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NETWORKS Simplicity

MX960 Universal Routing Platform

RELEASE

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MX960 Quick Start Description

This Quick Start contains information you need to install and configure the router quickly. For complete installation instructions, see the MX960 Universal Routing Platform Hardware Guide at https://www.juniper.net/documentation/.

> ⚠️ **WARNING**: This Quick Start contains a summary of safety warnings in "Safety Warnings" on page 29. For a complete list of warnings for this router, including translations, see the MX960 Universal Routing Platform Hardware Guide at https://www.juniper.net/documentation/.

The MX960 Universal Routing Platform with the standard cable manager is 16 rack units (U) tall, or 21 U with the extended cable manager. Three routers with the standard cable manager, or two routers with the extended cable manager, can be stacked in a single floor-to-ceiling rack, for increased port density per unit of floor space.

The router provides 14 slots that can be populated with up to 12 Dense Port Concentrators (DPCs) or Modular Port Concentrators (MPCs), six Flexible PIC Concentrators (FPCs), and two Switch Control Boards (SCBs) in nonredundant fabric configurations.

Several types of DPCs are available. Each DPC includes either two or four Packet Forwarding Engines. Each Packet Forwarding Engine enables a throughput of 10 Gbps.

Up to two PICs can be installed in each FPC. Fully populated, the MX960 router supports up to 12 PICs.

Up to two Modular Interface Cards (MICs) can be installed in each MPC. Fully populated, the MX960 router supports up to 24 MICs.

For a list of the supported DPCs, FPCs, MPCs, MICs, and PICs, see the *MX Series Interface Module Reference*.

The router is shipped in a cardboard box strapped securely to a wooden pallet. Plastic straps secure the top and bottom in place. The router chassis is bolted to this pallet. Quick Start installation instructions and a cardboard accessory box are also included in the shipping container.

Step 1: Prepare the Site for MX960 Installation

IN THIS SECTION

Rack-Mounting Requirements

- You can install the router in a four-post rack or cabinet or an open-frame rack.

- The rack rails must be spaced widely enough to accommodate the router chassis's external dimensions: 27.75 in. (70.49 cm) high, 23.0 in. (58.42 cm) deep, and 17.37 in. (44.11 cm) wide. The outer edges of the mounting brackets extend the width to 19 in. (48.3 cm).

- The rack must be strong enough to support the weight of the fully configured router, up to 350 lb (158.76 kg). If you stack three fully configured routers in one rack, it must be capable of supporting about 1,050 lb (476.3 kg).

- For service personnel to remove and install hardware components, there must be adequate space at the front and back of the router. Allow at least 30 in. (76.2 cm) in front of the router and 24 in. (61 cm) behind the router.

- The rack or cabinet must have an adequate supply of cooling air.

- Ensure that the cabinet allows the chassis hot exhaust air to exit from the cabinet without recirculating into the router.

- The router must be installed into a rack that is secured to the building structure.

- Mount the router at the bottom of the rack if it is the only unit in the rack.

- When mounting the router in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

Figure 1: MX960 Rack Clearance and Router Dimensions

27.75 in.
(70.49cm)

30 in.
(76.2 cm)

17.37 in.
(44.11 cm)

24 in.
(61 cm)

23.0 in.
(58.42 cm)

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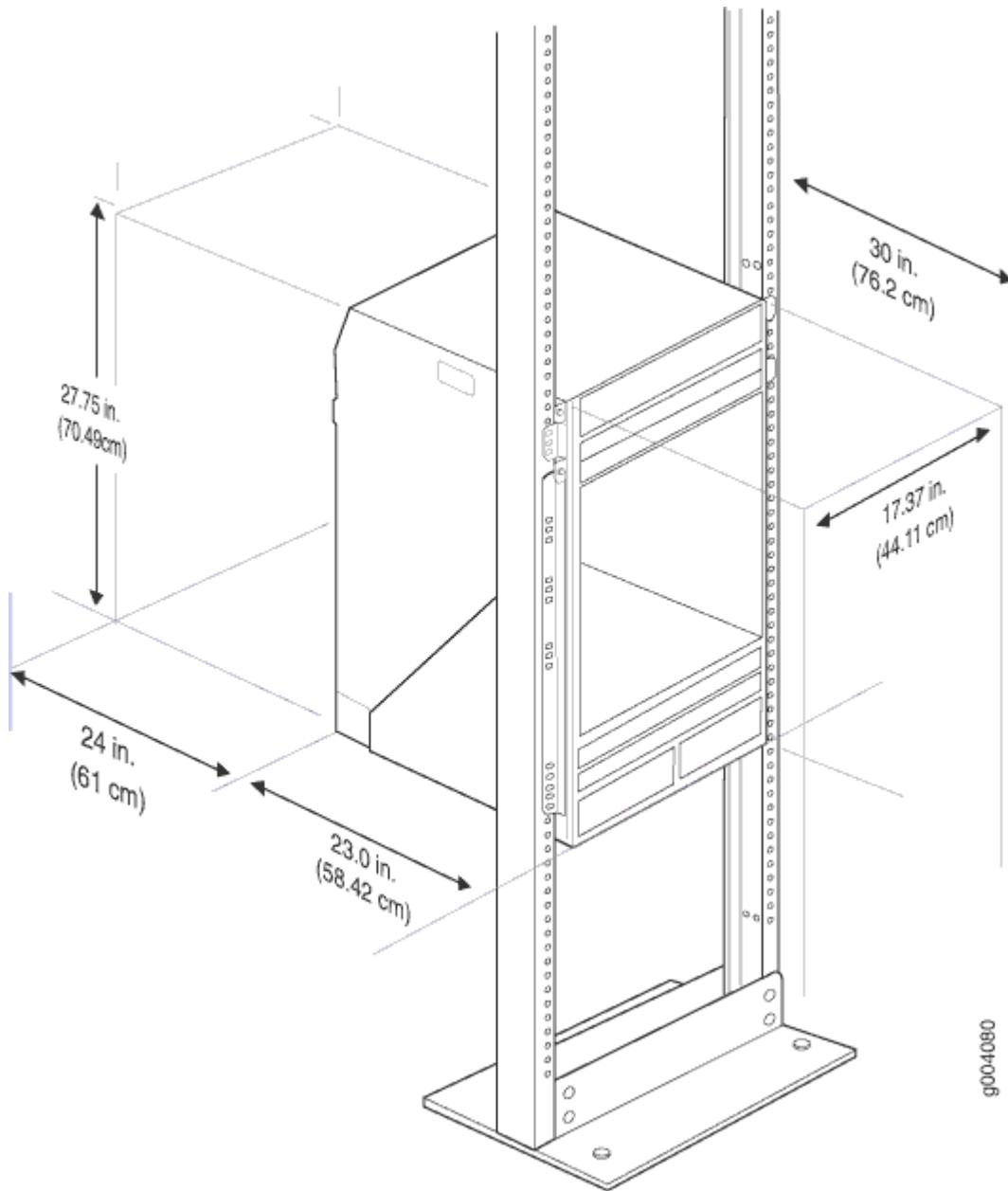
Tools Required to Unpack and Prepare the MX960 Router for Installation

To unpack the router and prepare for installation, you need the following tools:

- A mechanical lift—recommended

- Phillips (+) screwdrivers, numbers 1 and 2

- 2.5 mm flat-blade (–) screwdriver

- 7/16-in. (11 mm) torque-controlled driver or socket wrench

- 1/2-in. or 13-mm open-end or socket wrench to remove bracket bolts from the shipping pallet

- Electrostatic discharge wrist strap

- Antistatic mat

Proceed to .

Step 2: Install the Mounting Hardware

IN THIS SECTION

Install the Mounting Hardware in a Four-Post Rack or Cabinet

1. On the front rack rails, install cage nuts in the holes specified in the MX960 Universal Routing Platform Hardware Guide for the large shelf and the spacer bars.
2. On the front of each front rack rail, partially insert a mounting screw into the hole containing the lowest cage nut.
3. Install the large shelf on the front rack rails. Rest the bottom slot of each ear on a mounting screw.
4. Partially insert a mounting screw into the top hole in each ear of the large shelf.
5. Tighten all the screws completely.
6. On the rear rack rails, install cage nuts in the holes specified in the MX960 Universal Routing Platform Hardware Guide for the small shelf.
7. On the back of each rear rack rail, partially insert a mounting screw into the hole containing the lowest cage nut.
8. Install the small shelf on the back rack rails. Rest the bottom slot of each ear on a mounting screw. The small shelf installs on the back of the rear rails, extending toward the center of the rack. The bottom of the small shelf should align with the bottom of the large shelf.

9. Partially insert screws into the open holes in the ears of the small shelf.

10. Tighten all the screws completely.

Figure 2: Mount Hardware for a Four-Post Rack or Cabinet
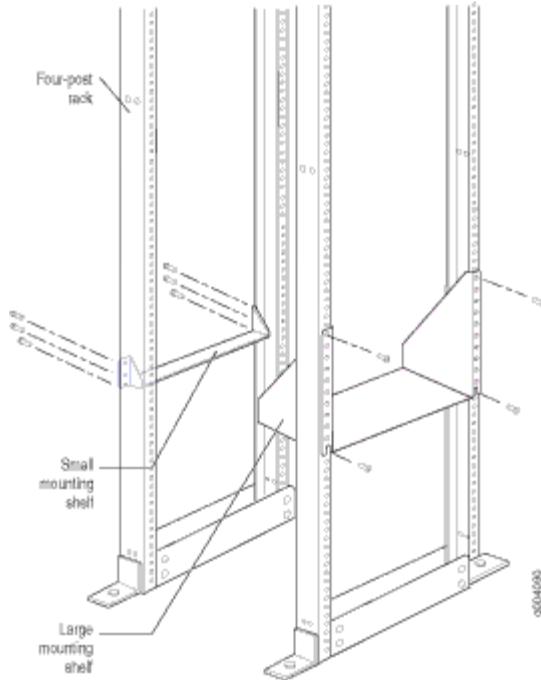
Install the Mounting Hardware in an Open-Frame Rack

1. On the rear of each rack rail, partially insert a mounting screw into the highest hole specified in the MX960 Universal Routing Platform Hardware Guide for the large shelf.

2. Install the large shelf on the rack. Hang the shelf over the mounting screws using the keyhole slots located near the top of the large shelf flanges.

3. Partially insert screws into the open holes in the ears of the large shelf.

4. Tighten all the screws completely.

Figure 3: Mount Hardware for an Open-Frame Rack
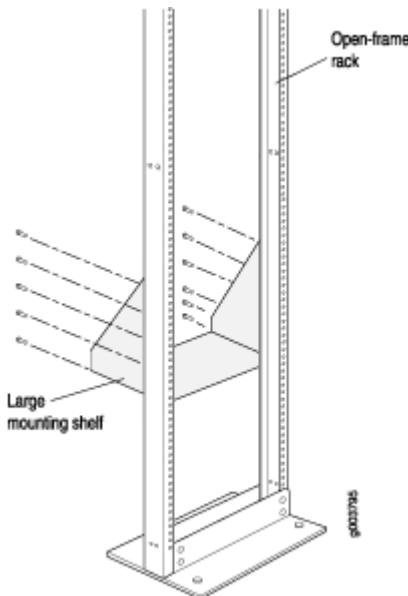
Step 3: Install the Router

Remove Components

Figure 4: Components to Remove from the Front of the MX960 Router
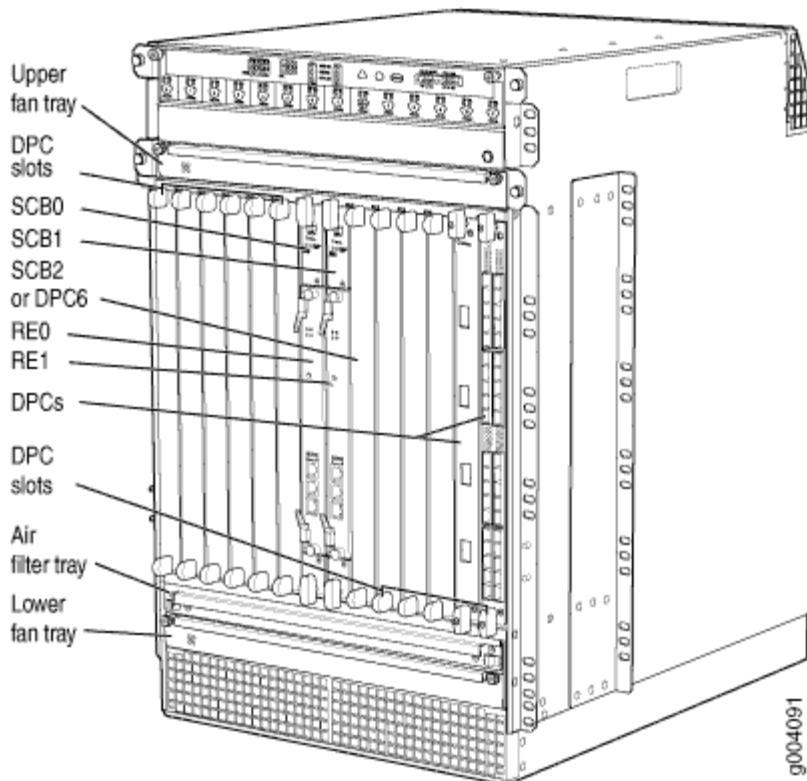
Figure 5: Components to Remove from the Rear of the MX960 Router
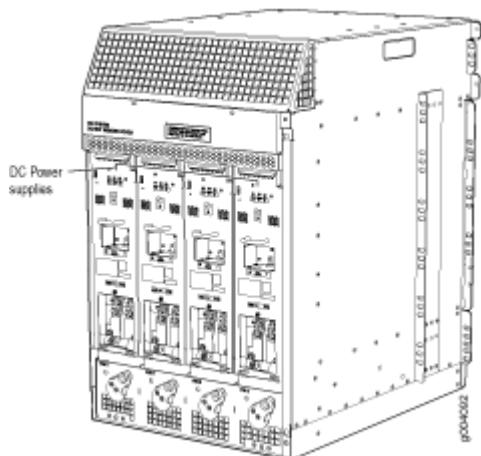
Before installing the router, you must remove the following components:

- Power supplies

- Switch Control Boards (SCBs)

- Cable management system

- Routing Engines

- Air filter

- Fan trays

- Line cards:

    - Dense Port Concentrators (DPCs)

    - Flexible PIC Concentrators (FPCs)

    - Physical Interface Cards (PICs)

    - Modular Port Concentrators (MPCs)

    - Modular Interface Cards (MICs)

To remove the components from the router:

1. Slide each component out of the chassis evenly so that it does not become stuck or damaged.
2. Label each component as you remove it so you can reinstall it in the correct location.
3. Immediately store each removed component in an electrostatic bag.
4. Do not stack removed components. Lay each one on a flat surface.

> **NOTE**: For complete instructions on removing router components, see the MX960 Universal Routing Platform Hardware Guide.

Install the Router Using a Lift

Before installing the router, you must remove all components (see "Remove Components" on page 7). To install the router using a lift:

1. Ensure that the rack is 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 the MX960 Universal Routing Platform Hardware Guide.

2. Load the router onto the lift, making sure it rests securely on the lift platform (see Figure 6 on page 9).

Figure 6: Load the MX960 Router onto the Lift
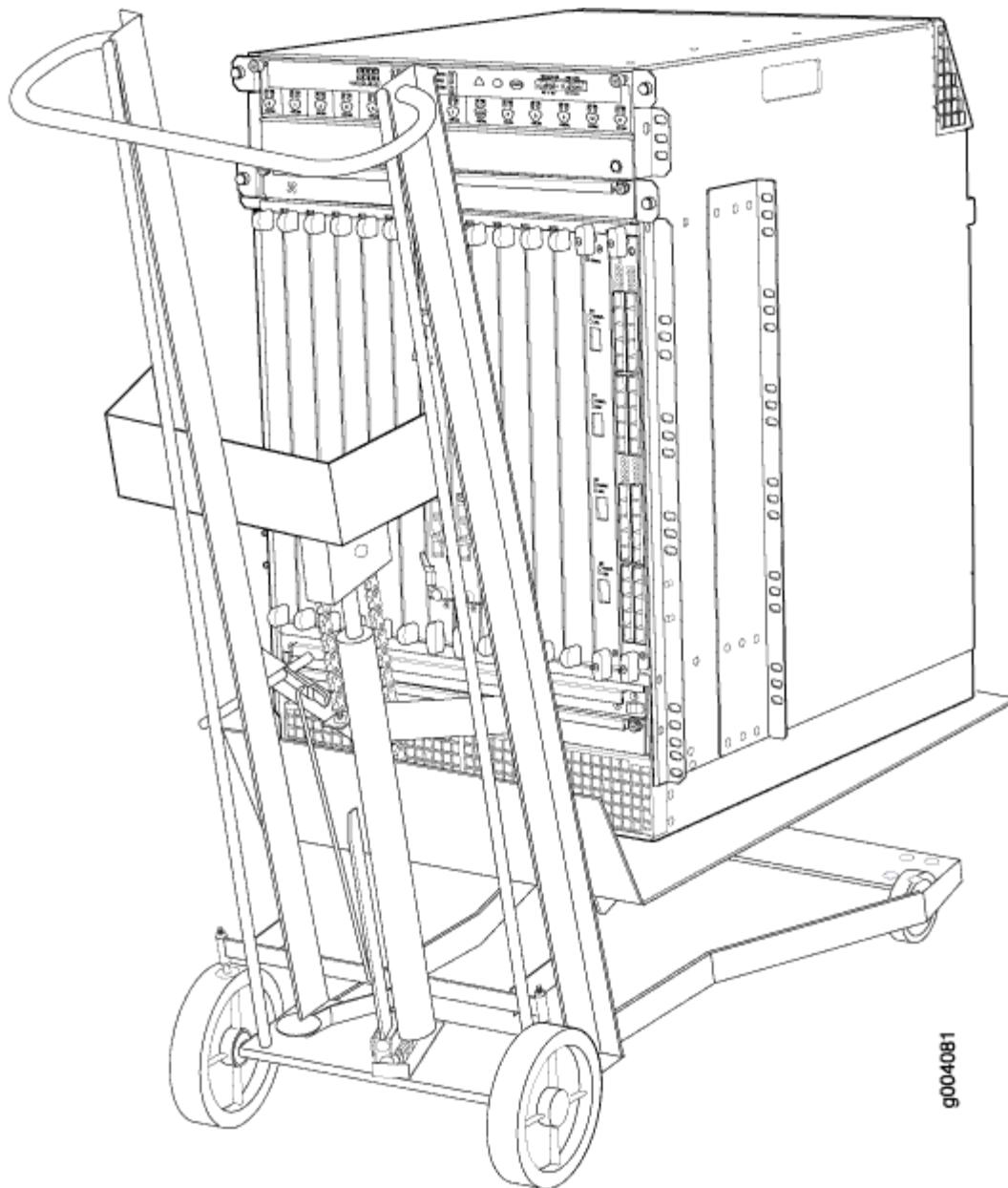
3. Using the lift, position the router in front of the rack or cabinet, centering it in front of the mounting shelves.

4. Lift the chassis approximately 0.75 in. above the surface of the mounting shelves, and position it as close as possible to the shelves.

5. Carefully slide the router onto the mounting shelves so that the bottom of the chassis and the mounting shelves overlap by approximately 2 inches.

6. Slide the router onto the mounting shelves until the mounting brackets or front-mounting flanges contact the rack rails. The shelves ensure that the holes in the mounting brackets and the front-mounting flanges of the chassis align with the holes in the rack rails.

7. Move the lift away from the rack.

8. To install the router in an open-frame rack, install a mounting screw into each of the open mounting holes aligned with the rack, starting from the bottom.

9. Visually inspect the alignment of the router. If the router is installed properly in the rack, all the mounting screws on one side of the rack should be aligned with the mounting screws on the opposite side and the router should be level.

Reinstall Components

To reinstall the components in the router:

1. Slide each component into the chassis evenly so that it does not become stuck or damaged.

2. Tighten the captive screws for each component.

NOTE: Make sure that all empty slots are covered with a blank panel before operating the router.

Proceed to "Step 4: Connect the Grounding Cable" on page 10.

Step 4: Connect the Grounding Cable

1. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to an approved site ESD grounding point. See the instructions for your site.

2. Connect the grounding cable to a proper earth ground.

3. Verify that a licensed electrician has attached the cable lug provided with the router to the grounding cable.

4. Make sure that grounding surfaces are clean and brought to a bright finish before grounding connections are made.

5. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to one of the ESD points on the chassis. For more information about ESD, see the MX960 Universal Routing Platform Hardware Guide.

6. Place the grounding cable lug over the grounding points. The left pair is sized for M6 bolts, and the right pair is sized for UNC 1/4-20 bolts.

7. Secure the grounding cable lug to the grounding points, first with the washers, then with the screws.

8. Verify that the grounding cabling is correct, that the grounding cable does not touch or block access to router components, and that it does not drape where people could trip on it.

Proceed to .

Step 5: Connect External Devices and Line Card Cables

IN THIS SECTION

Figure 7: Connect External Devices and DPC Cables

Fiber-optic cable

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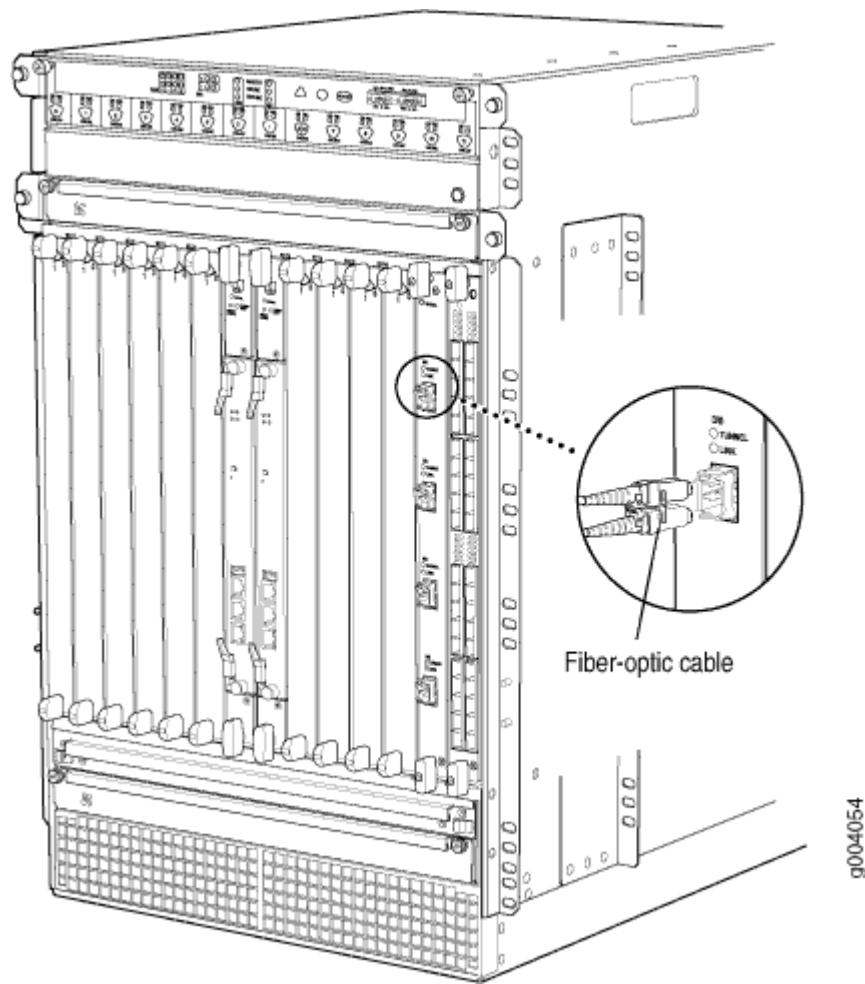
Connect to a Network for Out-of-Band Management

1. Turn off the power to the management device.
2. Plug one end of the RJ-45 Ethernet cable into the **ETHERNET** port on the Routing Engine.
3. Plug the other end of the cable into the network device.

Connect a Management Console

1. Turn off the power to the management device.
2. Plug one end of the RJ-45 Ethernet cable into the **CONSOLE** or **AUX** port on the Routing Engine.

3. Plug the female DB-9 end into the device's serial port.

> **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.

Connect the Line Card Cables

1. Have ready a length of the type of cable used by the DPCs, MPCs, MICs, or PICs. For cable specifications, see the *MX Series Interface Module Reference*.
2. If the cable connector port is covered by a rubber safety plug, remove the plug.

> **LASER WARNING**: Do not look directly into a fiber-optic transceiver or into the ends of fiber-optic cables. Fiber-optic transceivers and fiber-optic cable connected to a transceiver emit laser light that can damage your eyes.

> **CAUTION**: Do not leave a fiber-optic transceiver uncovered except when inserting or removing cable. The safety cap keeps the port clean and prevents accidental exposure to laser light.

3. Insert the cable connector into the cable connector port on the faceplate.
4. Arrange the cable in the cable management system to prevent it from dislodging or developing stress points. Secure the cable so that it is not supporting its own weight as it hangs to the floor. Place excess cable out of the way in a neatly coiled loop in the cable management system. Placing fasteners on the loop helps to maintain its shape.

> ⚠ **CAUTION**: Avoid bending fiber-optic cable beyond its minimum bend radius. An arc smaller than a few inches in diameter can damage the cable and cause problems that are difficult to diagnose.

> ⚠ **CAUTION**: Do not let fiber-optic cable hang free from the connector. Do not allow fastened loops of cable to dangle, which stresses the cable at the fastening point.

Proceed to .

Step 6: Connect Power Cables

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- Connect Power to an AC Router with Normal-Capacity Power Supplies | 14
- Connect Power to an AC Router with High-Capacity Power Supplies | 15
- Connect Power to a DC Router with Normal-Capacity Power Supplies | 19
- Connect Power to a DC Router with High-Capacity Power Supplies | 21

Depending on your configuration, your router uses either AC or DC power supplies. Perform the appropriate procedures for each power supply in your router.

Connect Power to an AC Router with Normal-Capacity Power Supplies

1. Locate the power cords shipped with the router, which should have a plug appropriate for your geographical location (see the MX960 Universal Routing Platform Hardware Guide).
2. Attach an electrostatic discharge (ESD) grounding strap to your bare wrist, and connect the strap to one of the ESD points on the chassis. For more information about ESD, see the For more information about ESD, see the MX960 Universal Routing Platform Hardware Guide..
3. Move the power switch on the power supply faceplate to the standby position.

4. Insert the appliance coupler end of the power cord into the appliance inlet on the power supply.

5. Insert the power cord plug into an external AC power source receptacle.

> **NOTE**: Each power supply must be connected to a dedicated AC power feed and a dedicated customer site circuit breaker. We recommend that you use a 15 A (250 VAC) minimum, or as permitted by local code.

6. Dress the power cord appropriately. Verify that the power cord does not block the air exhaust and access to router components, or drape where people could trip on it.

7. Repeat Step 1 through Step 6 for the remaining power supplies.

Connect Power to an AC Router with High-Capacity Power Supplies

> **NOTE**: A minimum of two AC nominal 220 VAC 20 amp power cords are required for this procedure.

To install an MX960 high-capacity AC power supply, use the following procedure (see Figure 8 on page 16).

1. Verify that the power switch on the power supply is in the off (**O**) position.

2. Ensure that the release lever below the empty power supply slot is locked in the counterclockwise position (see Figure 8 on page 16).

Figure 8: MX960 with High-Capacity AC Power Supplies Installed
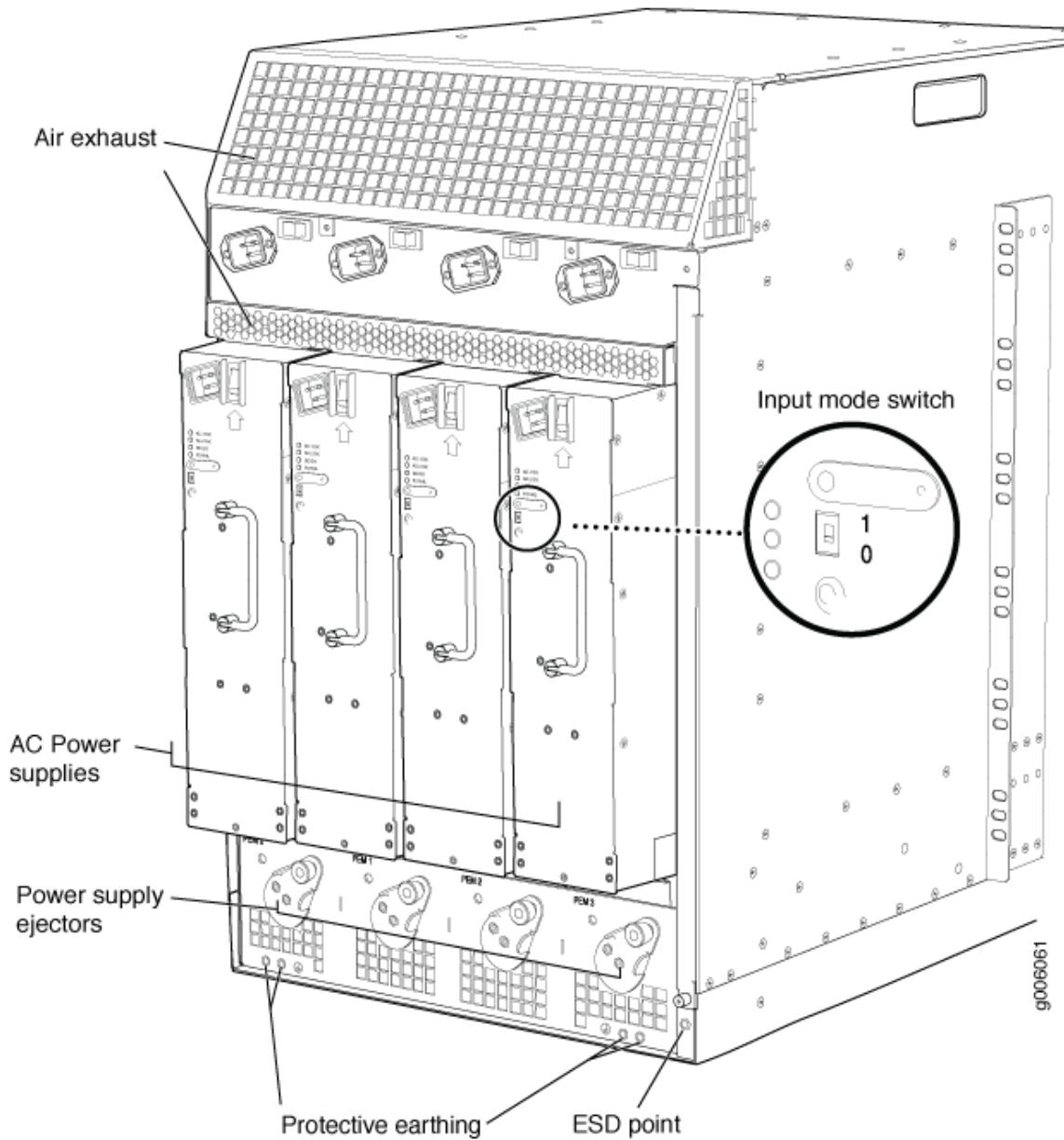
If necessary, pull the spring-loaded locking pin in the release lever away from the chassis and turn the release lever counterclockwise until it stops. Let go of the locking pin in the release lever. Ensure that the pin is seated inside the corresponding hole in the chassis.

3. On the power supply, rotate the metal cover away from the input mode switch to expose the switch.

4. Move the input mode switch to position 0 for one feed or position 1 for two feeds (see).

Figure 9: MX960 AC Power Input Mode Switch
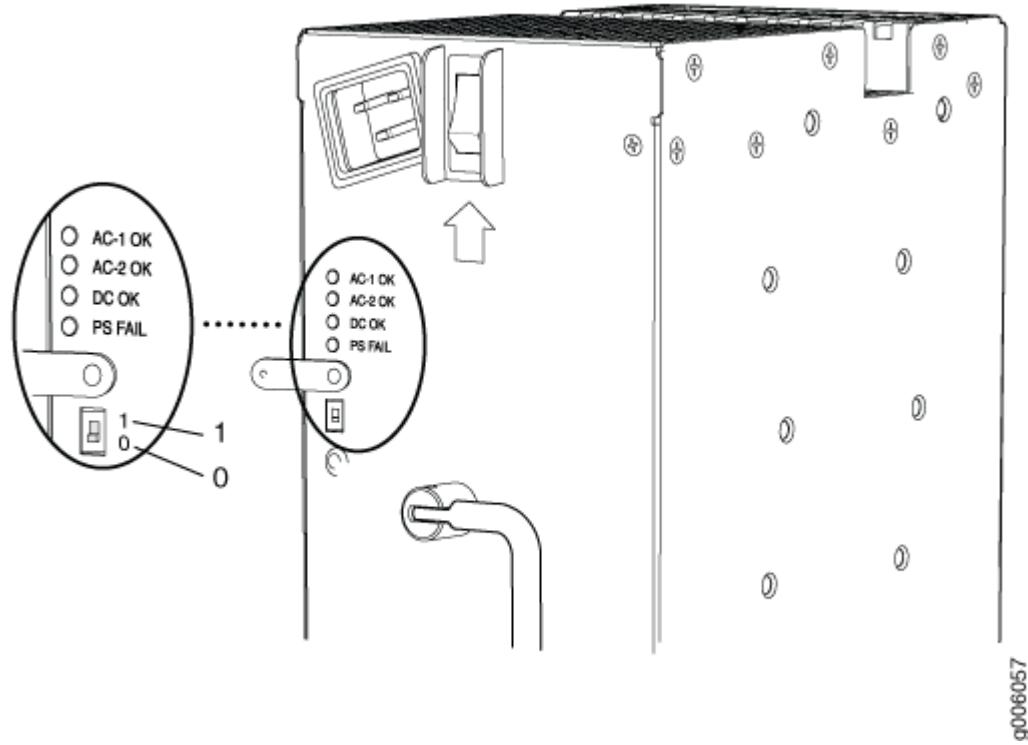
> ⚠️ **CAUTION**: Do not use a pencil, because fragments can break off and cause damage to the power supply.

5. Using both hands, slide the power supply straight into the chassis until the power supply is fully seated in the chassis slot. The power supply faceplate will protrude beyond the chassis.

   The small tab on the metal housing that is controlled by the release lever must be inside of the corresponding slot at the bottom of the power supply (see Figure 9 on page 17). This tab is used to pull the power supply down in the chassis slot, prior to removing the power supply.

6. While firmly pushing the handle on the power supply faceplate with one hand, use your other hand to pull the spring-loaded locking pin in the release lever away from the chassis and turn the release lever clockwise until it stops.

7. Let go of the locking pin in the release lever. Ensure that the pin is seated inside the corresponding hole in the chassis.

8. Locate a power cord with the type of plug appropriate for your geographical location (see *AC Power Cord Specifications for the MX960 Router*).

9. Plug the power cord into the corresponding appliance inlet located in the chassis directly above the power supply. This is the recommend receptacle when using the power supply in one-feed mode. If

using the power supply in two-feed mode, plug the second power cord into the receptacle on the power supply.

> **NOTE**: Each power supply must be connected to a dedicated AC power feed and a dedicated customer site circuit breaker.

10. Dress the power cords appropriately. Verify that the power cord does not block the air exhaust and access to router components, and that they do not drape where people could trip on them.

11. Move the AC input switch above the power supply to the on (**—**) position. This is the only switch you have to turn on if you are using the power supply in one feed mode. If using the power supply in two-feed mode, move the power switch on the power supply to the on position. Remember to turn on both switches when operating the power supply in two-feed mode.

12. If the power supply is correctly installed and functioning normally, the **AC1 OK**, **AC2 OK** (two-feed mode only) **DC OK** LEDs light steadily, and the **PS FAIL** LED is not lit. See Table 1 on page 18.

Table 1: MX960 High-Capacity AC Power Supply LEDs

Connected Inputs	DIP Switch Position	LEDs			
		AC-1 OK	**AC-2 OK**	**DC OK**	**PS FAIL**
PDM connected, power supply disconnected	0 (1 input)	Green	Off	Green	Off
PDM disconnected, power supply connected	0 (1 input)	Off	Green	Green	Off
PDM connected, PS connected	0 (1 input)	Green	Green	Green	Off
PDM connected, PS disconnected	1 (2 inputs)	Green	Off	Off	Red

Table 1: MX960 High-Capacity AC Power Supply LEDs *(Continued)*

Connected Inputs	DIP Switch Position	LEDs			
		AC-1 OK	**AC-2 OK**	**DC OK**	**PS FAIL**
PDM disconnected, PS connected	1 (2 inputs)	Off	Green	Off	Red
PDM connected, PS connected	1 (2 inputs)	Green	Green	Green	Off

Note: The corresponding appliance inlet located in the chassis directly above the power supply is the recommend receptacle when using the power supply in one feed mode. If using the power supply in two-feed mode, plug the second power cord into the receptacle on the power supply

Note: PDM in the above table stands for Power Distribution Module.

13. Repeat steps 1-12 for installing power supplies in slots 1, 2, and 3, where required.

Connect Power to a DC Router with Normal-Capacity Power Supplies

1. Ensure that the voltage across the DC power source cable leads is 0 V and that there is no chance that the cable leads might become active during installation.

2. Secure the power cable lugs to the terminal studs, first with the split washer, then with the nut. Apply between 23 lb-in. (2.6 Nm) and 25 lb-in. (2.8 Nm) of torque to each nut. Do not overtighten the nut. (Use a 7/16-in. [11 mm] torque-controlled driver or socket wrench.)

   a. Attach the positive (+) DC source power cable lug to the **RTN** (return) terminal.

   b. Attach the negative (−) DC source power cable lug to the **−48V** (input) terminal.

Table 2: MX960 DC Power System Input Voltage

Item	Specification
DC input voltage	Operating range: −40 to −72 VDC

Figure 10: Connect Ground and Power Cables
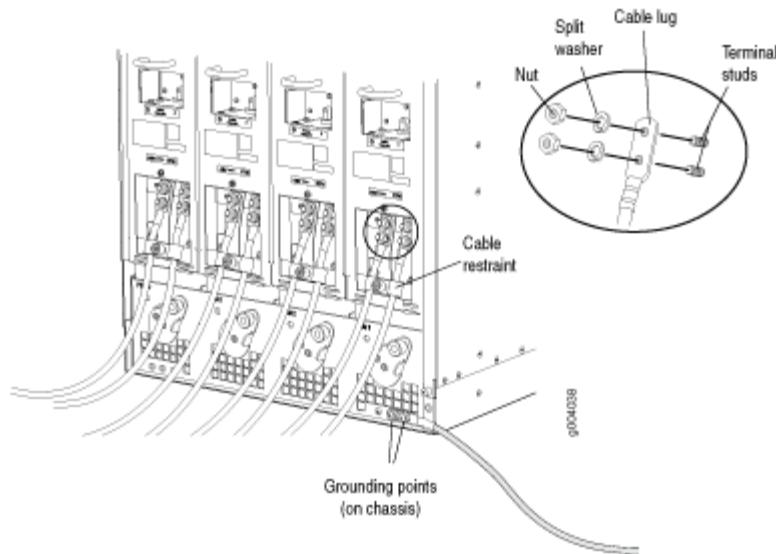
⚠ **CAUTION**: Ensure that each power cable lug seats flush against the surface of the terminal block as you are tightening the nuts. Ensure that each nut is properly threaded onto the terminal stud. The nut should be able to spin freely with your fingers when it is first placed onto the terminal stud. Applying installation torque to the nut when improperly threaded may result in damage to the terminal stud.

⚠ **CAUTION**: The maximum torque rating of the terminal studs on the DC power supply is 58 lb-in. (6.5 Nm). The terminal studs may be damaged if excessive torque is applied. Use only a torque-controlled driver or socket wrench to tighten nuts on the DC power supply terminal studs.

> **NOTE**: For information about connecting to DC power sources, see the MX960 Universal Routing Platform Hardware Guide.

3. Loosen the captive screw on the cable restraint on the lower edge of the power supply faceplate.

4. Connect each DC power cable to the appropriate external DC power source.

> **NOTE**: For information about connecting to external DC power sources, see the MX960 Universal Routing Platform Hardware Guide.

5. Switch on the external circuit breakers to provide voltage to the DC power source cable leads.

Connect Power to a DC Router with High-Capacity Power Supplies

To install an MX960 DC high-capacity DC power supply:

1. Verify that the power switch on the power supply is in the off (**O**) position.

2. On the power supply, rotate the metal cover away from the input mode switch to expose the switch.

3. Move the input mode switch to position 0 for one feed or position 1 for two feeds (see Figure 11 on page 22).

> **NOTE**: For a fully redundant configuration in two-feed mode, eight feeds are required. For a nonredundant configuration, four feeds are required.

Figure 11: MX960 with High-Capacity DC Power Supplies Installed
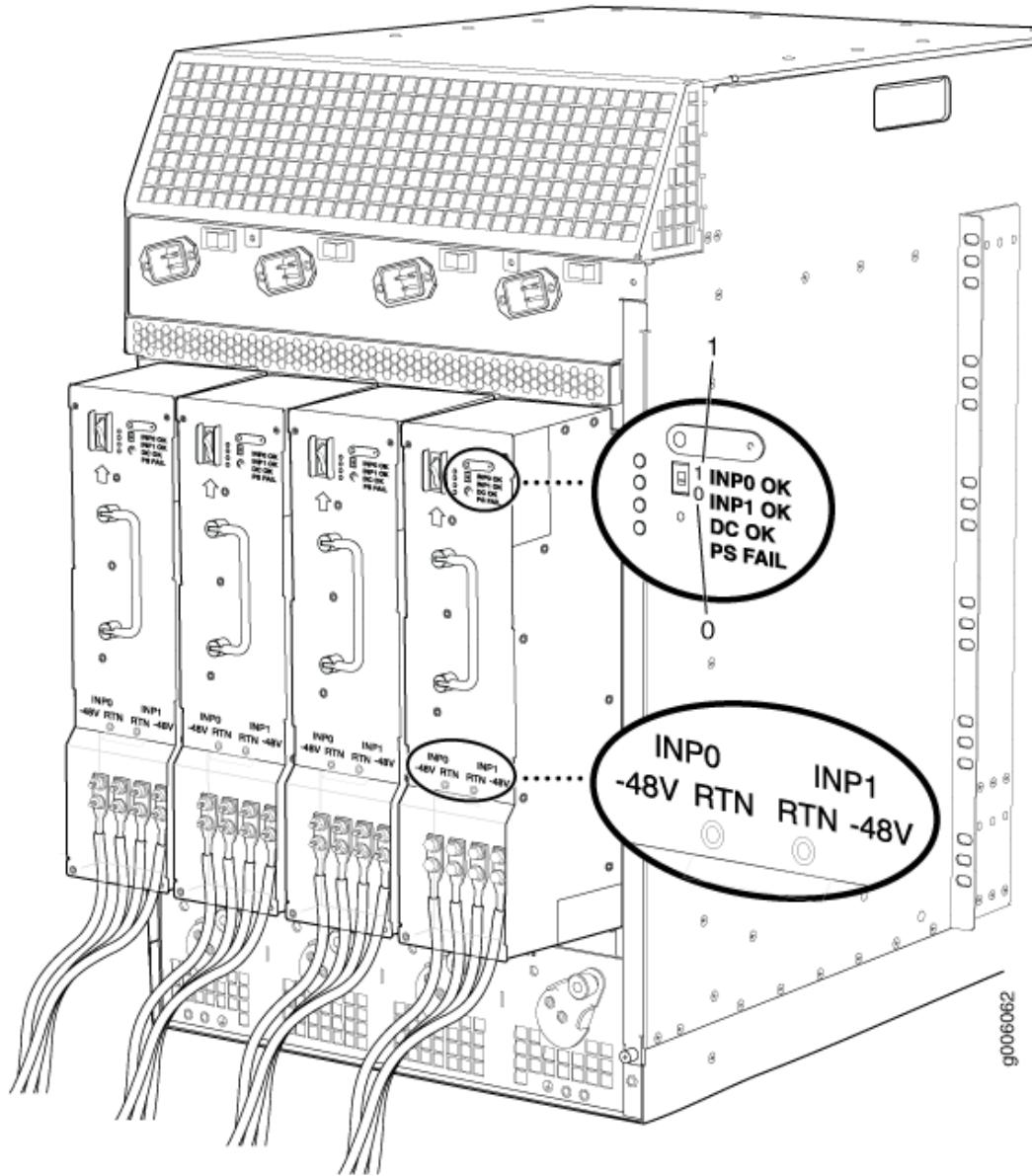
⚠ **CAUTION**: Do not use a pencil, because fragments can break off and cause damage to the power supply.

4. Ensure that the voltage across the DC power source cable leads is 0 V and that there is no chance that the cable leads might become active during installation.

5. Ensure that the release lever below the empty power supply slot is locked in the counterclockwise position.

If necessary, pull the spring-loaded locking pin in the release lever away from the chassis and turn the release lever counterclockwise until it stops. Let go of the locking pin in the release lever. Ensure that the pin is seated inside the corresponding hole in the chassis.

6. Using both hands, slide the power supply straight into the chassis until the power supply is fully seated in the chassis slot.

    The small tab on the metal housing that is controlled by the release lever must be inside of the corresponding slot at the bottom of the power supply. This tab is used to pull the power supply down in the chassis slot, prior to removing the power supply.

7. While firmly pushing the handle on the power supply faceplate with one hand, use your other hand to pull the spring-loaded locking pin in the release lever away from the chassis and turn the release lever clockwise until it stops.

8. Let go of the locking pin in the release lever. Ensure that the pin is seated inside the corresponding hole in the chassis.

9. Remove the cover protecting the terminal studs on the faceplate.

10. Remove the nut and washer from each of the terminal studs.

11. Secure each power cable lug to the terminal studs, first with the split washer, then with the nut. Apply between 23 in-lb. (2.6 Nm) and 25 in-lb. (2.8 Nm) of torque to each nut. Do not overtighten the nut. (Use a 7/16-in. [11-mm] torque-controlled driver or socket wrench.)

    a. On **INPUT 0**, attach the positive (+) DC source power cable lug to the **RTN** (return) terminal as shown in Figure 11 on page 22. Repeat this step for **INPUT 1** if using two feeds.

    b. On **INPUT 0** attach the negative (–) DC source power cable lug to the **–48V** (input) terminal. Repeat this step for **INPUT 1** if using two feeds.

    ⚠ **CAUTION**: Ensure that each power cable lug seats flush against the surface of the terminal block as you are tightening the nuts. Ensure that each nut is properly threaded onto the terminal stud. The nut should be able to spin freely with your fingers when it is first placed onto the terminal stud. Applying installation torque to the nut when improperly threaded may result in damage to the terminal stud.

    ⚠ **CAUTION**: The maximum torque rating of the terminal studs on the DC power supply is 36 in-lb. (4.0 Nm). The terminal studs may be damaged if excessive torque is applied. Use only a torque-controlled driver or socket wrench to tighten nuts on the DC power supply terminal studs.

> **NOTE**: The DC power supplies in slots **PEM0** and **PEM1** must be powered by dedicated power feeds derived from feed **A**, and the DC power supplies in **PEM2** and **PEM3** must be powered by dedicated power feeds derived from feed **B**. This configuration provides the commonly deployed **A/B** feed redundancy for the system. For information about connecting to DC power sources, see Electrical Specifications for the MX960 DC Power Supply.

12. Verify that the power cabling is correct, that the cables are not touching, and that they do not block access to router components or drape where people could trip on them.
13. Replace the clear plastic cover over the terminal studs on the faceplate.
14. Switch on the dedicated customer site circuit breaker.
15. Verify that the **INPUT 0 OK** or **INPUT 1 OK** LEDs on the power supply are lit green steadily. If using two feeds, verify that both **INPUT 0 OK** and **INPUT 1 OK** LEDs on the power supply are lit steadily. The **INPUT OK** will be lit amber if that input's voltage is in reverse polarity. Check the polarity of the power cables to fix the condition (see Figure 12 on page 25 and Table 3 on page 24.
16. Move the switch to the on (|) position.
17. Verify that the **DC OK** LED is lit green steadily. See Table 3 on page 24 for information on MX960 high-capacity DC LEDs.

Table 3: MX960 High-Capacity DC Power Supply LEDs

Connected Inputs	DIP Switch Position	LEDs			
		INP-0 OK	INP-1 OK	DC OK	PS FAIL
INP0 connected, INP1 disconnected		Green	Off	Green	Off
INP0 disconnected, INP1 connected	0 (1 input)	Off	Green	Green	Off
INP0 connected, INP1 connected		Green	Green	Green	Off
INP0 connected, INP1 disconnected		Green	Off	Off	Red
INP0 disconnected, INP1 connected	1 (2 inputs)	Off	Green	Off	Red
INP0 connected, INP1 connected		Green	Green	Green	Off

18. Repeat steps 1-17 for installing power supplies in slots 1, 2, and 3, where required.

Figure 12: MX960 DC High-Capacity Power Supply Front View
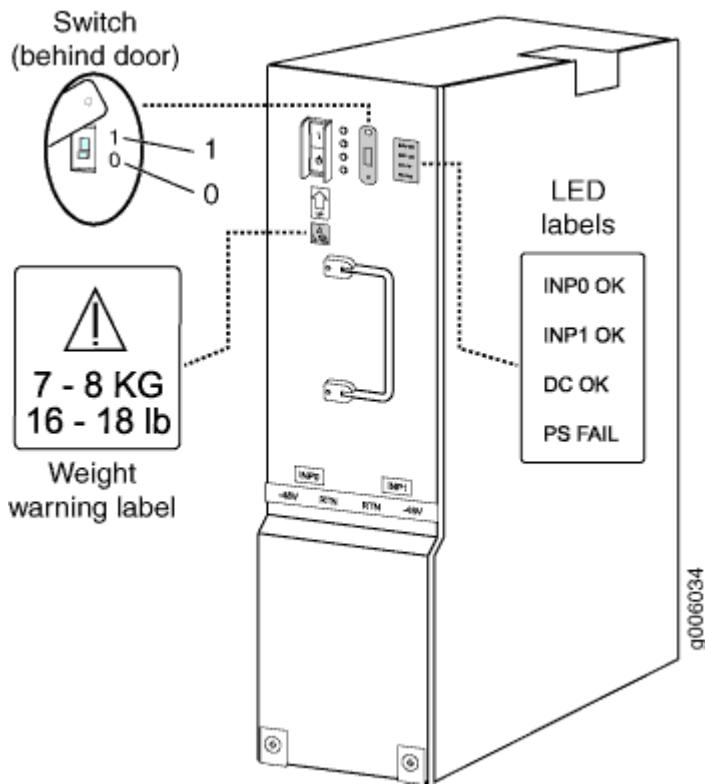
19. Install a blank panel over the power distribution modules, if available.

Proceed to .

Step 7: Perform Initial Software Configuration

This procedure connects the router to the network but does not enable it to forward traffic. For complete information about configuring the router to forward traffic, including examples, see the Junos OS configuration guides.

To configure the software:

Enter Configuration Mode

1. Log in as the "root" user. There is no password.
2. Start the CLI.

```
root# cli
root@>
```

3. Enter configuration mode.

```
cli> configure
[edit]
root@#
```

Configure User Accounts and Passwords

For information about using an encrypted password or an SSH public key string (DSA or RSA), see *Configuring the Root Password* and *user*.

1. Add a password to the root administration user account. Enter a cleartext password.

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

2. Create a management console user account.

```
[edit]
root@host# set system login user user-name authentication plain-text-password
```

```
New Password: password
Retype new password: password
```

3. Set the user account class to super-user.

```
[edit]
root@host# set system login user user-name class super-user
```

Configure System Attributes

1. Configure the name of the router. If the name includes spaces, enclose the name in quotation marks
   (" ").

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

2. Configure the router's domain name.

```
[edit]
root@# set system domain-name domain-name
```

3. Configure the IP address and prefix length for the router's Ethernet interface.

```
[edit]
root@# set interfaces fxp0 unit 0 family inet address address/prefix-length
```

4. Configure the IP address of a backup router, which is used only while the routing protocol is not
   running.

```
[edit]
root@# set system backup-router address
```

5. Configure the IP address of a DNS server.

```
[edit]
root@# set system name-server address
```

Commit the Configuration

1. Optionally, display the configuration to verify that it is correct.

```
[edit]
root@# show
system {
    host-name host-name;
    domain-name domain-name;
    backup-router address;
    root-authentication {
        authentication-method (password | public-key);
    }
    name-server {
        address;
    }
}
interfaces {
    fxp0 {
        unit 0 {
            family inet {
                address address/prefix-length;
            }
        }
    }
}
```

2. Commit the configuration to activate it on the router.

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

3. (Optional) Configure additional properties by adding the necessary configuration statements. Then commit the changes to activate them on the router.

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

4. When you have finished configuring the router, exit configuration mode.

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

Safety Warnings

> ⚡ **WARNING**: See installation instructions before connecting the router. This is a summary of safety warnings. For a complete list of warnings for this router, including translations, see the MX960 Universal Routing Platform Hardware Guide at https://www.juniper.net/documentation/.

> ⚡ **WARNING**: The intrabuilding port(s) of the router is suitable for connection to intrabuilding or unexposed wiring or cabling only. The intrabuilding port(s) of the router MUST NOT be metallically connected to interfaces that connect to the OSP or its wiring. These interfaces are designed for use as intrabuilding interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE, Issue 4) and require isolation from the exposed OSP cabling. The addition of primary protectors is not sufficient protection to connect these interfaces metallically to OSP wiring.

> ⚠ **CAUTION**: Before removing or installing components of a router, attach an ESD strap to an ESD point and place the other end of the strap around your bare wrist. Failure to use an ESD strap could result in damage to the router.

> ⚠ **CAUTION**: Use an external surge protective device (SPD) at the AC input of the router.

- Only trained and qualified personnel should install or replace the router.

- Perform only the procedures described in this quick start or the MX960 Universal Routing Platform Hardware Guide. Other services should be performed by authorized service personnel only.

- Read the installation instructions before you connect the router to a power source.

- Before installing the router, read the guidelines for site preparation in the MX960 Universal Routing Platform Hardware Guide to make sure that the site meets power, environmental, and clearance requirements for the router.

- For the cooling system to function properly, the airflow around the chassis must be unrestricted. Allow at least 6 in. (15.2 cm) of clearance between side-cooled routers. Allow 2.8 in. (7 cm) between the side of the chassis and any non-heat-producing surface such as a wall.

- When installing the router, do not use a ramp inclined more than 10 degrees.

- Mount the router at the bottom of the rack if it is the only unit in the rack.

- When mounting the router in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.

- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the router in the rack.

- When removing or installing an electrical component, always place it component-side up on a flat antistatic surface or in an electrostatic bag.

- When you install the router, always make the ground connection first and disconnect it last.

- Wire the DC power supply using the appropriate lugs. When connecting power, the proper wiring sequence is ground to ground, +RTN to +RTN, then –48 V to –48 V. When disconnecting power, the proper wiring sequence is –48 V to –48 V, +RTN to +RTN, then ground to ground. Always connect the ground wire first and disconnect it last.

- Do not work on the system 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.

- Failure to observe these safety warnings can result in serious physical injury.

- AC power cable warning (Japan):

  > ⚠️ **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。