



CHAPTER 2

Preparing to Install the Cisco NAM 2220 Appliance

This chapter describes the tasks you must perform before you install a Cisco NAM 2220 appliance.

This chapter contains the following sections:

- [Safety Guidelines, page 2-2](#)
- [Preparing Your Site for Installation, page 2-6](#)
- [Management and Console Port Considerations, page 2-16](#)



Warning

Only trained and qualified personnel should be allowed to install, replace, or service this equipment. This equipment contains an energy hazard. Disconnect the system before servicing. Statement 186



Warning

Read the installation instructions before you connect the system to its power source. Statement 10



Note

Read the *Regulatory Compliance and Safety Information for the Cisco NAM 2220 Appliance* document and the *Site Preparation and Safety Guide* that came with your Cisco NAM 2220 appliance before you begin the installation.

http://www.cisco.com/en/US/docs/net_mgmt/network_analysis_module_appliance/regulatory/compliance/nam2200rcsi.html

Safety Guidelines

Before you begin installing the Cisco NAM 2220 appliance, review the safety guidelines in this chapter and the “[Rack-Mounting Configuration Guidelines](#)” section on page 3-3 to avoid injuring yourself or damaging the equipment.

In addition, before replacing, configuring, or maintaining the appliance, review the safety warnings listed in the “[Safety Warnings](#)” section on page xi and in the *Cisco Regulatory Compliance and Safety Information for the Cisco NAM 2220 Appliance* document.

http://www.cisco.com/en/US/docs/net_mgmt/network_analysis_module_appliance/regulatory/compliance/nam2200rcsi.html

General Precautions

Observe the following general precautions for using and working with your appliance:

- Observe and follow service markings. Do not service any Cisco product except as explained in your appliance documentation. Opening or removing covers that are marked with the triangular symbol with a lightning bolt might expose you to electrical shock. Components inside these compartments should be serviced only by an authorized service technician.
- If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your authorized service provider:
 - 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.
- Keep your appliance away from radiators and heat sources. Also, do not block cooling vents.
- Do not spill food or liquids on your appliance, and never operate the product in a wet environment.
- Do not push any objects into the openings of your appliance. Doing so can cause fire or electric shock by shorting out interior components.
- Use the product only with other equipment approved by Cisco.
- Allow the product to cool before removing covers or touching internal components.
- 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 your service representative or local power company.
- Use only approved power cables. If you have not been provided with a power cable for your appliance or for any AC-powered option intended for your appliance, purchase a power cable that is approved for use in your country. The power cable must be 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 appliance and 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.
- Do not use appliance or voltage converters or kits sold for appliances with your product.
- To help protect your appliance from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).

- Position cables and power cords carefully; route cables and the power cord and plug so that they cannot be stepped on or tripped over. Be sure that nothing rests on your appliance cables or power cord.
- Do not modify power cables or plugs. Consult a licensed electrician or your power company for site modifications. Always follow your local or national wiring rules.

Safety with Equipment

The following guidelines will help ensure your safety and protect the equipment. This list does not include potentially hazardous situations, so be *alert*.



Warning

Read the installation instructions before connecting the system to the power source. Statement 1004

- Always disconnect all power cords and interface cables before moving the appliance.
- Never assume that power is disconnected from a circuit; *always* check.
- Keep the appliance chassis area clear and dust-free before and after installation.
- Keep tools and assembly components away from walk areas where you or others could fall over them.
- Do not work alone if potentially hazardous conditions exist.
- Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.
- Do not wear loose clothing that might get caught in the appliance chassis.
- Wear safety glasses when working under conditions that might be hazardous to your eyes.

Safety with Electricity



Warning

This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. Statement 1017



Warning

To avoid electric shock, do not connect safety extra-low voltage (SELV) circuits to telephone-network voltage (TNV) circuits. LAN ports contain SELV circuits, and WAN ports contain TNV circuits. Some LAN and WAN ports both use RJ-45 connectors. Statement 1021



Warning

Do not touch the power supply when the power cord is connected. For systems with a power switch, line voltages are present within the power supply even when the power switch is off and the power cord is connected. For systems without a power switch, line voltages are present within the power supply when the power cord is connected. Statement 4

**Warning**

Before working on equipment that is connected to power lines, remove jewelry (including rings, necklaces, and watches). Metal objects will heat up when connected to power and ground and can cause serious burns or weld the metal object to the terminals. Statement 43

**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 working on a chassis or working near power supplies, unplug the power cord on AC units. Statement 246

**Warning**

The plug-socket combination must be accessible at all times, because it serves as the main disconnecting device. Statement 1019

**Warning**

Installation of the equipment must comply with local and national electrical codes. Statement 1074

**Warning**

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

**Warning**

This equipment is intended to be grounded. Ensure that the host is connected to earth ground during normal use. Statement 39

**Warning**

When installing or replacing the unit, the ground connection must always be made first and disconnected last. Statement 1046

Follow these guidelines when working on equipment powered by electricity:

- Locate the room's emergency power-off switch. Then, if an electrical accident occurs, you can quickly turn off the power.
- Disconnect all power before doing the following:
 - Working on or near power supplies
 - Installing or removing an appliance
 - Performing most hardware upgrades
- Never install equipment that appears damaged.
- Carefully examine your work area for possible hazards, such as moist floors, ungrounded power extension cables, and missing safety grounds.
- Never assume that power is disconnected from a circuit; *always* check.
- Never perform any action that creates a potential hazard to people or makes the equipment unsafe.
- Never work alone when potentially hazardous conditions exist.

- If an electrical accident occurs, proceed as follows:
 - Use caution, and do not become a victim yourself.
 - Turn off power to the appliance.
 - If possible, send another person to get medical aid. Otherwise, determine the condition of the victim, and then call for help.
 - Determine whether the person needs rescue breathing, external cardiac compressions, or other medical attention; then take appropriate action.

In addition, use the following guidelines when working with any equipment that is disconnected from a power source but still connected to telephone wiring or network cabling:

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for it.
- Never touch uninsulated telephone wires or terminals unless the telephone line is disconnected at the network interface.
- Use caution when installing or modifying telephone lines.

Preventing Electrostatic Discharge Damage

Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. ESD can occur when electronic printed circuit cards are improperly handled and can cause complete or intermittent failures. Always follow ESD-prevention procedures when removing and replacing components:

- 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 appliance. 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.
- Ensure that the Cisco NAM 2220 appliance is electrically connected to earth ground.
- Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. Attach the antistatic wrist strap to your wrist and connect its cord to the ESD socket on the top, left-hand side on the front of the appliance to channel unwanted ESD voltages safely to ground. To guard against ESD damage and shocks, the wrist strap and cord must operate effectively. If no wrist strap is available, ground yourself by touching a metal part of the appliance.



Caution

For the safety of your equipment, periodically check the resistance value of the antistatic wrist strap. It should be between 1 and 10 Mohm.

Lifting Guidelines

A Cisco NAM 2220 appliance weighs 44.7 lb (20.3 kg). The appliance is not intended to be moved frequently. Before you install the appliance, ensure that your site is properly prepared so you can avoid having to move the appliance later to accommodate power sources and network connections.

Whenever you lift the appliance or any heavy object, follow these guidelines:

- Always disconnect all external cables before lifting or moving the appliance.
- Ensure that your footing is solid, and balance the weight of the object between your feet.
- Lift the appliance slowly; never move suddenly or twist your body as you lift.
- Keep your back straight and lift with your legs, not your back. If you must bend down to lift the appliance, bend at the knees, not at the waist, to reduce the strain on your lower back muscles.
- Lift the appliance from the bottom and grasp the underside of the appliance exterior with both hands.

Preparing Your Site for Installation

Before installing the Cisco NAM 2220 appliance, it is important to prepare for installation by:

- Preparing the site (site planning) and reviewing the installation plans or method of procedures (MOPs)
- Unpacking and inspecting the appliance
- Gathering tools and test equipment required to properly install the appliance

Site Planning



Warning

This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security.

Statement 1017

Typically, you should have prepared the installation site beforehand. As part of your preparation, obtain a floor plan of the site and the equipment rack where the Cisco NAM 2220 appliance will be housed. Determine the location of any existing appliances and their interconnections, including communications and power. Following the airflow guidelines (see the [“Airflow Guidelines” section on page 2-9](#)) ensures that adequate cooling air is provided to the appliance.

All personnel involved in the installation of the appliance including installers, engineers, and supervisors should participate in the preparation of a MOP for approval by the customer. (See the [“Method of Procedure” section on page 2-11](#).)

The following sections provide the site requirement guidelines that you must consider before installing the appliance:

- [Rack Installation Safety Guidelines, page 2-7](#)
- [Site Environment, page 2-8](#)
- [Airflow Guidelines, page 2-9](#)
- [Temperature and Humidity Guidelines, page 2-9](#)
- [Power Considerations, page 2-10](#)
- [Method of Procedure, page 2-11](#)

Rack Installation Safety Guidelines

The Cisco NAM 2220 appliance can be mounted in most 2-post, 4-post, or telco-type 19-inch equipment racks that comply with the Electronics Industries Association (EIA) standard for equipment racks (EIA-310-D). The rack must have at least two posts with mounting flanges to mount the appliance. The distance between the center lines of the mounting holes on the two mounting posts must be 18.31 inches +/- 0.06 inch (46.50 cm +/- 0.15 cm). The rack-mounting hardware included with the appliance is suitable for most 19-inch equipment racks or telco-type frames.

Figure 2-1 shows examples of 4-post and 2-post (telco-type) equipment racks, respectively.

Figure 2-1 **Equipment Rack Types**

Enclosed Rack (Do Not Use)

Figure 2-1a shows a free-standing, enclosed rack with two mounting posts in the front. The Cisco NAM 2220 appliance should *not* be installed in this type of enclosed rack, because the appliance requires an unobstructed flow of cooling air to maintain acceptable operating temperatures for its internal components. Installing the appliance in any type of enclosed rack—even with the front and back doors removed—could disrupt the airflow, trap heat next to the appliance, and cause an overtemperature condition inside the appliance.

4-Post (Open) Rack

Figure 2-1b shows a free-standing, 4-post open rack with two mounting posts in front and two mounting posts in back. The mounting posts in this type of rack are often adjustable so that you can position the rack-mounted unit within the depth of the rack rather than flush-mount it with the front of the rack.

2-Post (Telco) Rack

Figure 2-1c shows a 2-post (telco-type) rack. This rack is an open frame consisting of two posts tied together by a crossbar at the top and a floor stand at the bottom.

This type of rack is usually secured to the floor and sometimes to an overhead structure or wall for additional stability. The Cisco NAM 2220 appliance can be installed in this rack either in a front-mounted position or a mid-mounted position.

- In the front-mounted position, you secure the appliance rack-mounting brackets directly to the rack posts.
- In the mid-mounted position, you secure a set of optional mid-mount brackets to the rack posts. The appliance rack-mounting flanges are then secured to the mid-mount brackets. The mid-mounted position moves the center of gravity closer to the appliance and closer to the vertical axis of the rack posts, which adds to the stability of the rack installation.

Before installing your Cisco NAM 2220 appliance in a rack, review the following guidelines:

- Two or more people are required to install the appliance in a rack.
- Ensure that the room air temperature is below 95°F (35°C).
- Do not block any air vents; usually 6 inches (15 cm) of space provides proper airflow.
- Plan the appliance installation starting from the bottom of the rack.
- Do not extend more than one appliance out of the rack at the same time.
- Connect the appliance to a properly grounded outlet.
- Do not overload the power outlet when installing multiple devices in the rack.
- Do not place any object weighing more than 110 lb (50 kg) on top of rack-mounted devices.

Site Environment

The location of your appliance and the layout of your equipment rack or wiring room are important considerations for proper operation. Equipment placed too close together, inadequate ventilation, and inaccessible panels can cause malfunctions and shutdowns, and can make maintenance difficult. Plan for access to front and rear panels of the appliance.

The following precautions will help you plan an acceptable operating environment for your appliance and will help you avoid environmentally caused equipment failures:

- Ensure that the room where your appliance operates has adequate circulation. Electrical equipment generates heat. Without adequate circulation, ambient air temperature might not cool equipment to acceptable operating temperatures (see the [“Airflow Guidelines”](#) section on page 2-9).
- Ensure the site of the rack includes provisions for source AC power, grounding, and network cables.
- Allow sufficient space to work around the rack during the installation. You need:
 - At least 3 feet (9.14 m) adjacent to the rack to move, align, and insert the appliance.
 - At least 24 inches (61 cm) of clearance in front of and behind the appliance for maintenance after installation.
- To mount the appliance between two posts or rails, the usable aperture (the width between the *inner* edges of the two mounting flanges) must be at least 17.7 inches (45.0 cm).
- If you use a 2-post (telco-type) rack, the weight of several appliances is cantilevered off of the two rack posts. Make sure that:
 - The weight of several appliances does not make the frame unstable.
 - The frame is bolted to the floor and is secured to the building structure using either wall brackets or overhead brackets.
- Use appropriate strain-relief methods to protect cables and equipment connections.
- To avoid noise interference in network interface cables, do not route them directly across or along power cables.

- Always follow ESD-prevention procedures as described in the “[Preventing Electrostatic Discharge Damage](#)” section on page 2-5 to avoid damage to equipment. Damage from static discharge can cause immediate or intermittent equipment failure.

Airflow Guidelines



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

To ensure adequate airflow through the equipment rack, it is recommended that you maintain a clearance of at least 6 inches (15.24 cm) at the front and the rear of the rack.

If airflow through the equipment rack and the appliances that occupy it is blocked or restricted, or if the ambient air being drawn into the rack is too warm, an overtemperature condition within the rack and the appliances that occupy it can occur.

The site should also be as dust-free as possible. Dust tends to clog the appliance fans, reducing the flow of cooling air through the equipment rack and the appliances that occupy it. This reduction increases the risk of an overtemperature condition.

Additionally, the following guidelines will help you plan your equipment rack configuration:

- Besides airflow, you must allow clearance around the rack for maintenance.
- When mounting an appliance in an open rack, ensure that the rack frame does not block the front intakes or the rear exhausts.

Temperature and Humidity Guidelines

[Table 2-1 on page 2-9](#) lists the operating and nonoperating environmental site requirements for the Cisco NAM 2220 appliance. The appliance normally operates within the ranges listed; however, if a temperature measurement approaching a minimum or maximum parameter indicates a potential problem. Maintain normal operation by anticipating and correcting environmental anomalies before they approach critical values by properly planning and preparing your site before you install the appliance.



Warning

To prevent the system from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of: 95°F (35°C). Statement 1047

Table 2-1 *Operating and Nonoperating Environmental Specifications*

Specification	Minimum	Maximum
Temperature, ambient operating	50°F (10°C)	95°F (35°C)
Temperature, ambient nonoperating and storage	-40°F (°C)	158°F (70°C)
Humidity, ambient (noncondensing) operating	5%	85%

Table 2-1 Operating and Nonoperating Environmental Specifications (continued)

Specification	Minimum	Maximum
Humidity, ambient (noncondensing) nonoperating and storage	50%	90%
Vibration, operating	5–500 Hz, 2.20 g RMS random	—

Power Considerations

You can configure your Cisco NAM 2220 appliance with either 110-V or 220-V AC-input. (For power supply pinout descriptions, see the “AC Power Supplies” section on page 1-11.) Power supplies are hot-swappable. You can also configure your appliance for redundancy with an option second power supply.



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

When the appliance is configured with two power supply modules, the hot-swap feature allows you to replace a failed power supply without interrupting the appliance operation. During this hot-swap replacement, a maximum of two minutes is recommended.



Caution

If only one power supply is installed, it must be in the right-hand slot and a power supply blank filler panel must be installed in the left-hand slot to ensure proper cooling. (See location 10 in [Figure 3-8, Cisco NAM 2220 Appliance Back Panel](#).)

AC Power Supply Safety Considerations

Ensure all power connections conform to the rules and regulations in the National Electrical Codes (NECs), as well as local codes. Follow these precautions and recommendations when planning power connections to your appliance:

- Check the power at your site before installation and periodically after installation to ensure that you are receiving clean power (free of spikes and noise). Install a power conditioner if necessary.
- The AC power supply includes the following features:
 - Autoselects either 110-V or 220-V operation.
 - All appliances include an electrical cord. (A label near the power cord indicates the correct voltage, frequency, current draw, and power dissipation for the appliance.)



Warning

This product relies on the building’s installation for short-circuit (overcurrent) protection. Ensure that fuse or circuit breaker no larger than 120 VAC, 15A U.S. (240 VAC, 10A international) is used on the phase conductors (all current-carrying conductors). Statement 13

- Install proper grounding to your appliance and host equipment rack to avoid damage from lightning and power surges.

**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 appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available. Statement 1024

- The AC-input power supply operates on input voltage and frequency within the ranges of 100 to 240 VRMS and 50/60 Hz without the need for operator adjustments.

Method of Procedure

As described previously, part of your preparation includes reviewing installation plans or MOPs. An example of a MOP (a preinstallation checklist of tasks and considerations that need to be addressed and agreed upon before proceeding with the installation) is as follows:

1. Assign personnel.
2. Determine protection requirements for personnel, equipment, and tools.
3. Evaluate potential hazards that might affect service.
4. Schedule time for installation.
5. Determine any space requirements.
6. Determine any power requirements.
7. Identify any required procedures or tests.
8. On an equipment plan, make a preliminary decision that locates each Cisco NAM 2220 appliance that you plan to install.
9. Read this hardware installation guide.
10. Verify the list of replaceable parts for installation (screws, bolts, washers, and so on) so that the parts are identified.
11. Check the required tools list to make sure the necessary tools and test equipment are available. (See the [“Required Tools and Equipment”](#) section on page 2-14.)
12. Perform the installation.

Unpacking and Checking the Contents of Your Shipment

The shipping package for the Cisco NAM 2220 appliance is designed to reduce the possibility of product damage associated with routine material handling experienced during shipment. To reduce the potential damage to the product, transport the appliance in its original Cisco packaging. Failure to do so might result in damage to the appliance. Also, do not remove the appliance from its shipping container until you are ready to install it.

The appliance, cables, and any optional equipment you ordered might be shipped in more than one container. When you unpack the containers, check the items against a packing list to ensure that you received all the parts. [Table 2-2](#) lists items that will ship with your appliance and some optional parts. A *Notes* section has been provided to record damaged or missing items.

**Note**

Do not discard the packaging materials used in shipping your Cisco NAM 2220 appliance. You will need the packaging materials in the future if you move or ship your appliance.

Table 2-2 Cisco NAM 2220 Appliance Packing List

✓	Item	Cisco Part Number
<input type="checkbox"/>	Cisco NAM 2220 Appliance	NAM2220 NAM2220-HDD-6X146G NAM2220-DIMM-16GB
<input type="checkbox"/>	Cisco NAM Software 4.0 with Recovery CD	NAM-APPL-SW-4.0
<input type="checkbox"/>	Power cables, one of the following:	<ul style="list-style-type: none"> • CAB-AC (default) • CAB-ACA • CAB-ACE • CAB-ACI • CAB-ACR • CAB-ACS • CAB-ACU • CAB-JPN
<input type="checkbox"/>	Cable assembly, RJ45 Rolled, Modular, Console/Config, Lt.	72-1259-01
<input type="checkbox"/>	Cable assembly, Ethernet, RJ45-RJ45, Yellow, 6 ft	72-1482-01
<input type="checkbox"/>	Cable assembly, Crossover, RJ45-RJ45, Org, 6 ft	72-3515-01
<input type="checkbox"/>	Cisco 90-Day Limited Hardware Warranty Terms	83-1294-01
<input type="checkbox"/>	<i>Software Right-to-Use License</i>	90-0031-01
<input type="checkbox"/>	4-post Server Rack-mount kit (For kit contents, see the “4-Post Rack-Mount Hardware Kit” section on page 3-5.)	NAM2220-RAILS
<input type="checkbox"/>	<i>Quick Start and Documentation Guide for the Cisco NAM 2200 Series Appliance</i>	78-18440-01
<input type="checkbox"/>	<i>Regulatory Compliance and Safety Information for the Cisco NAM 2200 Series Appliance</i>	78-18787-01

Notes

Table 2-3 Cisco NAM 2220 Appliance Options and Spares

✓	Item	Cisco Part Number
<input type="checkbox"/>	10 GB Short Range XFP Transceiver Module ¹ (up to two plus spares)	XFP-10GBASE-SR
<input type="checkbox"/>	10 GB Long Range XFP Transceiver Module ¹ (up to two plus spares)	XFP-10GBASE-LR
<input type="checkbox"/>	Optional redundant power supply	NAM2220-AC-PS
<input type="checkbox"/>	4-post Server Rack-mount kit (For kit contents, see the “4-Post Rack-Mount Hardware Kit” section on page 3-5.)	NAM2220-RAILS

Notes

1. To use the appliance, you must have at least one of the XFP transceiver modules listed (or equivalent).

Inspect all items for shipping damage. If anything appears to be damaged, or if you encounter problems installing or configuring your appliance, contact your customer service representative.

Cisco Information Packet and Warranty

The *Cisco Information Packet* provides warranty, service, and support information.

To access and download the *Cisco Information Packet* and your warranty and license agreements from Cisco.com:

- Step 1** Launch your Internet browser, then go to this URL:
http://www.cisco.com/univercd/cc/td/doc/es_inpk/cetrans.htm

The Warranties and License Agreements page appears.

- Step 2** To read the *Cisco Information Packet*:
- Click the **Information Packet Number** field, and make sure the part number 78-5235-03D0 is highlighted.
 - Select the language in which you would like to read the document.
 - Click **Go**.
The Cisco Limited Warranty and software License page from the Information Packet appears.
 - Read the document online, or click the **PDF** icon to download and print the document.

**Note**

You must have Adobe Acrobat Reader to view and print PDF files. You can download the reader from the Adobe website at: <http://www.adobe.com>

- Step 3** To read translated and localized warranty information about your product:
- Enter this part number in the Warranty Document Number field:
78-5236-01C0
 - Select the language in which you would like to read the document.
 - Click **Go**.
The Cisco warranty page appears.
 - Review the document online, or click the **PDF** icon to download and print the document in PDF.
- Step 4** You can also contact the Cisco Service and Support website for assistance at:
<http://www.cisco.com/en/US/support/>

Duration of Hardware Warranty

Ninety (90) days.

Replacement, Repair, or Refund Policy for Hardware

Cisco or its service center will use commercially reasonable efforts to ship a replacement part within ten (10) working days after receipt of the Return Materials Authorization (RMA) request. Actual delivery times can vary depending on the customer location.

Cisco reserves the right to refund the purchase price as its exclusive warranty remedy.

To Receive a Return Materials Authorization (RMA) Number

Contact the company from whom you purchased the product. If you purchased the product directly from Cisco, contact your Cisco Sales and Service Representative.

Complete the information below, and keep it for reference:

Company product purchased from	
Company telephone number and website	
Product model number	
Product serial number ¹	
Maintenance contact number	

- See the “Product Serial Number Location” section on page 1-4 and the “Product Serial Number Location” section on page C-7 for more information.

Required Tools and Equipment



Caution

The fastener pack, within the rack-mount kit, contains eight rack screws. You must check these screws to ensure that they are the appropriate size for the holes in your rack. Using the wrong-sized screws for your threaded rack holes can damage the rack.

You need the following tools and equipment to install the Cisco NAM 2220 appliance in a 2- or 4-post rack:

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

Statement 1030

- ESD-preventive cord and wrist strap.
- Number 2 Phillips screwdriver.
- Flat-blade screwdrivers: small, 3/16-inch (0.476 cm) and medium, 1/4-inch (0.625 cm).
 - To remove the cover, if you are upgrading memory or other components
- Rack-Mount Kit (For kit contents, see the “4-Post Rack-Mount Hardware Kit” section on page 3-5 or the “2-Post Rack-Mount Hardware Kit” section on page 4-21.)
- Cables for connection to the LAN ports (depending on the configuration).
- Ethernet hub or PC with a network interface card for connection to the Ethernet (LAN) port or ports.
- Console terminal (an ASCII terminal or a PC running terminal-emulation software) that is configured for 9600 baud, 8 data bits, no parity, 1 stop bit, and no hardware flow control.
- Console cable for connection to the serial (console) port.

Installation Checklist

To assist you with your installation and to provide a historical record of what was done, and by whom, use the following Installation Checklist. Make a copy of this checklist and mark the entries as you complete each task. When the checklist is completed, include a copy of the checklist for each Cisco NAM 2220 appliance in your Site Log (see the “Creating a Site Log” section on page 2-16 for information about creating a Site Log) along with other records for your new appliance.

Installation Checklist for Site:

Cisco NAM 2220 Appliance Name:

Task	Verified by	Date
Installation Checklist copied		
Background information placed in Site Log		
Site power voltages verified		
Installation site power check completed		
Required tools available		
Additional equipment available		
Cisco NAM 2220 appliance received		
<i>Cisco Information Packet</i> publication received		
Appliance components verified		
Initial electrical connections established		
ASCII terminal (for local configuration)		
Signal distance limits verified		
Startup sequence steps completed		
Initial operation verified		

Creating a Site Log

The Site Log (see [Appendix D, “Site Log,”](#) for a sample Site Log) provides a record of all actions related to installing and maintaining the Cisco NAM 2220 appliance. Keep the log in an accessible place near the appliance so that anyone who performs tasks has access to it. Use the Installation Checklist (see the previous section, [“Installation Checklist”](#)) to verify the steps in the installation and maintenance of your appliance. Site Log entries might include the following:

- Installation progress—Make a copy of the appliance Installation Checklist, and insert it into the Site Log. Make entries as you complete each task.
- Upgrade, removal, and maintenance procedures—Use the Site Log as a record of ongoing appliance maintenance and expansion history. Each time a task is performed on the appliance, update the Site Log to reflect the following information:
 - Installation of new adapter cards
 - Removal or replacement of adapter cards and other upgrades
 - Configuration changes
 - Maintenance schedules and requirements
 - Maintenance procedures performed
 - Intermittent problems
 - Comments and notes

Management and Console Port Considerations

The management port, the (NIC 1) network interface connector on the rear panel of the Cisco NAM 2220 appliance uses an unshielded twisted-pair (UTP) cable. Cisco recommends at least a Category 5E or 6 UTP cable. The maximum segment distance is 328 feet (100 meters). The UTP cables look like the cables used for ordinary telephones; however, UTP cables meet certain electrical standards that telephone cables do not. (See the [“Management Port \(NIC 1\)”](#) section on page 1-8 for UTP cabling specifications.)

The appliance includes an asynchronous serial console port, which provides access to the appliance locally (using a console terminal). The following sections describe important cabling information to consider before connecting a console terminal—either an ASCII terminal or a PC running terminal-emulation software—to the console port. (See the [“Serial \(Console\) Port”](#) section on page 1-9 for serial (console) cabling specifications.)

NIC 1 (RJ-45) Ethernet Connections

The NIC 1 management port connection supports 10BASE-T, 100BASE-TX, and 1000BASE-T standards. The transmission speed of the Ethernet ports is autosensing by default and is user configurable. See location #3 in [Figure 1-4, Cisco NAM 2220 Appliance Rear View. Figure 1-6 on page 1-9](#) shows the pin orientation of the RJ-45 Ethernet port and the modular cable plug it accepts.

Serial (Console) Port Connections

The console port on the Cisco NAM 2220 appliance includes an EIA/TIA-232 asynchronous serial (RJ-45) connector. This serial console connector (port) allows you the capability to access the appliance locally by connecting a terminal—either a PC running terminal-emulation software or an ASCII terminal—to the console port.

To connect a PC running terminal-emulation software to the console port, use an RJ-45-to-RJ-45 rollover cable and an RJ-45-to-DB-9 female DTE adapter (labeled TERMINAL). (For more information, see the [“Serial \(Console\) Port” section on page 1-9.](#))

The default parameters for the console port are 9600 baud, 8 data bits, no parity, 1 stop bit, and no hardware flow control.

