



About This Guide

This section explains the objectives, intended audience, and organization of the *Cisco uBR904 Cable Modem Installation and Configuration Guide*, and defines the conventions used to convey instructions and information. See Terms and Acronyms on page xv for useful terminology and support information.

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly; therefore, it might be more up to date than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription. You can also access Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.cisco.com>.

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

Document Objectives

This installation guide explains the initial hardware installation and basic configuration procedures for the Cisco uBR904 cable modem units. It contains procedures for unpacking and installing the cable modem hardware, starting up the Cisco uBR904 cable modem, and configuring the cable modem automatically or manually.



Caution To ensure compliance with U.S. export laws and regulations for 56-bit Data Encryption Standard (DES), and to prevent problems later on, refer to the section “Compliance with U.S. Export Laws and Regulations Regarding Encryption” in the chapter “Product Overview,” later in this document.

Audience

To use this publication, you should be familiar with the installation, maintenance, and troubleshooting of cable television wiring and equipment, and preferably have experience as an electronic or electromechanical technician. You should also be familiar with the process of installing internal cards and external devices for personal computers.

Document Organization

This guide is organized into the following chapters and appendix:

- Chapter 1, “Product Overview,” describes the physical properties of the Cisco cable modem and provides a functional overview of the cable modem.
- Chapter 2, “Preparing for Installation,” is a preparatory section that describes safety considerations, tools required, an overview of the installation, and procedures you should perform *before* the actual installation.
- Chapter 3, “Installing the Cisco uBR904 Cable Modem,” provides instructions for installing the hardware and connecting the external network interface cables.
- Chapter 4, “Configuring the Cisco uBR904 Cable Modem,” provides instructions on configuring the cable modem in bridging and routing scenarios.
- Chapter 5, “Troubleshooting the Installation,” provides guidelines for troubleshooting the hardware installation.
- Appendix A, “ROM Monitor,” describes how to use the ROM monitor to isolate or rule out hardware problems encountered when installing your cable modem.

Document Conventions

This document uses the following conventions:

Convention	Meaning	Comments
Boldface	Commands and keywords you enter literally as shown	offset-list
<i>Italics</i>	Variables for which you supply values	command <i>type interface</i> You replace the variable with the type of interface. In contexts that do not allow italics, such as online help, arguments are enclosed in angle brackets (< >).
Square brackets ([])	Optional elements	command [abc] abc is optional (not required), but you can choose it.
Vertical bars ()	Separated alternative elements	command [abc def] You can choose either abc or def, or neither, but not both.
Braces ({ })	Required choices	command { abc def } You must use either abc or def, but not both.
Braces and vertical bars within square brackets ([{ }])	A required choice within an optional element	command [abc { def ghi }] You have three options: <ul style="list-style-type: none"> • Nothing • abc def • abc ghi

Document Conventions

Convention	Meaning	Comments
Caret character (^)	Control key	The key combinations ^D and Ctrl-D are equivalent: Both mean hold down the Control key while you press the D key. Keys are indicated in capital letters, but are not case sensitive.
A string	A nonquoted set of characters	For example, when setting an SNMP community string to <i>public</i> , do not use quotation marks around the string; otherwise, the string will include the quotation marks.
System prompts	Denotes interactive sessions, indicates that the user enters commands at the prompt	The system prompt indicates the current command mode. For example, the prompt Router (config) # indicates global configuration mode.
Screen font	Terminal sessions and information the system displays	
Angle brackets (<>)	Nonprinting characters such as passwords	
Exclamation points (!) at the beginning of a line	A comment line	Comments are sometimes displayed by the Cisco IOS software.



Caution Means *reader be careful*. You are capable of doing something that might result in equipment damage or loss of data.

Note Means *reader take note*. Notes contain helpful suggestions or references to materials not contained in this guide.



Timesaver Means *the described action saves time*. You can save time by performing the action described in the paragraph.



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 standard practices for preventing accidents. To see translations of the warnings that appear in this publication, refer to the *Regulatory Compliance and Safety Information* document that accompanied this device.

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. Voor vertalingen van de waarschuwingen die in deze publicatie verschijnen, kunt u het document *Regulatory Compliance and Safety Information* (Informatie over naleving van veiligheids- en andere voorschriften) raadplegen dat bij dit toestel is ingesloten.

Varoitus Tämä varoituserkki merkitsee vaaraa. Olet tilanteessa, joka voi johtaa ruumiinvammaan. Ennen kuin työskentelet minkään laitteiston parissa, ota selvää sähkökytkentöihin liittyvistä vaaroista ja tavanomaisista onnettomuuksien ehkäisykeinoista. Tässä julkaisussa esiintyvien varoitusten käännökset löydät laitteen mukana olevasta *Regulatory Compliance and Safety Information* -kirjasesta (määräysten noudattaminen ja tietoa turvallisuudesta).

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. Pour prendre connaissance des traductions d'avertissements figurant dans cette publication, consultez le document *Regulatory Compliance and Safety Information* (Conformité aux règlements et consignes de sécurité) qui accompagne cet appareil.

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. Übersetzungen der in dieser Veröffentlichung enthaltenen Warnhinweise finden Sie im Dokument *Regulatory Compliance and Safety Information* (Informationen zu behördlichen Vorschriften und Sicherheit), das zusammen mit diesem Gerät geliefert wurde.

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. La traduzione delle avvertenze riportate in questa pubblicazione si trova nel documento *Regulatory Compliance and Safety Information* (Conformità alle norme e informazioni sulla sicurezza) che accompagna questo dispositivo.

Advarsel Dette varselsymbolet betyr fare. Du befinner deg i en situasjon som kan føre til personskade. Før du utfører arbeid på utstyr, må du være oppmerksom på de faremomentene som elektriske kretser innebærer, samt gjøre deg kjent med vanlig praksis når det gjelder å unngå ulykker. Hvis du vil se oversettelser av de advarslene som finnes i denne publikasjonen, kan du se i dokumentet *Regulatory Compliance and Safety Information* (Overholdelse av forskrifter og sikkerhetsinformasjon) som ble levert med denne enheten.

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. Para ver as traduções dos avisos que constam desta publicação, consulte o documento *Regulatory Compliance and Safety Information* (Informação de Segurança e Disposições Reguladoras) que acompanha este dispositivo.

¡Advertencia! 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. Para ver una traducción de las advertencias que aparecen en esta publicación, consultar el documento titulado *Regulatory Compliance and Safety Information* (Información sobre seguridad y conformidad con las disposiciones reglamentarias) que se acompaña con este dispositivo.

Warning! 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. Se förklaringar av de varningar som förekommer i denna publikation i dokumentet *Regulatory Compliance and Safety Information* (Efterrättelse av föreskrifter och säkerhetsinformation), vilket medföljer denna anordning.

Terms and Acronyms

Note For a list and description of cable modem terminology, refer to “Cable Modem Terminology” in Chapter 1, “Product Overview.”

To fully understand the content of this guide, you should be familiar with the following terms and acronyms:

- dB—Decibel
- dBmV—A measurement of power used in the cable industry as decibels per millivolt (0 dBmV = 1 millivolt measured over a 75 ohm terminated lead, 1 dBmV = approximately -50 dB)
- DMA—Direct memory access
- DRAM—Dynamic random-access memory
- DCE—Data communications equipment
- DTE—Data terminal equipment
- HFC—Hybrid fiber coaxial (cable)
- NVRAM—Nonvolatile random-access memory
- OIR—Online insertion and removal
- PCI—Peripheral component interconnect
- SRAM—Static random-access memory
- EPROM—Erasable programmable read-only memory

- Gbps—Gigabits per second
- MB—Megabyte
- PCMCIA—Personal Computer Memory Card International Association
- RF—Radio frequency
- RFI—Radio frequency interference
- RISC—Reduced instruction set computing
- SIMM—Single in-line memory module
- SNMP—Simple Network Management Protocol
- TFTP—Trivial File Transfer Protocol

Cisco Connection Online

Cisco Connection Online (CCO) is Cisco Systems' primary, real-time support channel. Maintenance customers and partners can self-register on CCO to obtain additional information and services.

Available 24 hours a day, 7 days a week, CCO provides a wealth of standard and value-added services to Cisco's customers and business partners. CCO services include product information, product documentation, software updates, release notes, technical tips, the Bug Navigator, configuration notes, brochures, descriptions of service offerings, and download access to public and authorized files.

CCO serves a wide variety of users through two interfaces that are updated and enhanced simultaneously: a character-based version and a multimedia version that resides on the World Wide Web (WWW). The character-based CCO supports Zmodem, Kermit, Xmodem, FTP, and Internet e-mail, and it is excellent for quick access to information over lower bandwidths. The WWW version of CCO provides richly formatted documents with photographs, figures, graphics, and video, as well as hyperlinks to related information.

You can access CCO in the following ways:

- WWW: <http://www.cisco.com>
- WWW: <http://www-europe.cisco.com>
- WWW: <http://www-china.cisco.com>
- Telnet: cco.cisco.com
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

For a copy of CCO's Frequently Asked Questions (FAQ), contact cco-help@cisco.com. For additional information, contact cco-team@cisco.com.

Note If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or tac@cisco.com. To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or cs-rep@cisco.com.
