

configuration with full power for as long as the router is operational. In the two-PEM high-line configuration, slots **PEM0** and **PEM1** or **PEM2** and **PEM3** are used. The high-line configuration requires two power supplies, with the third and fourth providing redundancy. With high-capacity power supplies, you must have a minimum of two power supplies installed in the router.

MX480 AC Power Supply LEDs

Each AC power supply faceplate contains three LEDs that indicate the status of the power supply (see [Table 13 on page 47](#)). The power supply status is also reflected in two LEDs on the craft interface. In addition, a power supply failure triggers the red alarm LED on the craft interface.

Table 13: AC Power Supply LEDs

Label	Color	State	Description
AC OK	Yellow	Off	AC power input voltage is below 78 VAC.
	Green	On	AC power input voltage is within 78–264 VAC.
DC OK	Green	Off	DC power outputs generated by the power supply are not within the normal operating ranges.
		On	DC power outputs generated by the power supply are within the normal operating ranges.
PS FAIL	Red	Off	Power supply is functioning normally.
		On	Power supply is not functioning normally and its output voltage is out of regulation limits. Check AC OK and DC OK LEDs for more information.

AC Electrical Specifications for the MX480 Router

[Table 14 on page 47](#) lists the AC power supply electrical specifications; [Table 15 on page 48](#) lists the AC power system specifications.

Table 14: AC Power Supply Electrical Specifications

Item	Specification
Normal-Capacity Power Supplies	
Maximum output power	1027 W (low line)
	1590 W (high line)
AC input voltage	Operating range: 100 – 240 VAC (nominal)
AC input line frequency	50 to 60 Hz (nominal)
AC input current rating	11.0 A @ 200 VAC or 14.5 A @ 110 VAC maximum

Maintaining the MX480 Power Supplies

Purpose For optimum router performance, verify the condition of the power supplies.

Action On a regular basis:

```

• PEM 0 status:
  State           Online
  Temperature     OK
  AC Input:       OK
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  59          0          0          0
PEM 1 status:
  State           Online
  Temperature     OK
  AC Input:       OK
  DC Output       Voltage(V) Current(A) Power(W) Load(%)
                  59          18         1062         42

```

- Make sure that the power and grounding cables are arranged so that they do not obstruct access to other router components.
- Routinely check the status LEDs on the power supply faceplates and the craft interface to determine if the power supplies are functioning normally.
- Check the red and yellow alarm LEDs on the craft interface. Power supply failure or removal triggers an alarm that causes one or both of the LEDs to light. You can display the associated error messages by issuing the following command:

```
user@host> show chassis alarms
```

- Periodically inspect the site to ensure that the grounding and power cables connected to the router are securely in place and that there is no moisture accumulating near the router.

- See Also**
- [Power Supply LEDs on the MX480 Craft Interface on page 39](#)
 - [MX480 AC Power Supply Description on page 45](#)
 - [MX480 DC Power Supply Description on page 53](#)
 - [Troubleshooting Resources for MX480 Routers on page 353](#)
 - [MX480 Site Preparation Checklist on page 139](#)

Replacing an MX480 AC Power Supply

1. [Removing an MX480 AC Power Supply on page 319](#)
2. [Installing an MX480 AC Power Supply on page 320](#)

Removing an MX480 AC Power Supply

Before you remove a power supply, be aware of the following:



NOTE: The minimum number of power supplies must be present in the router at all times.



CAUTION: To maintain proper cooling and prevent thermal shutdown of the operating power supply unit, each power supply slot must contain either a power supply or a blank panel. If you remove a power supply, you must install a replacement power supply or a blank panel shortly after the removal.

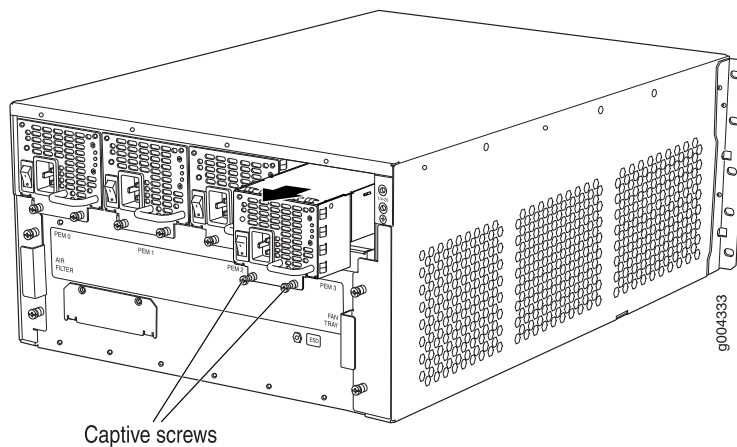


NOTE: After powering off a power supply, wait at least 60 seconds before turning it back on.

To remove an AC power supply (see [Figure 136 on page 320](#)):

1. Switch off the dedicated customer site circuit breaker for the power supply, and remove the power cord from the AC power source. Follow the instructions for your site.
2. Attach an ESD grounding strap to your bare wrist and connect the strap to one of the ESD points on the chassis.
3. Move the AC input switch next to the appliance inlet on the power supply to the off (O) position.
4. Remove the power cord from the power supply.
5. Unscrew the captive screws on the bottom edge of the power supply.
6. Pull the power supply straight out of the chassis.

Figure 136: Removing an AC Power Supply

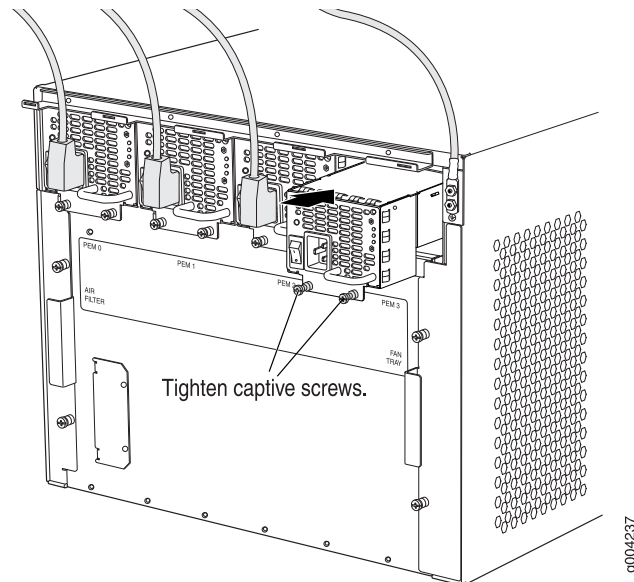


Installing an MX480 AC Power Supply

To install an AC power supply (see [Figure 137 on page 321](#)):

1. Attach an ESD grounding strap to your bare wrist and connect the strap to one of the ESD points on the chassis.
2. Move the AC input switch next to the appliance inlet on the power supply to the off (O) position.
3. 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 should be flush with any adjacent power supply faceplate or blank installed in the power supply slot.
4. Tighten both captive screws at the bottom of the power supply.
5. Attach the power cord to the power supply.
6. Route the power cord along the cable restraint toward the left or right corner of the chassis. If needed to hold the power cord in place, thread plastic cable ties, which you must provide, through the openings on the cable restraint.
7. Attach the power cord to the AC power source, and switch on the dedicated customer site circuit breaker for the power supply. Follow the ESD and connection instructions for your site.
8. Move the AC input switch next to the appliance inlet on the power supply to the on (I) position and observe the status LEDs on the power supply faceplate. If the power supply is correctly installed and functioning normally, the **AC OK** and **DC OK** LEDs light steadily, and the **PS FAIL** LED is not lit.

Figure 137: Installing an AC Power Supply in an MX480 Router



Replacing an MX480 AC Power Supply Cord

1. [Disconnecting an MX480 AC Power Supply Cord on page 321](#)
2. [Connecting an MX480 AC Power Supply Cord on page 322](#)

Disconnecting an MX480 AC Power Supply Cord

To disconnect the AC power cord:

1. Switch off the dedicated customer site circuit breaker for the power supply, and remove the power cord from the AC power source. Follow the instructions for your site.
2. Attach an ESD grounding strap to your bare wrist and connect the strap to one of the ESD points on the chassis.
3. Move the AC input switch next to the appliance inlet on the power supply to the off (O) position.
4. Remove the power cord from the power supply.

Connecting an MX480 AC Power Supply Cord

To connect the AC power cord:

1. Locate a replacement power cord with the type of plug appropriate for your geographical location (see [“AC Power Cord Specifications for the MX480 Router”](#) on page 49).
2. Connect the power cord to the power supply.
3. Route the power cord along the cable restraint toward the left or right corner of the chassis. If needed to hold the power cord in place, thread plastic cable ties, which you must provide, through the openings on the cable restraint.
4. Verify that the power cord does not block the air exhaust and access to router components, or drape where people could trip on it.
5. Attach the power cord to the AC power source, and switch on the dedicated customer site circuit breaker for the power supply. Follow the ESD and connection instructions for your site.
6. Switch the AC input switch on the each power supply to the on (—) position and observe the status LEDs on the power supply faceplate. If the power supply is correctly installed and functioning normally, the **AC OK** and **DC OK** LEDs light steadily, and the **PS FAIL** LED is not lit.

- See Also**
- [Replacing an MX480 AC Power Supply on page 318](#)
 - [AC Electrical Specifications for the MX480 Router on page 47](#)

Replacing an MX480 DC Power Supply

1. [Removing an MX480 DC Power Supply on page 322](#)
2. [Installing an MX480 DC Power Supply on page 324](#)

Removing an MX480 DC Power Supply

Before you remove a power supply, be aware of the following:



NOTE: The minimum number of power supplies must be present in the router at all times.

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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