



## QUICK START GUIDE



## Cisco 1861 Integrated Services Router Quick Start Guide

### INCLUDING LICENSE AND WARRANTY

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# 1 Cisco One-Year Limited Hardware Warranty Terms

There are special terms applicable to your hardware warranty and various services that you can use during the warranty period. Your formal Warranty Statement, including the warranties and license agreements applicable to Cisco software, is available on Cisco.com. Follow these steps to access and download the *Cisco Information Packet* and your warranty and license agreements from Cisco.com.

1. Launch your browser, and go to this URL:

[http://www.cisco.com/univercd/cc/td/doc/es\\_inpk/cetrans.htm](http://www.cisco.com/univercd/cc/td/doc/es_inpk/cetrans.htm)

The Warranties and License Agreements page appears.

2. To read the *Cisco Information Packet*, follow these steps:

- a. Click the **Information Packet Number** field, and make sure that the part number 78-5235-03A0 is highlighted.
- b. Select the language in which you would like to read the document.
- c. Click **Go**.

The Cisco Limited Warranty and Software License page from the Information Packet appears.

- d. Read the document online, or click the **PDF** icon to download and print the document in Adobe Portable Document Format (PDF).

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

3. To read translated and localized warranty information about your product, follow these steps:

- a. Enter this part number in the Warranty Document Number field:

78-10747-01C0.

- b. Select the language in which you would like to view the document.
- c. Click **Go**.

The Cisco warranty page appears.

- d. Review the document online, or click the **PDF** icon to download and print the document in Adobe Portable Document Format (PDF).

You can also contact the Cisco service and support website for assistance:

<http://www.cisco.com/en/US/support/>

## Duration of Hardware Warranty

One (1) Year

## 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 a 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	
Product model number	

Product serial number	
Maintenance contract number	

## 2 Overview

The Cisco 1861 Integrated Services Router, which is part of the Cisco 1800 series Integrated Services Router family, is a unified communications solution for small to medium-sized businesses and enterprise small branch offices that provides voice, data, voice-mail, automated attendant, video, and security capabilities while integrating with existing desktop applications such as calendar, e-mail, and customer relationship management (CRM) programs and with built-in security. It has the following core components:

- Integrated Cisco Unified Communications Manager Express or Survivable Remote Site Telephony for call processing for up to 12 users
- Optional Cisco Unity Express for voice messaging and automated attendant
- Integrated LAN switching with Power over Ethernet (POE) expandable via Cisco Catalyst Switches
- Optional support for a range of WAN interface cards

This document provides the minimum necessary information to help you install the router, power it up, and configure a network connection. This document directs you to other documents for the following information:

- More detailed router installation instructions, descriptions, and specifications
- Procedures for installing modules, interface cards, power supplies, and memory
- Software configuration
- Regulatory compliance and safety information

### Product Serial Number Location

The serial number label for the Cisco 1861 router is located on the back of the chassis, under interface card slot 0.

For detailed product serial number location on the chassis, refer to the online Cisco 1861 Integrated Services Router Hardware Installation Guide documentation.

## Hardware Configuration

The Cisco 1861 Integrated Services Router comes with various possible configurations, based on built-in ports and other hardware features of the Cisco 1861 Integrated Services Router and organized by model.

Table 1 lists the labels and descriptions for the WAN, LAN, voice interface card (VIC), and other interfaces, along with the values for these interfaces in the preconfigured router software configuration.




**Note** In Table 1, all slots/ports are numbered right to left, unless otherwise noted.

**Table 1** Cisco 1861 Integrated Services Router: Interfaces

Description	Label	Value in Software Configuration
Console/Aux port	CONSOLE	—
Fast Ethernet 10/100 expansion port	EXPANSION	FastEthernet0/1/8
Fast Ethernet 10/100 WAN port	WAN	FastEthernet0/0
Fast Ethernet 10/100 Power over Ethernet (PoE) ports	Power over Ethernet, and ACT 0 LNK to ACT 7 LNK	FastEthernet0/1/0 to 0/1/7
FXS (Foreign Exchange Station) ports	FXS, and 0-3	port 0/0/0 to 0/0/3

**Table 1 Cisco 1861 Integrated Services Router: Interfaces (continued)**

Description	Label	Value in Software Configuration
FXO (Foreign Exchange Office) ports	FXO, and 0-3	port 0/1/0 to 0/1/3
ISDN BRI ports	B0 - B1	Top-to-bottom, port 0/1/0 to 0/1/1
VLAN number for data network	—	Vlan1
VLAN number for voice network	—	Vlan100
Music-on-Hold (MoH) port		voice-port 0/4/0
Compact Flash slot	COMPACT FLASH	flash
(Factory Option) VIC: BRI*	VIC2-2BRI-NT/TE and 0-1	port 0/2/0 to 0/2/1
(Factory Option) VIC: FXO*	VIC2-2FXO and 0-1 VIC2-4FXO and 0-3	port 0/2/0 to 0/2/1 or port 0/2/0 to 0/2/3
(Factory Option) VIC: FXS*	VIC3-2FXS/DID and 0-1 VIC-4FXS/DID and 0-3 VIC3-4FXS/DID and 0-3	port 0/2/0 to 0/2/1 or port 0/2/0 to 0/2/3

\* Only one optional VIC can be factory installed in a Cisco 1861 Integrated Services Router.

\*\* The label on front panel is build-specific. Functionality is unaffected.

## Software Components

The Cisco 1861 Integrated Services Router is shipped with a factory-installed software configuration for a basic IP telephony system that enables phone users to make and receive calls using the preconfigured numbers on their IP phones within minutes after connecting the Cisco 1861 Integrated Services Router to the Ethernet and their IP phones to the platform. [Table 2](#) summarizes the software components of the Cisco 1861 Integrated Services Router.

**Table 2 Cisco 1861 Integrated Services Router Software Components**

Software Component	Description	Benefits
Cisco Unified Communications Manager Express (Cisco Unified CME)	Entry-level call processing system that provides a wide range of IP telephony features for small to medium-sized business customers and autonomous small enterprise branch offices.	All files and configurations for IP phones are stored internally on the Cisco 1861 Integrated Services Router for a cost-effective, highly reliable, IP communications solution.
Cisco Unity Express	Provides voice mail and automated attendant services specifically designed for the small and medium-sized branch office environment.	Users can easily and conveniently manage their voice messages and greetings with intuitive telephone prompts and a straightforward web-based GUI that allows simple administration
Security	Protects against information theft, virus outbreaks, and application abuse, whether from known or unknown threats, internal or external sources.	Integrated for a robust array of security features.

**Table 2** Cisco 1861 Integrated Services Router Software Components (continued)

Software Component	Description	Benefits
Cisco IOS Firewall	Protects customer networks against network and application layer attacks, viruses, worms, and at the same time providing effective control on various application traffic flowing through the network.	Help businesses guarantee network uptime and security.
Cisco Secure VPN	Carries private data over a public network and extends remote access to users over a shared infrastructure.	Most cost-effective method to provide increased VPN throughput with minimal effect on processing.

## License Support

The Cisco 1861 Integrated Services Router supports a maximum of 12 user licenses based on different models.

## 3 Documentation, Equipment, and Tools

For complete platform documentation, refer to the following URL:

[http://www.cisco.com/univercd/cc/td/doc/product/access/acs\\_mod/1800/index.htm](http://www.cisco.com/univercd/cc/td/doc/product/access/acs_mod/1800/index.htm)

All the documents referenced in this quick start guide are available on Cisco.com. See the “Where to Go Next” section on page 21. To view or print an online document in its original page format, click the PDF icon.

## 4 Equipment

This section contains information about the Cisco 1861 Integrated Services Router hardware, including the following topics:

- [Items in Box, page 5](#)
- [Items Not Included, page 6](#)
- [Front Panel View, page 6](#)
- [Install Cisco 1861 Integrated Services Router Chassis and Power Supply, page 7](#)

### Items in Box

The following items ship with the Cisco 1861 Integrated Services Router:

- Accessory kit containing:
  - Rubber feet for desktop installation
  - RJ-45-to-RJ-45 Ethernet cable
  - Light blue RJ-45-to-DB9 console cable
  - Wall-mount bracket for power supply
  - *Quick Start Guide for Cisco 1861 Integrated Services Router* (this guide)
  - *Regulatory Compliance and Safety Information Roadmap*

A separate rack-mount kit can be ordered which includes the following:

- Power supply bracket
- Rack-mount brackets for chassis
- Assembly hardware (screws)
- *Installing Components for Cisco 1861 Integrated Services Router*

## Items Not Included

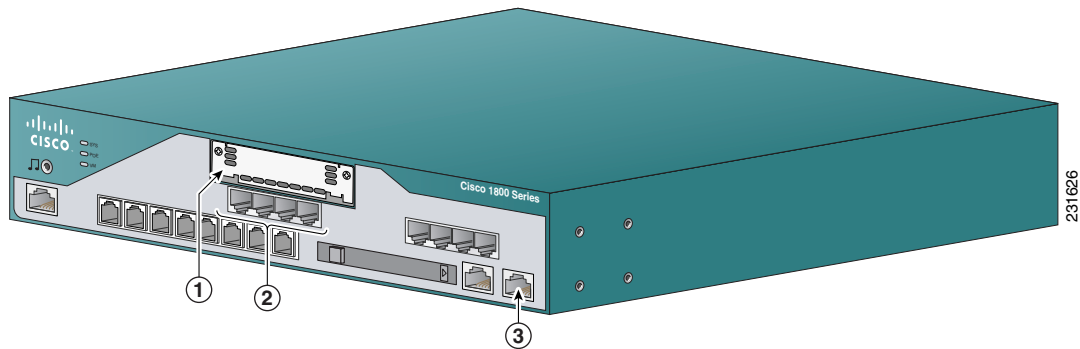
You may need individual items in this list which are not shipped in the box:

- Cisco Unified IP phones
- Cables for connecting phones
- Cable for connecting external audio device to the 3.5-mm MoH port
- Cables for WAN interfaces, voice interfaces, or additional LAN interfaces
- PC with Microsoft Internet Explorer 6.0 or later, for using web-based system management tools

## Front Panel View

Figure 1 shows the front panel of a Cisco 1861 Integrated Services Router that has a foreign exchange office (FXO) ports.

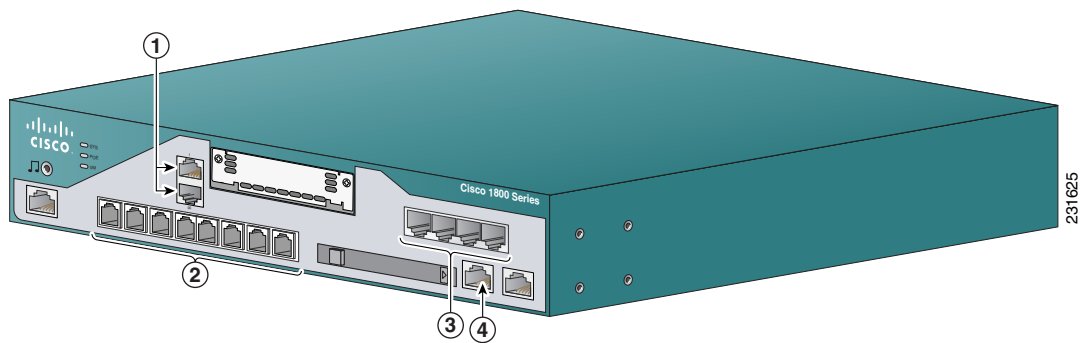
**Figure 1** Cisco 1861 Integrated Services Router with FXO Ports



<b>1</b>	WAN slot	<b>3</b>	Expansion switch port
<b>2</b>	FXO ports		

Figure 2 shows the front panel of a Cisco 1861 Integrated Services Router that has BRI ports.

**Figure 2 Cisco 1861 Integrated Services Router with BRI Ports**



<b>1</b>	BRI ports	<b>3</b>	FXS ports
<b>2</b>	Power over Ethernet (PoE) ports	<b>4</b>	Fast Ethernet (FE) port

## Cisco Product Identification Tool

The Cisco Product Identification (CPI) tool provides detailed illustrations and descriptions showing where to locate serial number labels on Cisco products. It includes the following features:

- A search option that allows browsing for models using a tree-structured product hierarchy
- A search field on the final results page making it easier to look up multiple products
- End of sale products are clearly identified in results lists

The tool streamlines the process of locating serial number labels and identifying products. Serial number information expedites the entitlement process and is important for access to support services.

The Cisco Product Identification tool can be accessed at the following URL:

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

## 5 Install Cisco 1861 Integrated Services Router Chassis and Power Supply

This section contains basic installation information including the following:

- [Safety Information, page 7](#)
- [Warning Definition, page 8](#)
- [Installation Guidelines, page 10](#)
- [Desktop Installation, page 10](#)
- [Wall-Mounting the Cisco 1861 Integrated Services Router, page 10](#)
- [Rack-Mounting the Cisco 1861 Integrated Services Router, page 12](#)

## Safety Information

The *Regulatory Compliance and Safety Information* document for Cisco 1861 Integrated Services Router contains translations of the warnings that appear in this guide.

For safety information you must know before working on a Cisco 1861 Integrated Services Router, see the *Regulatory Compliance and Safety Information* document at Cisco.com.

## Warning Definition



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### IMPORTANT SAFETY INSTRUCTIONS

**This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning statement to locate its translation in the translated safety warnings that accompanied this device.**

**Note: Save these instructions.**

**Note: This documentation is to be used in conjunction with the specific product installation guide that shipped with the product. Please refer to the Installation Guide, Configuration Guide, or other enclosed additional documentation for further details.** Statement 1071

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**High leakage current – permanent earth connection essential before making Telecommunication Network Connection.** Statement 343



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



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



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



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**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



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**Hazardous network voltages are present in WAN ports regardless of whether power to the unit is OFF or ON. To avoid electric shock, use caution when working near WAN ports. When detaching cables, detach the end away from the unit first.** Statement 1026



**Warning**

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**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 back covers are in place.** Statement 1029

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**Warning**

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**Only trained and qualified personnel should be allowed to install, replace, or service this equipment.** Statement 1030

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**Warning**

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**Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.** Statement 1037

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**Warning**

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**Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.** Statement 1038

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**Warning**

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

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**Warning**

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**This equipment must be installed and maintained by service personnel as defined by AS/NZS 3260. Incorrectly connecting this equipment to a general-purpose outlet could be hazardous. The telecommunications lines must be disconnected 1) before unplugging the main power connector or 2) while the housing is open, or both.** Statement 1043

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**Warning**

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**To prevent the system from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of 40 deg.** Statement 1047

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**Warning**

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**Voltages that present a shock hazard may exist on Power over Ethernet (PoE) circuits if interconnections are made using uninsulated exposed metal contacts, conductors, or terminals. Avoid using such interconnection methods, unless the exposed metal parts are located within a restricted access location and users and service people who are authorized within the restricted access location are made aware of the hazard. A restricted access area can be accessed only through the use of a special tool, lock and key or other means of security.** Statement 1072

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**Warning**

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**No user-serviceable parts inside. Do not open.** Statement 1073

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The following statement is applicable only in Scandinavian countries.



**Warning**

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**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

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## Installation Guidelines

Before you install a Cisco 1861 Integrated Services Router, review the *Regulatory Compliance and Safety Information for Cisco 1861 Integrated Services Router* document on Cisco.com.

This platform is a self-contained unit. Do not remove or install any modules or interface cards unless otherwise directed.

When selecting an installation site, observe these guidelines:

- Cabling is away from sources of electrical noise, such as radios, power lines, and fluorescent lighting fixtures.
- Clearance to the front and back panels is such that:
  - Airflow around the platform and through the vents is unrestricted.
  - Front-panel LEDs can be easily read.
  - Access to ports is sufficient for unrestricted cabling.
- Temperature does not exceed 104°F (40°C), humidity does not exceed 85 percent, and altitude at the installation site is not greater than 10,000 ft (3049 m).

## Desktop Installation

When installing a Cisco 1861 Integrated Services Router and power supply on a desktop, observe the following cautions.



**Caution**

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The Cisco 1861 Integrated Services Router installation must allow unrestricted airflow for cooling. For placing the platform on a desktop, keep at least 1 in. (2.54 cm) of clear space beside the cooling inlet and exhaust vents.

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**Caution**

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Do not place any items that weigh more than 10 lb (4.5 kg) on top of the chassis and do not stack.

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To install a chassis on a desktop, table, or other flat surface, place the unit upside-down on a flat surface. Attach the four rubber pads to the recessed areas on the bottom of the unit. Place the unit on a desktop.

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## Wall-Mounting the Cisco 1861 Integrated Services Router

You can mount the Cisco 1861 Integrated Services Router and power supply to a wall or other vertical surface.



**Warning**

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**This unit is intended to be mounted on a wall. Please read the wall mounting instructions carefully before beginning installation. Failure to use the correct hardware or to follow the correct procedures could result in a hazardous situation to people and damage to the system.** Statement 248

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## Attaching the Chassis and Power Supply to the Wall

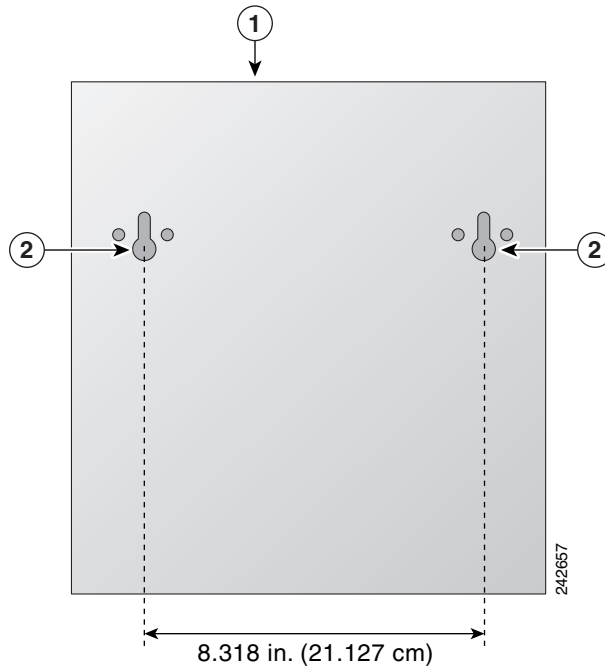
The Cisco 1861 Integrated Services Router has two keyholes on the bottom of the chassis for mounting the unit on a wall or other vertical surface. The power supply is mounted to the wall by using the wall-mount bracket. To mount the chassis and power supply on a wall, perform the following steps.



**Tip** When choosing a location for wall-mounting the router, consider cable limitations and wall structure.

Figure 3 shows the bottom of the Cisco 1861 Integrated Services Router and the locations of the wall-mount holes.

**Figure 3** Wall-Mount Holes on Bottom of Cisco 1861 Integrated Services Router



<b>1</b>	Front panel	<b>2</b>	Mounting-screw holes
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**Step 1** Align the mounting-screw holes with a wall stud, or use wall anchors.

- For attaching to a wall stud, use two #10 wood screws (round- or pan-head) with #10 washers, or two #10 washer-head screws. The screws must be long enough to penetrate at least 3/4 in (20 mm) into the supporting wood or into a metal wall stud.
- For hollow-wall mounting, the wall must be at least 1/2 in (12.7 mm) thick. Use two wall anchors with washers. The wall anchors and washers must be a size suitable for the wall to which they are mounted.

**Step 2** Position the chassis on the wall.

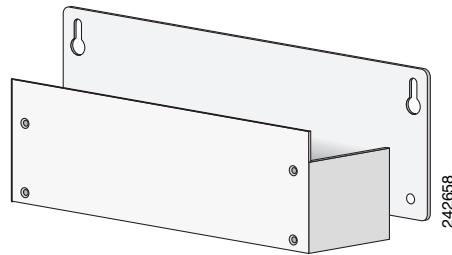
- Orient the front and back of the chassis vertically.
- The unit must be oriented with the front panel (TNV connection side) facing up and the connection to the power cord facing down.

**Step 3** Figure 4 shows the wall-mount bracket for the power supply and the mounting-screw holes on the back of the bracket. Align the mounting-screw holes with a wall stud, or use wall anchors.

- For attaching to a wall stud, use two #10 wood screws (round- or pan-head) with #10 washers, or two #10 washer-head screws. The screws must be long enough to penetrate at least 3/4 inch (20 mm) into supporting wood or into a metal wall stud.

- b. For hollow-wall mounting, wall must be at least 1/2 inch (12.7 mm) thick. Use two wall anchors with washers. Wall anchors and washers must be a size suitable for the wall to which they are mounted.

**Figure 4** *Wall-Mount Bracket for Power Supply*



- Step 4** Position the power supply in the bracket.
- a. Orient the front and back of the power supply vertically.
  - b. Position the end nearest the power cable at the top.

## Rack-Mounting the Cisco 1861 Integrated Services Router

### Attach Brackets for Rack-Mounting

To attach the brackets to the Cisco 1861 Integrated Services Router, perform the following steps.

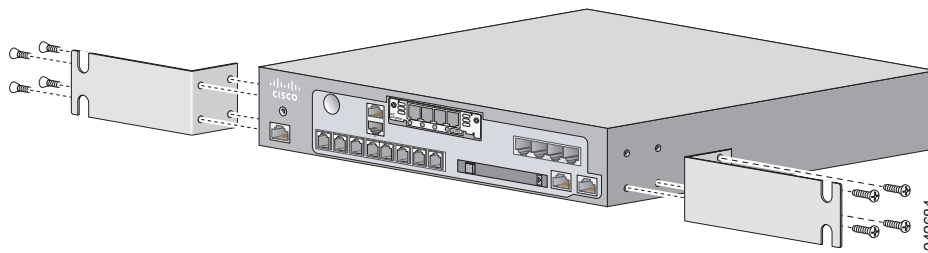


**Caution**

Do not overtorque the screws. The recommended torque is 6 to 8 in-lb (0.7 to 0.9 N-m).

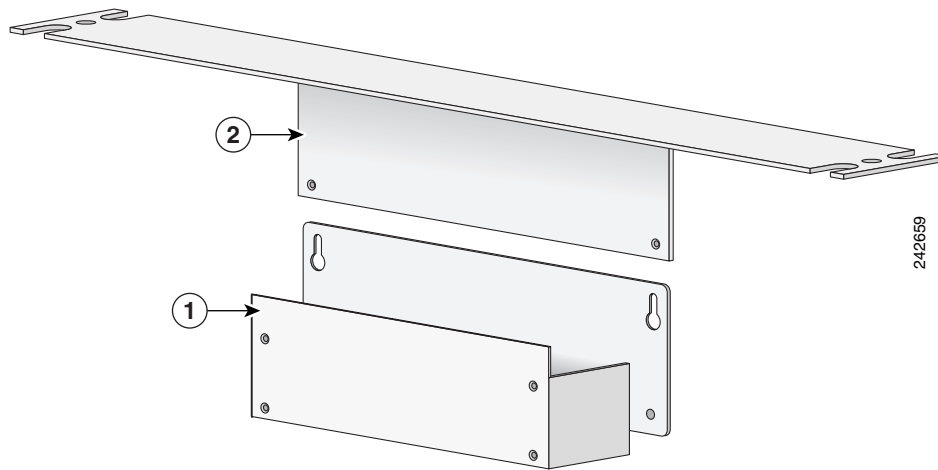
- Step 1** Attach the mounting brackets to the Cisco 1861 Integrated Services Router chassis as shown in [Figure 5](#), using the screws provided. Use four screws on each side. Use a number 2 Phillips screwdriver to install the bracket screws on both sides of the chassis.

**Figure 5** *Attaching Rack-Mount Brackets to the Cisco 1861 Integrated Services Router*



- Step 2** [Figure 6](#) shows the brackets in the rack-mount kit for the power supply.

**Figure 6** Brackets for Rack-Mounting Power Supply

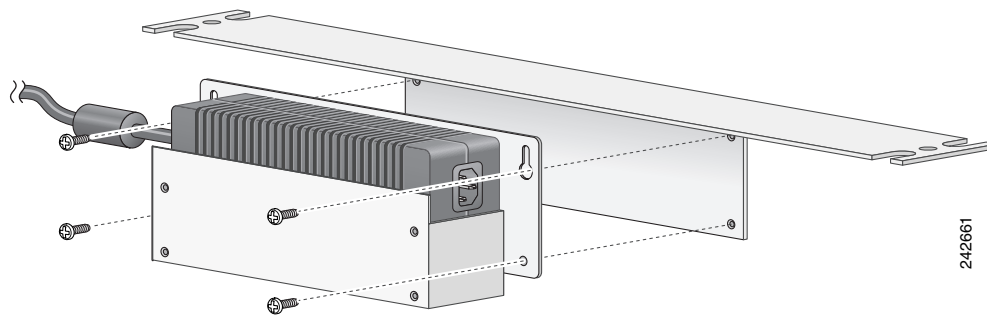


<b>1</b>	Wall-mount bracket	<b>2</b>	Rack-mount bracket
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- Step 3** Position the power supply in the wall-mount bracket.
- a. Orient the front and back of the power supply vertically.
  - b. Position the end nearest the power cable at the top.

**Step 4** Assemble the brackets for rack-mounting the power supply as shown in [Figure 7](#), using the four screws provided. Use a number 2 Phillips screwdriver to install the bracket screws.

**Figure 7** Assembling Rack-Mount Kit for the Power Supply



## Install the Cisco 1861 Integrated Services Router and Power Supply in a Rack

To mount the chassis and power supply, perform the following steps.

**Warning**

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

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack. Statement 1006

**Caution**

Chassis installation must allow unrestricted airflow for chassis cooling.



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**Note** Be sure to leave space above and below each unit in a rack to allow for cooling air circulation.

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**Step 1** Use two screws for each side (supplied with the rack) to attach Cisco 1861 Integrated Services Router with rack-mount brackets, then power supply with rack-mount bracket to a 19” rack. Start the lower pair of screws first, resting the brackets on the lower screws while you insert the upper pair of screws.



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**Tip** The screw slots in the brackets are spaced to line up with every second pair of screw holes in the rack. When the correct screw holes are used, the small threaded holes in the brackets line up with unused screw holes in the rack. If the small holes do not line up with the rack holes, you must raise or lower the brackets to the next rack hole.

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## 6 Ground the Chassis



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**Warning** **This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.** Statement 1024

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You must connect the chassis to a reliable earth ground; the ground wire must be installed in accordance with local electrical safety standards.

For NEC-compliant grounding, use size 14 AWG (2 mm) or larger copper wire and an appropriate user-supplied ring terminal with an inner diameter of 1/4 in. (5 to 7 mm).



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**Note** The Cisco 1861 Integrated Services Router is not NEBS-compliant.

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**Warning** **This equipment needs to be grounded. Use a green and yellow 14 AWG ground wire to connect the host to earth ground during normal use.** Statement 190

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To connect the chassis to a reliable earth ground, perform the following steps:

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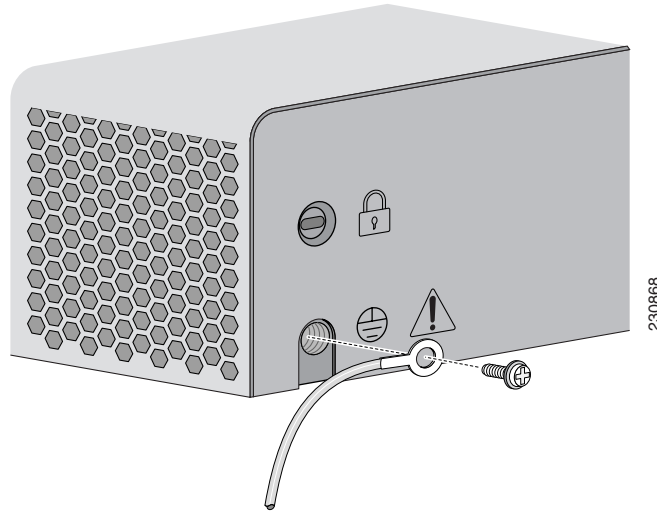
**Step 1** Strip one end of the ground wire to the length required for the ground lug or terminal.

- For the ground lug, approximately 0.75 in. (20 mm)
- For the user-provided ring terminal, as required

**Step 2** Crimp the ground wire to the ground lug or ring terminal, using a crimp tool of the appropriate size.

**Step 3** Attach the ground lug or ring terminal to the chassis as shown in [Figure 8](#). Tighten the screws to a torque of 8-10 in-lb (0.9-1.1 N-m).

**Figure 8** Attaching the Ground Wire to the Chassis



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**1** Grounding lug

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**Step 4** Connect the other end of the ground wire to a known reliable earth ground point. If there is any doubt as to the reliability of the ground point, contact a licensed electrician for assistance.

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## 7 Connect Power

**Warning**  **Only trained and qualified personnel should be allowed to install, replace, or service this equipment.** Statement 1030

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**Warning**  **The ISDN connection is regarded as a source of voltage that should be inaccessible to user contact. Do not attempt to tamper with or open any public telephone operator (PTO)-provided equipment or connection hardware. Any hardwired connection (other than by a nonremovable, connect-one-time-only plug) must be made only by PTO staff or suitably trained engineers.** Statement 23

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

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To connect the power supply to the Cisco 1861 Integrated Services Router, perform the following steps:

**Step 1** Connect the AC power cord to the the power supply.

**Step 2** Connect the power interface cable to the power connector port on the back of the Cisco 1861 Integrated Services Router.

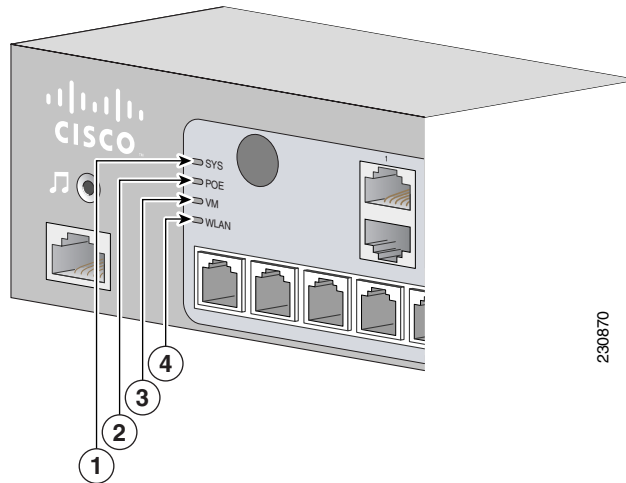
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## 8 Power Up the System

To power up the Cisco 1861 Integrated Services Router, perform the following steps:

- Step 1** Verify that the AC power cord is connected to the power supply.
- Step 2** There is no external Power On/Off switch on the power supply. To power up the power supply and Cisco 1861 Integrated Services Router, connect the power cord plug to a grounded AC outlet.
- Step 3** Verify the LED indicators on the front panel of the Cisco 1861 Integrated Services Router, as required. See [Figure 9](#).

**Figure 9** LEDs on the Front Panel of the Cisco 1861 Integrated Services Router



<b>1</b>	SYS	Solid green	Online
<b>2</b>	POE	Solid green	Connected
<b>3</b>	VM	Solid green	Online
<b>4</b>	WLAN	Blinking green	Connected

## Verify the Hardware Configuration

Verify the router hardware configuration by entering the following commands:

- **show version**—Displays the system hardware version; the installed software version; the names and sources of configuration files; the boot images; and the amount of installed DRAM, NVRAM, and flash memory.
- **show diag**—Lists and displays diagnostic information about the installed controllers, interface processors, and port adapters. Typical examples are network modules, interface cards (WICs, VWICs, HWICs) and advanced integration modules (AIMs).

## 9 Interface Numbering

Each interface (port) on a Cisco 1861 Integrated Services router is identified by a number. The Cisco 1861 router contains the following WANLAN interface types:

- One onboard Fast Ethernet LAN interface (FastEthernet0/0)
- One onboard Ethernet switch
- One fixed VIC slot with 4 FXS ports
- One fixed VIC slot with 4 FXO or 2 BRI ports
- One modular HWIC/WIC/VWIC slot

The numbering format for the slots is *interface-type 0/slot-number/port-number*. Table 3 summarizes the interface numbering.

**Table 3**     **Interface Numbering**

Slot Number	Slot Type	Slot Numbering Range	Example <sup>1</sup>
Onboard Ports	Fast Ethernet	0/0	interface fastethernet 0/0
Onboard Slot 1	Fast Ethernet Switch	0/1/0 to 0/1/7	interface fastethernet 0/1/0
Fixed HWIC slot 0	FXS	0/0/0 to 0/0/3	voice-port 0/0/0/
Fixed HWIC slot 1	FXO	0/1/0 to 0/1/3	voice-port 0/1/0
	BRI	0/1/0 to 0/1/1	
Modular HWIC Slot	HWIC/WIC/VWIC	0/3/0 to 0/3/x, where x depends on the card-type.	interface serial 0/0/0

1. The interfaces listed are examples only; other possible interface types are not listed.



**Note**

On the Cisco 1861 Integrated Services router, the numbering format for configuring an asynchronous, or async, interface is 0/slot/port. To configure the line associated with an async interface, simply use the interface number to specify the async line. For example, line 0/0/0 specifies the line associated with interface serial 0/0/0 on a WIC-2A/S in slot 0. Similarly, line 0/1/1 specifies the line associated with interface async 0/1/1 on a WIC-2AM in slot 1.



**Note**

If you have specified the use of a private line automatic ringdown (PLAR) off-premises extension (OPX) connection mode for an FXO voice port (with loop resistance less than 8000 Ohm), you must ensure that the soft-offhook option is enabled on the port.

This option allows a stepped offhook resistance during seizure which avoids overloading the circuit during offhook in the event that ringing voltage is present on the circuit at the same time as the trunk seizure. The stepped offhook resistance is initially set to 800 Ohms, then adjusts to 50 Ohms when ringing voltage is not present.

To enable **soft-offhook** command on the port, and to access the **connection** command with **plar opx** syntax, see the [Cisco Command Lookup Tool](#).

## 10 Perform Initial Configuration

You can configure your router by using one of the following tools:

- Cisco Router and Security Device Manager (SDM)—See the “Initial Configuration Using Cisco Router and Security Device Manager” section on page 17.
- Setup command facility—See the “Initial Configuration Using Setup Command Facility” section on page 18.
- Command-line interface (CLI)—See the “Initial Configuration Using Cisco CLI—Manual Configuration” section on page 20.

### Initial Configuration Using Cisco Router and Security Device Manager

If the following messages appear at the end of the startup sequence, Cisco Router and Security Device Manager (SDM) is installed on your router:

```
yourname con0 is now available
```

```
Press RETURN to get started.
```

For instructions on configuring your router by using SDM, refer to the *Cisco Router and Security Device Manager (SDM) Quick Start Guide* that shipped with your router.

**Tip**

If the messages do not appear, SDM was not installed on your router, and the *Cisco Router and Security Device Manager (SDM) Quick Start Guide* was not shipped with your router. If you want to use SDM, you can download the latest version of SDM and instructions for installing it on your router from the following location:

<http://www.cisco.com/pcgi-bin/tablebuild.pl/sdm>

To obtain the SDM quick start guide, SDM release notes, and other SDM documentation, go to [www.cisco.com/go/sdm](http://www.cisco.com/go/sdm) and click the Technical Documentation link.

## Initial Configuration Using Setup Command Facility

This section shows how to use the setup command facility to configure a hostname for the router, set passwords, and configure an interface for communication with the management network.

If the following messages appear at the end of the startup sequence, the setup command facility has been invoked automatically:

```
--- System Configuration Dialog ---
```

```
At any point you may enter a question mark '?' for help.  
Use ctrl-c to abort configuration dialog at any prompt.  
Default settings are in square brackets '[]'.
```

```
Would you like to enter the initial configuration dialog? [yes/no]:
```

The setup command facility prompts you for basic information about your router and network, and it creates an initial configuration file. After the configuration file is created, you can use the CLI or Cisco Router and Security Device Manager to perform additional configuration.

The prompts in the setup command facility vary, depending on your router model, the installed interface modules, and the software image. The following example and the user entries (in **bold**) are shown as examples only.

For help with interface and port numbering, see the “Interface Numbering” section on page 16.



**Note** If you make a mistake while using the setup command facility, you can exit and run the setup command facility again. Press **Ctrl-C**, and enter the **setup** command at the privileged EXEC mode prompt (Router#).

To use the setup command facility, perform the following steps:

**Step 1** To proceed using the setup command facility, enter **yes**:

```
Would you like to enter the initial configuration dialog? [yes/no]: yes
```

**Step 2** When the following messages appear, enter **yes** to enter basic management setup:

```
At any point you may enter a question mark '?' for help.  
Use ctrl-c to abort configuration dialog at any prompt.
```

```
Default settings are in square brackets '[]'.
```

```
Basic management setup configures only enough connectivity  
for management of the system, extended setup will ask you  
to configure each interface on the system
```

```
Would you like to enter basic management setup? [yes/no]: yes
```

**Step 3** Enter a hostname for the router (this example uses **Router**):

```
Configuring global parameters:
```

```
Enter host name [Router]: Router
```

**Step 4** Enter an enable secret password. This password is encrypted (more secure) and cannot be seen when viewing the configuration:

The enable secret is a password used to protect access to privileged EXEC and configuration modes. This password, after entered, becomes encrypted in the configuration.  
Enter enable secret: **xxxxxxx**

**Step 5** Enter an enable password that is different from the enable secret password. This password is *not* encrypted (less secure) and can be seen when viewing the configuration:

The enable password is used when you do not specify an enable secret password, with some older software versions, and some boot images.  
Enter enable password: **xxxxxxx**

**Step 6** Enter the virtual terminal password, which prevents unauthenticated access to the router through ports other than the console port:

The virtual terminal password is used to protect access to the router over a network interface.  
Enter virtual terminal password: **xxxxxxx**

**Step 7** Respond to the following prompts as appropriate for your network:

Configure SNMP Network Management? [yes]:  
Community string [public]:

A summary of the available interfaces is displayed.



**Note** The interface numbering depends on the type of Cisco modular router platform and on the installed interface modules and cards.

Current interface summary

Controller	Timeslots	D-Channel	Configurable modes	Status
T1 0/0/0	24	23	pri/channelized	Administratively up
T1 0/0/1	24	23	pri/channelized	Administratively up
T1 0/1/0	24	23	pri/channelized	Administratively up
T1 0/1/1	24	23	pri/channelized	Administratively up

Any interface listed with OK? value "NO" does not have a valid configuration

Interface	IP-Address	OK?	Method	Status	Prol
FastEthernet0/0	unassigned	NO	unset	up	up

**Step 8** Select one of the available interfaces for connecting the router to the management network:

Enter interface name used to connect to the management network from the above interface summary: **fastethernet0/0**

**Step 9** Respond to the following prompts as appropriate for your network:

Configuring interface FastEthernet0/0:  
Use the 100 Base-TX (RJ-45) connector? [yes]: **yes**  
Operate in full-duplex mode? [no]: **no**  
Configure IP on this interface? [yes]: **yes**  
IP address for this interface: **172.1.2.3**  
Subnet mask for this interface [255.255.0.0] : **255.255.0.0**  
Class B network is 172.1.0.0, 26 subnet bits; mask is /16

The following configuration is displayed:

The following configuration command script was created:

```
hostname Router
enable secret 5 $1$D5P6$PYx41/lQIASK.HcSbf05q1
enable password xxxxxx
```

```
line vty 0 4
password xxxxxx
snmp-server community public
!
no ip routing
!
interface FastEthernet0/0
speed 100
half-duplex
ip address 172.1.2.3 255.255.0.0
!
interface FastEthernet0/0
shutdown
no ip address
end
```

**Step 10** Respond to the following prompts. Select [2] to save the initial configuration.

```
[0] Go to the IOS command prompt without saving this config.
[1] Return back to the setup without saving this config.
[2] Save this configuration to nvram and exit.
```

```
Enter your selection [2]: 2
Building configuration...
Use the enabled mode 'configure' command to modify this configuration.
```

```
Press RETURN to get started! RETURN
```

The user prompt is displayed.

```
Router>
```

**Step 11** Verify the initial configuration. See the “Verify the Initial Configuration” section on page 21 for verification procedures.

---

## Initial Configuration Using Cisco CLI—Manual Configuration

This section shows how to display a command-line interface (CLI) prompt for configuration by using the CLI. The section directs you to documentation for the CLI configuration. You can use the CLI if the following messages appear at the end of the startup sequence:

```
--- System Configuration Dialog ---
```

```
At any point you may enter a question mark '?' for help.
Use ctrl-c to abort configuration dialog at any prompt.
Default settings are in square brackets '[]'.
```

```
Would you like to enter the initial configuration dialog? [yes/no]:
```

If these messages do not appear, SDM and a default configuration file were installed on your router at the factory. To use SDM to configure the router, see the “Initial Configuration Using Cisco Router and Security Device Manager” section on page 17.

For help with interface and port numbering, see the “Interface Numbering” section on page 16.

---

**Step 1** To proceed with manual configuration using the CLI, enter **no** when the power-up messages end:

```
Would you like to enter the initial configuration dialog? [yes/no]: no
```

**Step 2** Press **Return** to terminate autoinstall and continue with manual configuration:

```
Would you like to terminate autoinstall? [yes] Return
```

Several messages appear, ending with a line similar to the following:

```
Copyright (c) 1986-2004 by Cisco Systems, Inc.
```

Compiled <date> <time> by <person>

**Step 3** Press **Return** to display the Router> prompt:

```
...  
flashfs[4]: Initialization complete.  
Router>
```

**Step 4** Enter privileged EXEC mode:

```
Router> enable  
Router#
```

**Step 5** For configuration procedures, refer to the applicable configuration instructions in the Cisco 1800 series software configuration documents. See the “Where to Go Next” section on page 21 for information about accessing these documents.



---

**Note** To avoid losing work you have completed, be sure to save your configuration regularly as you proceed. Use the **copy running-config startup-config** command to save the configuration to NVRAM.

---

**Step 6** When you have finished the initial configuration, verify the initial configuration. See the “Verify the Initial Configuration” section on page 21 for verification procedures.

---

## Verify the Initial Configuration

To verify that the new interfaces are operating correctly, perform the following tests:

- To verify that the interfaces are operating correctly and that the interfaces and line protocol are in the correct state—up or down—enter the **show interfaces** command.
- To display a summary status of the interfaces configured for IP, enter the **show ip interface brief** command.
- To verify that you configured the correct host name and password, enter the **show configuration** command.

When you complete and verify the initial configuration, your Cisco router is ready to configure for specific functions. See the “Where to Go Next” section on page 21 for information about locating documentation for advanced configuration procedures.

## 11 Where to Go Next

For additional configuration procedures, refer to the appropriate Cisco 1800 series routers documentation or Cisco IOS software documentation, available online on Cisco.com.



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**Tip** See the “Obtaining Documentation” section on page 22 for help in locating these documents.

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### To access documentation on Cisco.com

For Cisco 1861 router platform documentation, begin at Cisco.com at <http://www.cisco.com>, and select **Products & Solutions > Routers > 1800 Series Integrated Services Routers> Technical Documentation > Document type > Document**.

For Cisco IOS software documentation, start on Cisco.com at <http://www.cisco.com>, and select **Products & Solutions > IOS Software > Cisco IOS Software Releases > Your Cisco IOS software release**.

To obtain updated information about platform support for features, access Feature Navigator II at <http://www.cisco.com/go/fn>. (Use of Feature Navigator II requires a registered account on Cisco.com.)

### To access documentation using Cisco Connection Online (CCO):

For Cisco 1800 series routers platform documentation, begin at Cisco.com at <http://www.cisco.com>, and click the **Technical Documentation** tab under Quick Links. Under the Product Documentation heading, navigate to Modular Access Routers and to the documentation for your router.

For Cisco IOS software documentation, start on Cisco.com at <http://www.cisco.com>, and click the **Technical Documentation** tab under Quick Links. Under the Product Documentation heading, navigate to the Cisco IOS software documentation for the Cisco IOS software release that is installed on your router.

## 12 Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

### Cisco.com

You can access the most current Cisco documentation at this URL:

<http://www.cisco.com/univercd/home/home.htm>

You can access the Cisco website at this URL:

<http://www.cisco.com>

You can access international Cisco websites at this URL:

[http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml)

### Ordering Documentation

You can find instructions for ordering documentation at this URL:

[http://www.cisco.com/univercd/cc/td/doc/es\\_inpk/pdi.htm](http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm)

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:  
<http://www.cisco.com/en/US/partner/ordering/index.shtml>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

## 13 Documentation Feedback

You can send comments about technical documentation to [bug-doc@cisco.com](mailto:bug-doc@cisco.com).

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems  
Attn: Customer Document Ordering  
170 West Tasman Drive  
San Jose, CA 95134-9883

We appreciate your comments.

## 14 Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

## Cisco Technical Support Website

The Cisco Technical Support Website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, 365 days a year at this URL:

<http://www.cisco.com/techsupport>

Access to all tools on the Cisco Technical 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 this URL:

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

## Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool automatically provides recommended solutions. If your issue is not resolved using the recommended resources, your service request will be assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

<http://www.cisco.com/techsupport/servicerequest>

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco TAC engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)

EMEA: +32 2 704 55 55

USA: 1 800 553 2447

For a complete list of Cisco TAC contacts, go to this URL:

<http://www.cisco.com/techsupport/contacts>

## Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

## Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

<http://www.cisco.com/go/marketplace/>

- The Cisco *Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

<http://cisco.com/univercd/cc/td/doc/pcat/>

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:  
<http://www.ciscopress.com>
- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:  
<http://www.cisco.com/packet>
- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:  
<http://www.cisco.com/go/iqmagazine>
- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:  
<http://www.cisco.com/ipj>
- World-class networking training is available from Cisco. You can view current offerings at this URL:  
<http://www.cisco.com/en/US/learning/index.html>



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