



Preparing the Appliance for Installation

This chapter describes the steps to follow before installing new hardware or performing hardware upgrades, and includes the following sections:

- [Installation Preparation, page 2-1](#)
- [Safety Recommendations, page 2-2](#)
- [General Site Requirements, page 2-5](#)

Installation Preparation

To prepare for installing an appliance, follow these steps:

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- Step 1** Review the safety precautions outlined in one of the following safety documents:
- [Regulatory Compliance and Safety Information for the Cisco ASA 5500-X Series Adaptive Security Appliances and the Intrusion Prevention System 4300 Series Appliances](#)
 - [Regulatory Compliance and Safety Information for the Cisco Intrusion Prevention System 4500 Series Sensor Appliance.](#)
- Step 2** To familiarize yourself with the IPS and related documentation and where to find it on Cisco.com, read the [Documentation Roadmap for Cisco Intrusion Prevention System 7.2](#).
- Step 3** Before proceeding with appliance installation, read the Release Notes for your software version, found at this URL:
- http://www.cisco.com/en/US/products/hw/vpndevc/ps4077/prod_release_notes_list.html
- Step 4** Unpack the appliance. An accessory kit ships with the appliance. Refer to the chapter for your appliance for the accessory kit contents.
- Step 5** Place the appliance in an ESD-controlled environment.
- Step 6** Place the appliance on a stable work surface.
- Step 7** For installation instructions, see the chapter on your sensor in this book, *Cisco Intrusion Prevention System Appliance and Module Installation Guide for IPS 7.2*.
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For More Information

- For ESD guidelines, see [Electricity Safety Guidelines, page 2-2](#).
- For the procedure for working in an ESD environment, see [Working in an ESD Environment, page 2-4](#).

Safety Recommendations

This section lists the safety precautions you should take when working with IPS appliances, and contains the following topics:

- [Safety Guidelines, page 2-2](#)
- [Electricity Safety Guidelines, page 2-2](#)
- [Preventing Electrostatic Discharge Damage, page 2-3](#)
- [Working in an ESD Environment, page 2-4](#)

Safety Guidelines

Use the following guidelines to help ensure your safety and protect the appliance. The list of guidelines may not address all potentially hazardous situations in your working environment, so be alert and exercise good judgement at all times.

**Note**

Removing the chassis cover to install a hardware component does not affect your Cisco warranty. Upgrading the appliance does not require any special tools and does not create any radio frequency leaks.

The safety guidelines are as follows:

- Keep the chassis area clear and dust-free before, during and after installation.
- Keep tools away from walk areas where you and others could fall over them.
- Do not wear loose clothing or jewelry, such as earrings, bracelets, or chains, that could get caught in the chassis.
- Wear safety glasses if you are working under any conditions that might be hazardous to your eyes.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.
- Never attempt to lift an object that is too heavy for one person to handle.

Electricity Safety Guidelines

**Warning**

Before working on a chassis or working near power supplies, unplug the power cord on AC units; disconnect the power at the circuit breaker on DC units. Statement 12

Follow these guidelines when working on equipment powered by electricity:

- Before beginning procedures that require access to the interior of the chassis, locate the emergency power-off switch for the room in which you are working. Then, if an electrical accident occurs, you can act quickly to turn off the power.
- Do not work alone if potentially hazardous conditions exist anywhere in your work space.
- Never assume that power is disconnected from a circuit; always check the circuit.
- Look carefully for possible hazards in your work area, such as moist floors, ungrounded power extension cables, frayed power cords, and missing safety grounds.
- If an electrical accident occurs, proceed as follows:
 - Use caution; do not become a victim yourself.
 - Disconnect power from the system.
 - If possible, send another person to get medical aid. Otherwise, assess the condition of the victim and then call for help.
 - Determine if the person needs rescue breathing or external cardiac compressions; then take appropriate action.
- Use the chassis within its marked electrical ratings and product usage instructions.
- Install the appliance in compliance with local and national electrical codes as listed in one of the following safety documents:
 - *Regulatory Compliance and Safety Information for the Cisco ASA 5500-X Series Adaptive Security Appliances and the Intrusion Prevention System 4300 Series Appliances*
 - *Regulatory Compliance and Safety Information for the Cisco Intrusion Prevention System 4500 Series Sensor Appliance*
- The sensor models equipped with AC-input power supplies are shipped with a 3-wire electrical cord with a grounding-type plug that fits only a grounding-type power outlet. This is a safety feature that you should not circumvent. Equipment grounding should comply with local and national electrical codes.

Preventing Electrostatic Discharge Damage

Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. ESD damage occurs when electronic components are improperly handled, which can result in complete or intermittent failures.

- Always follow ESD-prevention procedures when you remove and replace components. Make sure that the chassis is electrically connected to earth ground. Wear an ESD-preventive wrist strap, and make sure that it makes good skin contact. Connect the grounding clip to an unpainted surface of the chassis frame to safely ground unwanted ESD voltage. To guard against ESD damage and shocks, the wrist strap and cord must operate properly. If no wrist strap is available, ground yourself by touching the metal part of the chassis.
- For safety, periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohms (Mohms).

Working in an ESD Environment

Work on ESD-sensitive parts only at an approved static-safe station on a grounded static dissipative work surface, for example, an ESD workbench or static dissipative mat.

To remove and replace components in a sensor, follow these steps:

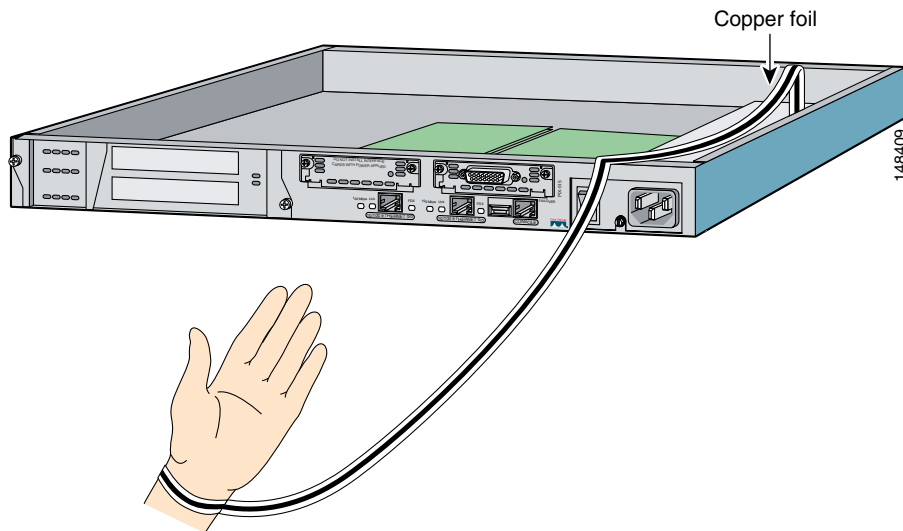
Step 1 Remove all static-generating items from your work area.

Step 2 Use a static dissipative work surface and wrist strap.



Note Disposable wrist straps, typically those included with an upgrade part, are designed for one time use.

Step 3 Attach the wrist strap to your wrist and to the terminal on the work surface. If you are using a disposable wrist strap, connect the wrist strap directly to an unpainted metal surface of the chassis.



Step 4 Connect the work surface to the chassis using a grounding cable and alligator clip.



Caution Always follow ESD-prevention procedures when removing, replacing, or repairing components.



Note If you are upgrading a component, do not remove the component from the ESD packaging until you are ready to install it.

General Site Requirements

This section describes the requirements your site must meet for safe installation and operation of your IPS appliance. This section includes the following topics:

- [Site Environment, page 2-5](#)
- [Preventive Site Configuration, page 2-5](#)
- [Power Supply Considerations, page 2-6](#)
- [Configuring Equipment Racks, page 2-6](#)

Site Environment

Place the appliance on a desktop or mount it in a rack. The location of the appliance and the layout of the equipment rack or wiring room are extremely important for proper system operation. Equipment placed too close together, inadequate ventilation, and inaccessible panels can cause system malfunctions and shutdowns, and can make appliance maintenance difficult.

When planning the site layout and equipment locations, keep in mind the following precautions to help avoid equipment failures and reduce the possibility of environmentally-caused shutdowns. If you are experiencing shutdowns or unusually high errors with your existing equipment, these precautions may help you isolate the cause of failures and prevent future problems.

- Electrical equipment generates heat. Ambient air temperature might not be adequate to cool equipment to acceptable operating temperatures without adequate circulation. Make sure that the room in which you operate your system has adequate air circulation.
- Always follow the ESD-prevention procedures to avoid damage to equipment. Damage from static discharge can cause immediate or intermittent equipment failure.
- Make sure that the chassis top panel is secure. The chassis is designed to allow cooling air to flow effectively within it. An open chassis allows air leaks, which can interrupt and redirect the flow of cooling air from the internal components.

Preventive Site Configuration

The following precautions will help plan an acceptable operating environment for the chassis and avoid environmentally caused equipment failures:

- Electrical equipment generates heat. Ambient air temperature might not be adequate to cool equipment to acceptable operating temperatures without adequate circulation. Ensure that the room in which you operate your system has adequate air circulation.
- Always follow the ESD-prevention procedures described previously to avoid damage to equipment. Damage from static discharge can cause immediate or intermittent equipment failure.
- Ensure that the chassis top panel is secure. The chassis is designed to allow cooling air to flow effectively within it. An open chassis allows air leaks, which may interrupt and redirect the flow of cooling air from the internal components.

Power Supply Considerations

**Note**

The IPS 4345, IPS 4360, IPS 4510, and IPS 4520 have either an AC or DC power supply.

Follow these guidelines for power supplies:

- Check the power at the site before installing the chassis to ensure that the power is free of spikes and noise. Install a power conditioner if necessary, to ensure proper voltages and power levels in the source voltage.
- Install proper grounding for the site to avoid damage from lightning and power surges.
- The following applies to a chassis equipped with an AC-input power supply:
 - The chassis does not have a user-selectable operating range. Refer to the label on the chassis for the correct AC-input power requirement.
 - Several types of AC-input power supply cords are available; make sure you have the correct type for your site.
 - Install a UPS for your site.
 - Install proper site-grounding facilities to guard against damage from lightning or power surges.
- The following applies to a chassis equipped with a DC-input power supply:
 - Each DC-input power supply requires dedicated 15-amp service.
 - For DC power cables, we recommend a minimum of 14 AWG wire cable.
 - The DC return connection to this system is to remain isolated from the system frame and chassis.

Configuring Equipment Racks

The following tips help you plan an acceptable equipment rack configuration:

- Enclosed racks must have adequate ventilation. Ensure that the rack is not overly congested, because each chassis generates heat. An enclosed rack should have louvered sides and a fan to provide cooling air.
- When mounting a chassis in an open rack, ensure that the rack frame does not block the intake or exhaust ports. If the chassis is installed on slides, check the position of the chassis when it is seated all the way into the rack.
- In an enclosed rack with a ventilation fan in the top, excessive heat generated by equipment near the bottom of the rack can be drawn upward and into the intake ports of the equipment above it in the rack. Ensure that you provide adequate ventilation for equipment at the bottom of the rack.
- Baffles can help to isolate exhaust air from intake air, which also helps to draw cooling air through the chassis. The best placement of the baffles depends on the airflow patterns in the rack. Experiment with different arrangements to position the baffles effectively.