



CHAPTER 2

Preparing for Installation

This chapter describes the safety instructions and site requirements for installing Cisco Secure ACS Solution Engine 3.3, and guides you through installation preparation. It contains the following sections:

- [Safety, page 2-11](#)
- [Preparing Your Site for Installation, page 2-16](#)
- [Precautions for Rack-Mounting, page 2-17](#)
- [Required Tools and Equipment, page 2-18](#)

Safety

This section provides safety information for installing this product.

Warnings and Cautions

Read the installation instructions in this document before you connect the system to its power source. Failure to read and follow these guidelines could lead to an unsuccessful installation and possibly damage the system and components.

You should observe the following safety guidelines when working with any equipment that connects to electrical power or telephone wiring. They can help you avoid injuring yourself or damaging the Cisco Secure ACS Solution Engine.



Note

The English warnings in this document are followed by a statement number. To see the translations of a warning into other languages, look up its statement number in the *Regulatory Compliance and Safety Information for the Cisco Secure ACS Solution Engine 3.3*.

The following warnings and cautions are provided to help you prevent injury to yourself or damage to the devices:



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

The safety cover is an integral part of the product. Do not operate the unit without the safety cover installed. Operating the unit without the cover in place will invalidate the safety approvals and pose a risk of fire and electrical hazards. Statement 117



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

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



Warning

Before opening the chassis, disconnect the telephone-network cables to avoid contact with telephone-network voltages. Statement 1041



Warning

This unit might have more than one power cord. To reduce the risk of electrical shock, disconnect all power supply cords before servicing the unit. Statement 106



Warning

This product requires short-circuit (overcurrent) protection, to be provided as part of the building installation. Install only in accordance with national and local wiring regulations. Statement 1045



Warning

This equipment is intended to be grounded to comply with emission and immunity requirements. Ensure that the switch functional ground lug is connected to earth ground during normal use.
Statement 1064



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

Do not work on the system or connect or disconnect cables during periods of lightning activity.
Statement 1001.



The power supply circuitry for the equipment can constitute an energy hazard. Before you install or replace the equipment, remove all jewelry (including rings, necklaces, and watches). Metal objects can come into contact with exposed power supply wiring or circuitry inside the DSLAM equipment. This could cause the metal objects to heat up and cause serious burns or weld the metal object to the equipment. Statement 207



Ultimate disposal of this product should be handled according to all national laws and regulations. Statement 1040



Before working on a system that has an On/Off switch, turn OFF the power and unplug the power cord. Statement 1



Read the installation instructions before you connect the system to its power source. Statement 1004



There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions. Statement 1015

General Precautions

Observe the following general precautions when using and working with your system:

- Keep your system components away from radiators and heat sources, and do not block cooling vents.
- Do not spill food or liquids on your system components, and never operate the product in a wet environment. If the computer gets wet, see the appropriate chapter in your troubleshooting guide or contact the Cisco Technical Assistance Center. For instructions on contacting the Technical Assistance Center, see [Obtaining Technical Assistance](#), page -xviii, in the Preface.
- Do not push any objects into the openings of your system components. Doing so can cause fire or electric shock by shorting out interior components.
- Position system cables and power cables carefully; route system cables and the power cable and plug so that they cannot be stepped on or tripped over. Be sure that nothing rests on your system components' cables or power cable.
- Do not modify power cables or plugs. Consult a licensed electrician or your power company for site modifications. Always follow your local/national wiring rules.
- To help avoid possible damage to the system board, wait 5 seconds after turning off the system before removing a component from the system board or disconnecting a peripheral device from the computer.

Maintaining Safety with Electricity

Follow these guidelines when working on equipment powered by electricity:

- If any of the following conditions occur contact the Cisco Technical Assistance Center:
 - The power cable or plug is damaged.
 - An object has fallen into the product.
 - The product has been exposed to water.

- The product has been dropped or damaged.
- The product does not operate correctly when you follow the operating instructions.
- Use the correct external power source. Operate the product only from the type of power source indicated on the electrical ratings label. If you are not sure of the type of power source required, consult the Cisco Technical Assistance Center or a local power company.
- Use only approved power cable(s). You have been provided with a power cable for your Cisco Secure ACS Solution Engine that is intended for your system (approved for use in your country, based on the shipping location). Should you have to purchase a power cable, ensure that it is rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cable should be greater than the ratings marked on the product.
- To help prevent electric shock, plug the Cisco Secure ACS Solution Engine, components, and peripheral power cables into properly grounded electrical outlets. These cables are equipped with three-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable.
- Observe power strip ratings. Make sure that the total ampere rating of all products plugged into the power strip does not exceed 80% of the rating.
- To help protect your system and components from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).
- Do not modify power cables or plugs. Consult a licensed electrician or your power company for site modifications. Always follow your local and national wiring rules.

Protecting Against Electrostatic Discharge

Static electricity can harm delicate components inside your computer. To prevent static damage, discharge static electricity from your body before you touch any of your computer's electronic components, such as the microprocessor. You can do so by touching an unpainted metal surface on the computer chassis.

As you continue to work inside the computer, periodically touch an unpainted metal surface to remove any static charge your body may have accumulated.

You can also take the following steps to prevent damage from electrostatic discharge (ESD):

- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the antistatic packing material until you are ready to install the component in your computer. Just before unwrapping the antistatic packaging, be sure to discharge static electricity from your body.
- When transporting a sensitive component, first place it in an antistatic container or packaging.
- Handle all sensitive components in a static-safe area. If possible, use antistatic floor pads and workbench pads.

Preventing EMI

When you run wires for any significant distance in an electromagnetic field, electromagnetic interference (EMI) can occur between the field and the signals on the wires.



Note

Bad plant wiring can result in radio frequency interference (RFI).

**Note**

Strong EMI, especially when it is caused by lightning or radio transmitters, can destroy the signal drivers and receivers in the system, and can even create an electrical hazard by conducting power surges through lines and into the system.

To predict and remedy strong EMI, consult RFI experts.

Preparing Your Site for Installation

This section describes the requirements your site must meet for safe installation and operation of your Cisco Secure ACS Solution Engine. Ensure that your site is properly prepared before beginning installation.

Environmental

When planning your site layout and equipment locations, remember the precautions described in this section 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 will help you isolate the cause of failures and prevent future problems.

Use the following precautions when planning the operating environment for your Cisco Secure ACS Solution Engine.

- Always follow the ESD-prevention procedures described in [Preventing EMI, page 2-15](#), to avoid damage to equipment. Damage from static discharge can cause immediate or intermittent equipment failure.
- Make sure that the chassis cover is secure. The chassis allows cooling air to flow effectively within it. An open chassis allows air leaks, which could interrupt and redirect the flow of cooling air from internal components.
- 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 has adequate air circulation.

Choosing a Site for Installation

**Warning**

This unit is intended for installation in restricted access areas. A restricted access area is where access can only be gained by service personnel through the use of a special tool, lock and key, or other means of security, and is controlled by the authority responsible for the location.

- Choose a site with a dry, clean, well-ventilated and air-conditioned area.
- Choose a site that maintains an ambient temperature of 10° to 35°C (50° to 95°F).

Grounding the System



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.

Creating a Safe Environment

Follow these guidelines to create a safe operating environment:

- Keep tools and chassis components off the floor and away from foot traffic.
- Clear the area of possible hazards, such as moist floors, ungrounded power extension cables, and missing safety grounds.
- Keep the area around the chassis free from dust and foreign conductive material (such as metal flakes from nearby construction activity).

AC Power

Ensure that the plug-socket combination is accessible at all times, because it serves as the main disconnecting device. For the Cisco Secure ACS Solution Engine power requirements, see [Appendix A, “Technical Specifications.”](#)



This product requires short-circuit (overcurrent) protection, to be provided as part of the building installation. Install only in accordance with national and local wiring regulations.

Cabling

Use the cables in the accessory kit to connect the Cisco Secure ACS Solution Engine console port to a console or computer that is running a console program. In addition to using the console cable, use the provided standard Ethernet cable to connect the Cisco Secure ACS Solution Engine to your network. For information detailing cable requirements, see [Network Cable Requirements, page 1-7](#).

Precautions for Rack-Mounting



To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

Observe the following precautions for rack stability and safety. Also refer to the rack installation documentation accompanying the rack for specific warning and caution statements and procedures.

**Note**

Component refers to any server, storage system, or appliance, and to various peripherals or supporting hardware.

- Do not move large racks by yourself. Due to the height and weight of the rack, a minimum of two people are needed to accomplish this task.
- Ensure that the rack is level and stable before extending a component from the rack.
- Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80% of the branch circuit rating.
- Ensure that proper airflow is provided to components in the rack.
- Do not step or stand on any system or component when servicing other systems and components in a rack.
- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.

Precautions for Products with Modems, Telecommunications, or Local Area Network Options

Observe the following guidelines when working with options:

- Do not connect or use a modem or telephone during a lightning storm. There may be a risk of electrical shock from lightning.
- Never connect or use a modem or telephone in a wet environment.
- Do not plug a modem or telephone cable into the Ethernet connector.
- Disconnect the modem cable before opening a product enclosure, touching or installing internal components, or touching an unshielded modem cable or jack.
- Do not use a telephone line to report a gas leak while you are in the vicinity of the leak.

Required Tools and Equipment

You need the following tools and equipment to install the Cisco Secure ACS Solution Engine:

- Number 2 Phillips screwdriver
- Tape measure and level
- Antistatic mat or antistatic foam
- ESD grounding strap