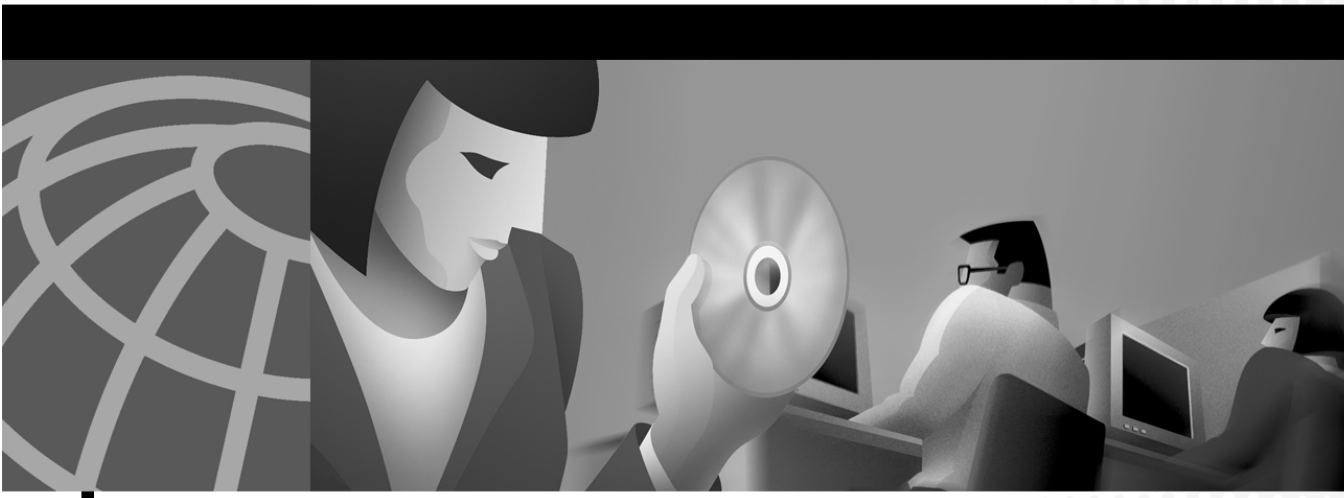

Cisco 806 Router Hardware Installation Guide

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Text Part Number: 78-10432-01

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The following information is for FCC compliance of Class A devices: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio-frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to correct the interference at their own expense.

The following information is for FCC compliance of Class B devices: The equipment described in this manual generates and may radiate radio-frequency energy. If it is not installed in accordance with Cisco's installation instructions, it may cause interference with radio and television reception. This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in part 15 of the FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

Modifying the equipment without Cisco's written authorization may result in the equipment no longer complying with FCC requirements for Class A or Class B digital devices. In that event, your right to use the equipment may be limited by FCC regulations, and you may be required to correct any interference to radio or television communications at your own expense.

You can determine whether your equipment is causing interference by turning it off. If the interference stops, it was probably caused by the Cisco equipment or one of its peripheral devices. If the equipment causes interference to radio or television reception, try to correct the interference by using one or more of the following measures:

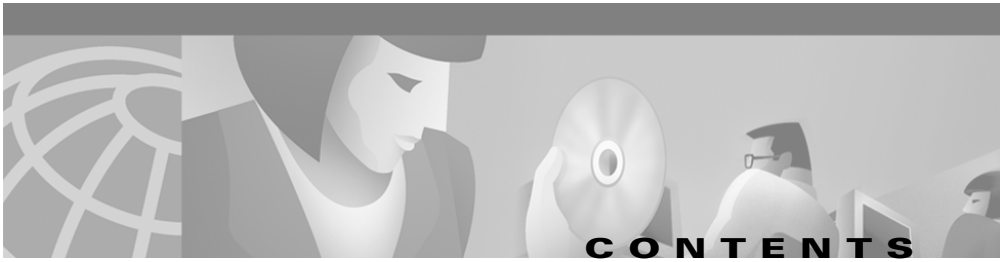
• Turn the television or radio antenna until the interference stops.

• Move the equipment to one side or the other of the television or radio.

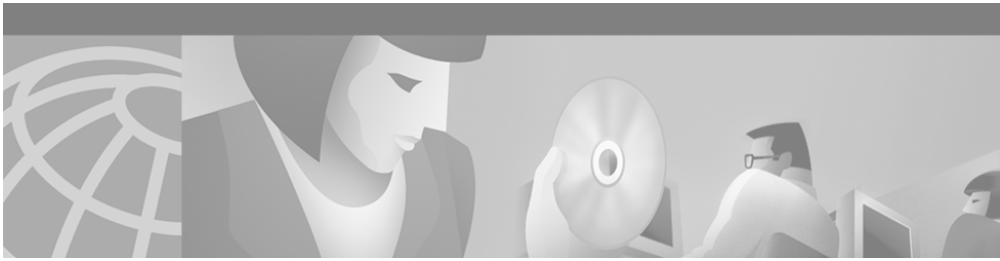
• Move the equipment farther away from the television or radio.

• Plug the equipment into an outlet that is on a different circuit from the television or radio. (That is, make certain the equipment and the television or radio are on circuits controlled by different circuit breakers or fuses.)

Modifications to this product not authorized by Cisco Systems, Inc. could void the FCC approval and negate your authority to operate the product.



CONTENTS



Preface

This preface discusses the audience, organization, and conventions used in this guide. It also discusses related documentation and how to access electronic documentation.

Audience

This guide is intended for service technicians who have no experience installing routers and whose goal is to connect the router to the network as quickly as possible.

Organization

This guide contains the following information:

- Product Overview—Describes the Cisco 806 router and its features.
- Installation—Provides information on preinstallation procedures, mounting and connecting the router, and verifying the router connections.
- Troubleshooting—Describes problems that might develop and how to identify and solve them.
- Specifications and Cables—Provides Cisco part numbers for cables that you can order and contains port connector pinouts and specifications for cables that you might need to provide.
- Glossary—Defines terms and acronyms used in this manual.

Conventions

This section describes the conventions used in this guide.

Note Means *reader take note*. Notes contain helpful suggestions or references to additional information and material.

Caution This symbol means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Warning **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 the standard practices for preventing accidents.**

Waarschuwing **Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van standaard maatregelen om ongelukken te voorkomen.**

Varoitus **Tämä varoitusmerkki merkitsee vaaraa. Olet tilanteessa, joka voi johtaa ruumiinvammaan. Ennen kuin työskentelet minkään laitteiston parissa, ota selvää sähkökytkentöihin liittyvistä vaaroista ja tavanomaisista onnettomuuksien ehkäisykeinoista.**

Attention **Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant causer des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers posés par les circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents.**

Warnung **Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu einer Körperverletzung führen könnte. Bevor Sie mit der Arbeit an irgendeinem Gerät beginnen, seien Sie sich der mit elektrischen Stromkreisen verbundenen Gefahren und der Standardpraktiken zur Vermeidung von Unfällen bewußt.**

Avvertenza **Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di lavorare su qualsiasi apparecchiatura, occorre conoscere i pericoli relativi ai circuiti elettrici ed essere al corrente delle pratiche standard per la prevenzione di incidenti.**

Advarsel **Dette varselsymbolet betyr fare. Du befinner deg i en situasjon som kan føre til personskade. Før du utfører arbeid på utstyr, må du vare oppmerksom på de faremomentene som elektriske kretser innebærer, samt gjøre deg kjent med vanlig praksis når det gjelder å unngå ulykker.**

Aviso **Este símbolo de aviso indica perigo. Encontra-se numa situação que lhe poderá causar danos físicos. Antes de começar a trabalhar com qualquer equipamento, familiarize-se com os perigos relacionados com circuitos eléctricos, e com quaisquer práticas comuns que possam prevenir possíveis acidentes.**

¡Atención! **Este símbolo de aviso significa peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considerar los riesgos que entraña la corriente eléctrica y familiarizarse con los procedimientos estándar de prevención de accidentes.**

Varning! **Denna varningssymbol signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanligt förfarande för att förebygga skador.**

Related Documentation

In addition to this *Cisco 806 Router Hardware Installation Guide*, the Cisco 806 documentation set includes the following:

- *Cisco 806 Router Cabling and Setup Quick Start Guide*
- *Cisco 806 Router Software Configuration Guide*
- *Cisco 806 Router Release Notes*
- *Regulatory Compliance and Safety Information for the Cisco 806 Router*
- The latest version of the *Cisco IOS Release Notes*

You might also need to refer to the following documents:

- *Cisco IOS Release 12.0 Quality of Service Solutions Configuration Guide*
- *Cisco IOS Security Configuration Guide, Release 12.0*

Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following sites:

- http://www.cisco.com
- http://www-china.cisco.com
- http://www-europe.cisco.com

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

Ordering Documentation

Cisco documentation is available in the following ways:

- Registered Cisco Direct Customers can order Cisco Product documentation from the Networking Products MarketPlace:

  http://www.cisco.com/cgi-bin/order/order_root.pl

- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:

  http://www.cisco.com/go/subscription

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, in North America, by calling 800 553-NETS(6387).

Documentation Feedback

If you are reading Cisco product documentation on the World Wide Web, you can submit technical comments electronically. Click **Feedback** in the toolbar and select **Documentation**. After you complete the form, click **Submit** to send it to Cisco.

You can e-mail your comments to bug-doc@cisco.com.

To submit your comments by mail, use the response card behind the front cover of your document, or write to the following address:

Attn Document Resource Connection
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain documentation, troubleshooting tips, and sample configurations from online tools. For Cisco.com registered users, additional troubleshooting tools are available from the TAC website.

Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information and resources at anytime, from anywhere in the world. This highly integrated Internet application is a powerful, easy-to-use tool for doing business with Cisco.

Cisco.com provides a broad range of features and services to help customers and partners streamline business processes and improve productivity. Through Cisco.com, you can find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online technical support, download and test software packages, and order Cisco learning materials and merchandise. Valuable online skill assessment, training, and certification programs are also available.

Customers and partners can self-register on Cisco.com to obtain additional personalized information and services. Registered users can order products, check on the status of an order, access technical support, and view benefits specific to their relationships with Cisco.

To access Cisco.com, go to the following website:

http://www.cisco.com

Technical Assistance Center

The Cisco TAC website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

http://www.cisco.com/tac

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

http://www.cisco.com/register/

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

http://www.cisco.com/tac/caseopen

Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following website:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.

- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.

Product Overview

The Cisco 806 router can connect a corporate telecommuter or small office to an Internet service provider (ISP) over a broadband or Ethernet connection to the following sites:

- Corporate LANs
- Internet

The router is capable of bridging and multiprotocol routing between LAN and WAN ports.

Features

Table 1-1 summarizes the features of the Cisco 806 router.

Table 1-1 Cisco 806 Router Feature Summary

Feature	Description
10BaseT Ethernet ports	Provides connection to 10BaseT (10-Mbps) Ethernet networks. Compatible with 10/100-Mbps devices.
Flash memory	12 MB of Flash memory.
Webflash	2 MB of Flash memory reserved for use by the Cisco Router Web Setup software.

Table 1-1 Cisco 806 Router Feature Summary (continued)

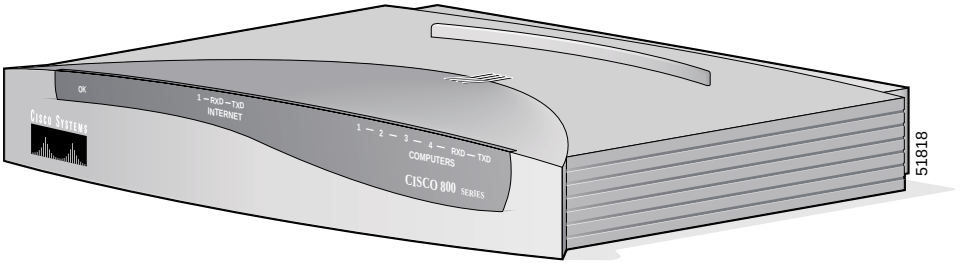
Feature	Description
Dynamic RAM (DRAM)	16 MB of DRAM built in. 4-MB, 8-MB, and 16-MB DIMM cards are available to increase DRAM.
Ease of installation	Color-coded ports and cables reduce the chance of installation error.
Cisco IOS software	Supports Cisco IOS software.
Cisco Router Web Setup application	Provides a web-based software tool for basic configurations and selected applications.
Console port	Provides connection to terminal or PC for software configuration using command-line interface and for troubleshooting.
Cable lock	Provides complementary feature for physically securing router.
Locking power connector	Locks power connector in place.
Wall-mount feature	Brackets on router bottom provide a means for mounting router on a wall or vertical surface.

Router Overview

Front Panel

Figure 1-1 shows the front panel of the Cisco 806 router.

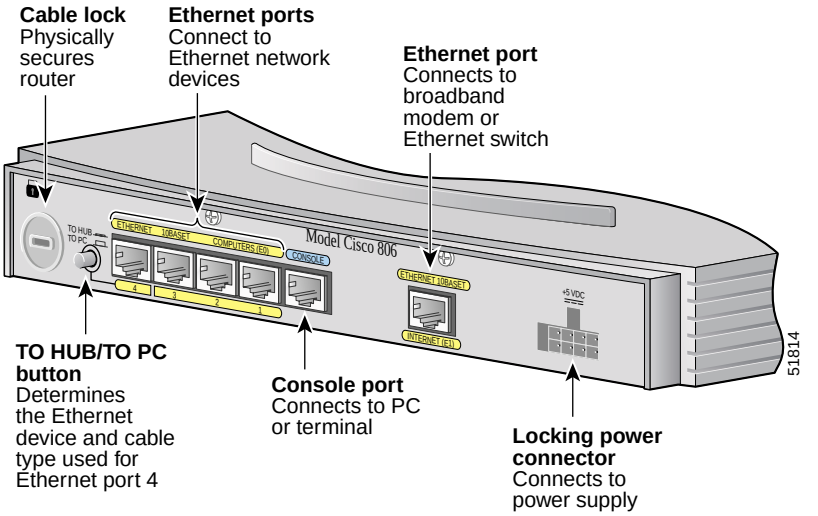
Figure 1-1 Cisco 806 Front Panel



Back Panel

Figure 1-2 shows the back panel of the Cisco 806 router.

Figure 1-2 Cisco 806 Back Panel



LEDs

Table 1-2 summarizes the functions of the LEDs on the Cisco 806 router.

Table 1-2 Cisco 806 LED Functions

LED	Color	Function
OK LED	Green	On when power is supplied to the router and when the router completes the self-test procedure and begins operating.
COMPUTERS 1-4	Green	On when an Ethernet device is connected. Blinks when the connection has a problem. See the "Troubleshooting" chapter for more information.
ETHERNET RXD	Green	Blinks when an ETHERNET port receives a packet.
ETHERNET TXD	Green	Blinks when an ETHERNET port sends a packet.
INTERNET 1	Green	On when the INTERNET ETHERNET port is connected to a broadband modem or to an Ethernet switch.
INTERNET RXD	Green	Blinks when the INTERNET ETHERNET port receives a packet.
INTERNET TXD	Green	Blinks when the INTERNET ETHERNET port sends a packet.

Installation

This chapter provides information on the following topics:

Preparing for Installation

This section provides information on safety, mounting of the router, and unpacking the router box.

Safety

This section provides the safety warnings and electrostatic and router damage information applicable to the Cisco 806 router.

Warnings

Before installing the router, read the following warnings:

Warning **Read the installation instructions before you connect the system to its power source.**

Warning **No operator serviceable parts inside. Refer servicing to qualified personnel.**

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.**

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

Warning **This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that a 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).**

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.**

Warning **The ports labeled "10BaseT", 100BaseTX", and "10/100" are safety extra-low voltage (SELV) circuits. SELV circuits should only be connected to other SELV circuits. Avoid connecting these circuits to telephone network voltage (TNV) circuits.**

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.**

Preventing Electrostatic Discharge Damage

Electrostatic discharge (ESD) is a transfer of electrostatic charge between bodies of different electrostatic potentials, such as an operator and a piece of electrical equipment. It occurs when electronic components are improperly handled, and it can damage equipment and impair electrical circuitry. Electrostatic discharge is more likely to occur in the presence of synthetic fibers and dry atmosphere.

Always use the following ESD-prevention procedures when removing and replacing components:

Step 1 Wear an ESD-preventive wrist strap that you provide, ensuring that it makes good skin contact.

Caution To properly guard against ESD damage and shocks, the wrist strap and cord must operate effectively. Always follow the guidelines in the preceding section, "Warnings."

Step 2 Do not touch any exposed contact pins or connector shells of interface ports that do not have a cable attached.

If cables are connected at one end only, do not touch the exposed pins at the unconnected end of the cable.

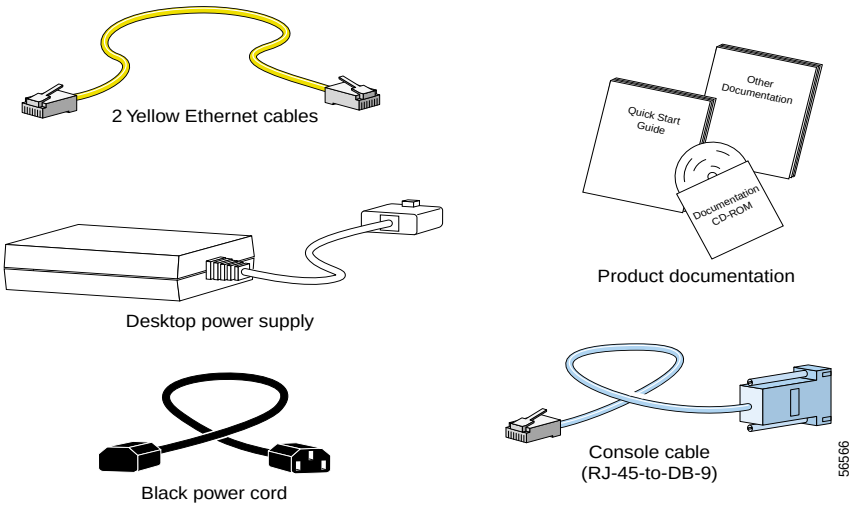
Note This device is intended for use in residential and commercial environments only.

Caution Periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohms (Mohms).

Unpacking the Box

Figure 2-1 shows the items included with your router. If any of the items is missing or damaged, contact your customer service representative.

Figure 2-1 Items Included with Router



To prepare for installation, follow these steps:

Step 1 Obtain a broadband or Ethernet connection from your service provider.

Step 2 Remove the yellow Ethernet cables, light blue console cable, and product documentation from the Open Me First bag. Remove the desktop power supply and the black power cord from the accessory kit. Gather the Ethernet devices to be connected to the router: hub, servers, workstations, or PCs.

Step 3 If you plan to configure the software using IOS commands via the console port, provide a terminal or PC to connect to the console port.

Step 4 If you plan to use the cable-lock feature, provide a Kensington or equivalent locking cable.

Preventing Router Damage

Follow these guidelines when connecting devices to your router:

- Connect the color-coded cables supplied by Cisco Systems to the color-coded ports on the back panel.
- If you must supply your own cable, see Appendix A for cabling specifications. If this appendix does not provide specifications for a particular cable, we strongly recommend ordering the cable from Cisco Systems.

Installing Your Router

To install the Cisco 806 router, you need to perform these tasks in the following order:

- Connect the Ethernet devices to the router.
- Connect the router to a broadband modem or Ethernet switch.
- Connect a terminal or PC to the router (for software configuration using the command-line interface [CLI] or troubleshooting).
- Connect the router to the power source.
- Verify the router installation.
- Mount the router.

Connecting Ethernet Devices

Table 2-1 lists the Ethernet devices you can connect to the router, the connections for each device, and the settings of the router TO HUB/TO PC button (the default setting is IN).

Table 2-1 Connecting Ethernet Devices

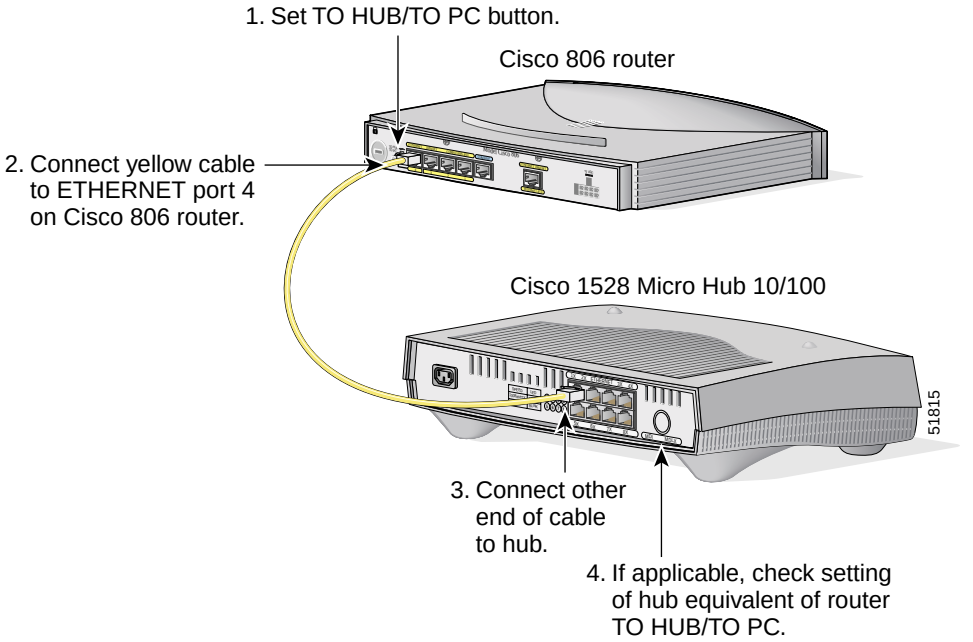
Network Device Connected to Router	Network Device Button Setting[1]	Router Port	Ethernet Cable Type[2]	Router HUB/NO HUB Button Setting
Hub with equivalent to router TO HUB/TO PC button	MDI (IN)	ETHERNET port 4	Straight-through	IN
Hub with equivalent to router TO HUB/TO PC button	MDI-X (OUT)	ETHERNET port 4	Straight-through	OUT
Hub without equivalent to router TO HUB/TO PC button	MDI-X (OUT)	ETHERNET port 4	Straight-through	OUT
Server, PC, or workstation	–	ETHERNET port 4	Straight-through	OUT

1. Hub vendors use different names for the button controlling the cable selections. This table uses the Cisco 1528 Micro Hub 10/100 with an MDI/MDI-X button as an example. Determine the button name and setting for your particular hub. Refer to your hub documentation for details.
2. Cisco provides a yellow straight-through cable. You must provide additional straight-through cables. For details on cables, see Appendix A.

Connecting a Hub

Before connecting a hub to the router, see Table 2-1 for information on setting the TO HUB/TO PC button. To connect a hub, follow the steps in Figure 2-2.

Figure 2-2 Connecting a Hub



To verify your hub connection, ensure that the COMPUTERS 4 LED on the front panel is on after you have completed the router installation.

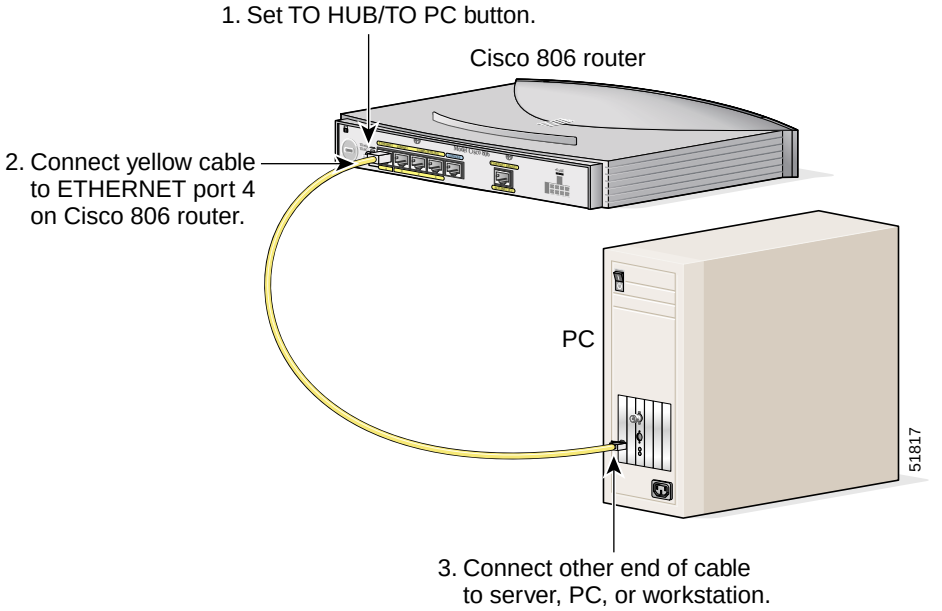
If the LED is not on, see Table 3-2 in Chapter 3 for troubleshooting information.

Connecting a Server, PC, or Workstation

Before connecting the server, PC, or workstation, see Table 2-1 to determine how to set the router TO HUB/TO PC button.

To connect one of these devices to ETHERNET port number 4, follow the steps in Figure 2-3.

Figure 2-3 Connecting a Server, PC, or Workstation



To verify your connection, ensure that the COMPUTERS 4 LED is on after you have completed router installation.

If the LED is not on, see Table 3-2 in Chapter 3 for troubleshooting information.

You can connect additional servers, PCs, or workstations to ETHERNET ports 1, 2, and 3.

Connecting to the Internet

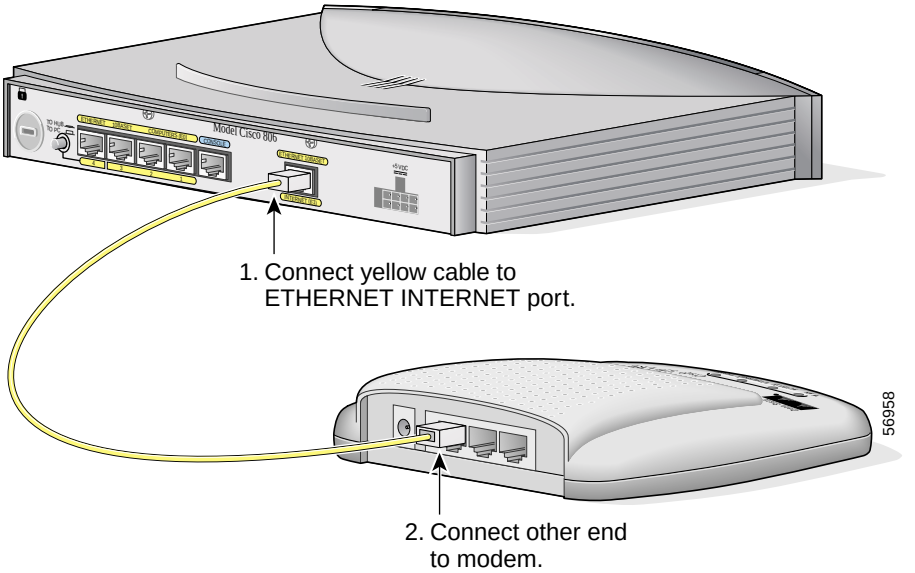
You can use an installed broadband modem or Ethernet switch to connect to the Internet.

Connecting a Broadband Modem

To connect to an installed DSL, cable, or long-reach Ethernet modem, follow the steps in Figure 2-4.

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

Figure 2-4 Connecting to a Broadband Modem

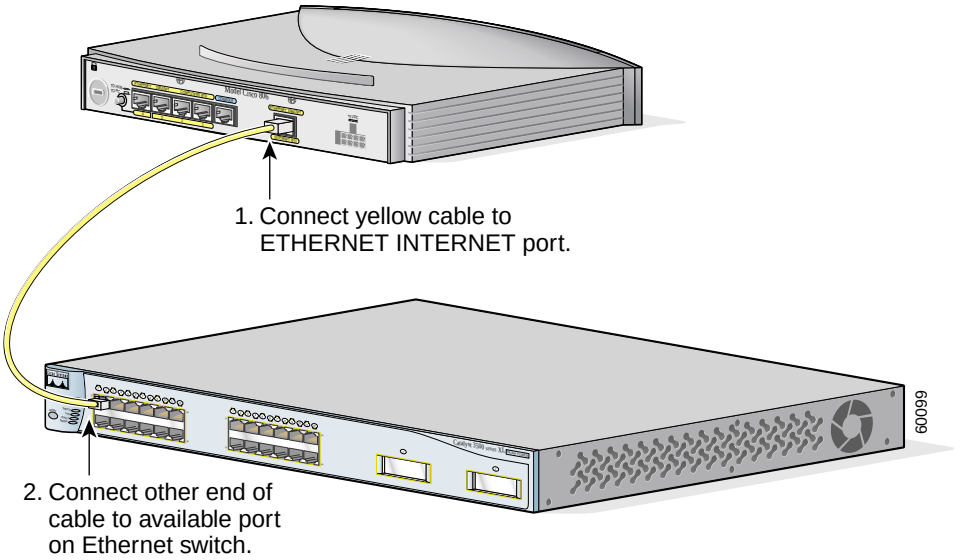


Follow the instructions provided with your broadband modem to determine which port on the modem to connect to.

Connecting an Ethernet Switch

To connect an installed Ethernet switch to the Cisco 806 router, follow the steps in Figure 2-5.

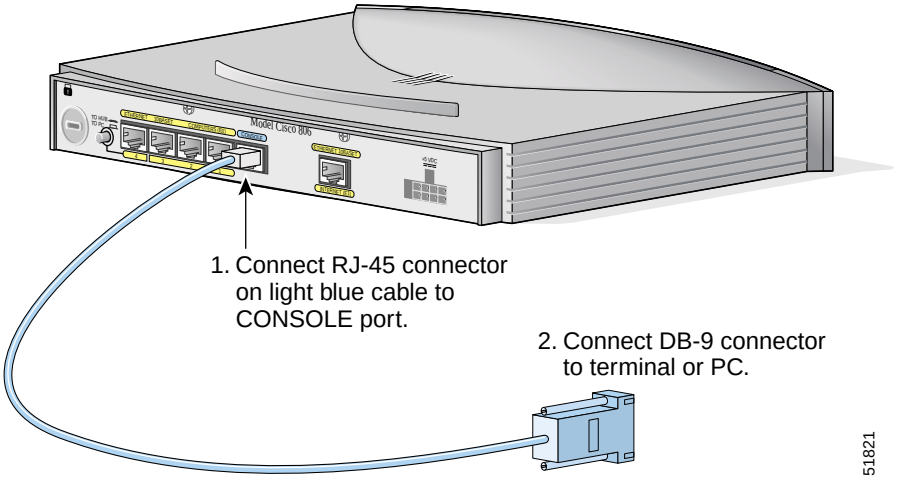
Figure 2-5 Connecting to an Ethernet Switch



Connecting a Terminal or PC to the Console Port

The CONSOLE port is a service port to which you can connect a terminal or PC in order to configure the software via the command-line interface (CLI) or to troubleshoot problems with the router. To connect a terminal or PC to the CONSOLE port, follow the steps in Figure 2-6.

Figure 2-6 Connecting a Terminal or PC



Connecting the Power Supply

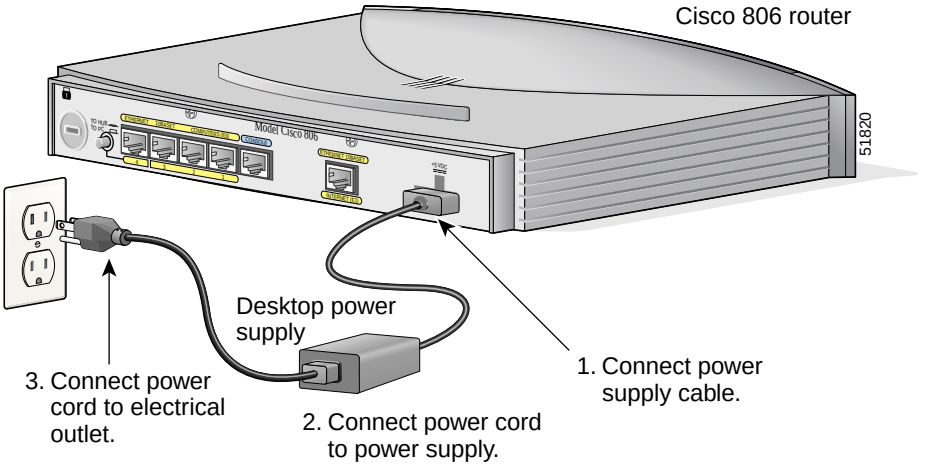
To connect the power supply, follow the steps in Figure 2-7.

Warning **The device is designed to work with TN power systems.**

Warning **This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that a fuse or circuit breaker no larger than 120 VAC, 15A U.S. (240 VAC, 16A international) is used on the phase conductors (all current-carrying conductors).**

Warning **This equipment is designed to be grounded. Ensure that the host is connected to earth ground during normal use.**

Figure 2-7 Connecting the Power Supply



Verifying Your Router Installation

Use this table to verify that you have properly installed the router.

Table 2-2 Verifying Installation

Power/Link	LEDs to Check	Normal Patterns
Power	OK	On

Table 2-2 Verifying Installation (continued)

Power/Link	LEDs to Check	Normal Patterns
To hub, server, PC, or workstation	COMPUTERS 4, COMPUTERS RXD, and COMPUTERS TXD	• COMPUTERS 4 is on when the Ethernet port is physically connected to a hub, PC, or workstation. • COMPUTERS RXD blinks when an Ethernet port receives an Ethernet packet. • COMPUTERS TXD blinks when an Ethernet port sends an Ethernet packet.
To broadband modem or Ethernet switch	INTERNET 1, INTERNET RXD, AND INTERNET TXD	• INTERNET 1 is on when the INTERNET ETHERNET port is physically connected to a broadband modem or Ethernet switch. • INTERNET RXD blinks when the INTERNET ETHERNET port receives an Ethernet packet. • INTERNET TXD blinks when the INTERNET ETHERNET port sends an Ethernet packet.

Mounting Your Router

You can mount your router on one of the following surfaces:

- Table or other horizontal surface
- Wall or other vertical surface

Mounting on Table

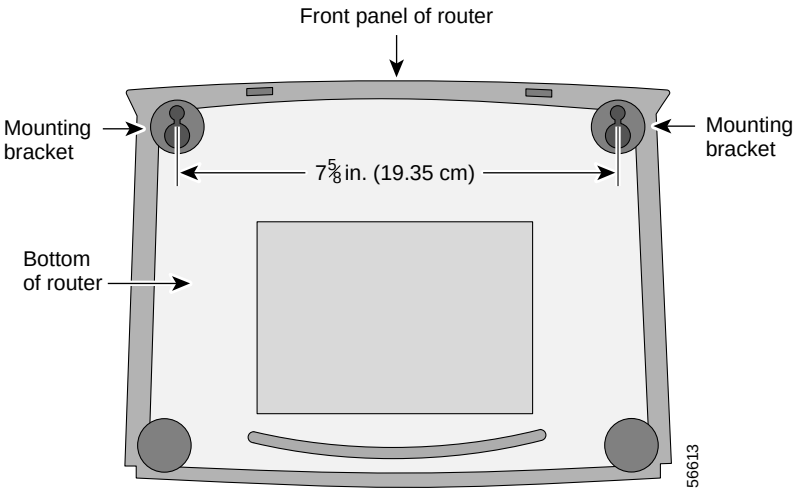
Do not cover or obstruct router vents, which are located on the router sides.

Mounting on Wall

You can mount your router on a wall or other vertical surface by using the molded mounting brackets on the bottom of the router and two number-six, 3/4-in. (M3.5 x 20 mm) screws. You must provide the screws. Figure 2-8 shows the mounting brackets.

Caution If you are mounting your router on drywall, use two hollow wall-anchors (1/8 in. with 5/16-in. drill bit, or M3 with 8-mm drill bit) to secure the screws. If the screws are not properly anchored, the strain of the network cable connections could pull the router from the wall.

Figure 2-8 Wall-Mounting Brackets (Bottom of Router)



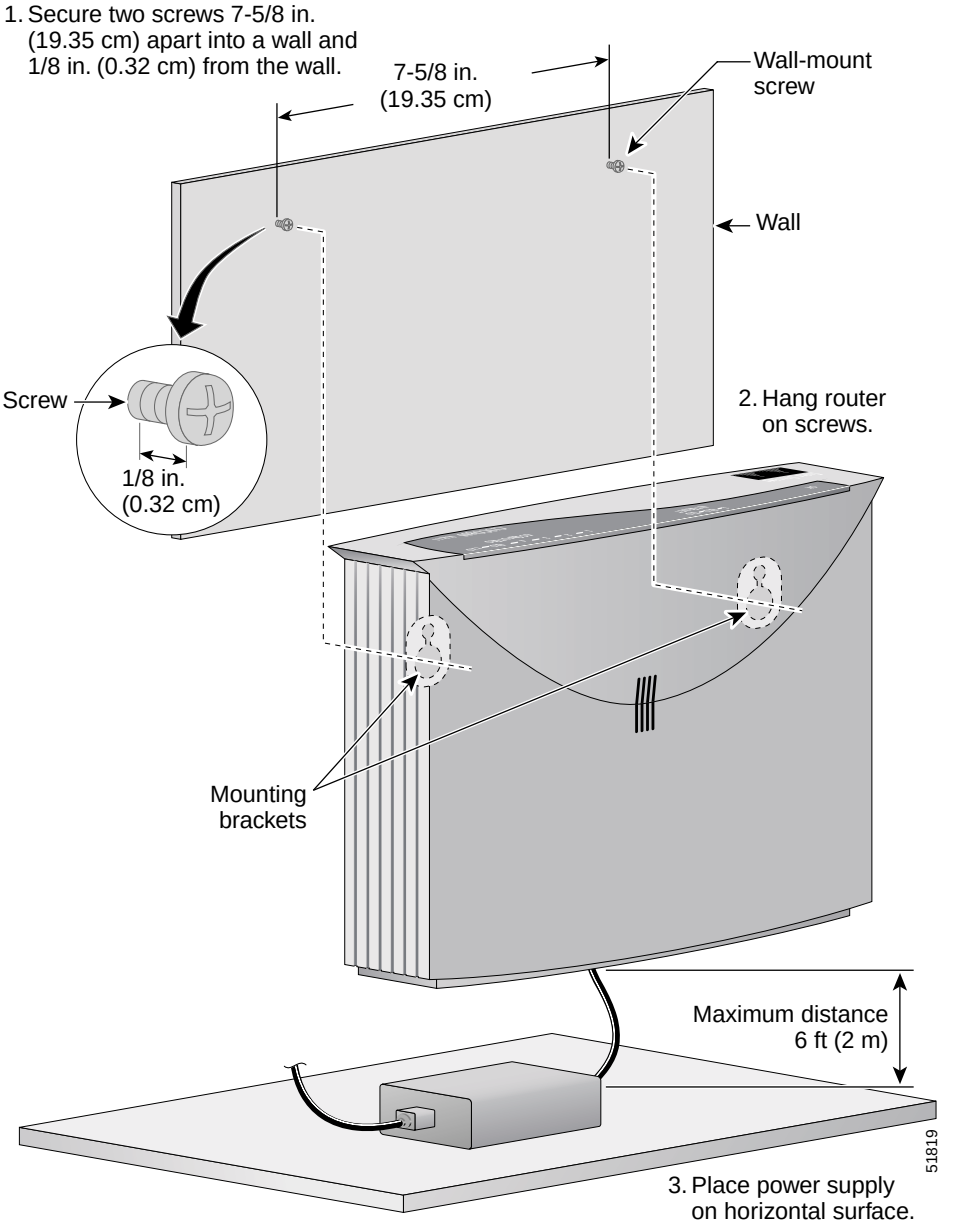
The following conditions must be met when you mount the router:

- Because you will use the LEDs as status and problem indicators, the front panel must face upward and be easily visible.
- The router must be mounted low enough for you to see the LEDs in case you need to troubleshoot a problem.

- The power supply must rest on a horizontal surface such as the floor or a table. If the power supply is not supported, it might place strain on the power supply cable and cause it to disconnect from the connector on the router back panel.

To mount the router, follow the steps in Figure 2-9. The last page of this manual provides a template for measuring the distance between the screws.

Figure 2-9 Mounting Router On Wall



Where to Go from Here

You have completed the hardware installation and are ready to configure the software. Cisco strongly recommends that inexperienced network administrators use the Cisco Router Web Setup application that has been installed on the router. To use this application, complete the following steps:

Step 1 Log on to one of the PCs connected to the router through ETHERNET port 1, 2, 3, or 4.

Step 2 Open a web browser.

Step 3 Type in the following universal resource locator (URL):

http://10.10.10.1

Step 4 Click the Router Setup link in the Cisco Router Web Setup home page, and follow the instructions that appear in the page that is displayed.

Step 5 If the web page does not appear when you enter the URL **http://10.10.10.1**, test the connection between the PC and the router by doing the following:

a. Check that the OK LED on the router is on, and check the cable connection between the router and the PC. If the PC you are using is connected to Ethernet port number 4, be sure that the TO HUB/TO PC button is in the TO PC position.

b. If the CRWS home page still does not appear, verify that your web browser's work offline option is disabled.

c. If the web page still does not appear, verify that your PC is automatically configured to receive an IP address, by following the instructions in *Cisco Router Web Setup User Guide*, which is available on the Cisco 800 and SOHO Series Product Documentation CD.

CHAPTER 3

Troubleshooting

This chapter describes problems that could occur with the Cisco 806 router hardware, possible causes of the problems, and steps for solving the problems. The problems are grouped into the following areas:

- Problems During Initial Startup
- Problems After Router Is Running

For more information on problems that could occur with the software, refer to the *Cisco 806 Router Software Configuration Guide.*

Before You Call Your Cisco Reseller

Some of the solutions in this chapter instruct you to contact your Cisco reseller. Before you contact your reseller, have the following information ready:

- Router model and serial number (on the back panel)
- Maintenance agreement or warranty information
- Date you received your router
- Brief description of the problem
- Brief description of the steps you have taken to solve the problem

Problems During Initial Startup

Table 3-1 lists problems that a user might encounter when the router is initially booted.

Table 3-1 Problems During Initial Startup

Symptom	Problem	Solutions
All LEDs, including OK LED, are off.	No power to router.	Perform the following tasks in order: 1. Make sure that the power switch is set to ON. 2. Make sure that all connections to and from the power supply are secure. 3. Make sure that the power outlet has power. 4. If the problem continues, the power supply could be faulty. Contact your Cisco reseller.
No connection to modem or Ethernet switch. (Internet LED is off.)	A cable-related problem: • Improperly connected cable. • Damaged cable.	Perform the following tasks in order: 1. To make sure that you have cabled the device correctly, see Figure 2-4 or Figure 2-5 in Chapter 2, "Installation." 2. Make sure that the connectors at both ends of the cable are securely seated. 3. Make sure the cable is not physically damaged. If it is, order another cable from Cisco, or replace it with a similar cable.

Table 3-1 Problems During Initial Startup (continued)

Symptom	Problem	Solutions
No connection to Ethernet devices. (COMPUTER LEDs 1 through 4 are off.)	A cable-related problem: • Improperly connected cable. • Damaged cable.	Perform the following tasks in order: 1. To make sure that you have cabled the device correctly, see Figure 2-2 or Figure 2-3 in Chapter 2, "Installation." 2. Make sure that the connectors at both ends of the cable are securely seated. 3. Make sure the cable is not physically damaged. If it is, order another cable from Cisco Systems, or replace it with a similar cable
	Improper setting of TO HUB/TO PC button on router or hub.	To make sure that the button is set correctly, see Table 2-1 in Chapter 2, "Installation."

Problems After Router Is Running

Table 3-2 lists problems that could occur after the router has been up and running.

Table 3-2 Problems After Router is Running

Symptom	Problem	Solutions
Problems with Ethernet connection. (COMPUTER LEDs 1 through 4 are off.)	A cable-related problem: • Disconnected cable. • Damaged cable.	Perform the following tasks in order: 1. Make sure that the connectors at both ends of the cable are secure. 2. Make sure that the cable is not physically damaged. If it is damaged, order another cable from Cisco Systems, or replace it with a similar cable.
	Improper setting of TO HUB/TO PC button on router or hub.	To make sure that the button is set correctly, see Table 2-1 in Chapter 2, "Installation."

Table 3-2 Problems After Router is Running (continued)

Symptom	Problem	Solutions
Connection to the broadband or Ethernet line is intermittent or lost. (The INTERNET 1 LED on the front panel is off.)	A cable-related problem: • Disconnected cable. • Damaged cable.	Perform the following tasks in order: 1. Make sure that the connectors at both ends of the cable are secure. 2. Make sure that the cable is not physically damaged. If it is damaged, order another cable from Cisco Systems, or replace it with a similar cable.
	Problem with broadband line or WAN service.	Contact your broadband line or WAN service provider to determine whether there is a problem.

Specifications and Cables

This appendix provides system, port, and cabling specifications for the Cisco 806 router.

System Specifications

Table A-1 outlines the system specifications for the Cisco 806 router.

Table A-1 System Specifications

Description	Design Specification
Physical Dimensions	
Dimensions (H x W x D)	2.0 x 9.7 x 8.5 in. (5.1 x 24.6 x 21.6 cm)
Weight (does not include desktop power supply)	Cisco 806 router: 1.5 lb (0.68 kg)
Environmental Operating Ranges	
Nonoperating temperature	–4 to 149°F (–20 to 65°C)
Nonoperating humidity	5 to 95% relative humidity
Nonoperating altitude	0 to 15,000 ft (4570 m)
Operating temperature	32 to 104°F (0 to 40°C)
Operating humidity	10 to 85% relative humidity
Operating altitude	0 to 10,000 ft (3000 m)

Table A-1 System Specifications (continued)

Description	Design Specification
Router Power	
AC input voltage	100 to 240 VAC
Frequency	50 to 60 Hz
Power consumption	15W
Voltage	5V

For information on regulatory compliance, refer to the *Regulatory Compliance and Safety Information for Cisco 806 Router* document that was shipped with your router.

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

Port Connector Pinouts

This section provides pinouts for the following connectors:

- Ethernet—See Table A-2, Table A-5, and Table A-6.
- Console (for connecting a terminal or PC)—See Table A-3.
- Power—See Table A-4.

Table A-2 Cisco 806 Router Ethernet Connector Pinouts (RJ-45)

Pin	Function (TO HUB/TO PC Button – IN Position)	Function (TO HUB/TO PC Button – OUT Position)
1	TX+	RX+
2	TX–	RX–
3	RX+	TX+
4	Unused	Unused
5	Unused	Unused
6	RX–	TX–
7	Unused	Unused
8	Unused	Unused

Table A-3 Console Connector Pinouts (RJ-45)

Pin	Function
1	RTS
2	DTR
3	TXD
4	GND
5	GND
6	RXD
7	DSR
8	CTS

The Console port is configured as a data communications equipment (DCE) device. The default parameters for the console port are as follows:

- 9600 baud
- 8 data bits
- No parity
- One stop bit

Table A-4 Power Connector Pinouts

Pin	Function
1	ROF
2	RTN
3	N.C.
4	N.C.
5	+5
6	RTN
7	N.C.
8	N.C.

Cabling Specifications

This section provides specifications for the following Ethernet cables, which you might need to provide:

- Straight-through
- Crossover

It also provides information on Ethernet cable distance limitations.

Ethernet Cable Specifications

Table A-5 provides the specifications for straight-through and crossover Ethernet cables. See the Glossary for definitions of straight-through and crossover cables.

Table A-5 Ethernet Cable Specifications

Type	Category	Shielding
10BaseT	Category 3 or 5	Unshielded twisted-pair (UTP)

Maximum Cable Distances

Table A-6 provides the maximum distances of Ethernet cables that you can use between Ethernet devices.

Table A-6 Maximum Cable Distances

Cable	Maximum Distance
Ethernet cables	328 ft (100 m)

Numerics

10BaseT The 10-Mbps baseband Ethernet specification that uses two pairs of twisted-pair cabling (Category 3 or 5): one pair for transmitting data and the other for receiving data.

B

broadband modem As used in this manual, a DSL, cable, or long-reach Ethernet modem.

C

cable modem A modulator-demodulator device that is placed at subscriber locations to convey data on a cable television system.

crossover Ethernet cable A cable that wires a pin to its opposite pin; for example, RX+ is wired to TX+. This cable connects two similar devices, such as two data terminal equipment (DTE) devices or two data communications equipment (DCE) devices.

D

DRAM Dynamic random-access memory (RAM). RAM that stores information in capacitors which must be periodically refreshed.

DSL Digital Subscriber Line. Public network technology that delivers high bandwidth over conventional copper wiring at limited distances. There are four types of DSL: ADSL, HDSL, SDSL, and VDSL. All are provisioned via modem pairs, with one modem at the central office, and the other located at the subscriber site.

E

EMI Electromagnetic interference. The interference by electromagnetic signals that can cause reduced data integrity and increased error rates on transmission channels.

ESD Electrostatic discharge. A transfer of electrostatic charge between bodies of different electrostatic potentials, such as an operator and a piece of electrical equipment. ESD occurs when electronic components are improperly handled. ESD can damage equipment and impair electrical circuitry. ESD is more likely to occur with the combination of synthetic fibers and dry atmosphere.

F

Flash memory The nonvolatile storage that can be electrically erased and reprogrammed so that data can be stored, booted from, and rewritten as necessary.

L

link LNK — A light-emitting diode (LED) that indicates that a physical connection between the router and an Ethernet device exists.

LRE — Long-reach Ethernet. A technology that encapsulates Ethernet packets for robust, high-frequency transmission over telephone wiring, and extends the distance reach from 100 meters for traditional Ethernet over copper to up to 5,000 feet (1,524 meters).

M

MDI — Media-dependent interface. A port on an Ethernet network device used to connect the device to the Ethernet network, usually through a hub or switch.

MDI-X — Media-dependent interface, crossover. A port on an Ethernet hub, such as the Cisco 1528 Micro Hub 10/100, that connects the Ethernet network devices through the MDI port to create a network.

modem — Modulator-demodulator. A device that converts analog and digital signals. At the source, a modem converts digital signals to a form suitable for transmission over analog communication facilities. At the destination, analog signals are converted back to their digital form.

S

SELV — Safety extra-low voltage. A secondary circuit that under normal conditions has a voltage less than 42.4V peak or 60 VDC.

straight-through Ethernet cable — A cable that wires a pin to its equivalent pin. This cable connects two dissimilar devices such as a data terminal equipment (DTE) and a data communications equipment (DCE) device. A straight-through Ethernet cable is the most common cable used.

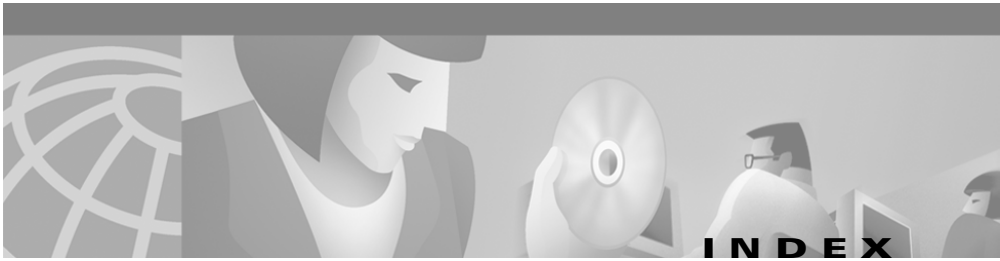
T

TNV

Telecommunications network voltage. A secondary circuit that under normal operating conditions carries telecommunication signals. Telecommunications signals are a steady-state, varying amplitude, or intermittent voltage or current intended for use on a telecommunications network. A telecommunications network is considered a metallically terminated circuit intended to carry telecommunication signals for voice, data, or other communication. These networks might be publicly or privately owned. They might be subjected to overvoltages due to atmospheric discharges or power-line failures.

TO HUB/TO PC button

A button that enables you to use a straight-through cable to connect either hubs, or servers, PCs, and workstations to the router. Without this button, you would need to supply a crossover cable to connect a hub to the router. Setting the button to TO HUB (in) indicates that you are connecting a hub; setting the button to TO PC (out) indicates that you are connecting a server, PC, or workstation.



Numerics

A

B

C

D

E

F

H

I

L

M

P

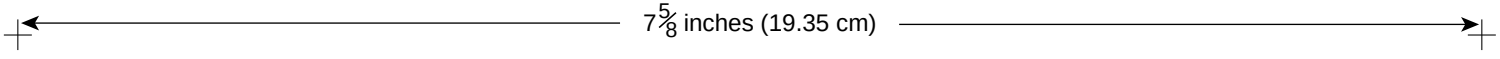
S

T

U

V

W



Router Wall-Mount Template