

## Preparing for Installation

This chapter describes how to install and add hardware upgrades that accompany the unit. The information in this guide applies to the PIX 501, PIX 506/506E, PIX 515/515E, PIX 520, PIX 525, and PIX 535. In this guide, the term “security appliance” refers to all models unless specifically noted otherwise.

**Caution**

Installing PIX software Version 6.0(1), or a later version, on an older model of PIX hardware, such as a PIX “Classic” (PIX 10000) or PIX 510, causes the security appliance to reboot continuously until a software version previous to 6.0(1) is reinstalled.

This chapter includes the following sections:

- [Installation Overview, page 1-1](#)
- [Safety Recommendations, page 1-2](#)
- [General Site Requirements, page 1-4](#)

## Installation Overview

To prepare for the installation of the PIX security appliance, perform the following steps:

**Note**

If your PIX security appliance model supports a failover configuration, perform the steps that follow only on the primary (active) unit. (Not applicable to the PIX 501 or the PIX 506/506E.)

- Step 1** Review the safety precautions outlined in the Regulatory Compliance and Safety Information document.
- Step 2** Completely read the release notes for your respective software version.
- Step 3** Unpack the PIX security appliance. The PIX security appliance consists of two main components, the PIX security appliance unit and a separate accessory kit. The accessory kit contains documentation, a power supply or cord, rack mounting hardware (not applicable to the PIX 501 or the PIX 506/506E), and additional software you can use with the PIX security appliance.
- Step 4** Place the PIX security appliance on a stable work surface.

# Safety Recommendations

Use the following guidelines and the information in the following sections to help ensure your safety and protect the PIX security 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

If you need to open the PIX security appliance case to install a hardware component, such as additional memory or an interface card, doing so does not affect your Cisco warranty. Upgrading the PIX security 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.

This section includes the following topics:

- [Maintaining Safety with Electricity, page 1-2](#)
- [Preventing Electrostatic Discharge Damage, page 1-3](#)

## Maintaining Safety with Electricity



## 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.**

Follow these guidelines when working on equipment powered by electricity:

- Before beginning procedures that require access to the interior of the PIX security appliance, 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 PIX security appliance within its marked electrical ratings and product usage instructions.
- Install the PIX security appliance in compliance with local and national electrical codes as listed in the Regulatory Compliance and Safety Information document.
- PIX security appliance models equipped with AC-input power supplies are shipped with a three-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.
- PIX security appliance models equipped with DC-input power supplies must be terminated with the DC input wiring on a DC source capable of supplying at least 15 amps. A 15-amp circuit breaker is required at the 48 VDC facility power source. An easily accessible disconnect device should be incorporated into the facility wiring. Be sure to connect the grounding wire conduit to a solid earth ground. We recommend that you use a closed loop ring to terminate the ground conductor at the ground stud.

Other DC power guidelines are listed in the Regulatory Compliance and Safety Information document.

## Preventing Electrostatic Discharge Damage

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

- Always follow ESD-prevention procedures when removing and replacing components. Ensure that the chassis is electrically connected to earth ground. Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. Connect the grounding clip to an unpainted surface of the chassis frame to safely ground ESD voltages. To properly guard against ESD damage and shocks, the wrist strap and cord must operate effectively. 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).

# General Site Requirements

The topics in this section describe the requirements your site must meet for safe installation and operation of your system. Ensure that your site is properly prepared before beginning installation.

This section includes the following topics:

- [Site Environment, page 1-4](#)
- [Preventive Site Configuration, page 1-4](#)
- [Power Supply Considerations, page 1-4](#)
- [Configuring Equipment Racks, page 1-5](#)

## Site Environment

The PIX security appliance can be placed on a desktop. Except for the PIX 501 and the PIX 506/506E, all other PIX security appliance models can be mounted in a rack. The location of the PIX security appliance and the layout of your 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 PIX security appliance maintenance difficult.

When planning your site layout and equipment locations, keep in mind the precautions described in the next section “[Preventive Site Configuration](#),” to help avoid equipment failures and reduce the possibility of environmentally caused shutdowns. If you are currently experiencing shutdowns or unusually high errors with your existing equipment, these precautions may help you isolate the cause of failures and prevent future problems.

## Preventive Site Configuration

The following precautions help you plan an acceptable operating environment for your PIX security appliance and help you 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 cover 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 internal components.

## Power Supply Considerations

The PIX 515/515E, PIX 520, PIX 525, PIX 535, and PIX 10000, have AC power supplies. The PIX 515/515E, PIX 520, PIX 525, and PIX 535 models can have either an AC or DC power supply. The PIX 501 and the PIX 506/506E have an external power supply that converts AC to DC.

Observe the following considerations:

- Check the power at your site before installing the PIX security appliance to ensure that you are receiving “clean” power (free of spikes and noise). Install a power conditioner if necessary, to ensure proper voltages and power levels in the source voltage for the system.
- Install proper grounding for the site to avoid damage from lightning and power surges.
- In units equipped with AC-input power supplies, use the following guidelines:
  - The PIX 501, PIX 506/506E, and PIX 10000 models automatically select operating ranges of a low range of 90 to 135 volts or a high range of 180 to 270 volts.
  - The PIX 510 and PIX 520 models operate with a source voltage ranging from 100 to 240 VAC; the input power supply requires a 20 amp service minimum for North America and 10 amp or 16 amp for the international area.
  - The PIX 515/PIX 515E, PIX 525, and PIX 535 do not have a selectable operating range. Refer to the label on each model for the correct AC-input power requirement.
  - Several styles of AC-input power supply cords are available; make sure you have the correct style for your site.
  - Install an uninterruptible power source for your site, if possible.
  - Install proper site grounding facilities to guard against damage from lightning or power surges.
- In a unit equipped with DC-input power supplies, use the following guidelines:
  - Each DC-input power supply requires dedicated 15 amp service.
  - For DC power cables, we recommend that you use a minimum of 18 AWG wire cable.

## Configuring Equipment Racks

Follow these tips to help plan for configuration of an equipment rack:

- PIX 515/515E, PIX 520, PIX 525, and PIX 535 security appliances require you to first attach rack mounting brackets to the units before mounting them in an equipment rack.
- Enclosed racks must have adequate ventilation. Ensure that the rack is not overly congested because each unit 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.

