassis frame.
4. Use the Phillips screwdriver to attach two mounting screws to the latch bracket at the top left of the chassis frame.



5. Use the final two mounting screws to attach a latch bracket to the top right of the chassis frame so there are brackets on all four corners of the front of the chassis.
6. Lift the front panel and rest it on the two bottom brackets.
7. Slide the panel back on the bracket glides until it engages on the two ramps.
8. Tilt the panel toward the chassis until it is vertical with the chassis. The blue release buttons on the side of the panel clicks into place.



Connect Power to the Chassis

IN THIS SECTION

Before supplying power to the QFX10016, ensure that you complete these tasks:

- "Ground the Chassis" on page 13
- "Install AC Power Supplies" on page 14
- "Install DC Power Supplies" on page 16

Ground the Chassis

To meet safety and electromagnetic interference (EMI) requirements and to ensure proper operation, you must connect the chassis to earth ground before you connect it to power.

For installations that require a separate grounding conductor to the chassis, you must attach a protective earthing terminal bracket on the chassis. There are mounting holes for the terminal bracket on the left-rear side of the chassis to connect to the earth ground.

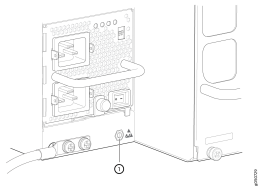
Before you connect earth ground to the protective earthing terminal of a QFX10016, ensure that a licensed electrician has attached an appropriate grounding lug to the grounding cable.

CAUTION: Using a grounding cable with an incorrectly attached lug can damage the switch.

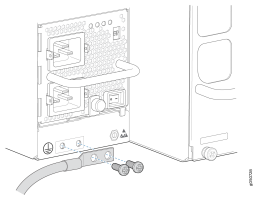
An AC-powered QFX10016 gains additional grounding when you plug the power supply in the switch into a grounded AC power outlet by using an AC power cord appropriate for your geographical location.

To connect earth ground to a QFX10016:

1. Verify that a licensed electrician has attached the cable lug (provided in the accessory kit) to the grounding cable.
2. Connect the other end of the grounding cable to a proper earth ground, such as the rack in which the switch is mounted.
3. Attach an ESD grounding strap to your bare wrist and connect the strap to the ESD grounding point next to the earthing posts.



4. Remove the two screws on the chassis by using a Phillips screwdriver.
5. Place the chassis grounding lug and cable over the PEM nuts with the cable connection pointing to the left.



6. Place the two screws over the grounding lug and grounding cable.
7. Tighten the two screws using a Phillips screwdriver.
8. 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 can trip over it.

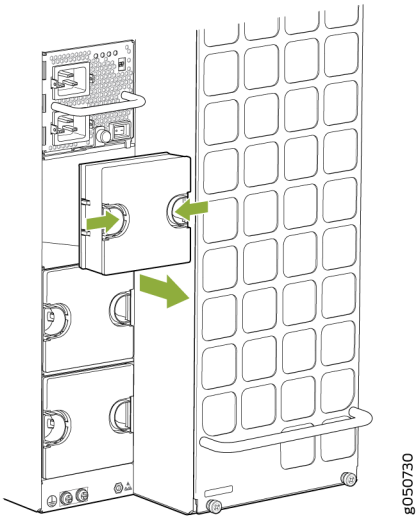
Install AC Power Supplies

QFX10016 power supplies are hot-insertable and are field-replaceable units (FRUs). You can install up to 10 power supplies in a QFX10016. The power supplies install in the rear of the chassis in the slots provided along the left side.

CAUTION: Do not mix AC and DC power supplies in the same chassis.

To install an AC power supply in a QFX10016 :

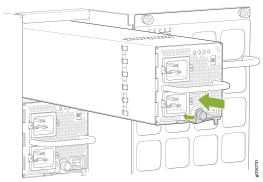
1. Attach the electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to the ESD point on the chassis. There is an ESD point located next to the protective earthing terminal and below **PSU 9** on the rear panel.
2. If the power supply slot has a cover panel on it, insert your thumb and forefinger into the finger holes, squeeze and pull the cover out of the slot. Save the cover panel for later use.



3. Taking care not to touch power supply connections, remove the power supply from its bag.
4. Peel back and remove the protective plastic wrap that covers all four sides of the power supply.
5. Ensure that the power switch is set to the standby (**O**) position. This switch turns off the output voltage; it does not interrupt AC.
6. Unscrew the captive screw in the counterclockwise direction by using the Phillips (+) screwdriver, number 1.
7. Rotate the captive screw away from the faceplate of the power supply to release the latch.

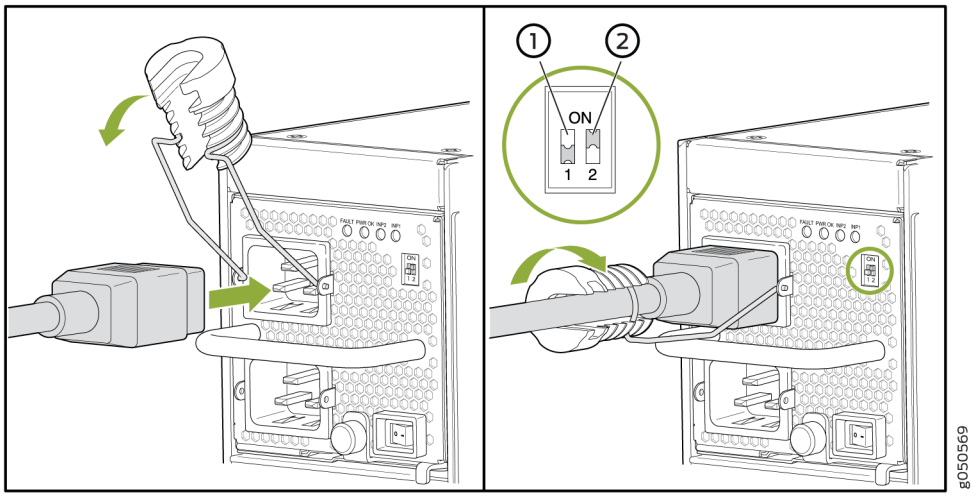
> **NOTE**: You can install the power supplies in any slot labeled PSU 0 through PSU 9 (top to bottom).

8. Using both hands, place the power supply in the power supply slot on the rear of the system. Slide the power supply straight into the chassis until the power supply is fully seated in the slot. Ensure that the power supply faceplate is flush with any adjacent power supply faceplates or power supply cover panels.
9. Push the captive screw into the power supply faceplate. Ensure that the screw is seated inside the corresponding hole on the faceplate.
10. Tighten the captive screw by turning it clockwise by using the Phillips (+) screwdriver, number 1. When the screw is completely tight, the latch locks into the switch chassis.



11. Locate two power cords shipped with the switch; the cords have plugs appropriate for your geographical location.
12. Attach each power cord to a dedicated AC power source outlet.
13. Squeeze the two sides of the power cord retainer clip and insert the ends of the clip into the holes in the bracket on each side of the AC appliance inlets on the AC power supply faceplate.
14. Insert the power cord coupler into the power supply. Each AC power supply has two independent 16 A-rated AC inlets on the faceplate. Each inlet must be connected to a dedicated AC power feed to achieve 2N source redundancy. If redundancy is not a requirement, use the default input **INP1** for a single connection.

15. Fasten the cord retainer by lowering the clip over the cord and pushing the cord into the adjustment nut of the cord retainer. Rotate the nut until it is tight against the base of the cord.



WARNING: Ensure that the power cords do not block access to switch components or drape where people can trip on them.

16. If the AC power source outlets have a power switch, set them to the on (|) position.
17. Move the enable switches for input 1 and input 2 to the **ON** position.
18. Verify that the **INP1** and **INP2** LEDs on the power supply faceplate are lit and are on steadily.
19. Press the power switch to the on (|) position.

Install DC Power Supplies

QFX10016 power supplies are hot-insertable and are field-replaceable units (FRUs). You can install up to 10 power supplies in a QFX10016. The power supplies install in the rear of the chassis in the slots provided along the left side.

CAUTION: Do not mix AC and DC power supplies in the same chassis.

Before you install a DC power supply in the chassis, ensure that you have followed all safety warnings and cautions:

WARNING: Before performing DC power procedures, ensure that power is removed from the DC circuit. To ensure that all power is off, locate the circuit breaker on the panel board that services the DC circuit, switch the circuit breaker to the OFF position, and tape the switch handle of the circuit breaker in the OFF position.

CAUTION: Before you connect power to the switch, a licensed electrician must attach a cable lug to the grounding and power cables that you supply. A cable with an incorrectly attached lug can damage the switch (for example, by causing a short circuit).

CAUTION: To meet safety and electromagnetic interference (EMI) requirements and to ensure proper operation, you must connect QFX10016 switches to earth ground before you connect them to power. For installations that require a separate grounding conductor to the chassis, use the protective earthing terminal on the switch chassis to connect to earth ground. For instructions on connecting a QFX10016 switch to ground using a separate grounding conductor, see "Ground the Chassis" on page 13.

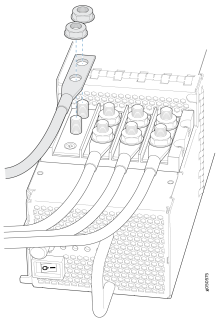
To install a DC power supply in a QFX10016:

1. Attach the electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to the ESD point on the chassis. There is an ESD point located next to the protective earthing terminal and below **PSU 9** on the rear panel .
2. Taking care not to touch power supply components, pins, leads, or solder connections, remove the power supply from its bag.
3. Peel back and remove the protective plastic wrap that covers all four sides of the power supply.
4. Ensure the power switch is set to the standby (**O**) position. This switch turns off the output voltage; it does not interrupt DC.
5. Remove the plastic cable cover from the DC power input terminals by using the Phillips (+) screwdriver, number 2, to loosen the screws.
6. Remove the nuts from each DC power input terminal, using the 13/32 in. (10 mm) nut driver or socket wrench to loosen the nuts.
7. Ensure that the power source circuit breaker is open so that the voltage across the DC power source cable leads is 0 (zero) V and that the cable leads do not become active while you are connecting DC power.
8. Verify that the DC power cables are correctly labeled before making connections to the power supply. In a typical power distribution scheme where the return is connected to chassis ground at the battery plant, you can use a multimeter to verify the resistance of the –48V and RTN DC cables to chassis ground:
   - The cable with very high resistance (indicating an open circuit) to chassis ground is negative (–) and will be installed on the –48V (input) DC power input terminal.

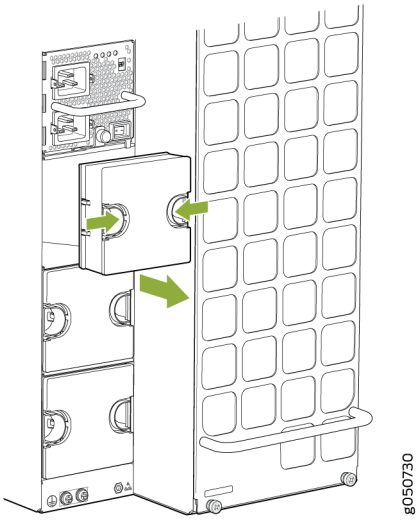
     The cable with very low resistance (indicating a closed circuit) to chassis ground is positive (+) and will be installed on the RTN (return) DC power input terminal.

     CAUTION: You must ensure that power connections maintain the proper polarity. The power source cables might be labeled (+) and (–) to indicate their polarity. There is no standard color coding for DC power cables.
9. Install each power cable lug on the DC power input terminal, securing it with the nut.
10. Apply between 24 in.-lb (2.7 Nm) and 25 in.-lb (2.8 Nm) of torque to each nut. (Use the 13/32 in. [10 mm] nut driver or socket wrench.)
    - Secure each positive (+) DC source power cable lug to the RTN (return) DC power input terminal.
    - Secure each negative (–) DC source power cable lug to the –48V (input) DC power input terminal.

Each power supply has two independent sets of DC power input terminals (INPUT 1: RTN –48V/–60V: and INPUT 2: : RTN –48V/–60V). For feed redundancy, each power supply must be powered by dedicated power feeds derived from feed INPUT 1 and feed INPUT 2. This configuration provides the commonly deployed INPUT 1 / INPUT 2 feed redundancy for the switch.



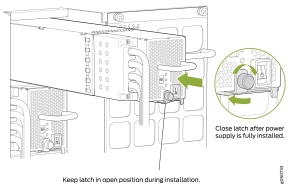
11. Install the plastic cable cover over each set of power cables by using the Phillips (+) screwdriver, number 2, to tighten the screw.
12. If the power supply slot on the chassis has a cover panel on it, insert your thumb and forefinger into the finger holes, then squeeze and pull the cover out of the slot. Save the cover panel for later use.



13. Unscrew the captive screw in the counterclockwise direction by using the Phillips (+) screwdriver, number 1.
14. Pull the captive screw away from the faceplate of the power supply to release the latch.

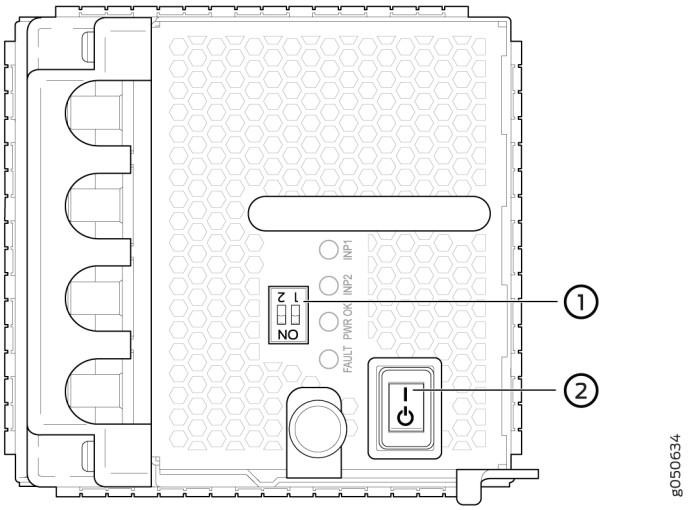
NOTE: You can install the power supplies in any slot labeled PSU 0 through PSU 9 (top to bottom).

15. Using both hands, place the power supply in the power supply slot on the rear of the switch. Slide the power supply straight into the chassis until the power supply is fully seated in the slot. Ensure that the power supply faceplate is flush with any adjacent power supply faceplates or power supply cover panels.
16. Push the captive screw into the power supply faceplate. Ensure that the screw is seated inside the corresponding hole on the faceplate.
17. Tighten the captive screw by turning it clockwise by using the Phillips (+) screwdriver, number 1. When the screw is completely tight, the latch locks into the switch chassis.



WARNING: Ensure that the power cords do not block access to switch components or drape where people can trip on them.

18. Set the enable switches for input 1 and input 2.
19. Set both enable switches to the | (on) position when using both source inputs. When not using source redundancy, set the unused source to the **O** (off) position. The LED turns red and indicates an error if a source input is not in use and the enable switch is **|** (on).



20. Verify that the input 1 and 2 LEDs on the power supply faceplate are lit and are on steadily.
21. Press the power switch to the on (|) position.

Step 2: Up and Running

IN THIS SECTION

Now that the QFX10016 is powered on, let's do some initial configuration to get it up and running on the network.

Connect to the Network

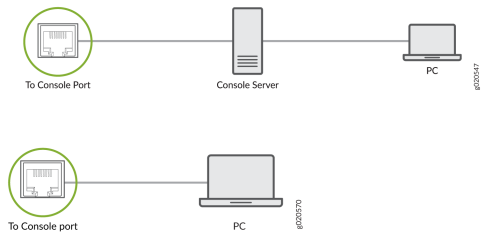
You can configure and manage the chassis by using a dedicated console. Every control board has a console port with an RJ-45 connector. Use the console port to connect the device to the management console or to a console server. The console port accepts a cable with an RJ-45 connector.

Ensure that you have an Ethernet cable with an RJ-45 connector available. An RJ-45 cable and an RJ-45 to DB-9 serial port adapter are supplied with the device.

NOTE: If your laptop or PC does not have a DB-9 male connector pin and you want to connect your laptop or PC directly to the device, use a combination of the RJ-45 to DB-9 female adapter supplied with the device and a USB to DB-9 male adapter. You must provide the USB to DB-9 male adapter.

To connect the chassis to the network using the console port:

1. Connect one end of the Ethernet cable into the console port labeled CON on the control board.
2. Connect the other end of the Ethernet cable into the console server.



Perform Initial Configuration

You must perform the initial configuration of a QFX10016 switch through the console port using the CLI.

Before you begin connecting and configuring the switch, set the following parameter values on the console server or PC, verify that the following default serial port settings are configured on your laptop or desktop PC:

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

1. Connect the console port to a laptop or PC using the supplied RJ-45 cable and RJ-45 to DB-9 adapter. The console (**CON**) port is located on the port panel of the switch.

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 default gateway.

```
[edit]
root@# set routing-options static route default next-hop address
```

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

```
[edit]
root@# set interfaces em0 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: The management ports, em0 (MGMT for RJ-45 connections) and em1 (also labeled MGMT for fiber connections) are found on each of the control boards of the QFX10016.

9. (Optional) 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 retain
no-readvertise
```

10. Enable Telnet service.

```
[edit]
root@# set system services telnet
```

NOTE: When Telnet is enabled, you cannot log in to a QFX10016 through Telnet using root credentials. Root login is allowed only for SSH access.

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

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

Step 3: Keep Going

IN THIS SECTION

Congratulations! Your QFX10016 is configured and ready to go. 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 QFX 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
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 QFX10016	See the QFX10016 Documentation in the Juniper Networks TechLibrary
Find more information about how to install and configure the QFX10016	See the QFX10016 Switch Hardware Guide

(Continued)

If you want to	Then
Manage software upgrades for your QFX10016	See Installing Software on QFX Series Devices
Stay up-to-date about new and changed features and known and resolved issues	See the Junos OS Release Notes

Learn With Videos

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If you want to	Then
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