



Preface

This document is the *Cisco uBR924 Cable Access Router Hardware Installation Guide* and describes installing, powering on, and troubleshooting a Cisco uBR924 cable access router. The document also includes cabling and pinout information.

This section contains:

- Audience
- Purpose
- Organization
- Conventions
- Related Documentation
- Obtaining Documentation
- Obtaining Technical Assistance

Audience

This guide is intended for coaxial networking transmission installers and technicians who are familiar with the installation, maintenance, and troubleshooting of cable television wiring and equipment. Cable system installers and technicians should be familiar with their cable plant's base operating parameters and subscriber service offerings. Cable system support engineers and administrators should be acquainted with Ethernet and IEEE 802.3 type data communications networks.



Note

This document contains instructions to install or configure the Cisco uBR924 cable access router using procedures that only qualified personnel should perform. This document is not intended for subscribers. See the "Related Documentation" section of this preface for the documentation available for subscribers.

Purpose

This guide covers the physical installation of the Cisco uBR924 cable access router. These procedures include site preparation, the physical placement of the router in an appropriate location, the cabling required for the power, Ethernet, voice, and cable connections, and verification of the installation at the router's initial power-on.

These procedures do not require a connection to the router's console port, nor do they require access to the router's command-line interface (CLI). However, CLI access might be required to configure the router and to bring it to full operability. See the *Cisco uBR924 Cable Access Router Software Configuration Guide* for instructions on configuring the router for network operation.

Organization

This guide is organized into the following chapters and appendixes:

Table 1 **Organization**

Chapter	Title	Description
Chapter 1	Product Overview	Describes the Cisco uBR924 cable access router, its operation, and its interaction with the Cable Modem Termination System (CMTS).
Chapter 2	Preparing for Installation	Outlines site preparation requirements to meet before installing a Cisco uBR924 cable access router at a subscriber site. The chapter also discusses safety and agency considerations.
Chapter 3	Installing the Cisco uBR924 Router	Provides instructions to connect the Cisco uBR924 cable access router, perform its initial power-on, and verify its basic functionality.
Chapter 4	Troubleshooting	Contains basic installation troubleshooting information appropriate to field service technicians. (The troubleshooting information in this appendix does not require access to the router's console port or CLI interface.)
Appendix A	Technical Specifications	Contains the physical, environmental, power, data, and voice technical specifications for the router.
Appendix B	Connector and Cable Specifications	Contains the technical description of the interfaces on the Cisco uBR924 cable access router and the most common cables that are used with it.
Appendix C	Regulatory Compliance and Safety Information	Contains international agency compliance, safety, and statutory information for the Cisco uBR924 cable access router. This appendix also contains safety warnings translated into multiple languages.

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
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	

Convention	Meaning	Comments
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 appendix, "Regulatory Compliance and Safety Information" - Translated Safety Warnings.)

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 aanhangsel "Regulatory Compliance and Safety Information" (Vertalingen van veiligheidsvoorschriften) raadplegen.)

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. (Tässä julkaisussa esiintyvien varoitusten käännökset löydät liitteestä "Regulatory Compliance and Safety Information" (käännetyt turvallisuutta koskevat varoitukset).)

- Attention** Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures. Avant d'accéder à cet équipement, soyez conscient des dangers posés par les circuits électriques et familiarisez-vous avec les procédures courantes de prévention des accidents. Pour obtenir les traductions des mises en garde figurant dans cette publication, veuillez consulter l'annexe intitulée « Regulatory Compliance and Safety Information » (Traduction des avis de sécurité).
- 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 Anhang mit dem Titel "Regulatory Compliance and Safety Information" (Übersetzung der Warnhinweise).)
- Avvertenza** Questo simbolo di avvertenza indica un pericolo. Si è in una situazione che può causare infortuni. 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 nell'appendice, "Regulatory Compliance and Safety Information" (Traduzione delle avvertenze di sicurezza).
- 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 vedlegget "Regulatory Compliance and Safety Information" [Oversatte sikkerhetsadvarsler].)
- 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 apêndice "Regulatory Compliance and Safety Information" - "Traduções dos Avisos de Segurança").
- 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 traducciones de las advertencias que aparecen en esta publicación, consultar el apéndice titulado "Regulatory Compliance and Safety Information.")
- 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. (Se förklaringar av de varningar som förekommer i denna publikation i appendix "Regulatory Compliance and Safety Information" [Översatta säkerhetsvarningar].)

Related Documentation

Refer to the following Cisco documents for related information. The documents can be found online at Cisco Connection Online (CCO) or on the Documentation CD-ROM. You can also order printed copies of most current documents.



Note

The list that follows is not all-inclusive. New documents and revisions occur frequently.

Service Provider Subscriber-Related Publications

- *Cisco uBR924 Cable Access Router Hardware Installation Guide* (this manual)
- *Cisco uBR924 Cable Access Router Software Configuration Guide*
- *Cisco uBR924 Cable Access Router Installation and Startup Quick Start Guide*
- *Bridging and Routing Features for the Cisco uBR924 Cable Access Router*
- *Troubleshooting Tips for the Cisco uBR924 Cable Access Router*

Subscriber Publications

- *Quick Start, Cisco uBR924 Cable Access Router Subscriber Setup*



Note

Service provider and subscriber publications for other models of Cisco uBR900 series cable access routers are also available on CCO.

CMTS Hardware Installation Publications

- *Cisco uBR7200 Series Universal Broadband Router Hardware Installation Guide*
- *Cisco uBR7200 Series Universal Broadband Router Software Configuration Guide*
- *Cisco uBR7200 Series Universal Broadband Router Cable Modem Card Installation and Configuration* publication
- *Cisco uBR7200 Series Universal Broadband Router Port Adapter Installation and Configuration* publication
- *Cisco uBR7200 Series Universal Broadband Router 550-Watt DC-Input Power Supply Replacement Instructions*
- *Cisco uBR7200 Series Universal Broadband Router Subchassis and Midplane Replacement Instructions*
- *Cisco uBR7200 Series Rack-Mount and Cable-Management Kit Installation Instructions*
- *Cisco uBR7200 Series Universal Broadband Router Fan Tray Replacement Instructions*
- *Cisco uBR7200 Series Universal Broadband Router Feature Enhancements* publication

Cisco IOS Publications

- Cisco IOS Release 12.1 New Feature Sets documentation for feature module descriptions on Cisco IOS 121-based releases
- Cisco IOS Release 12.1 Configuration Guides and Command References for task and command descriptions on Cisco IOS 12.1based releases

**Note**

Use the Cisco IOS Release *Command Reference Master Index(es)* to obtain document pointers for specific software release feature sets and commands.

Configuration Editor and Network Management Publications

- *Cisco Cable Configuration Guide* for information on the Cisco Network Registrar (CNR) product
- *CiscoView: Internetworking Device Monitoring and Management*
- *CiscoView Incremental Installation Quick Reference Guide*
- CiscoWorks documentation for networks that use the Simple Network Management Protocol (SNMP) to monitor Cisco uBR924 cable access routers
- MIB information is available on CCO at <ftp://ftp.cisco.com/pub/mibs>.

Obtaining Documentation

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.cisco.com>.

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM is updated monthly. Therefore, it is probably more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

Ordering Documentation

Registered CCO users can order the Documentation CD-ROM and other Cisco Product documentation through our online Subscription Services at <http://www.cisco.com/cgi-bin/subcat/kaojump.cgi>.

Nonregistered CCO users can order documentation through a local account representative by calling Cisco's corporate headquarters (California, USA) at 408 526-4000 or, in North America, call 800 553-NETS (6387).

Obtaining Technical Assistance

Cisco provides Cisco Connection Online (CCO) as a starting point for all technical assistance. Warranty or maintenance contract customers can use the Technical Assistance Center. All customers can submit technical feedback on Cisco documentation using the web, e-mail, a self-addressed stamped response card included in many printed documents, or by sending mail to Cisco.

Cisco Connection Online

Cisco continues to revolutionize how business is done on the Internet. Cisco Connection Online 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.

CCO's broad range of features and services helps customers and partners to streamline business processes and improve productivity. Through CCO, you will find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online support services, 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 CCO to obtain additional personalized information and services. Registered users may order products, check on the status of an order and view benefits specific to their relationships with Cisco.

You can access CCO in the following ways:

- WWW: www.cisco.com
- Telnet: [cco.cisco.com](telnet://cco.cisco.com)
- Modem using standard connection rates and the following terminal settings: VT100 emulation; 8 data bits; no parity; and 1 stop bit.
 - From North America, call 408 526-8070
 - From Europe, call 33 1 64 46 40 82

You can e-mail questions about using CCO to cco-team@cisco.com.

Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to warranty or maintenance contract customers who need technical assistance with a Cisco product that is under warranty or covered by a maintenance contract.

To display the TAC web site that includes links to technical support information and software upgrades and for requesting TAC support, use www.cisco.com/techsupport.

To contact by e-mail, use one of the following:

Language	E-mail Address
English	tac@cisco.com
Hanzi (Chinese)	chinese-tac@cisco.com
Kanji (Japanese)	japan-tac@cisco.com
Hangul (Korean)	korea-tac@cisco.com
Spanish	tac@cisco.com
Thai	thai-tac@cisco.com

In North America, TAC can be reached at 800 553-2447 or 408 526-7209. For other telephone numbers and TAC e-mail addresses worldwide, consult the following web site:
<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>.

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, for your convenience many documents contain a response card behind the front cover. Otherwise, you can mail your comments to the following address:

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

We appreciate and value your comments.

