



CHAPTER 3

Installing Cards and Modules in the Chassis

This chapter contains the procedures for installing cards and modules into the chassis after the chassis has been installed into a rack. This chapter also describes how to connect cables to line cards, the RSP, the RP, and alarm cards. In most cases, the procedures for the Cisco ASR 9010 Router, Cisco ASR 9006 Router, and Cisco ASR 9922 Router are identical, unless noted otherwise.

The installation is presented in the following sections:

- [Installing Power Modules, page 3-1](#)
- [Installing the Fan Trays, page 3-4](#)
- [Installing Cards in the Chassis, page 3-5](#)
- [Connecting Line Card Network Interface Cables, page 3-14](#)
- [Connecting Cables to the RSP or RP, page 3-17](#)
- [Connecting the Alarm Cable, page 3-21](#)
- [Connecting Power to the Router, page 3-22](#)
- [Powering on the Router, page 3-27](#)

Installing Power Modules

The following procedures describe how to reinstall the power modules back into the chassis. Be sure to follow the correct procedure for the type of power modules that you have.



Caution

Never force a power module into the power tray if you feel any resistance! The power modules are keyed to prevent AC modules from being plugged into a DC power tray or a DC module into an AC power tray. Forcing a module into the incorrect tray can cause damage to the module and the tray.

Installing AC Power Modules

Prerequisites

There are no prerequisites for this task.

Required Tools and Equipment

You need the following tool to perform this task:

- 7/16 Hex socket and torque wrench, torque 50 in-lbs.

Steps

Follow these steps to reinstall the AC power modules back into the chassis (see [Figure 3-1](#) for the version 1 power module or [Figure 3-2](#) for the version 2 power module).


-
- Step 1** Slide the power module into the power tray until it mates with its backplane connector.
- Step 2** Secure the module:
- a. Version 1 power module: Pivot the power module door fully to the left until it locks to securely seat the power module to its backplane connector.
 - b. Version 2 power module: move the handle up and tighten the screw using the 7/16 Hex socket and torque wrench with the torque set to 50 in-lbs. to secure.
-
-  **Caution** To prevent damage to the power tray backplane connector, do not use excessive force when inserting the power module into the power tray.
-
- Step 3** Repeat [Step 1](#) and [Step 2](#) for the other AC power modules.
- Step 4** Go to the [“Installing the Fan Trays”](#) section on [page 3-4](#) to install the fan tray.

Figure 3-1 *Installing a Version 1 Power Module*

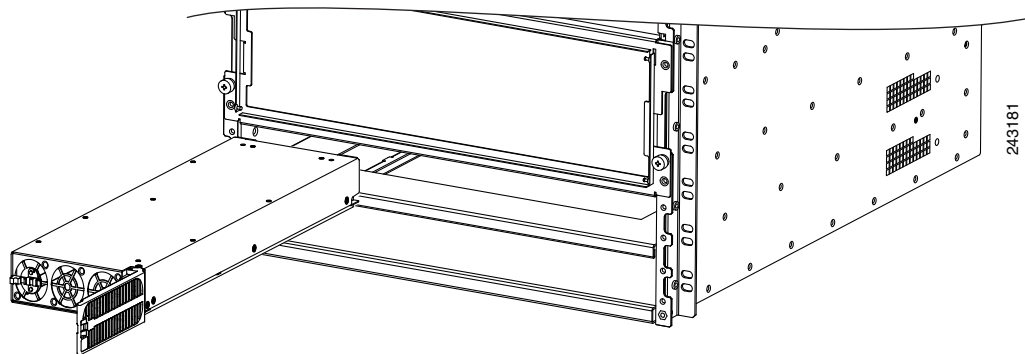
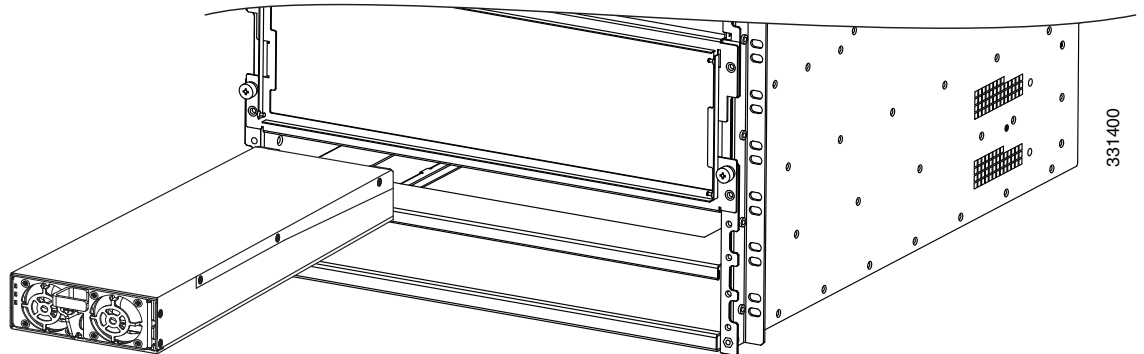


Figure 3-2 *Installing a Version 2 Power Module*

Installing DC Power Modules

Prerequisites

There are no prerequisites for this task.

Required Tools and Equipment

You need the following tool to perform this task:

- 7/16 Hex socket and torque wrench, torque 50 inch-pounds

Steps

Follow these steps to reinstall the DC power modules back into the chassis (see [Figure 3-1](#) for the version 1 power module or [Figure 3-2](#) for the version 2 power module).

-
- Step 1** Slide the power module into the power tray until it mates with its backplane connector.
- Step 2** Secure the module:
- Version 1 power module: Pivot the power module door fully to the left until it locks to securely seat the power module to its backplane connector.
 - Version 2 power module: move the handle up and tighten the screw using the 7/16 Hex socket and torque wrench with the torque set to 50 inch-pounds to secure.



Caution

To prevent damage to the power tray backplane connector, do not use excessive force when inserting the power module into the power tray.

- Step 3** Repeat [Step 1](#) and [Step 2](#) for the other DC power modules.

- Step 4** Go to the [“Installing the Fan Trays” section on page 3-4](#) to install the fan trays.
-

Installing the Fan Trays

Prerequisites

Install the power modules before installing the fan trays.

Required Tools and Equipment

You need the following tool to perform this task:

- 6-in. long number 2 Phillips screwdriver, torque 10 inch-pounds

Steps

Follow these steps to install the fan trays in the chassis (refer to [Figure 2-9](#), [Figure 2-10](#), and [Figure 2-11](#)):



Note

You must install the lower fan tray before attaching the accessory grill. The lower fan tray slot is located behind the accessory grill. See the [“Installing Chassis Accessories” section on page 2-36](#).

- Step 1** Lift the fan tray (with two hands) and slide it halfway into the module bay.

- Step 2** Slowly push the fan tray into the chassis until it mates with the backplane connector at the back of the chassis bay.



Caution

To prevent damage to the connectors, do not use excessive force when inserting the fan tray into the chassis.

- Step 3** Tighten the captive screw(s) on the fan tray using the 6-in. long number 2 Phillips screwdriver to a torque of 10 +/-1 in-lb to secure it to the chassis.

- Step 4** Repeat [Step 1](#) through [Step 3](#) for the second fan tray.



Note

In the Cisco ASR 9922 Router, the third and fourth fan trays (under the middle cage) are installed *upside down* compared to the first and second fan trays (above the middle cage).

- Step 5** Go to the [“Installing Cards in the Chassis” section on page 3-5](#) to reinstall the RSP, RP, FC, and line cards.
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Installing Cards in the Chassis

This section describes how to reinstall the RSP, RP, FC, and line cards back into the chassis. For information about installing shared port adapter (SPA) and SPA interface processor (SIP) cards, see the *Cisco ASR 9000 Series Aggregation Services Router SIP and SPA Hardware Installation Guide*.

**Caution**

Be sure to verify that you are inserting a card into its correct slot. RSP/RP cards must only be inserted in the two slots reserved for RSP/RP cards (RSP0, RSP1, RP0, RP1). FC cards must only be inserted in the FC slots of the Cisco ASR 9922 Router. All other slots are for line cards.

**Caution**

Unoccupied card slots must have a blank filler card installed for electromagnetic compatibility (EMC) and to ensure proper air flow through the chassis.

**Caution**

Be careful to avoid damaging the electromagnetic interference (EMI) gasket that runs along the full height of the card front panel edges. Damage to the EMI gasket can affect the ability of your system to meet EMC requirements.

**Caution**

Handle all cards by the metal card carrier edges only; avoid touching the board or any connector pins. After removing a card, carefully place it in an antistatic bag or similar environment to protect it from ESD and dust in the optic ports (fiber-optic line cards).

**Caution**

To avoid damaging card mechanical components, never carry an RSP, RP, FC, or line card by the captive installation screws or ejector levers. Doing so can damage these components and cause card insertion problems.

**Caution**

Be sure to always tighten the captive installation screws on RSP, RP, FC, and line cards. Failure to tighten the screws can cause boot failure or prevent proper router operation.

Installing RSP Cards in the Chassis

Follow these steps to reinstall RSP cards into the chassis (see [Figure 2-13](#) and [Figure 2-14](#) for slot numbering):

Step 1 Starting at slot RSP0, slide the card into the slot.

Step 2 Pivot the ejector levers to seat the card to the backplane connector.



Caution

Do not apply excessive force to the RSP card to seat it. When seated, the RSP card ejector levers are angled slightly outward from the card faceplate (item 1 in [Figure 3-3](#)). When the captive installation screws are fully tightened, the ejector levers are parallel to the card faceplate (item 2 in [Figure 3-3](#)). Some flexing in the backplane is normal. When you push the ejector levers fully vertical, the card is seated in the backplane connectors. However, when you release the levers, backplane flexing pushes the levers out, so the levers may be slightly loose. Tightening the captive installation screws prevents any additional movement from flexing of the backplane.

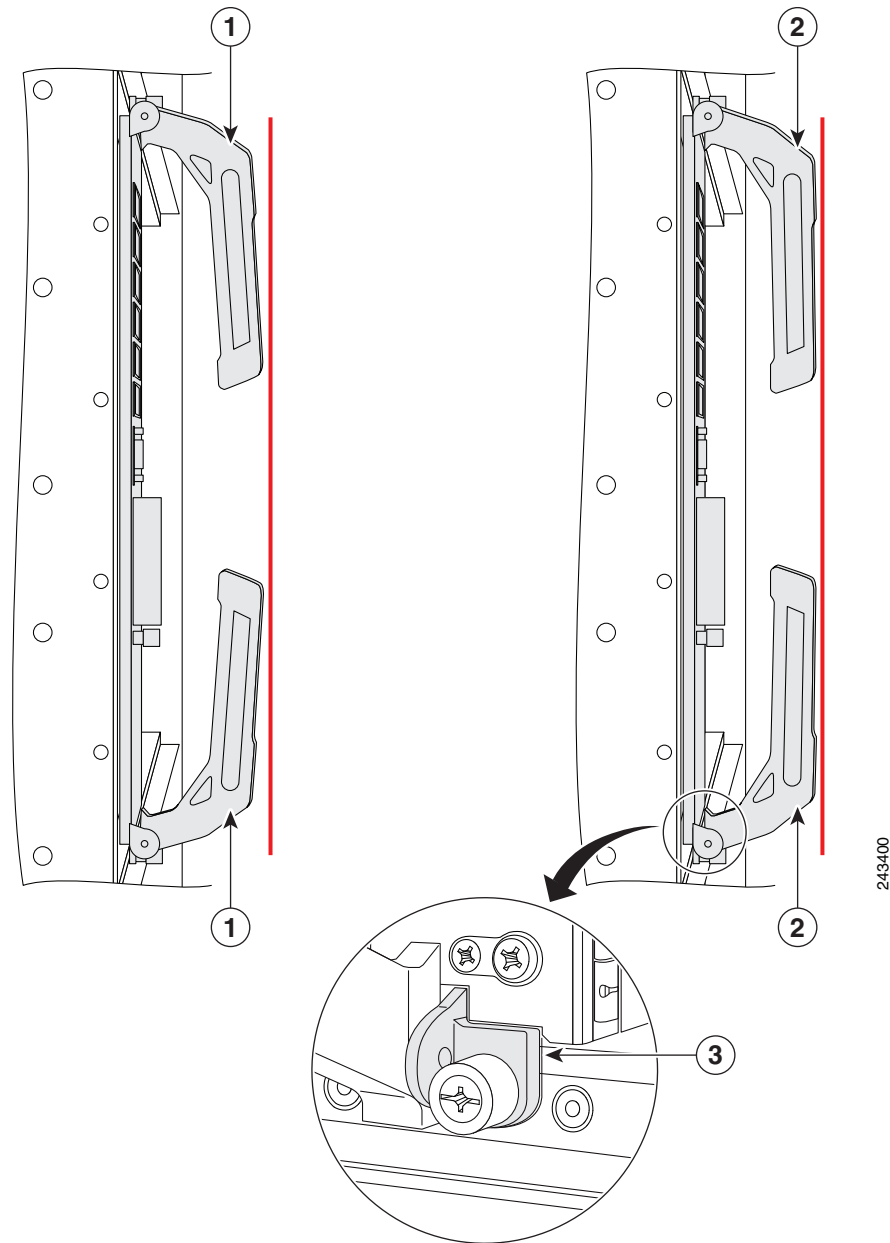
Step 3 Tighten the captive screws at the top and bottom of the front panel to a torque of 10 +/-1 in-lbs.

Step 4 Repeat [Step 1](#) through [Step 3](#) to install the second RSP card into slot RSP1.



Note

Even when the RSP card is fully seated with installation screws fully tightened, there may be a slight gap between the card and the chassis (item 3 in [Figure 3-3](#)).

Figure 3-3 RSP Card Ejector Lever Positions During Installation

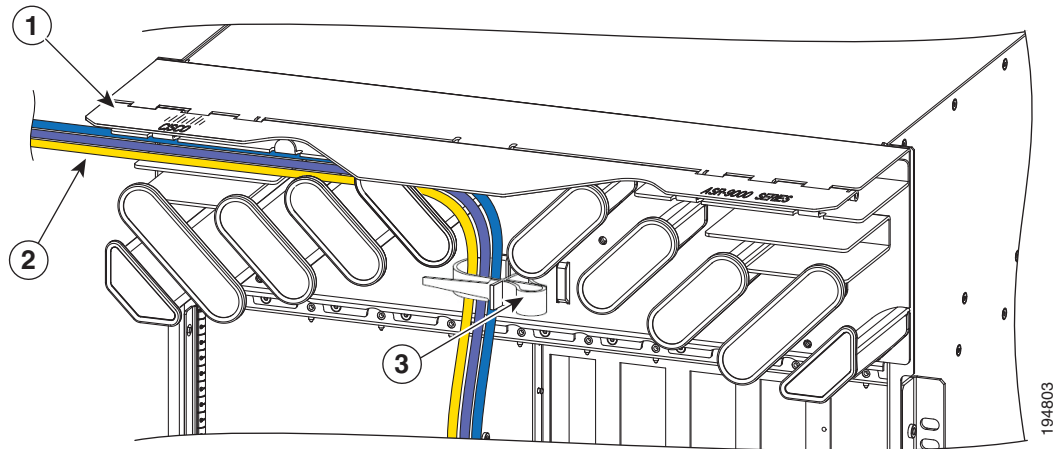
Note: Vertical red lines in [Figure 3-3](#) indicate a line fully parallel to the RSP card front panel.

1 Slightly loose position of ejector levers when the RSP card is fully seated in the backplane, but the captive installation screws are not fully tightened	2 Fully parallel position of ejector levers when the RSP card is fully seated in the backplane and captive installation screws are fully tightened	3 Slight gap that may be present when the RSP card is fully seated in the backplane and captive installation screws are fully tightened
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RSP Cable Management Ties

The Cisco ASR 9010 Router has cable management ties on the front of the cable management tray assembly. Cables to the RSP cards can be routed as shown in [Figure 3-4](#) to separate them from line card cabling.

Figure 3-4 RSP Cable Management Ties



1	Hinged cover (shown in the raised position)	2	RSP cable bundle routed through the tray	3	RSP cable management tie
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Installing RP Cards in the Chassis

Follow these steps to reinstall RP cards into the Cisco ASR 9922 Router (see [Figure 2-18](#) for slot numbering):

Step 1 Starting at slot RP0, slide the card into the slot.

Step 2 Pivot the ejector levers to seat the card to the backplane connector.



Caution

Do not apply excessive force to the RP card to seat it. When seated, the RP card ejector levers are angled slightly outward from the card faceplate (item 1 in [Figure 3-3](#)). When the captive installation screws are fully tightened, the ejector levers are parallel to the card faceplate (item 2 in [Figure 3-3](#)). Some flexing in the backplane is normal. When you push the ejector levers fully vertical, the card is seated in the backplane connectors. However, when you release the levers, backplane flexing pushes the levers out, so the levers may be slightly loose. Tightening the captive installation screws prevents any additional movement from flexing of the backplane.

Step 3 Tighten the captive screws at the top and bottom of the front panel to a torque of 10 +/-1 in-lbs.

Step 4 Repeat [Step 1](#) through [Step 3](#) to install the second RP card into slot RP1.



Note

Even when the RP card is fully seated with installation screws fully tightened, there may be a slight gap between the card and the chassis (item 3 in [Figure 3-3](#)).

Installing FC Cards in the Chassis

Follow these steps to reinstall FC cards into the Cisco ASR 9922 Router (see [Figure 2-18](#) for slot numbering):

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- Step 1** Starting at slot FC0, slide the card into the slot.
- Step 2** Pivot the ejector levers to seat the card to the backplane connector.

**Caution**

Do not apply excessive force to the FC card to seat it. When seated, the FC card ejector levers are angled slightly outward from the card faceplate (item 1 in [Figure 3-3](#)). When the captive installation screws are fully tightened, the ejector levers are parallel to the card faceplate (item 2 in [Figure 3-3](#)). Some flexing in the backplane is normal. When you push the ejector levers fully vertical, the card is seated in the backplane connectors. However, when you release the levers, backplane flexing pushes the levers out, so the levers may be slightly loose. Tightening the captive installation screws prevents any additional movement from flexing of the backplane.

- Step 3** Tighten the captive screws at the top and bottom of the front panel to a torque of 10 +/-1 in-lbs.
- Step 4** Repeat [Step 1](#) through [Step 3](#) to install the remaining FC cards into slots FC1 to FC6.

**Note**

Even when the FC card is fully seated with installation screws fully tightened, there may be a slight gap between the card and the chassis (item 3 in [Figure 3-3](#)).

Installing Line Cards in the Chassis

Before you begin reinstalling cards in the card cage, identify slot assignments by referring to the written list you prepared when you removed the cards (see [Figure 2-13](#), [Figure 2-15](#), and [Figure 2-18](#) for slot numbering).

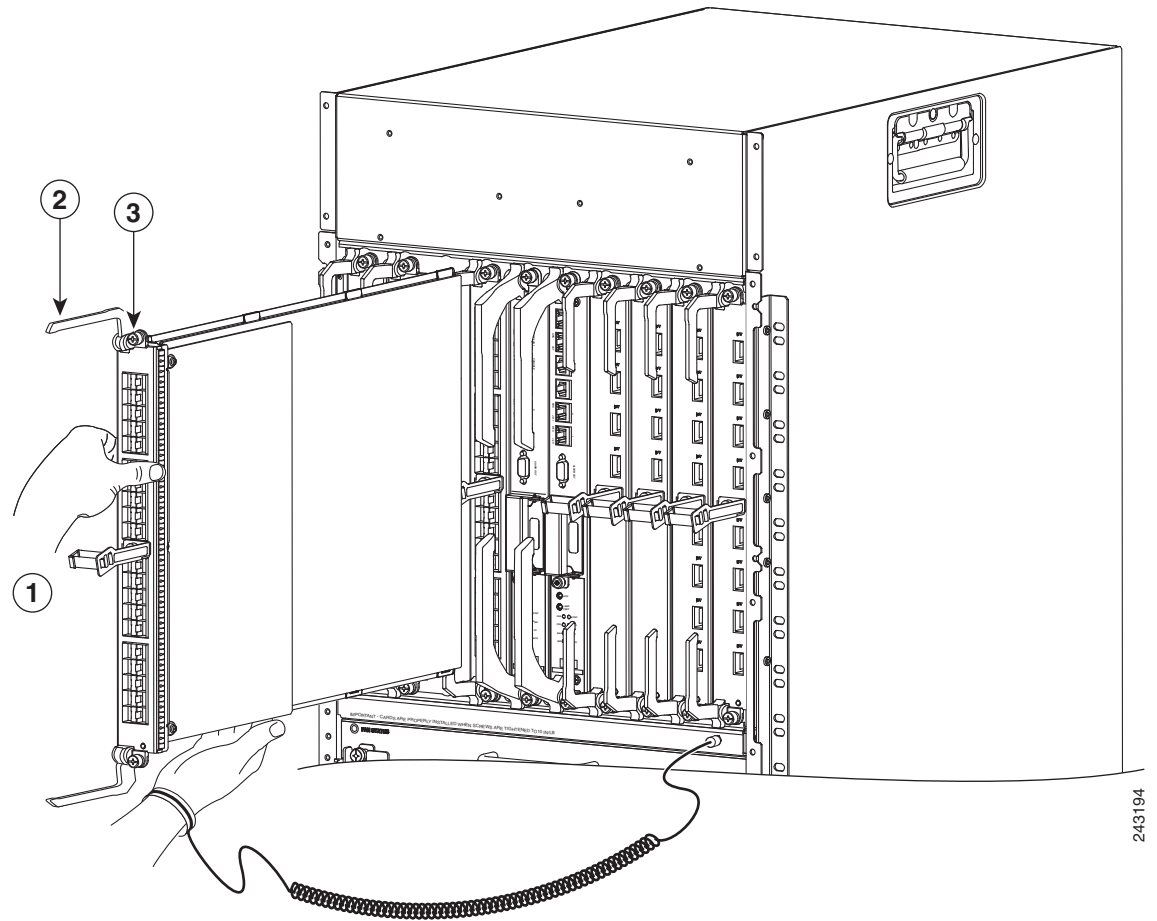
**Caution**

Be careful to avoid damaging the EMI gasket that runs along the full height of the card front panel edges. Damage to the EMI gasket can affect the ability of your system to meet EMI requirements.

Follow these steps to reinstall line cards in the chassis card cage:

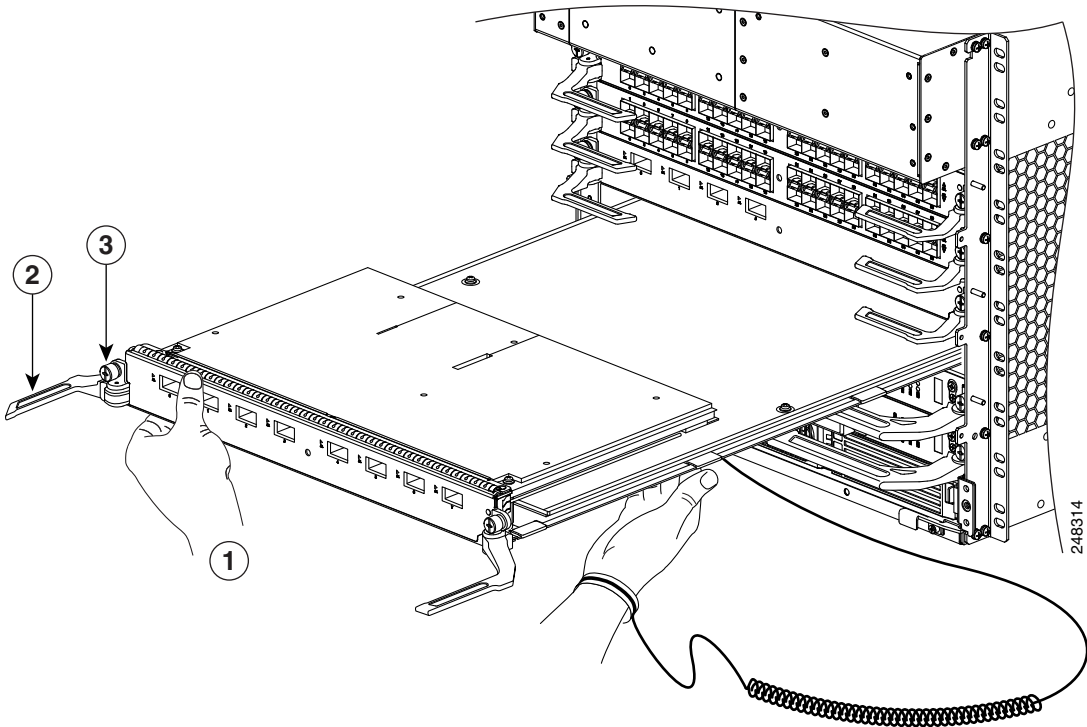
-
- Step 1** Starting at the lowest numbered line card slot, slide the card into the slot (see [Figure 3-5](#), [Figure 3-6](#), or [Figure 3-7](#)) until it mates with the backplane connector.
- Step 2** Pivot the ejector levers to seat the card into the backplane connector.
- Step 3** Tighten the captive screws at the top and bottom of the front panel to a torque of 10 +/-1 in-lb.

Figure 3-5 *Installing a Line Card into the Cisco ASR 9010 Router Chassis*



1	Slide the card into the chassis	2	Pivot the ejector levers to seat the card into the backplane connector	3	Tighten the captive screws
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Figure 3-6 *Installing a Line Card into the Cisco ASR 9006 Router Chassis*



1	Slide the card into the chassis	2	Pivot the ejector levers to seat the card into the backplane connector	3	Tighten the captive screws
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1	Slide the card into the chassis	2	Pivot the ejector levers to seat the card into the backplane connector	3	Tighten the captive screws
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Step 5 Go to the [“Connecting Line Card Network Interface Cables”](#) section on page 3-14 to connect the network interface cables.

Connecting Line Card Network Interface Cables

This section describes how to route the network interface cables through the router cable-management system and attach the network interface cables to the line card ports.

This procedure uses an 40x1GE line card as an *example* to describe how to attach a network interface cable to a line card port and route the cable through the cable-management system. Depending on which line cards are installed in your system, your cable connection procedure might differ slightly from this example. For cable connection information for your specific line card, refer to the installation and configuration note for that line card.


Note

You can access the most current Cisco line card documentation online at: <http://www.cisco.com>.

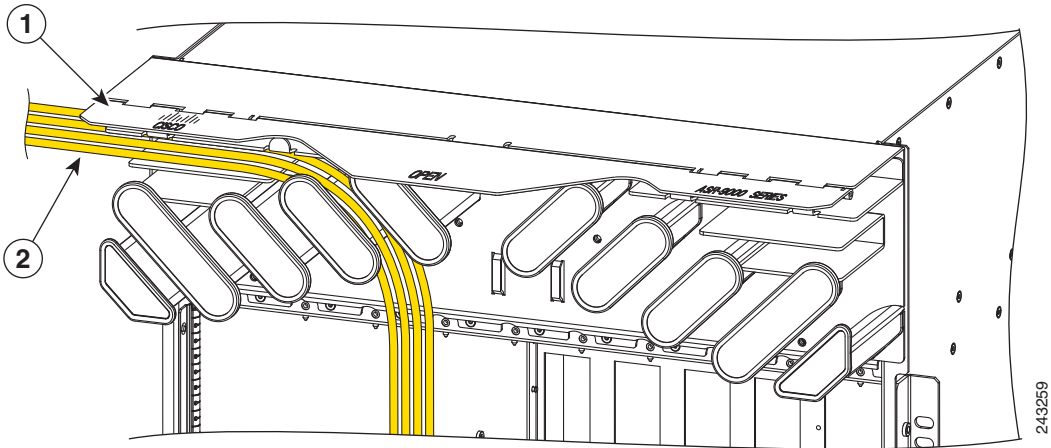
Follow these steps as an example to route the network interface cables through the cable-management system and connect them to the line card:

Step 1 Route an interface cable across the horizontal cable management tray (see [Figure 3-8](#)), and down through the cable tray opening to connect it to the line card.


Note

Each line card has its own cable routing slot in the cable management tray. For example, the cables shown in [Figure 3-8](#) are cables being routed to line card 3 in slot 3 in a Cisco ASR 9010 Router.

Figure 3-8 Routing Interface Cables through the Cable Management Tray

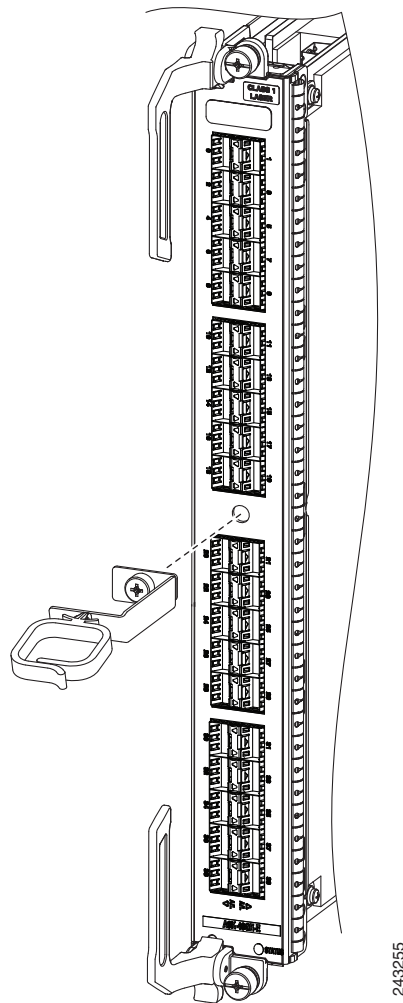


1	Hinged cover (shown in the raised position)	2	Line card cable bundle routed through the tray
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Step 2 Attach a line card cable management bracket to the line card front panel (see [Figure 3-9](#)). This bracket is shipped with the line card.

- Step 3** Route the cable through the cable-management bracket and carefully press the cable into the channel so it is held in place by the cable clips, as shown in [Figure 3-10](#). For an example of cable routing in the Cisco ASR 9006 Router, see [Figure 3-11](#).
- Step 4** Insert the cable connector into its assigned port.
- Step 5** Repeat [Step 1](#) through [Step 4](#) for each additional cable connection to that line card.

Figure 3-9 Attaching a Line Card Cable Management Bracket



Caution

Make sure the interface cables do not have any kinks or sharp bends, which can destroy or degrade the ability of the optical fiber to propagate the signal-encoded beam of light accurately from one end of the cable to the other. Always allow adequate strain relief in the interface cable.

Figure 3-10 Example of Interface Cable Routing Using Line Card Cable Management Bracket

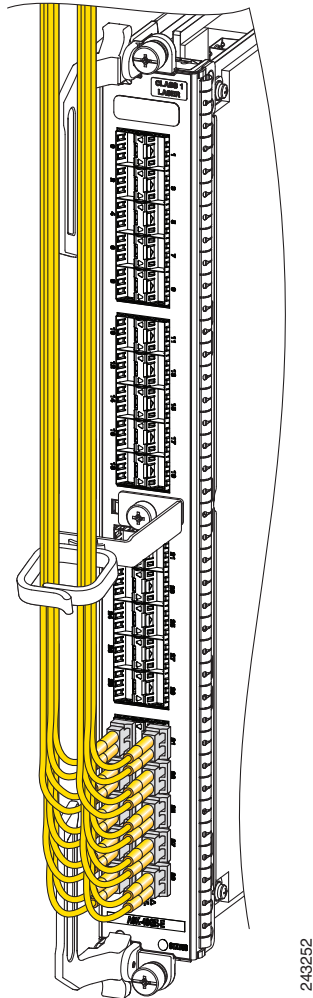
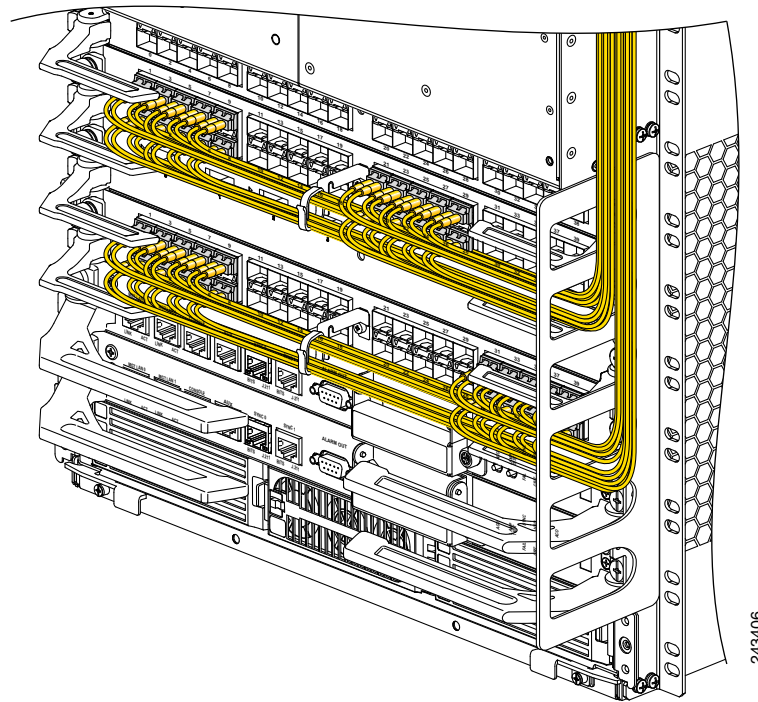


Figure 3-11 Example of Interface Cable Routing Using Line Card and Chassis Cable Management Bracket on the Cisco ASR 9006 Router

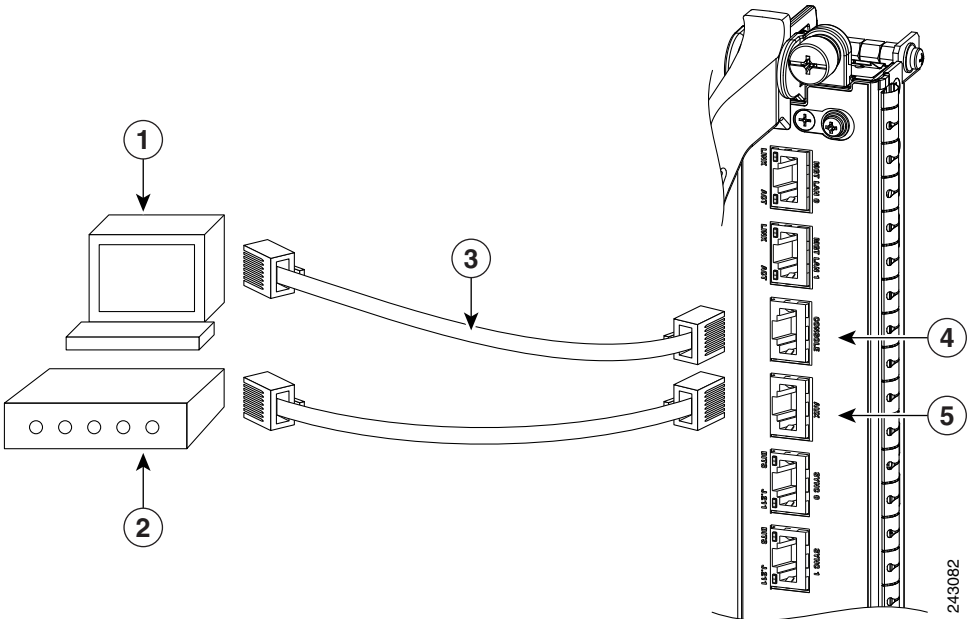


Connecting Cables to the RSP or RP

This section describes how to connect cables to the console, auxiliary, and Ethernet ports on the RSP/RP. The console and auxiliary ports are both asynchronous serial ports; any devices connected to these ports must be capable of asynchronous transmission. For example, most modems are asynchronous devices.

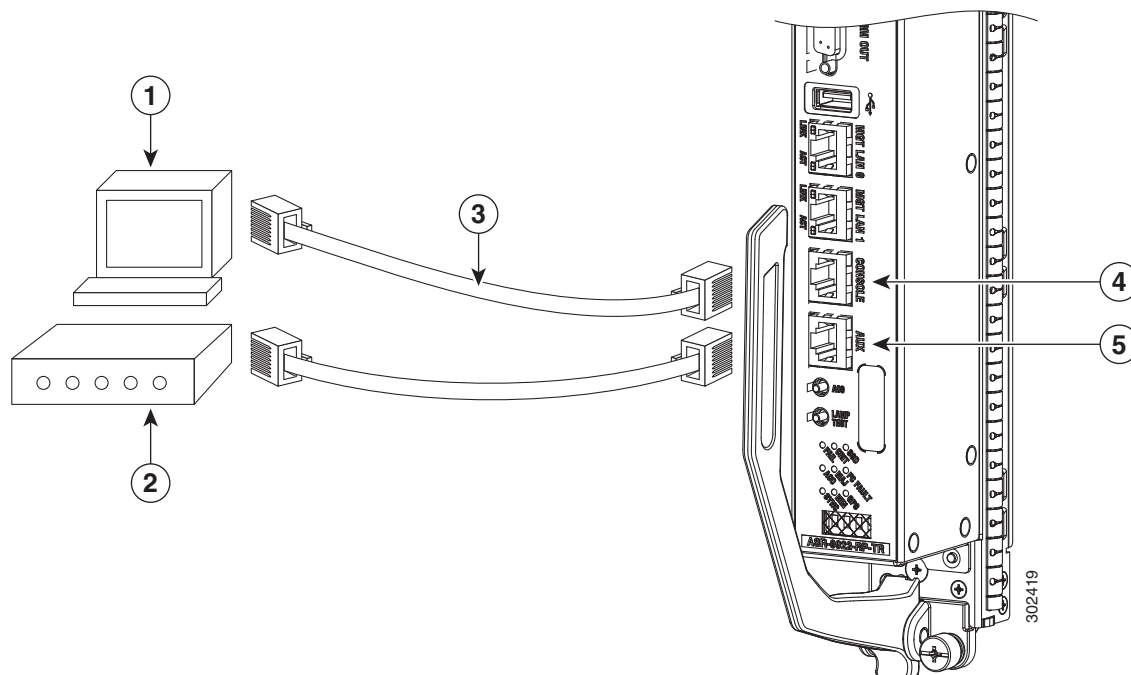
[Figure 3-12](#) shows an example of an RSP with data terminal and modem connections called out.

Figure 3-12 RSP Console and Auxiliary Port Connections



1	Console terminal	3	RJ45 Ethernet cables	5	Auxiliary (AUX) port
2	Modem	4	Console port		

Figure 3-13 shows an example of an RP with data terminal and modem connections called out.

Figure 3-13 RP Console and Auxiliary Port Connections

1	Console terminal	3	RJ45 Ethernet cables	5	Auxiliary (AUX) port
2	Modem	4	Console port		

Caution

The ports labeled Ethernet, Console, and Auxiliary (AUX) are safety extra-low voltage (SELV) circuits. SELV circuits should only be connected to other SELV circuits.



Note

RSP/RP cables are not available from Cisco, but they are available from any commercial cable vendor.



Note

To comply with the intra-building lightning surge requirements of Telecordia GR-1089-CORE, Issue II, Revision 01, February 1999, you must use a shielded cable when connecting to the console, auxiliary, and Ethernet ports. The shielded cable is terminated by shielded connectors on both ends, with the cable shield material tied to both connectors.

Connecting to the Console Port

The system console port on the RSP/RP is an RJ45 receptacle for connecting a data terminal to perform the initial configuration of the router. The console port requires a straight-through RJ45 cable.

See the [“RSP and RP Port Connection Guidelines” section on page 1-38](#) for additional information about the console port.

Follow this procedure to connect a data terminal to the RSP/RP console port:

-
- | | |
|---------------|--|
| Step 1 | Set your terminal to these operational values: 9600 bps, 8 data bits, no parity, 2 stop bits (9600 8N2). |
| Step 2 | Power off the data terminal. |
| Step 3 | Attach the terminal end of the cable to the interface port on the data terminal. |
| Step 4 | Attach the other end of the cable to the RSP/RP console port. |
| Step 5 | Power on the data terminal. |
-

Connecting to the Auxiliary Port

The auxiliary port on the RSP/RP is a RJ45 receptacle for connecting a modem or other data communication equipment (DCE) device (such as another router) to the RSP/RP. The asynchronous auxiliary port supports hardware flow control and modem control.

See the [“RSP and RP Port Connection Guidelines” section on page 1-38](#) for additional information about the auxiliary port.

Follow this procedure to connect an asynchronous serial device to the RSP/RP auxiliary port:

-
- | | |
|---------------|---|
| Step 1 | Power off the asynchronous serial device. |
| Step 2 | Attach the device end of the cable to the interface port on the asynchronous serial device. |
| Step 3 | Attach the other end of the cable to the RSP/RP auxiliary port. |
| Step 4 | Power on the asynchronous serial device. |
-

Connecting to the Ethernet Management Ports

To connect cables to the RSP/RP management ports, attach Category 5 UTP cables directly to the MGT LAN 0 and MGT LAN 1 RJ45 receptacles on the RSP/RP.

See the [“Management LAN Ports Connection Guidelines” section on page 1-40](#) for additional information about the Ethernet management LAN ports.

**Note**

RJ45 cables are not available from Cisco Systems; they are available from outside commercial cable vendors. Use cables that comply with EIA/TIA-568 standards.

**Caution**

Ethernet management ports are primarily used as telnet ports into the Cisco ASR 9000 Series Router, and for booting or accessing Cisco software images over a network to which an Ethernet port is directly connected. We strongly caution you to consider the security implications of enabling routing functions on these ports.

**Note**

The Ethernet interfaces on the RSP/RP are endstation devices only, not repeaters.

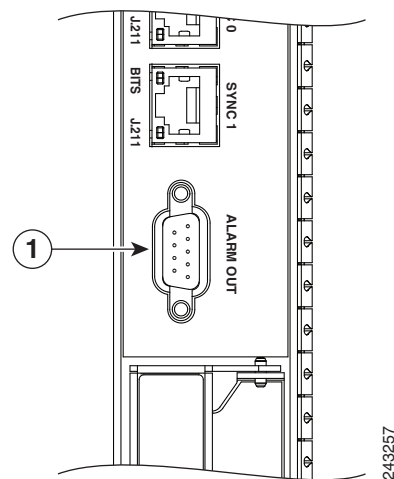
Follow these steps to connect an Ethernet cable to the RSP/RP RJ45 Ethernet receptacle:

- Step 1** Plug the cable directly into the RJ45 receptacle.
- Step 2** Connect the network end of your RJ45 cable to a switch, hub, repeater, or other external equipment.

Connecting the Alarm Cable

The router alarm connector, located on the RSP/RP front panel, is a 9-pin D-subconnector, labeled Alarm Out (see [Figure 3-14](#)).

Figure 3-14 Alarm Out Cable Connector



1	Alarm Out cable connector
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The alarm subconnector can be used to connect the router to an external site alarm maintenance system. Any critical, major, and minor alarms generated by the router also energize alarm relays on the alarm card and activate the external site alarm. The alarm relay contacts on the RSP/RP card consist of standard common, normally open, and normally closed relay contacts that are wired to the Alarm Out connector pins.

Table 1-6 lists the pin-to-signal correspondence between the connector pins and the alarm relay contacts. Because alarm contact cables are entirely dependent on installation site circumstances, alarm connector cables are not available from Cisco. For information about alarm connector wiring requirements and the pinouts for the alarm connector interface, see the [“Alarm Connection Guidelines” section on page 1-43](#).

**Caution**

Only safety extra-low voltage (SELV) circuits can be connected to the Alarm Out connector. Maximum rating for the alarm circuit is 100 mA, 50 V.

**Note**

To comply with the intra-building lightning surge requirements of GR-1089-CORE, Issue II, Revision 01, February 1999, you must use a shielded cable when connecting to the external alarm port on the RSP/RP card. The shielded cable is terminated by shielded connectors on both ends, with the cable shield material tied to both connectors.

Connecting Power to the Router

Use the one of the following procedures to connect power to your router.

- [Connecting Power to an AC-Powered Router, page 3-22](#)
- [Connecting Power to a DC-Powered Router, page 3-24](#)

**Caution**

A router must be operated with all its power modules installed at all times for electromagnetic compatibility (EMC).

Connecting Power to an AC-Powered Router

Follow these steps to connect the AC power cords to the router.

**Note**

Connect each AC power supply to a dedicated power source (branch circuit). Each AC-input power supply operates at a nominal input level of 200 to 240 VAC. For more information on AC power input levels, see the [“Power Connection Guidelines” section on page 1-22](#).

- Step 1** Check that the power switch is set to the OFF (0) position. On version 1 power trays, this switch is at the rear of the power tray. On version 2 power trays, this switch is at the front of the power tray.
- Step 2** Check that the circuit breaker assigned to the AC power source you are connecting is set to OFF.
- Step 3** Connect the permanent ground connection (central office grounding system) to the NEBS grounding location on the router chassis.

**Warning**

To ensure that power remains off while you are performing this procedure, tape the circuit breaker switch in the off (0) position until you are ready to turn it on.

- Step 4** Plug the AC power cord into the receptacle at the rear of the AC power tray (see [Figure 3-15](#) for the version 1 power tray and [Figure 3-16](#) for the version 2 power tray).
- Step 5** Close the retainer bracket to secure the AC power cord plug to the power tray receptacle.

Figure 3-15 Typical AC Power Connections to an AC Power Tray - Version 1 Power System

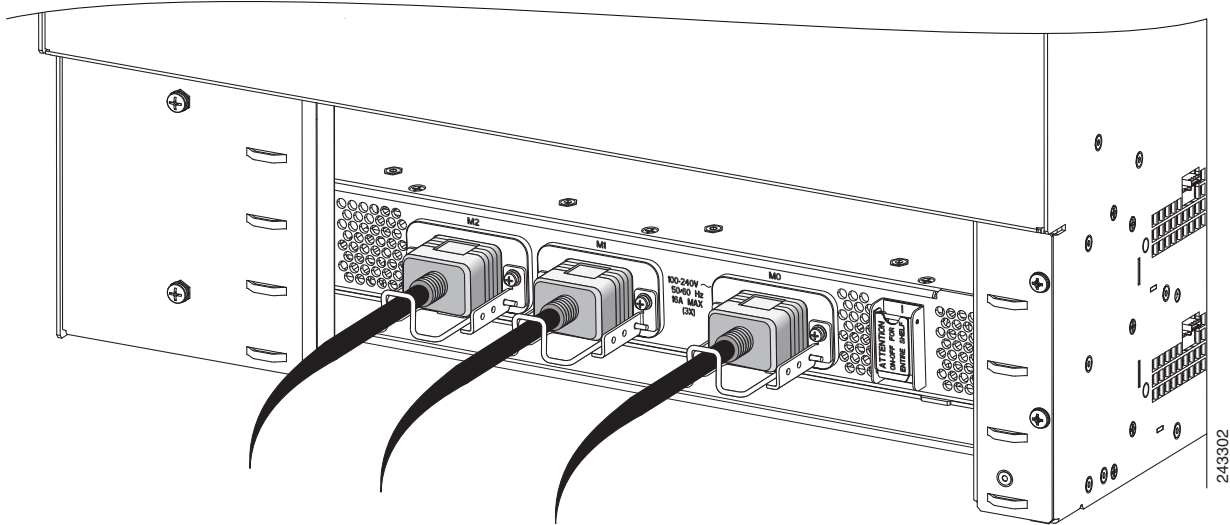
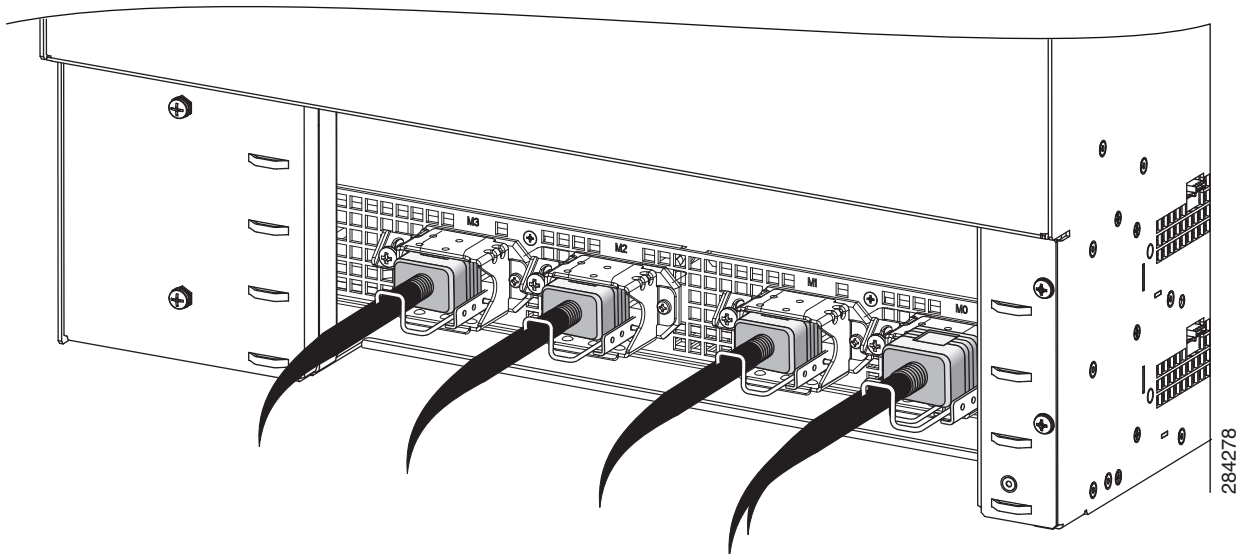


Figure 3-16 Typical AC Power Connections to an AC Power Tray - Version 2 Power System



- Step 6** Plug the other end of the AC power cord into the AC source receptacle.
- Step 7** Proceed to the [“Powering on the Router”](#) section on page 3-27.

Connecting Power to a DC-Powered Router

This section contains the procedures to connect the DC source power cables to a DC-powered router.

The color coding of source DC power cable leads depends on the color coding of the site DC power source. Because there is no color code standard for source DC wiring, you must be sure that power source cables are connected to the power module with the proper positive (+) and negative (–) polarity:

- In some cases, the source DC cable leads might have a positive (+) or a negative (–) label. This is a relatively safe indication of the polarity, *but you must verify the polarity by measuring the voltage between the DC cable leads*. Be sure that the positive (+) and negative (–) cable leads match the positive (+) and negative (–) labels on the power module when making the measurement.
- Green (or green and yellow) cable typically indicates that it is a ground cable.



Caution

DC power modules contain circuitry to trip the breaker on the power module if the power module detects a reverse polarity condition. No damage should occur from reverse polarity, but you should correct a reverse-polarity condition immediately.



Note

The length of the cables depends on the location of your router in relation to the source of DC power. These cables and the cable lugs used to attach the cables to the router chassis are not available from Cisco Systems. They are available from any commercial cable vendor. For more information on site power and source DC cable requirements, see the [“Power Connection Guidelines” section on page 1-22](#).



Warning

To ensure that power remains off while you are performing this procedure, tape the DC circuit breaker switch in the off (0) position.

Follow these steps to connect the DC source power cables to a DC power tray:

- Step 1** Verify that the power tray switch is set to the OFF (0) position.
- Step 2** Remove the clear plastic safety covers that fit over the DC power connection terminal studs.
- Step 3** Connect the DC power cables in the following order (see [Figure 3-17](#) for version 1 power and [Figure 3-19](#) for version 2 power):
 - a. Ground cables first.
 - b. Positive cables next.
 - c. Negative cable last.
- Step 4** Repeat [Step 3](#) for the other power modules installed in the tray.



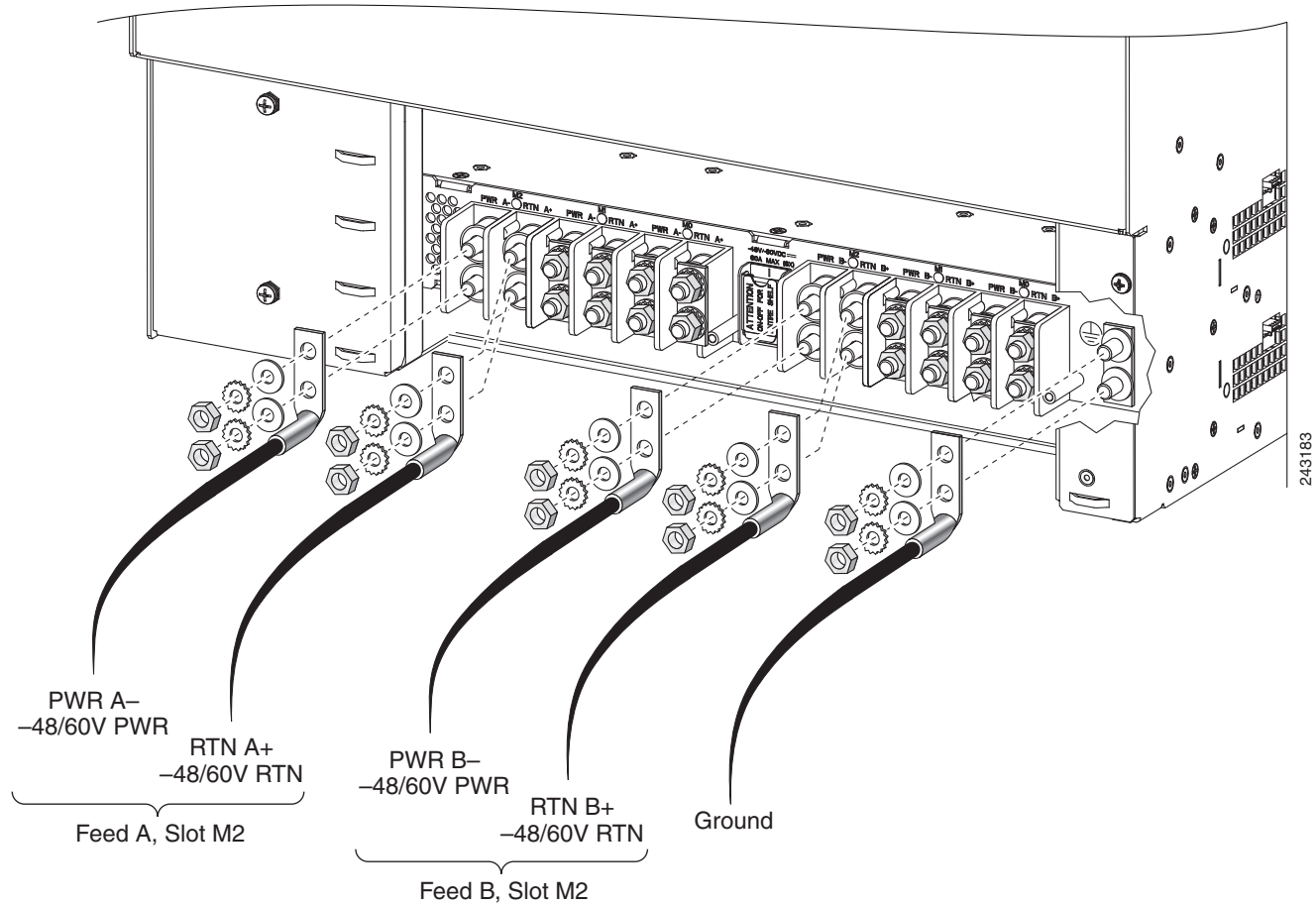
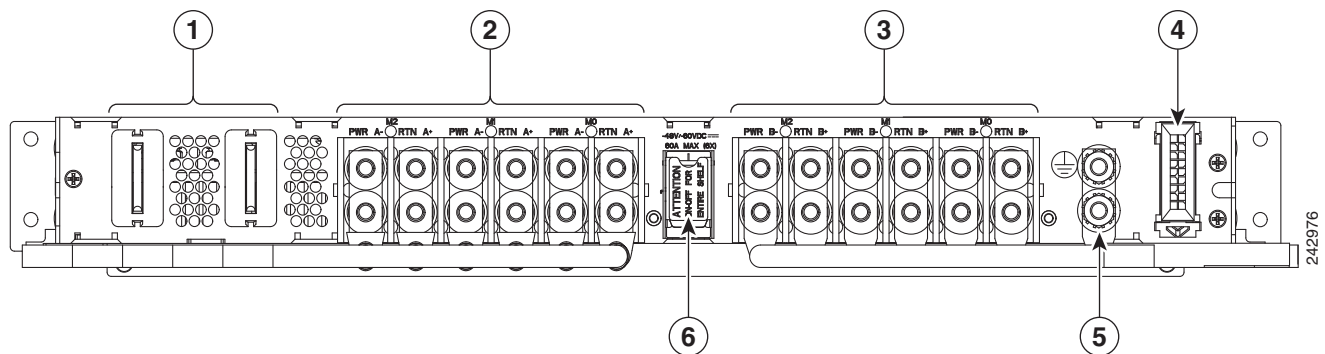
Warning

To prevent injury and damage to the equipment, always attach the ground and source DC power cable lugs to power tray terminals in the following order: (1) ground to ground, (2) positive (+) to positive (+), (3) negative (–) to negative (–).



Caution

Do not overtighten the nuts that secure the DC power cables to the power tray terminals. Using the 7/16 Hex socket and torque wrench the nuts should be tightened to a torque of 45 to 50 in-lb.

Figure 3-17 Typical Power Connections to a Power Tray for a Single DC Power Module - Version 1 Power System**Figure 3-18** DC Power Tray Rear Panel - Version 1 Power System

1	DC output power blades	4	I2C cable from backplane
2	"A" feed connectors	5	Primary ground
3	"B" feed connectors	6	Power switch

Figure 3-19 Typical Power Connections to a Power Tray for a Single DC Power Module - Version 2 Power System

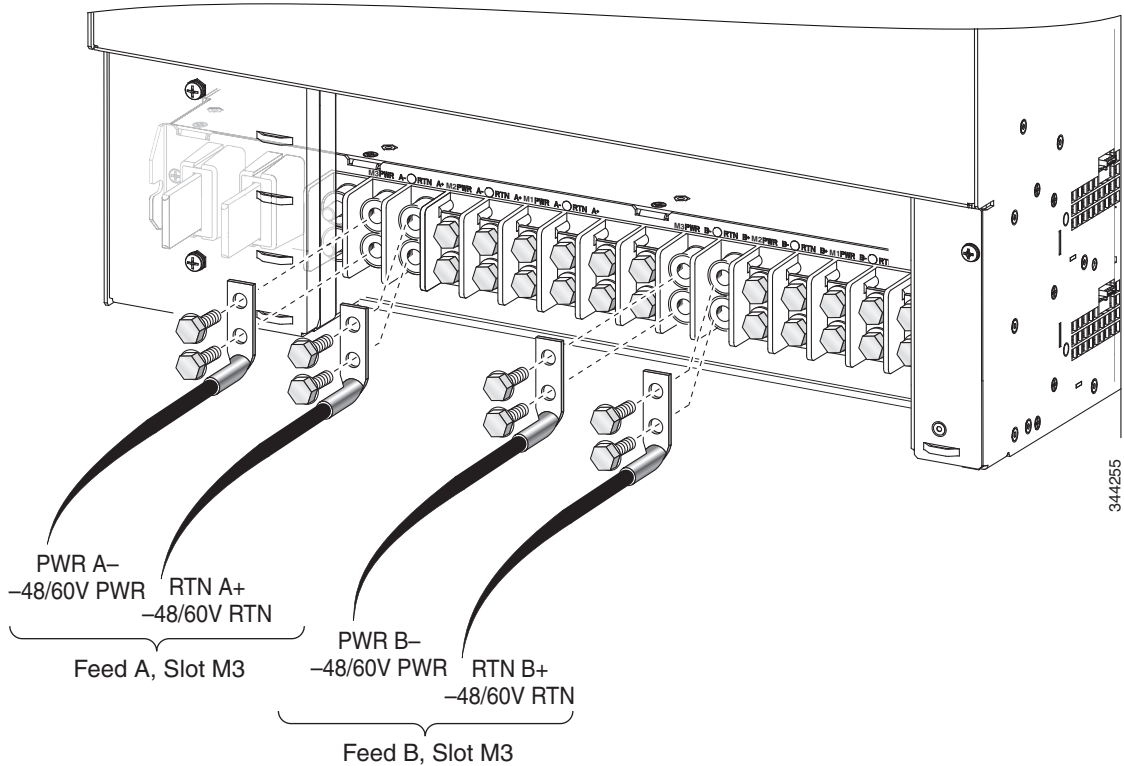
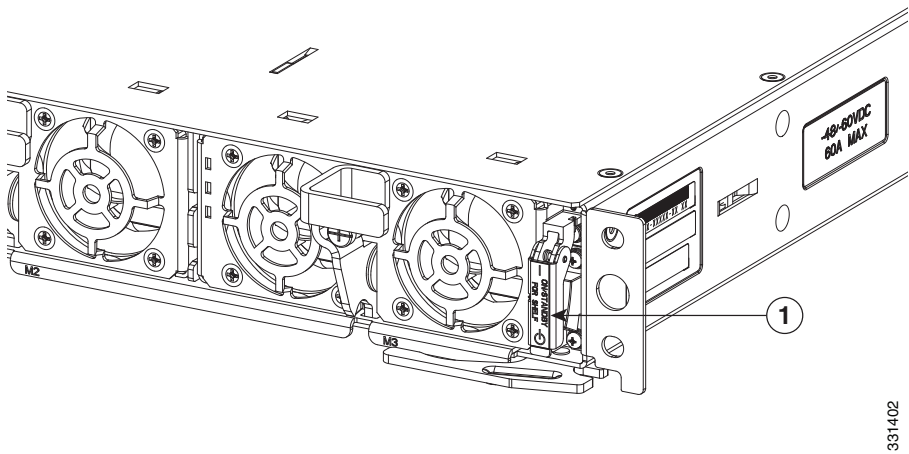


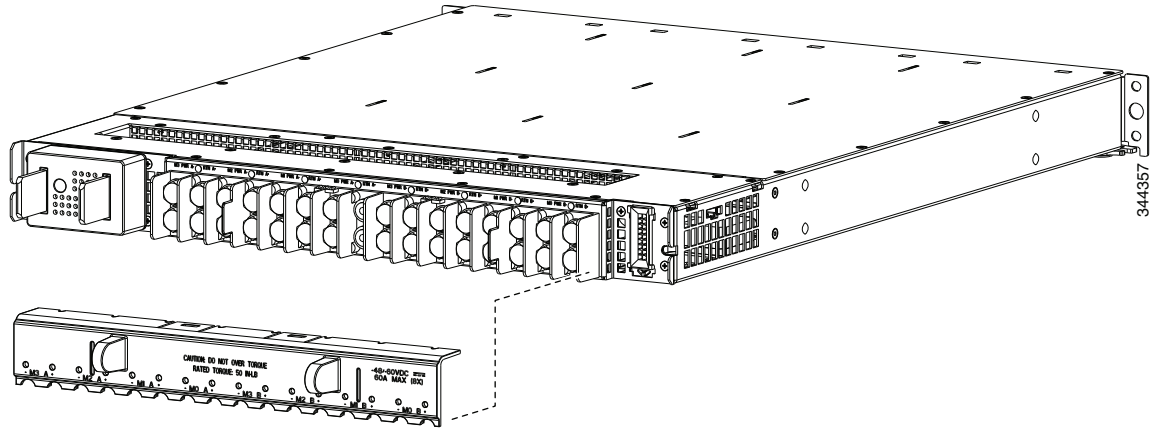
Figure 3-20 Location of DC Power Switch - Version 2 Power System



1	Power switch		
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- Step 5** Replace the clear plastic safety covers over the connection terminal studs.


Figure 3-21 Typical Plastic Safety Cover over the Power Tray Connection Terminals - Version 2 Power System



- Step 6** Proceed to the “Powering on the Router” section on page 3-27.

Powering on the Router

Follow these steps to turn on power to either an AC-powered or DC-powered router:

- Step 1** Power on the circuit breaker to your power sources.
- Step 2** Verify that the Power Input LED on each power module in the tray is lit.
-  **Note** On the DC power tray, the Power Input LED is lit solid green if both DC feeds are valid and blinks green if only a single DC feed is valid.
- Step 3** Set the power tray switch for Feed A Slots M0 - 3 to the ON (1) position. Refer to [Figure 3-17](#) for Version 1 power systems, [Figure 3-19](#) for Version 2 power systems for the feeds. Refer to [Figure 3-18](#) for Version 1 power systems, [Figure 3-20](#) for Version 2 power systems for the locations of the power switch.
- Step 4** Verify that the Power Output LED on each power module in the tray is lit.
- Step 5** Repeat [Step 3](#) and [Step 4](#) for Slots M0 - 3 for Feed B.

