



CHAPTER 5

Installing IPS-4260

This chapter describes IPS-4260 and how to install it. It also describes the accessories and how to install them. This chapter contains the following sections:

- [Introducing IPS-4260, page 5-1](#)
- [Supported PCI Cards, page 5-2](#)
- [Hardware Bypass, page 5-3](#)
- [Front and Back Panel Features, page 5-5](#)
- [Specifications, page 5-8](#)
- [Accessories, page 5-8](#)
- [Rack Mounting, page 5-9](#)
- [Installing IPS-4260, page 5-14](#)
- [Removing and Replacing the Chassis Cover, page 5-17](#)
- [Installing and Removing PCI Cards, page 5-19](#)
- [Installing and Removing the Power Supply, page 5-21](#)



Caution

The BIOS on IPS-4260 is specific to IPS-4260 and must only be upgraded under instructions from Cisco with BIOS files obtained from the Cisco website. Installing a non-Cisco or third-party BIOS on IPS-4260 voids the warranty. For more information on how to obtain instructions and BIOS files from the Cisco website, see [Obtaining Cisco IPS Software, page 11-1](#).

Introducing IPS-4260

IPS-4260 delivers 1 Gigabit of intrusion prevention performance. You can use IPS-4260 to protect both Gigabit subnets and aggregated traffic traversing switches from multiple subnets. IPS-4260 is a purpose-built device that provides support for both copper and fiber NIC environments providing flexibility of deployment in any environment.

IPS-4260 has two built-in Gigabit Ethernet network ports and six expansion slots. The network port numbers increase from right to left and the expansion slot numbers increase from bottom to top and from right to left as shown in [Figure 5-4 on page 5-6](#). Slots 2 and 3 are PCI-Express connectors and the other expansion slots are PCI-X slots. Slots 1 through 3 are full-height slots and slots 4 through 6 are half-height slots. The built-in management port is called Management0/0 and the built-in sensing interface is Gigabit-Ethernet0/1. For more information on sensor interfaces, see [Sensor Interfaces, page 1-3](#).

**Note**

Only expansion slots 2 and 3 are supported at this time.

For improved reliability, IPS-4260 uses a flash device for storage rather than a hard-disk drive. IPS-4260 supports two optional network interface cards, the 2SX Fiber card, and the 4GE bypass interface card that contains the hardware-bypass feature. Initially IPS-4260 supports only the built-in interfaces and these two interface cards. For more information on the 4GE bypass interface card, see [Hardware Bypass, page 5-3](#).

IPS-4260 monitors greater than 1 Gbps of aggregate network traffic on multiple sensing interfaces and is also inline ready. It replaces IDS-4250-XL. It supports both copper and fiber interfaces.

**Note**

The 1-Gbps performance for IPS-4260 is based on the following conditions: 10,000 new TCP connections per second, 100,000 HTTP transactions per second, average packet size of 450 bytes, and the system running Cisco IPS 5.1 software. The 1-Gbps performance is traffic combined from all sensing interfaces.

IPS-4260 ships with one power supply, but it supports redundant power supplies. For more information, see [Installing and Removing the Power Supply, page 5-21](#).

**Note**

IPS-4260 operates in load-sharing mode when the optional redundant power supply is installed.

Supported PCI Cards

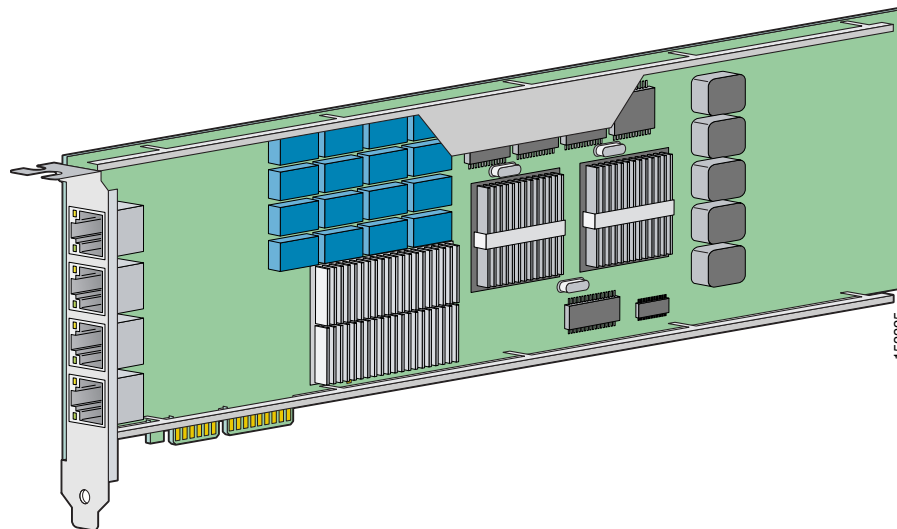
IPS-4260 supports the following PCI cards:

- 4GE bypass interface card (part number IPS-4GE-BP-INT=)

Provides four 10/100/1000BASE-T (4GE) monitoring interfaces (allowing up to 9 total monitoring interfaces). The 4GE bypass interface card support hardware bypass.

Figure 5-1 shows the 4GE bypass interface card.

Figure 5-1 4GE Bypass Interface Card

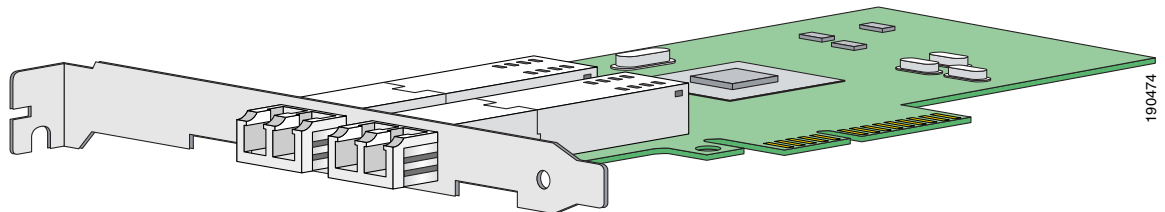


- 2SX Card (part number IPS-2SX-INT=)

Provides two 1000BASE-SX (fiber) monitoring interfaces (allowing up to 4 total fiber monitoring interfaces). The 2SX interface cards does not support hardware bypass.

Figure 5-2 shows the 2SX card.

Figure 5-2 2SX Interface Card



Hardware Bypass

This section describes the 4GE bypass interface card and its configuration restrictions. For the procedure for installing and removing the 4GE bypass interface card, see [Installing and Removing PCI Cards](#), page 5-19.

This section contains the following topics:

- [4GE Bypass Interface card](#), page 5-4
- [Hardware Bypass Configuration Restrictions](#), page 5-4

4GE Bypass Interface card

IPS-4260 supports the 4-port GigabitEthernet card (part number IPS-4GE-BP-INT=) with hardware bypass. This 4GE bypass interface card supports hardware bypass only between ports 0 and 1 and between ports 2 and 3. [Figure 5-1 on page 5-3](#) shows the 4GE bypass interface card.

Hardware bypass complements the existing software bypass feature in IPS 5.1. For more information on software bypass mode, refer to [Configuring Bypass Mode](#). The following conditions apply to hardware bypass and software bypass on IPS-4260:

- When bypass is set to OFF, software bypass is not active.

For each inline interface for which hardware bypass is available, the component interfaces are set to disable the fail-open capability. If SensorApp fails, the sensor is powered off, reset, or if the NIC interface drivers fail or are unloaded, the paired interfaces enter the fail-closed state (no traffic flows through inline interface or inline VLAN subinterfaces).

- When bypass is set to ON, software bypass is active.

Software bypass forwards packets between the paired physical interfaces in each inline interface and between the paired VLANs in each inline VLAN subinterface. For each inline interface on which hardware bypass is available, the component interfaces are set to standby mode. If the sensor is powered off, reset, or if the NIC interfaces fail or are unloaded, those paired interfaces enter fail-open state in hardware (traffic flows unimpeded through inline interface). Any other inline interfaces enter fail-closed state.

- When bypass is set to AUTO (traffic flows without inspection), software bypass is activated if sensorApp fails.

For each inline interface on which hardware bypass is available, the component interfaces are set to standby mode. If the sensor is powered off, reset, or if the NIC interfaces fail or are unloaded, those paired interfaces enter fail-open state in hardware. Any other inline interfaces enter the fail-closed state.

**Note**

To test fail-over, set the bypass mode to ON or AUTO, create one or more inline interfaces and power down the sensor and verify that traffic still flows through the inline path.

Hardware Bypass Configuration Restrictions

To use the hardware bypass feature on the 4GE bypass interface card, you must pair interfaces to support the hardware design of the card. If you create an inline interface that pairs a hardware-bypass-capable interface with an interface that violates one or more of the hardware-bypass configuration restrictions, hardware bypass is deactivated on the inline interface and you receive a warning message similar to the following:

```
Hardware bypass functionality is not available on Inline-interface pair0.
```

```
Physical-interface GigabitEthernet2/0 is capable of performing hardware bypass only when paired with GigabitEthernet2/1, and both interfaces are enabled and configured with the same speed and duplex settings.
```

The following configuration restrictions apply to hardware bypass:

- The 4-port bypass card is only supported on IPS-4260.
- Fail-open hardware bypass only works on inline interfaces (interface pairs), not on inline VLAN pairs.
- Fail-open hardware bypass is available on an inline interface if all of the following conditions are met:
 - Both of the physical interfaces support hardware bypass.
 - Both of the physical interfaces are on the same interface card.
 - The two physical interfaces are associated in hardware as a bypass pair.
 - The speed and duplex settings are identical on the physical interfaces.
 - Both of the interfaces are administratively enabled.
- Autonegotiation must be set on MDI/X switch ports connected to IPS-4260.

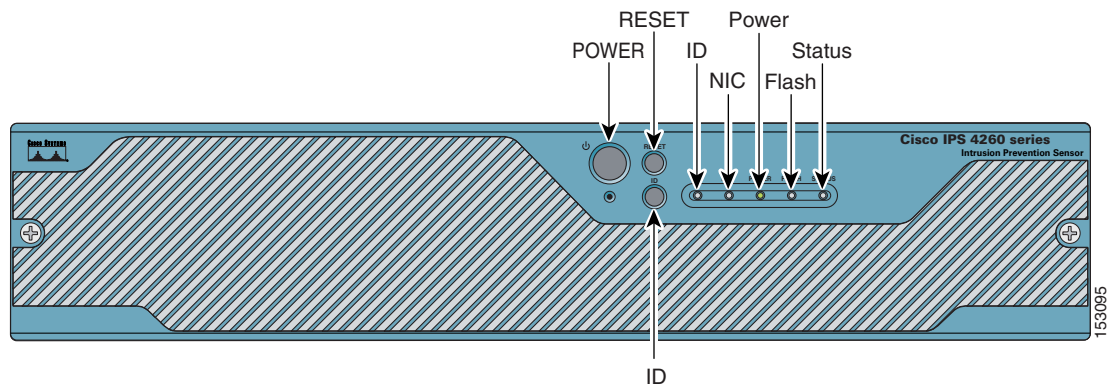
You must configure both the sensor ports and the switch ports for autonegotiation for hardware bypass to work. The switch ports must support MDI/X, which automatically reverses the transmit and receive lines if necessary to correct any cabling problems. The sensor is only guaranteed to operate correctly with the switch if both of them are configured for identical speed and duplex, which means that the sensor must be set for autonegotiation too.

Front and Back Panel Features

This section describes the IPS-4260 front and back panel features and indicators.

Figure 5-3 shows the front view of IPS-4260.

Figure 5-3 IPS-4260 Front Panel Features



There are three switches on the front panel of IPS-4260:

- Power—Toggles the system power.
- Reset—Resets the system.
- ID—Toggles the system ID indicator.

Table 5-1 describes the front panel indicators on IPS-4260.

Table 5-1 Front Panel Indicators

Indicator	Description
ID (blue)	Continuously lit when activated by the front panel ID switch.
NIC (green)	Indicates activity on either the GigabitEthernetO/1 or MGMT interfaces.
Power (green)	When continuously lit, indicates DC power. The indicator is off when power is turned off or the power source is disrupted.
Flash (green/amber)	Off when the compact flash device is not being accessed. Blinks green when the compact flash device is being accessed. Solid amber when a device has failed.
Status (green/amber)	Blinks green while the power-up diagnostics are running or the system is booting. Solid green when the system has passed power-up diagnostics. Solid amber when the power-up diagnostics have failed.

Figure 5-4 shows the back view of the IPS-4260.

Figure 5-4 IPS-4260 Back Panel Features

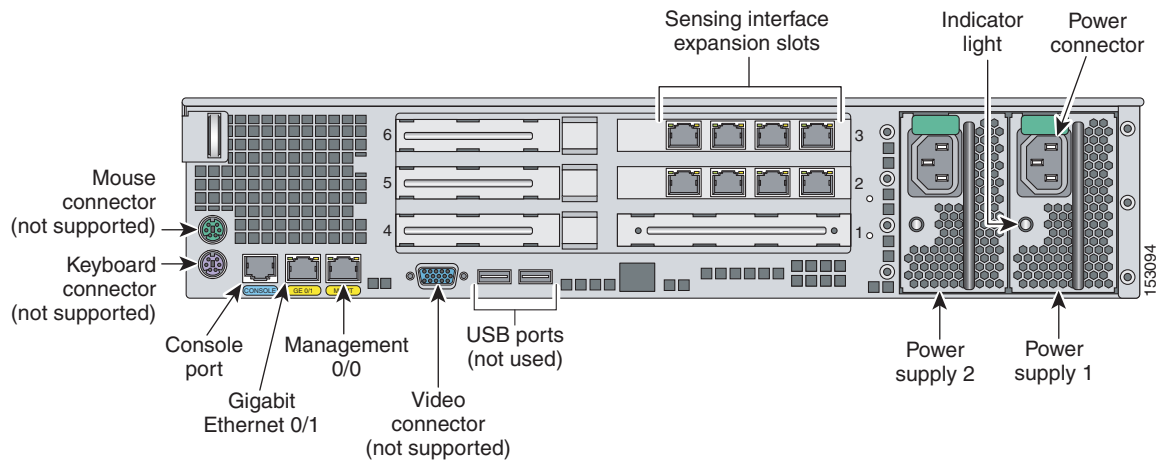


Figure 5-5 shows the two built-in Ethernet ports, which have two indicators per port.

Figure 5-5 Ethernet Port Indicators

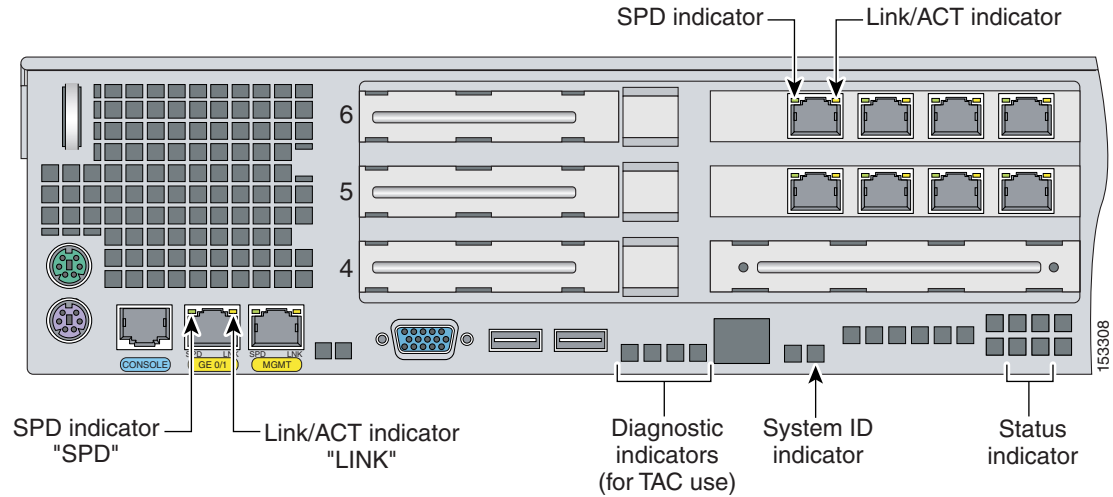


Table 5-2 lists the back panel indicators.

Table 5-2 Back Panel Indicators

Indicator	Color	Description
Left side	Green solid Green blinking	Physical link Network activity
Right side	Not lit Green Amber	10 Mbps 100 Mbps 1000 Mbps

Table 5-3 lists the power supply indicator.

Table 5-3 Power Supply Indicators

Color	Description
Off	No AC power to all power supplies.
Green solid	Output on and ok.
Green blinking	AC present, only 5Vsb on (power supply off).
Amber	No AC power to this power supply (for 1+1 configuration) or power supply critical event causing a shutdown: failure, fuse blown (1+1 only), OCP 12 V, OVP 12 V, or fan failed.
Amber blinking	Power supply warning events where the power supply continues to operate: high temperature, high power/high current, or slow fan.

Specifications

Table 5-4 lists the specifications for IPS-4260.

Table 5-4 **IPS-4260 Specifications**

Dimensions and Weight	
Height	3.45 in. (87.6 cm)
Width	17.14 in. (435.3 cm)
Depth	20 in. (508 cm)
Weight	40.0 lb (18.14 kg)
Form factor	2 RU, standard 19-inch rack-mountable
Power	
Autoswitching	100V to 240V AC
Frequency	47 to 63 Hz, single phase
Operating current	8.9 A
Steady state	588 W max continuous
Maximum peak	657 W
Maximum heat dissipation	648 BTU/hr
Environment	
Temperature	Operating +32°F to +104°F (+0°C to +40°C) Nonoperating -104°F to +158°F (-40°C to +70°C)
Relative humidity	Operating 10% to 85% (noncondensing) Nonoperating 5% to 95% (noncondensing)
Altitude	Operating 0 to 9843 ft (3000 m) Nonoperating 0 to 15,000 ft (4750 m)
Shock	Operating Half-sine 2 G, 11 ms pulse, 100 pulses Nonoperating 25 G, 170 inches/sec delta V
Vibration	2.2 Grms, 10 minutes per axis on all three axes

Accessories



Warning

IMPORTANT SAFETY INSTRUCTIONS

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. **Statement 1071**

SAVE THESE INSTRUCTIONS

**Warning**

Only trained and qualified personnel should be allowed to install, replace, or service this equipment. Statement 1030

IPS-4260 accessories kit contains the following:

- DB25 connector
- DB9 connector
- Rack mounting kit—screws, washers, and metal bracket
- RJ45 console cable
- Two 6-ft Ethernet cables

Rack Mounting

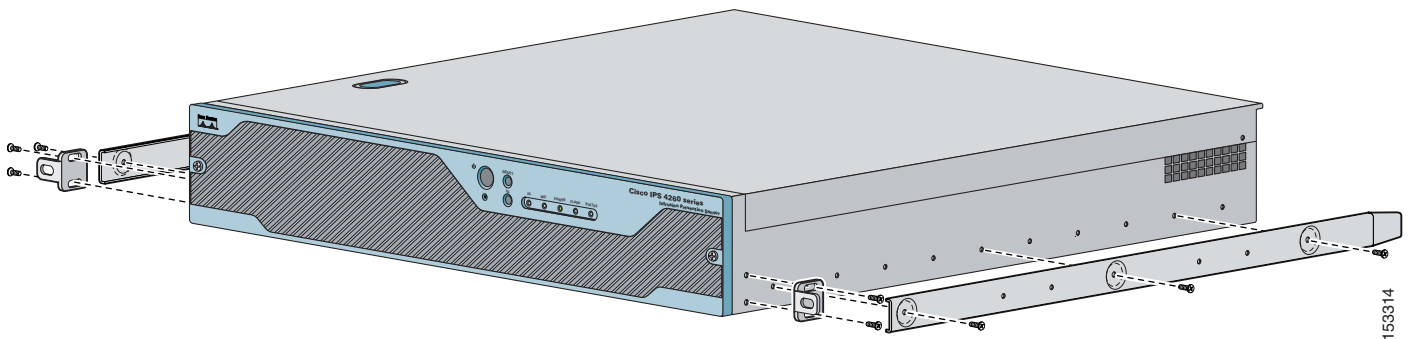
You can rack mount IPS-4260 in a 2- or 4-post rack. This section describes how to rack mount IPS-4260 and contains the following topics:

- [Installing IPS-4260 in a 4-Post Rack, page 5-9](#)
- [Installing IPS-4260 in a 2-Post Rack, page 5-12](#)

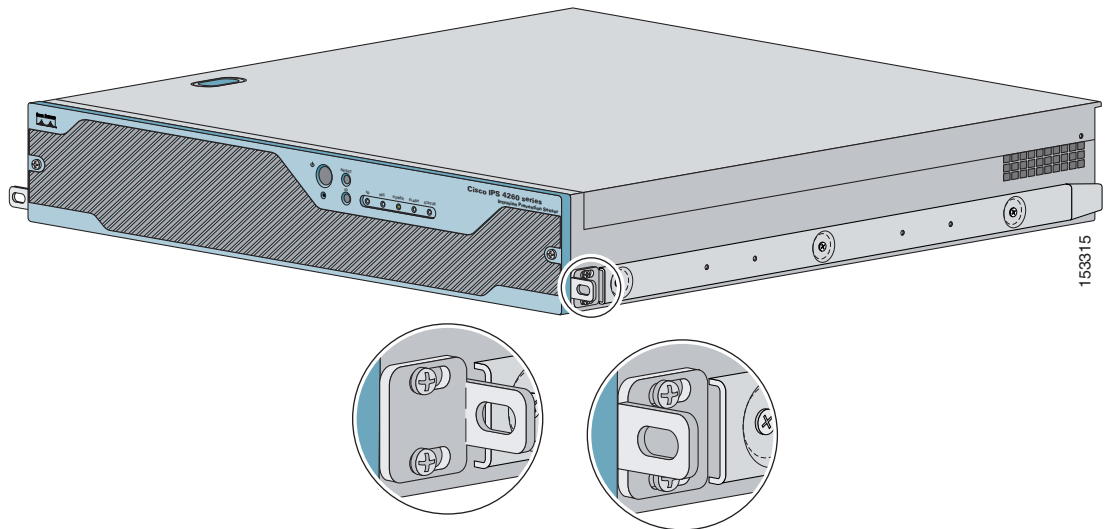
Installing IPS-4260 in a 4-Post Rack

To rack mount IPS-4260 in a 4-post rack, follow these steps:

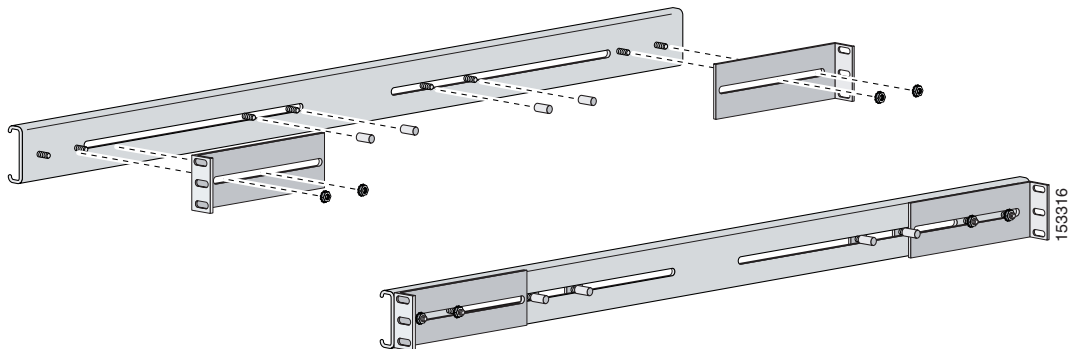
- Step 1** Attach each inner rail to each side of the chassis with three 8-32x1/4" SEMS screws.



- Step 2** Attach the front-tab mounting bracket to the chassis with two 8-32x1/4" SEMS screws. You can flip the bracket to push the system forward in the rack.



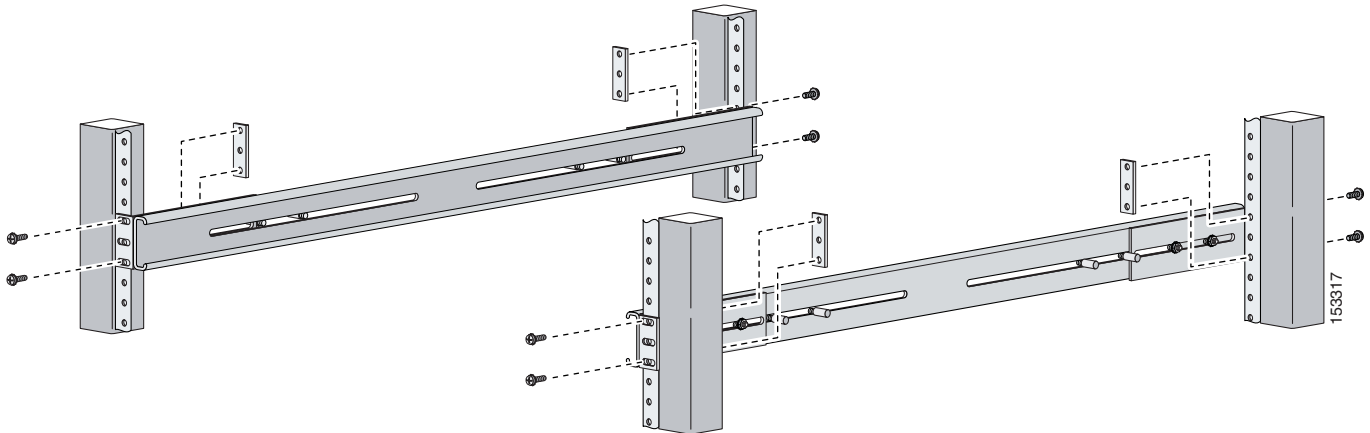
- Step 3** Using the four inner studs, install the mounting brackets to the outer rail with four 8-32 KEPS nuts. Insert four thread covers over the four outer studs on each side.



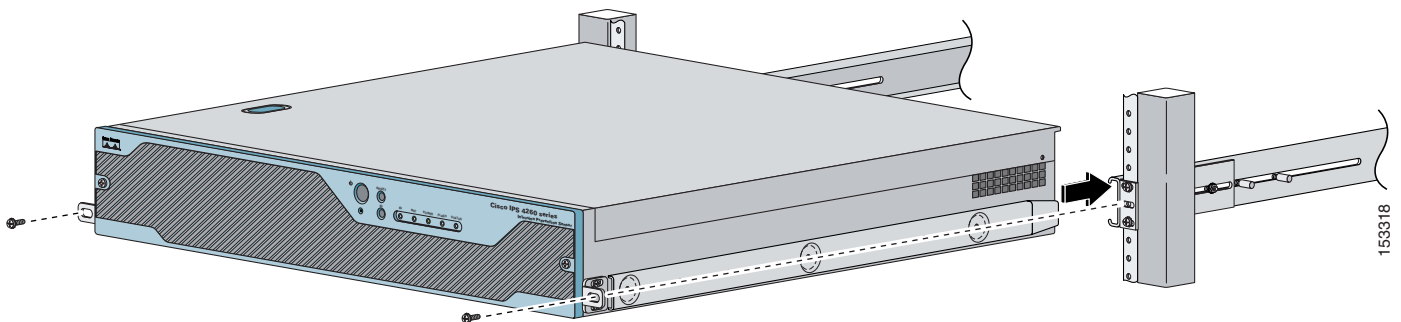
- Step 4** Install the two outer rail subassemblies in the rack using eight 10-32x1/2" SEMS screws. You can use four bar nuts if necessary.



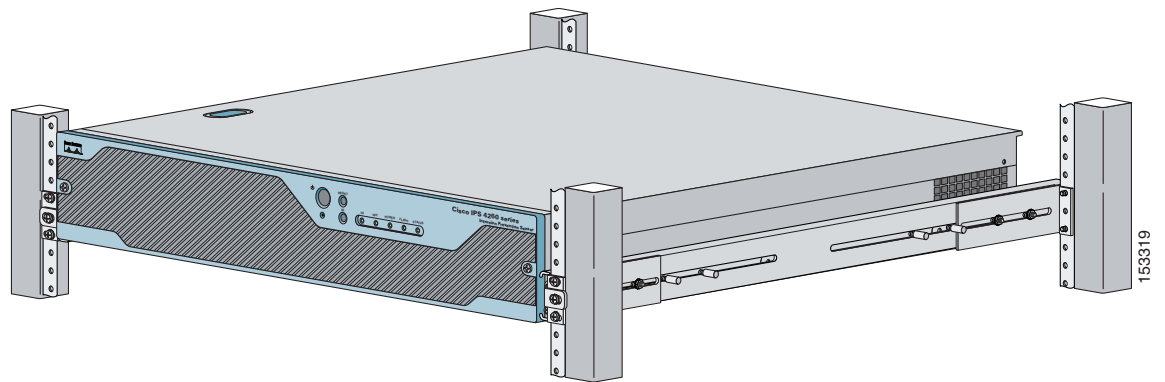
Note Adjust the mounting brackets based on rack depth.



- Step 5** Slide IPS-4260 into the rack making sure the inner rail is aligned with the outer rail.



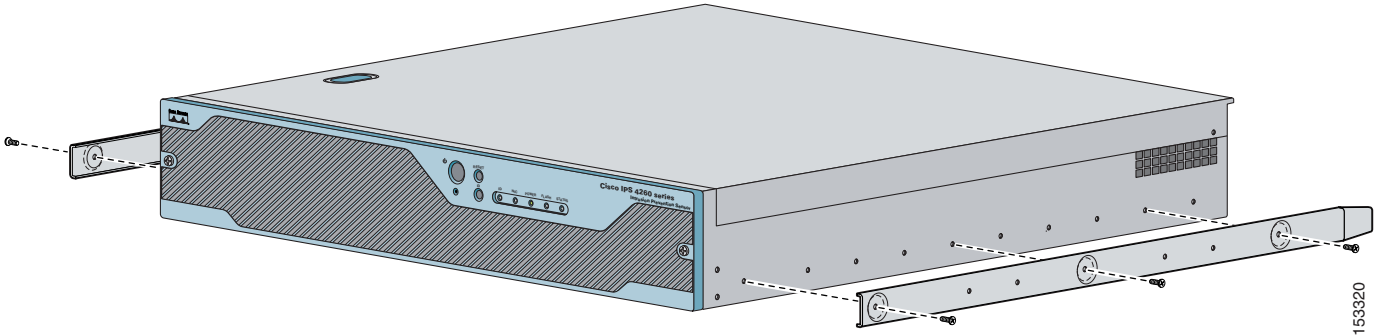
- Step 6** Install two 10-32x1/2" SEMS screws to hold the front-tab mounting bracket to the rail.



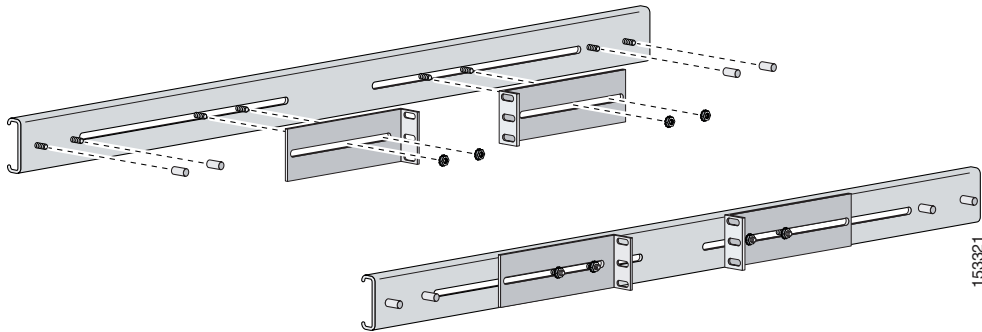
Installing IPS-4260 in a 2-Post Rack

To rack mount IPS-4260 in a 2-post rack, follow these steps:

- Step 1** Attach the inner rail to each side of the chassis with three 8-32x1/4" SEMS screws.



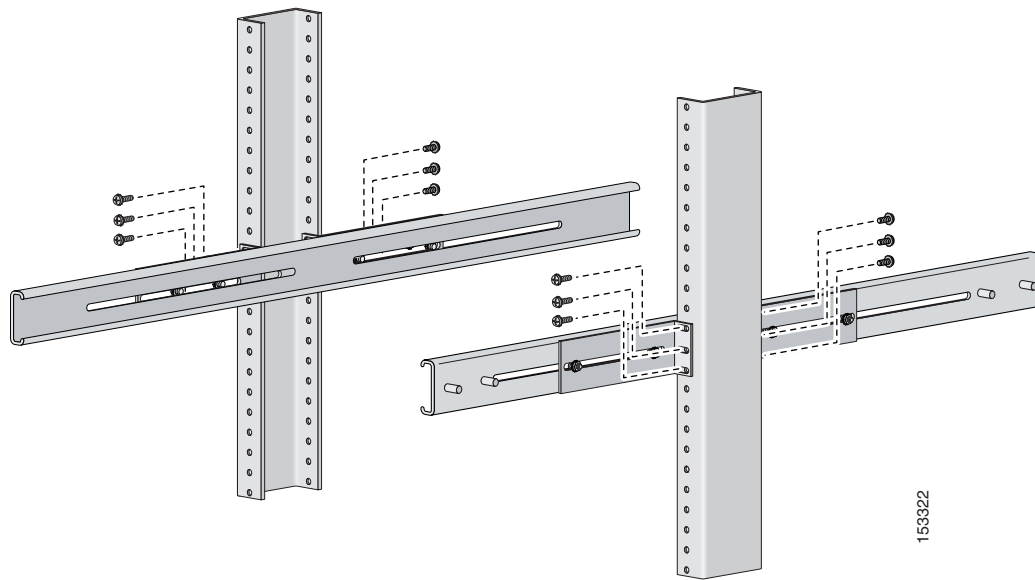
- Step 2** Using the four inner studs, install the mounting brackets to the outer rail with four 8-32 KEPS nuts. Insert four thread covers over the four outer studs on each side.



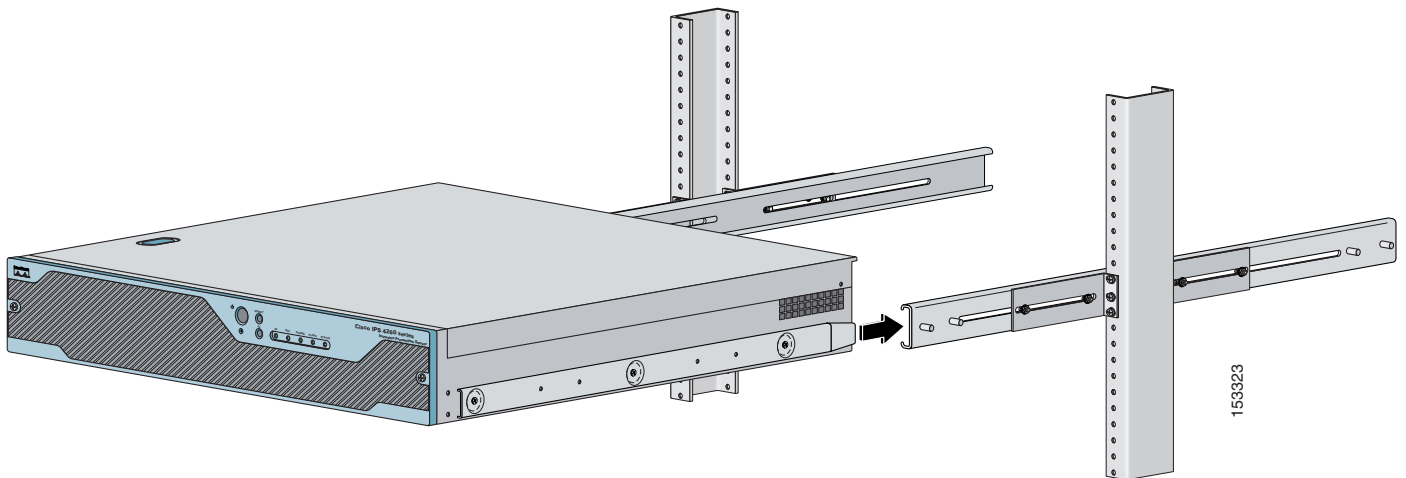
- Step 3** Install the two outer rail subassemblies in the rack using twelve 10-32x1/2" SEMS screws or whatever rack hardware is necessary.



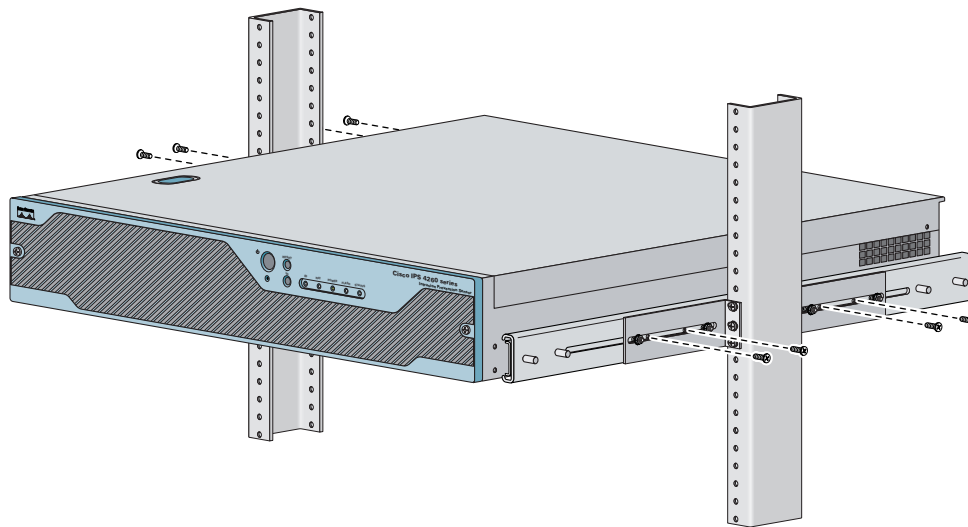
Note Adjust the mounting brackets based on the rack-channel depth.



Step 4 Slide IPS-4260 into the rack making sure the inner rail is aligned with the outer rail.



Step 5 Install four 8-32x7/16" SEMS screws through the clearance slots in the side of each outer rail assembly into the inner rail.



Installing IPS-4260



Warning

Only trained and qualified personnel should be allowed to install, replace, or service this equipment. Statement 1030

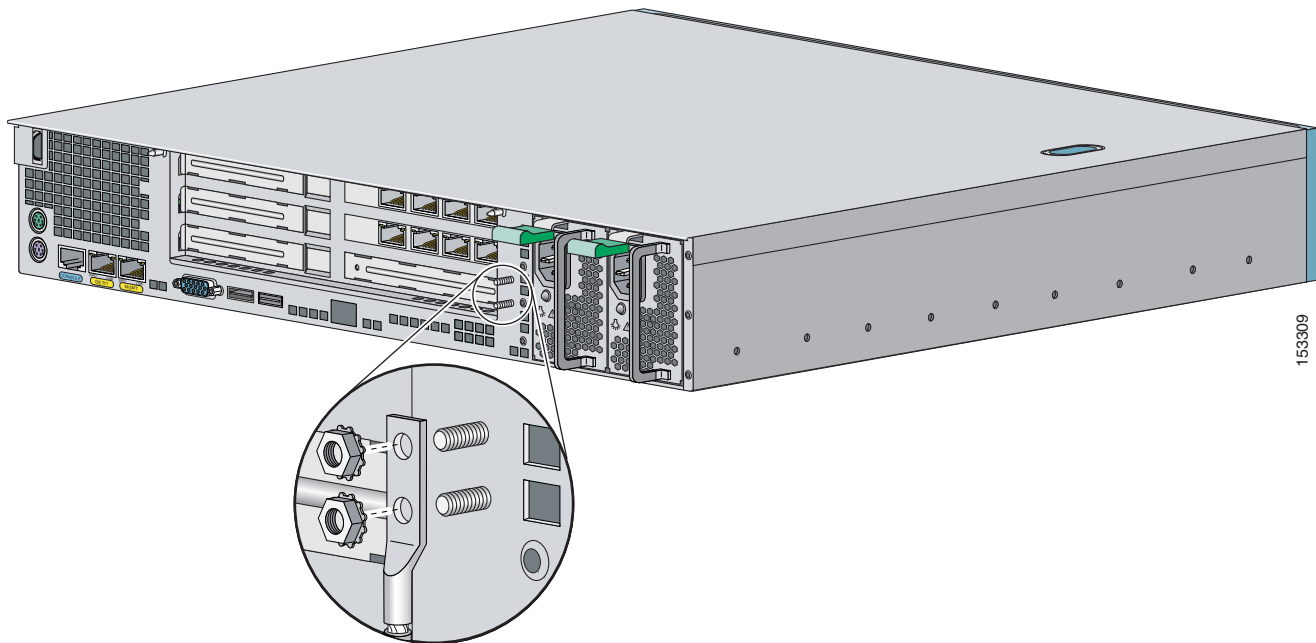


Caution

Follow proper safety procedures when performing these steps by reading the safety warnings in *Regulatory Compliance and Safety Information for the Cisco Intrusion Prevention System 4200 Series Appliance Sensor*. For more information on working with electrical power and in an ESD environment, see [Site and Safety Guidelines, page 1-23](#).

To install IPS-4260 on the network, follow these steps:

- Step 1** Position IPS-4260 on the network.
- Step 2** Attach the grounding lugs to the back of IPS-4260.

**Note**

Use 8-32 locknuts to connect a copper standard barrel grounding lug to the holes. The appliance requires a lug where the distance between the center of each hole is 0.56 inches. The ground lug must be NRTL listed or recognized. In addition, the copper conductor (wires) must be used and the copper conductor must comply with the NEC code for ampacity. A lug is not supplied with the appliance.

Step 3 Place IPS-4260 in a rack, if you are rack mounting it.

For the procedure, see [Rack Mounting](#), page 5-9.

Step 4 Attach the power cord to IPS-4260 and plug it in to a power source (a UPS is recommended).

Step 5 Connect the cable as shown in Step 6 so that you have either a DB-9 or DB-25 connector on one end as required by the serial port for your computer, and the other end is the RJ-45 connector.

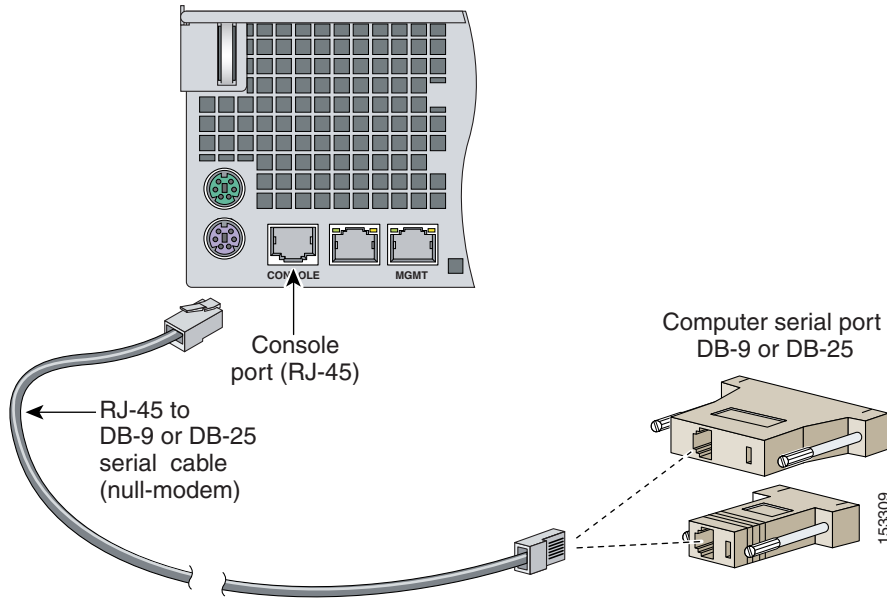
**Note**

Use the console port to connect to a computer to enter configuration commands. Locate the serial cable from the accessory kit. The serial cable assembly consists of a 180/rollover cable with RJ-45 connectors (DB-9 connector adapter PN 74-0495-01 and DB-25 connector adapter PN 29-0810-01).

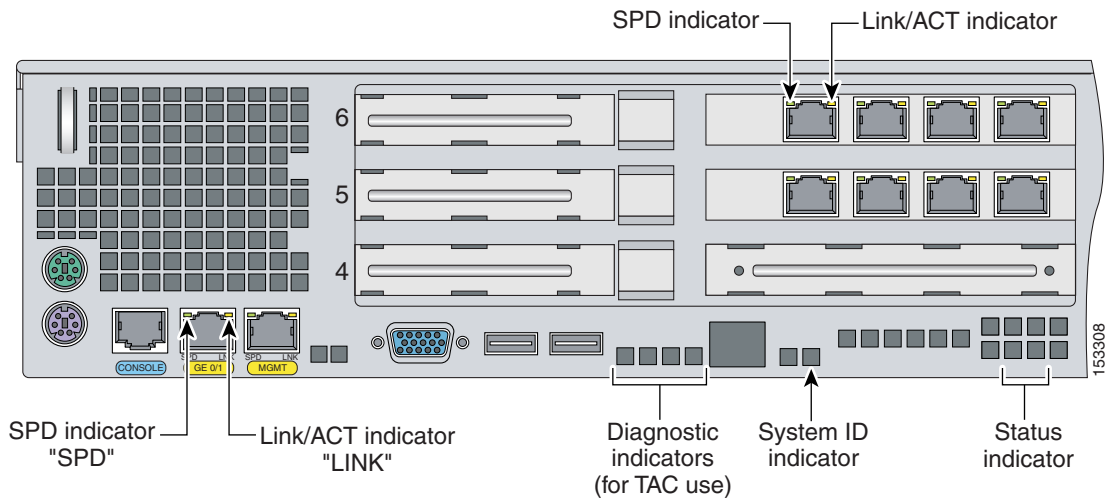
**Note**

You can use a 180/rollover or straight-through patch cable to connect the appliance to a port on a terminal server with RJ-45 or hydra cable assembly connections. Connect the appropriate cable from the console port on the appliance to a port on the terminal server. For the instructions for setting up a terminal server, see [Setting Up a Terminal Server](#), page 1-14.

Step 6 Connect the RJ-45 connector to the console port and connect the other end to the DB-9 or DB-25 connector on your computer.



Step 7 Attach the network cables.



IPS-4260 has the following interfaces:

- GigabitEthernet0/1 (GE 0/1) is the sensing port.
- Management0/0 (MGMT) is the command and control port.
- GigabitEthernet2/0 through GigabitEthernet2/3 and GigabitEthernet3/0 through 3/3 are the additional expansion port slots.



Caution

Management and console ports are privileged administrative ports. Connecting them to an untrusted network can create security concerns.

Step 8 Power on IPS-4260.

- Step 9** Initialize IPS-4260.
For the procedure, see [Initializing the Sensor, page 10-2](#).
- Step 10** Upgrade IPS-4260 with the most recent Cisco IPS software.
For the procedure, see [Obtaining Cisco IPS Software, page 11-1](#).
You are now ready to configure intrusion prevention on IPS-4260.
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For More Information

- For the procedure for using HTTPS to log in to IDM, refer to [Logging In to IDM](#).
- For the procedures for configuring intrusion prevention on your sensor, refer to the following documents:
 - [Installing and Using Cisco Intrusion Prevention System Device Manager 5.1](#)
 - [Configuring the Cisco Intrusion Prevention System Sensor Using the Command Line Interface 5.1](#)

Removing and Replacing the Chassis Cover



Warning

This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than 120 VAC, 20 A U.S. (240 VAC, 16-20 A International). Statement 1005



Warning

This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available. Statement 1024



Warning

Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place. Statement 1029



Warning

This unit might have more than one power supply connection. All connections must be removed to de-energize the unit. Statement 1028



Caution

Follow proper safety procedures when removing and replacing the chassis cover by reading the safety warnings in [Regulatory Compliance and Safety Information for the Cisco Intrusion Prevention System 4200 Series Appliance Sensor](#).

**Note**

Removing the appliance chassis cover does not affect your Cisco warranty. Upgrading IPS-4260 does not require any special tools and does not create any radio frequency leaks.

To remove and replace the chassis cover, follow these steps:

Step 1 Log in to the CLI.

Step 2 Prepare IPS-4260 to be powered off:

```
sensor# reset powerdown
```

Wait for the power down message before continuing with Step 3.

**Note**

You can also power down IPS-4260 using IDM. For the procedure, refer to [Resetting the Appliance](#).

Step 3 Power off IPS-4260.

Step 4 Remove the power cord and other cables from IPS-4260.

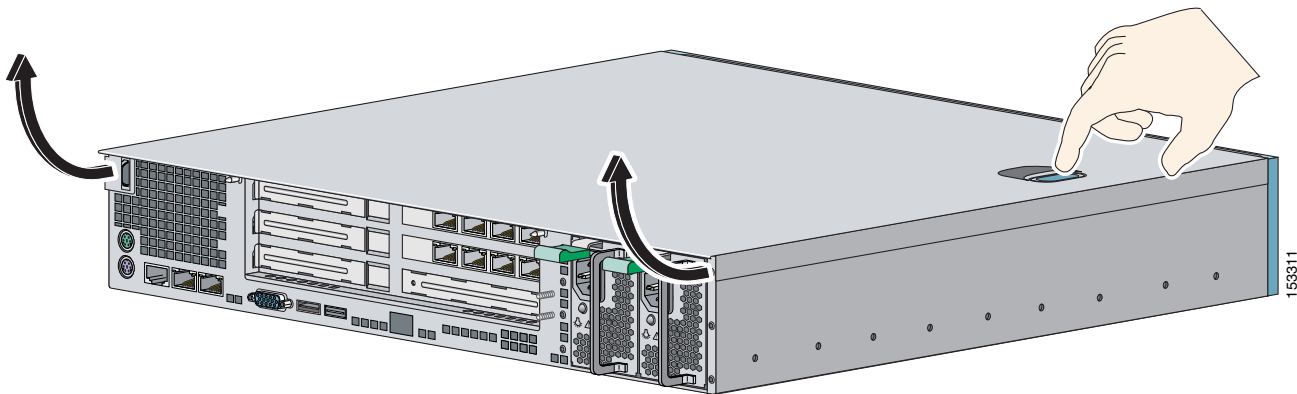
Step 5 If rack-mounted, remove IPS-4260 from the rack.

For the procedure, see [Rack Mounting, page 5-9](#).

Step 6 Place IPS-4260 in an ESD-controlled environment.

For more information, see [Working in an ESD Environment, page 1-25](#).

Step 7 Press the blue button on the top of the chassis cover and slide the chassis cover back.

**Caution**

Do not operate IPS-4260 without the chassis cover installed. The chassis cover protects the internal components, prevents electrical shorts, and provides proper air flow for cooling the electronic components.

Step 8 To replace the chassis cover, position it at the back of the chassis and slide it on until it snaps into place.

Step 9 Reattach the power cord and other cables to IPS-4260.

For the procedure, see [Installing IPS-4260, page 5-14](#).

- Step 10** Reinstall IPS-4260 on a rack, desktop, or table.
If you are reinstalling in a rack, see [Rack Mounting, page 5-9](#).
- Step 11** Power on IPS-4260.
-

Installing and Removing PCI Cards

IPS-4260 has 6 expansion card slots, three full-height and three half-height slots. You can install the optional network interface cards in the two top full-height slots, slots 2 and 3. IPS-4260 supports up to two network interface cards. For an illustration of the expansion card slots, see [Figure 5-5 on page 5-7](#). For an illustration of the supported PCI cards, see [Supported PCI Cards, page 5-2](#).

**Note**

We recommend that you install the 4GE bypass interface card in slot 2 if you are installing only one 4GE bypass card. This improves accessibility to the RJ45 cable connectors.

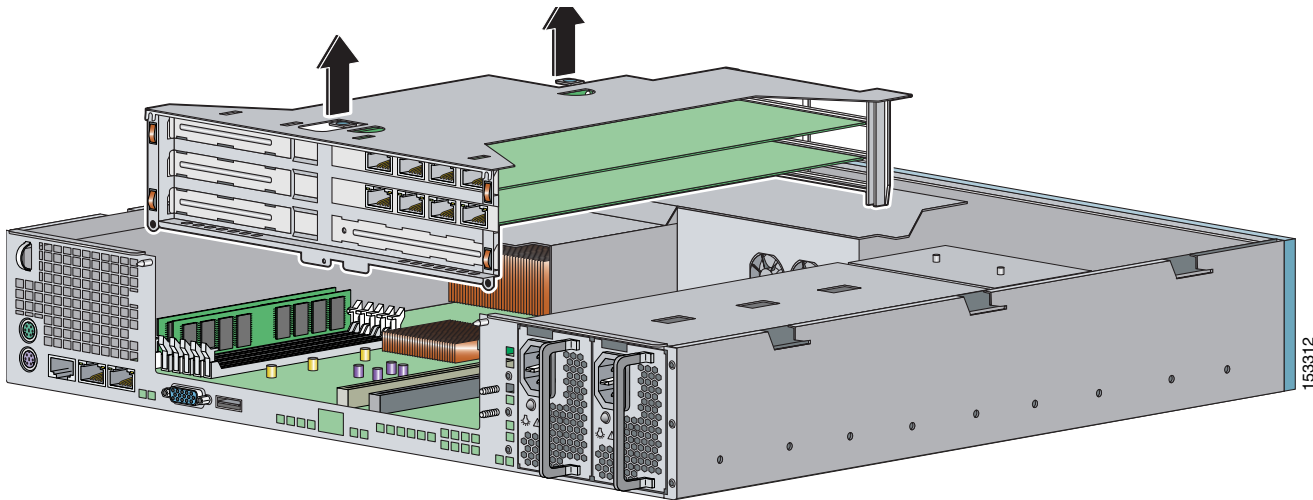
To install and remove PCI cards, follow these steps:

- Step 1** Log in to the CLI.
- Step 2** Prepare IPS-4260 to be powered off:
`sensor# reset powerdown`
- Wait for the power down message before continuing with Step 3.
- Step 3** Power off IPS-4260.
- Step 4** Remove the power cord and other cables from IPS-4260.
- Step 5** If rack-mounted, remove IPS-4260 from the rack.
For the procedure, see [Rack Mounting, page 5-9](#).
- Step 6** Place IPS-4260 in an ESD-controlled environment.
For more information, see [Working in an ESD Environment, page 1-25](#).
- Step 7** Remove the chassis cover.
For the procedure, see [Removing and Replacing the Chassis Cover, page 5-17](#).

**Note**

You can also power down IPS-4260 using IDM. For the procedure, refer to [Resetting the Appliance](#).

- Step 8** Remove the card carrier by pulling up on the two blue release tabs. Use equal pressure and lift the card carrier out of the chassis.

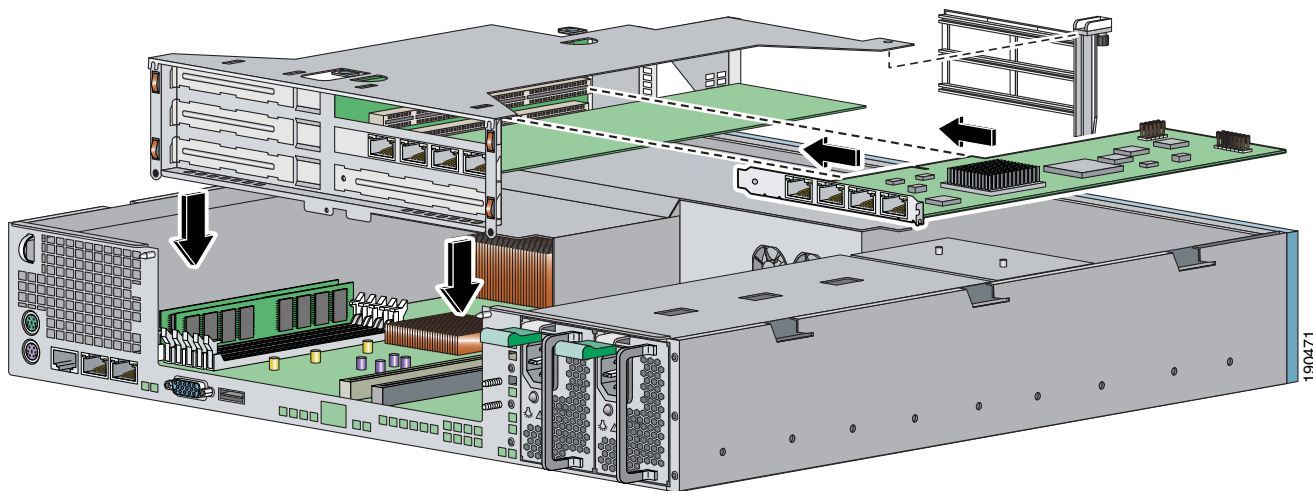


- Step 9** With a screw driver, remove the screw from the desired slot cover.

- Step 10** Remove the slot cover by pressing on it from inside the chassis.

If the card is full length, use a screw driver to remove the blue thumb screw from the card support at the back of the card carrier.

- Step 11** Carefully align the PCI card with the PCI-Express connector and alignment grooves for the appropriate slot. Apply firm even pressure until the card is fully seated in the connector.



- Step 12** Reinstall the slot cover screw to hold the card to the carrier. If necessary, reinstall the card support at the back of the card carrier.

- Step 13** Replace the card carrier in the chassis.

- Step 14** Replace the chassis cover.

Installing and Removing the Power Supply

IPS-4260 ships with one power supply, but you can order it with two power supplies so that you have a redundant power supply.

To install and remove power supplies, follow these steps:

-
- Step 1** Log in to the CLI.
- Step 2** Prepare IPS-4260 to be powered off:

```
sensor# reset powerdown
```

Wait for the power down message before continuing with Step 3.



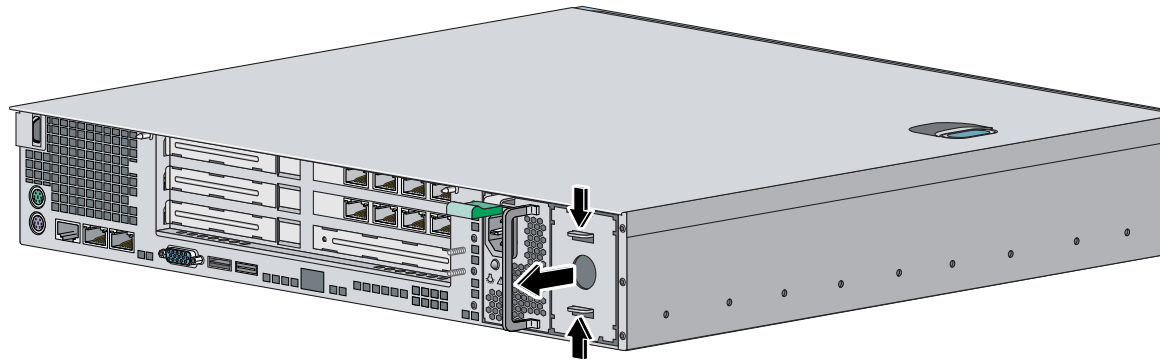
Note You can also power down IPS-4260 using IDM. For the procedure, refer to [Resetting the Appliance](#).

-
- Step 3** Power off IPS-4260.
- Step 4** Remove the power cord and other cables from IPS-4260.

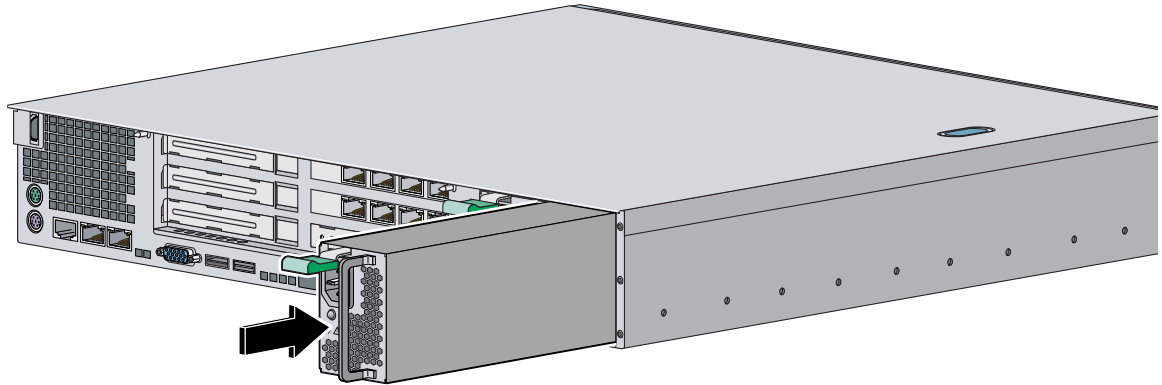


Note Power supplies are hot-swappable. You can replace a power supply while IPS-4260 is running, if you are replacing a redundant power supply.

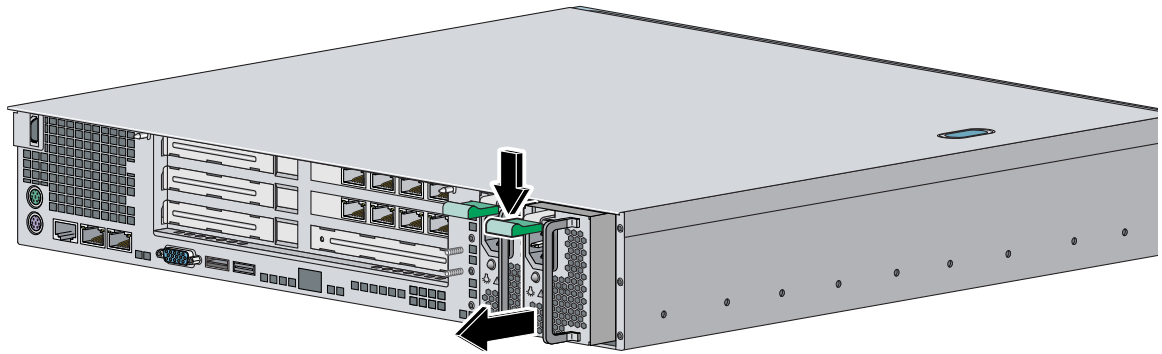
-
- Step 5** Squeeze the tabs to remove the filler plate.



Step 6 Install the power supply.



Step 7 To remove the power supply, push down the green tab and pull out the power supply.



Step 8 After installing or removing the power supply, replace the power cord and other cables.

Step 9 Power on IPS-4260.
