CHAPTER 1

Introducing the Cisco NAM 2204 Appliances

This chapter provides an introduction to the two Cisco NAM 2204 appliances, the NAM2204-RJ45 and the NAM2204-SFP, and describes the appliance hardware, major components, and front- and rear-panel LED indicators, controls, and connectors of both appliances.

The Cisco NAM 2204 appliance comes preloaded with Cisco Prime Network Analysis Module (NAM), software. NAM software enables network managers to understand, manage, and improve how applications and services are delivered to end-users.

The Cisco Prime portfolio of enterprise and service provider management offerings supports integrated lifecycle management of Cisco architectures and technologies based on a service-centric framework. Built on an intuitive workflow-oriented user experience, Cisco Prime products help increase IT productivity and reduce operations costs through innovative management solutions for the network services, infrastructure, and endpoints.

The NAM offers flow-based traffic analysis of applications, hosts, and conversations, performance-based measurements on application, server, and network latency, quality of experience metrics for network-based services such as voice over IP (VoIP) and video, and problem analysis using deep, insightful packet captures.

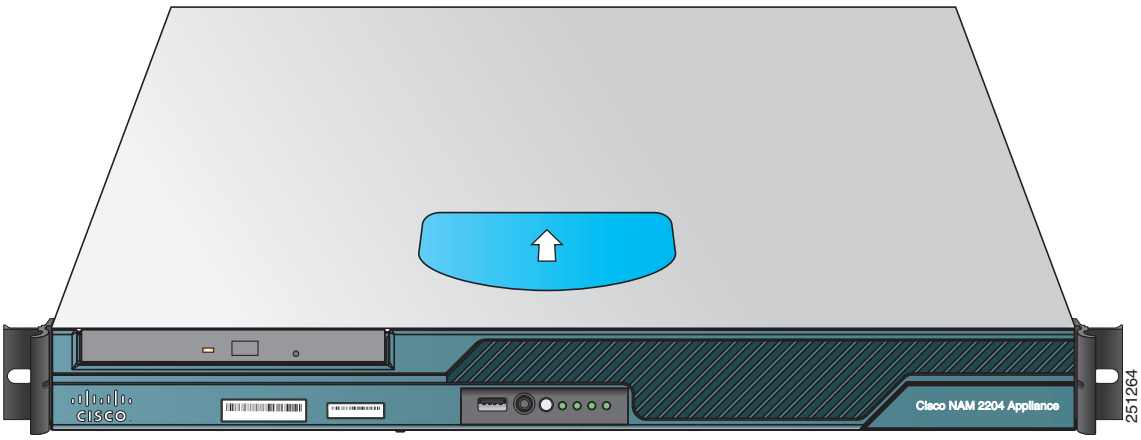
The Cisco NAM includes an embedded, web-based GUI that provides quick access to the configuration menus and presents easy-to-read performance reports on web for different types of services and traffic including voice and video, response time, and netFlow-based reports.

This chapter contains the following sections:

Product Overview

The Cisco NAM 2204 appliance (see Figure 1-1) is contained in a standard shelf-rack enclosure. The appliance weighs 35 lb (15.9 kg). It measures 1.69 inches high x 17 inches wide x 20 inches deep (4.29 cm x 43.18 cm x 50.80 cm). These dimensions do not include the rack handles.

Figure 1-1 Cisco NAM 2204 Appliance Front View



Note See for upgrade options and spare part numbers.

The Cisco NAM 2204 appliance is configured for AC-input power and has a single auto-ranging AC-input power supply, mounted in a standard 19-inch (48.3 cm) 2- or 4-post equipment rack (using the rack-mount brackets provided) and includes the following:

- Intel Core 2 Duo 2.13-GHz processor with an 800-MHz front side bus (FSB) and 2 MB of Layer 2 cache
- 8 GB dynamic RAM (SDRAM, factory installed)
- Two 250 GB SATA hard disk drives
- Monitoring Ports—Four 1-GB 10/100/1000BASE-T RJ45 or four 1 GB SFP 1000BASE-T SX LC or LX LC
- Management Port—One RJ-45 10BASE-T/100BASE-TX/1000BASE-T network interface connector (located on the rear panel)
- One slimline DVD-ROM drive (located on the front panel)
- One DB-9 serial (console) port (located on the rear panel)
- Front-to-rear airflow blowers using two 40-mm exhaust fans and ducting for the CPU and memory, two 40-mm exhaust fans built in to the power supply, and one PCI exhaust fan
- Three USB 2.0 ports (two located on the rear panel, one on the front panel)
- One PS/2 (keyboard) port (located on the rear panel)
- One PS/2 (mouse) port (located on the rear panel)
- One DB-15 serial (video) port (located on the rear panel)
- Rear-access cabling

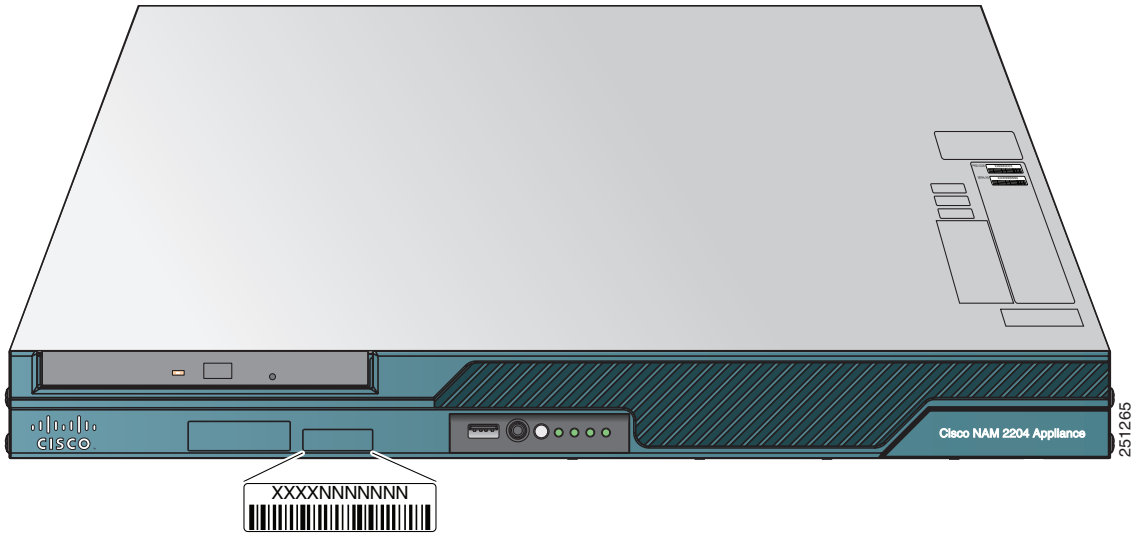
- Four green front-panel appliance LEDs (for a description, see the "Cisco NAM 2204 Appliance Front View" section on page 1-4):
  - Power (indicates whether the power supply is operational)
  - Hard disk drive activity (indicates whether the drive is functioning properly)
  - NIC 1 activity (indicates whether interrupts or packet transfers are occurring)

The Cisco NAM 2204 appliance is normally shipped with a 4-post rack-mount kit. (See Chapter 3, "Installing the Cisco NAM 2204 Appliance.")

Product Serial Number Location

On the Cisco NAM 2204 appliance, the serial number label is located on the front of the appliance at the lower-left, as shown in Figure 1-2.

Figure 1-2 Cisco NAM 2204 Appliance Serial Number Location



Note The serial number for the Cisco NAM 2204 appliance is 11 characters long.

Cisco Product Identification Tool

The Cisco Product Identification (CPI) tool helps you retrieve the serial number of your Cisco products.

Before you submit a request for service online or by phone, use the CPI tool to locate your product serial number. You can access this tool from the Cisco Support website by clicking the **Get Tools & Resources** link, clicking the **All Tools (A-Z)** tab, and then choosing **Cisco Product Identification Tool** from the alphabetical list.

This tool offers three search options:

- Search by product ID or model name
- Browse for Cisco model
- Copy and paste the output of the **show** command to identify the product

Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before you place a service call.

The CPI tool is accessed via Cisco.com at the following URL:

http://tools.cisco.com/Support/CPI/index.do

Access to the CPI tool on the Cisco Support website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at:

http://tools.cisco.com/RPF/register/register.do

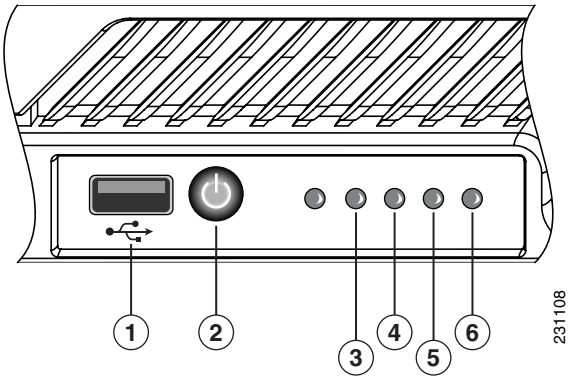
Hardware Features

This section illustrates and describes the front- and rear-panel controls, ports, and LED indicators on the Cisco NAM 2204 appliance.

Cisco NAM 2204 Appliance Front View

The center of the Cisco NAM 2204 appliance front panel includes a USB 2.0 port, the appliance power button, and various status LEDs. Figure 1-3 shows the location of these components.

Figure 1-3 Cisco NAM 2204 Appliance Front View



1	USB port	**4**	Hard Disk Drive Activity LED
2	Power button	**5**	NIC 1 LED
3	Appliance Power LED	**6**	(Unused)

LEDs

Table 1-1 describes the Cisco NAM 2204 appliance LEDs located on the front panel.

Table 1-1 Front-Panel LEDs

LED	Color	State	Description
Appliance Power	Green	On	Power on
	Green	Blinking	Sleep (standby)
	Off	Off	Power off
Hard Disk Drive	Green	Random blinking	HDD activity
	Off	Off	No HDD activity
NIC 1	Green	On	NIC link, no access
	Green	Blinking	LAN access

Cisco NAM 2204 Appliance Rear View

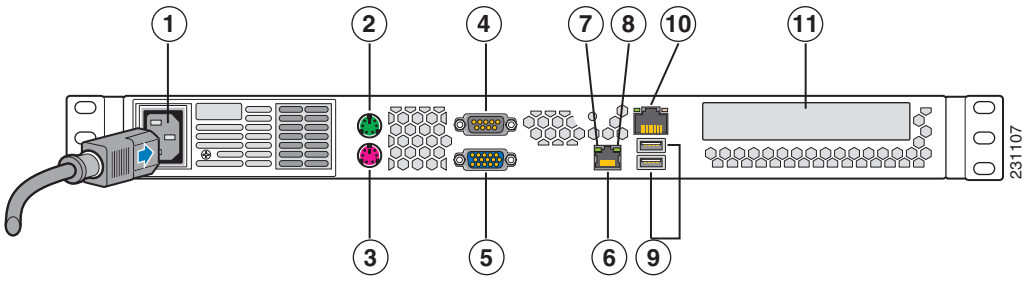
On the rear panel, viewing from left to right, the Cisco NAM 2204 appliance includes the following components:

- AC power connector
- Two PS/2 connectors (mouse and keyboard)
- One serial (DB-9) connector
- One video connector
- Two NIC (RJ-45) ports
- Two USB 2.0 ports
- One PCI-e Network Adapter card (in expansion slot)
- NIC LEDs

Figure 1-4 shows the orientation of these components.

Note The locations of the rack-mounting brackets are also shown on the left and right sides of the appliance. (See the "Rack-Mounting Configuration Guidelines" section on page 3-2 for instructions on how to install the mounting brackets.)

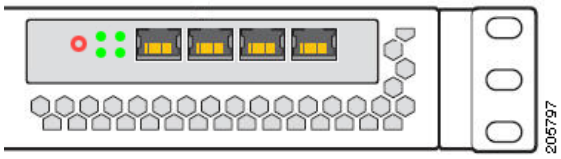
Figure 1-4 Cisco NAM 2204 Appliance Rear View



1	AC power receptacle	**7**	Unused NIC LED
2	PS/2 connector (mouse)	**8**	Unused NIC LED
3	PS/2 connector (keyboard)	**9**	Two USB ports (2.0)
4	Serial (EIA/TIA-232) console port	**10**	NIC 1 port (10/100/1000 Mb/s) or Ethernet 0
5	Video (VGA) port	**11**	Monitoring ports (see Figure 1-5)
6	Inactive NIC port; unused		

Figure 1-5 shows the location of the monitoring ports on the back panel of the Cisco NAM 2204 appliance. These are logical DataPort inputs (DataPort 1 - DataPort 4 from right to left) for the NAM appliance. Figure 1-5 shows the RJ-45 ports of the Cisco 2204-RJ45 appliance. The Cisco 2204-SFP appliance has slots in this location for your SFP modules.

Figure 1-5 Monitoring Ports



LEDs

The rear of the Cisco NAM 2204 appliance includes LEDs that indicate the connection activity and speed of the NIC 1 port. See location 10 in Figure 1-4. See Figure 1-6 for a deetailed view of the connector and LEDs. Table 1-2 on page 1-7 describes the activity and connection speed associated with each LED state.

Figure 1-6 NIC 1 LEDs

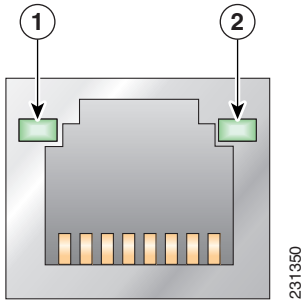


Table 1-2 NIC 1 LEDs

LED	Color	State	Description
Left (1)		Off	No network connection
	Amber	Solid	Network connection
	Amber	Blinking	Transmit/receive activity
Right (2)		Off	10-Mb/s connection (if left LED is on or blinking)
	Amber	Solid	100-Mb/s connection
	Green	Solid	1000-Mb/s (or 1-Gb/s) connection

Input/Output Ports and Connectors

The Cisco NAM 2204 appliance supports the following I/O connectors on the rear of the appliance:

- 1 GB Ethernet connectors
- Ethernet connectors
- Serial connector
- Video connector
- Mouse connector
- Keyboard connector

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. Use caution when connecting cables.** Statement 1021

Management Port (NIC 1)

The Cisco NAM 2204 appliance comes with an integrated dual-port Ethernet controller which provides an interface for connecting to 10-Mb/s, 100-Mb/s, or 1000-Mb/s networks. The Ethernet controller also provides full-duplex (FDX) capability which enables simultaneous transmission and reception of data on the Ethernet local-area network (LAN).

To access the management port, connect a Cat5e or 6 unshielded twisted-pair (UTP) cable to the RJ-45 connector on the back of the appliance. (See Table 1-3.)

Table 1-3 Ethernet Cabling Guidelines

Type	Description
10BASE-T	EIA Categories 3, 4, or 5 UTP (2 or 4 pair) up to 328 ft (100 m)
100BASE-TX	EIA Cat5e UTP (2 pair) up to 328 ft (100 m)
1000BASE-T	EIA Category 6 UTP (recommended), Category 5E UTP or 5 UTP (2 pair) up to 328 ft (100 m)

Ethernet Port Connector

Figure 1-7 on page 1-8 shows the Ethernet RJ-45 port and plug.

Figure 1-7 RJ-45 Port and Plug

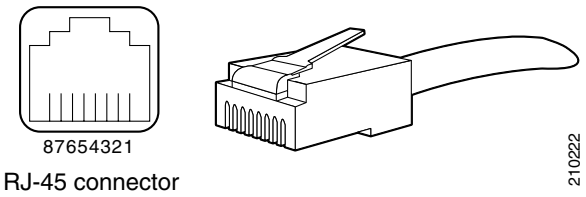


Table 1-4 lists the RJ-45 pin signals used on the connector.

Table 1-4 Ethernet Port Pinout

Ethernet Port Pin	Signal	Description
1	TxD+	Transmit data +
2	TxD–	Transmit data –
3	RxD+	Receive data +
4	Termination network	No connection
5	Termination network	No connection
6	RxD–	Receive data –
7	Termination network	No connection
8	Termination network	No connection

Serial (Console) Port

The Cisco NAM 2204 appliance has one standard serial (console) port. Use the configuration/setup utility program to change the port address assignments.

Note The configuration/setup utility program is located in the Cisco NAM 2204 appliance ROM and can be accessed through the serial (console) port.

Serial (Console) Port Connector

The Cisco NAM 2204 appliance has one serial port connector located on the back of the appliance.

Figure 1-8 shows the pin number assignments for the 9-pin, male D-shell serial port connector on the back of the appliance. These pin number assignments conform to industry standards.

Figure 1-8 Serial Port Connector

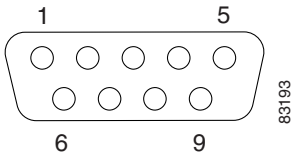


Table 1-5 shows the serial (console) port pinout description.

Table 1-5 DB-9 Serial (Console) Port Pinout

Serial Port Pin	Signal	Description
1	DCD	Carrier Detect
2	DSR	Data Set Ready
3	RXD	Receive Data
4	RTS	Request To Send
5	TXD	Transmit Data
6	CTS	Clear To Send
7	DTR	Data Terminal Ready
8	RI	Ring Indicator
9	GND	Ground

Environmental Monitoring

The Cisco NAM 2204 appliance has protection circuits that monitor and detect overcurrent, overvoltage, and overtemperature conditions inside the appliance. If the power supply shuts down or latches off, an AC cycle of off for 15 seconds and on for 1 second will reset the power supply.

Overcurrent Protection (OCP)

The power supply shuts down and latches off after an overcurrent condition occurs. This latch is cleared by an AC power interruption.

Note The power supply will not be damaged from repeated power cycling.

Overvoltage Protection (OVP)

The power supply shuts down and latches off after an overvoltage condition occurs. This latch is cleared by an AC power interruption.

Overtemperature Protection (OTP)

The power supply is protected against overtemperature conditions caused by the loss of fan cooling or excessive ambient temperature. In an OTP condition, the power supply will shut down. When the power supply temperature drops to the rated safety limit, the power supply restores power automatically.

Regulatory Compliance

For regulatory compliance and safety information, see the Cisco *Regulatory Compliance and Safety Information for the Cisco NAM 2204 Appliance* document. This document is available online at Cisco.com (see the for more information).