



Preface

This section describes the purpose, audience, organization, and conventions used in this guide. This section also provides a revision history and a list of related documents as well as instructions for obtaining technical assistance and additional information.

Document Revision History

Date	Revision	Reason
February 16, 2015	—	Updated information about the Cisco 6 Gbps Wideband Shared Port Adapter.
September 08, 2014	—	Added information about the Cisco 6 Gbps Wideband Shared Port Adapter.
August 4, 2014	—	Added Cisco uBR-MC3GX60V-RPHY Line Card information.
July 6, 2012	OL-18259-10	Added information about the second-generation cable management bracket on the Cisco uBR10012 router.
October 11, 2011	OL-18259-09	Added instructions on cabling and connecting the Lineage power shelf to the UBR10-PWR-DC-PLUS= power entry module on the Cisco uBR10012 router.
June 20, 2011	OL-18259-08	Added the SFP modules supported on the 1-Port 10-Gigabit Ethernet SPA.
April 29, 2011	OL-18259-07	Added information about Lineage power shelf for UBR10-PWR-DC PEM— brief overview and instructions on cabling the shelf to the Cisco uBR10012 chassis. Updated the ferrite beads to be used with the Lineage power shelf.
March 10, 2011	OL-18259-06	Added information about fan assembly module (UBR10012-FAN-PLUS=), 3300 W AC PEM (UBR10-PWR-AC-PLUS=), and 3300 W DC PEM module.
November 29, 2010	OL-18259-05	Added Cisco UBR-MC3GX60V cable interface line card information.
September 01, 2010	OL-18259-04	Updated for DC PEM Requalification. Added table 2-2 and Table A-1 with the updated DC PEM power specifications.

Date	Revision	Reason
May 10, 2010	OL-18259-03	Added information about the 10 and 15 downstream channel licenses.
November 16, 2009	OL-18259-02	Added Cisco UBR-MC20X20V cable interface line card information.
December 15, 2008	OL-18259-01	Updated with PRE4 information. Moved the document to online only.
April 05, 2006	78-11450-03 Rev.B0	Updated Table 3-6.
June 28, 2005	OL-5000-03	Added HHGE line card information.
October 18, 2004	OL-5000-02	Updated with PRE2 information.
December 20, 2003	OL-5000-01	Moved document to online only, updated format, added AC PEM specifications, and corrected PEM information, corrected PRE information, revised line card installation procedure.
March 20, 2001	78-11450-03	Original publication and updates.

Purpose

This installation guide explains the initial hardware installation and basic configuration procedures for the Cisco uBR10012 universal broadband router. It contains procedures for installing the router hardware, creating a basic software configuration file, and starting up the router. After you complete the installation and basic configuration procedures covered in this guide, use the appropriate companion publications to more completely configure your system. See the documents listed in the [“Related Documentation”](#) section on page xiii.

Audience

To use this publication, you should be familiar not only with Cisco router hardware and cabling, but also with electronic circuitry and wiring practices. You should be able to perform basic network configuration procedures, and preferably have experience as an electronic or electromechanical technician.



Warning

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

Document Organization

This publication is organized as follows:

Chapter	Title	Description
Chapter 1	Cisco uBR10012 Universal Broadband Router Overview	Describes the physical properties of the Cisco uBR10012 components and a functional overview of the system.
Chapter 2	Preparing for Installation	Describes safety considerations, tools required, site requirements, and procedures you should perform <i>before</i> the installation.
Chapter 3	Installing the Cisco uBR10012 Router	Provides information for installing the router hardware, connecting system cables, initial system startup, and verifying system operation.
Chapter 4	Troubleshooting the Installation	Provides basic troubleshooting procedures for the hardware installation.
Chapter 5	Maintaining the Cisco uBR10012 Router	Describes the procedures required to perform routine maintenance and to remove and replace field replaceable units (FRUs) in the Cisco uBR10012 router.
Appendix A	Technical Specifications	Contains the electrical and physical specifications for the Cisco uBR10012 router.
Appendix B	Cable Specifications	Provides cabling information and pinout information for the router.
Appendix C	Frequency Allocation	Provides the standard frequency allocation channel plans for cable networks.
Appendix D	Manufacturers for Hardware Components	Lists vendors for the auxiliary equipment that is normally required for a headend installation.

Related Documentation

The following is a list of documents and URLs for the Cisco uBR10012 router:

- *Cisco uBR10012 Universal Broadband Router Software Configuration Guide*
http://www.cisco.com/web/techdoc/cable/Config/Sw_conf.html
- *Regulatory Compliance and Safety Information for the Cisco uBR10012 Universal Broadband Router*
<http://www.cisco.com/en/US/docs/cable/cmts/ubr10012/regulatory/compliance/ub10rcsi.html>

Additional documentation can be found here:

- For information on installing and replacing field-replaceable units (FRUs), such as the flash memory on Cisco uBR10012 routers, see the document for each FRU or go to the following URL:
http://www.cisco.com/en/US/products/hw/cable/ps2209/prod_installation_guides_list.html
- For detailed Cisco IOS software configuration information and support, refer to the modular configuration and modular command reference publications in the Cisco IOS software configuration documentation set that corresponds to the software release installed on your Cisco hardware at the following URL:
http://www.cisco.com/en/US/products/ps6350/tsd_products_support_series_home.html

Specifically, you should refer to the following publications:

- For information on setting up quality of service (QoS), refer to the *Quality of Service Solutions Configuration Guide* and *Quality of Service Solutions Command Reference* publications.
- For information on encryption, refer to the *Security Configuration Guide* and the *Security Command Reference* publications.
- For information on interfaces, refer to the *Cisco IOS Interface Configuration Guide* and the *Cisco IOS Interface Command Reference* publications.
- For information on IP, refer to the *Network Protocols Configuration Guide, Part 1* and the *Network Protocols Command Reference, Part 1* publications.

You can also refer to the Cisco IOS software release notes for the version of software you are using on your Cisco uBR10012 router. Release notes for the Cisco uBR10012 router are found at the following URL:

http://www.cisco.com/en/US/products/hw/cable/ps2209/prod_release_notes_list.html

- For information about cleaning fiber-optic connections, go to the following URL:
http://www.cisco.com/en/US/tech/tk482/tk876/technologies_white_paper09186a0080254eba.shtml

Conventions



Note

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



Tip

Means the following information might help you solve a problem.



Caution

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

Safety Information Referral Warning

See the following URL for the foreign language translations of all the warnings used in this guide:

<http://www.cisco.com/en/US/docs/cable/cmts/ubr10012/regulatory/compliance/ub10rcsi.html>



Warning

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 to locate its translation in the translated safety warnings that accompanied this device.
Statement 1071

SAVE THESE INSTRUCTIONS

Terms and Acronyms

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



Note

A complete list of terms and acronyms is available in the *Internetworking Terms and Acronyms* guide, available on Cisco.com and the Documentation CD-ROM. Also see the Glossary section at the end of this guide.

- ABR—Available bit rate
- AAL5—ATM adaptation layer 5
- AWG—American wire gauge
- CoS—Class of service
- CPE—Customer premises equipment
- CRC—Cyclic redundancy check
- CSU—Channel service unit
- CTS—Clear To Send
- DCD—Data Carrier Detect
- DCE—Data communications equipment
- DIMM—Dual in-line memory module
- DSR—Data set ready
- DSU—Data service unit
- DTE—Data terminal equipment
- DTR—Data terminal ready
- EMC—Electromagnetic compliance
- EMI—Electromagnetic interference
- ESD—Electrostatic discharge
- FRU—Field-replaceable unit (router components that do not require replacement by a Cisco-certified service provider)
- FTP—Foil twisted-pair
- HDLC—High-Level Data Link Control
- HHGE—Half-Height Gigabit Ethernet
- IPSec—IP Security Protocol
- MAC—Media Access Control
- MB—Megabyte
- MM—Multimode
- nrt-VBR—Non-real time variable bit rate
- NVRAM—Nonvolatile random-access memory
- OAM AIS—Operation, Administration, and Maintenance alarm indication signal

- OIR—Online insertion and removal
- PCI—Peripheral Component Interconnect
- PCMCIA—Personal Computer Memory Card International Association
- PPP—Point-to-Point Protocol
- QoS—Quality of service
- rcp—remote copy protocol
- RFI—Radio frequency interference
- RIP—Routing Information Protocol
- RISC—Reduced Instruction Set Computing
- RTS—Request To Send
- SDRAM—Synchronous dynamic random-access memory
- SIMM—Single in-line memory module
- SMI—Single-mode intermediate reach
- SNMP—Simple Network Management Protocol
- TCP/IP—Transmission Control Protocol/Internet Protocol
- TDM—Time-division multiplexing
- TFTP—Trivial File Transfer Protocol
- UBR—Unspecified bit rate
- UDP—User Datagram Protocol
- UNI—User-Network Interface
- UTP—Unshielded twisted-pair
- VC—Virtual circuit
- VPN—Virtual Private Network

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS Version 2.0.