Preface

This guide documents processes and procedures for user level hardware troubleshooting on the Cisco uBR10012 universal broadband router. For complete configuration instructions, please refer to the *Cisco uBR10012 Universal Broadband Router Software Configuration Guide* and the documents listed in the "Related Documentation" section on page viii.

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Purpose

The Cisco uBR10012 router provides data and Voice over IP (VoIP) services to cable modems (CMs) and customer premises equipment (CPE) devices over a cable TV (CATV) network, supplying high-speed Internet and voice connectivity over the coaxial cable that provides TV and other signals. Many of the Cisco uBR10012 modules are available in redundant configurations, so that the failure of one module does not affect systems operations. This guide provides troubleshooting steps for a failed component that you can take before system failure occurs and before intervention from higher level support agencies becomes necessary.

Audience

To benefit from this guide, you must be experienced using Cisco IOS and have some responsibility for installing, configuring, or operating the Cisco uBR10012 router. Knowledge of basic cable data network operations and of the Data-Over-Cable Service Interface Specifications (DOCSIS), which define the transmission of data and other services over a coaxial cable TV network.

Document Organization

The sections of this guide are as follows:

Chapter	Description
Chapter 1, "Basic Troubleshooting Tasks and Startup Issues"	Basic procedures that users should perform before undertaking a detailed troubleshooting analysis of the Cisco uBR10012 router or logging a case with the Cisco Technical Assistance Center (TAC).
Chapter 2, "PEM Faults and Fan Assembly Failures"	Methods for troubleshooting faults involving the Cisco uBR10012 Power Entry Modules (PEMs) and blower modules.
Chapter 3, "Troubleshooting PRE-1 Modules"	How to troubleshoot Performance Routing Engine (PRE-1) modules. It provides information on troubleshooting PRE-1 fault states, the management Ethernet port, and the serial port.
Chapter 4, "Troubleshooting Line Cards"	Troubleshooting faults for all following Cisco uBR10012 line cards.
Chapter 5, "Replacing or Recovering Passwords"	How to recover a lost enable or console login password, and how to replace a lost enable secret password on the Cisco uBR10012 router.
Appendix A, "Unsupported Commands"	A list of the commands that are not supported in Cisco IOS Release 12.2(15)BC1 for the Cisco uBR10012 router.
Appendix B, "Recommended Tools and Test Equipment"	A list of basic tools and test equipment necessary to perform maintenance and troubleshooting tasks on the Cisco uBR10012 router.

Related Documentation

When troubleshooting the Cisco uBR10012 router, you should use the *Cisco uBR10012 Universal Broadband Router Troubleshooting Guide* with the following documents:

- *Cisco uBR10012 Universal Broadband Router Release Notes*—Provides the most up-to-date information about software version requirements for using the router. It also provides information about bugs and workarounds. See the following URL:

  http://www.cisco.com/en/US/docs/cable/cmts/ubr10012/release/notes/12_3bc/ubr10k_123bc_rn.html

- *Cisco uBR10012 Universal Broadband Router Software Configuration Guide*—Contains detailed information on the configuration and administration of the Cisco uBR10012 router. See the following URL:

  http://www.cisco.com/en/US/docs/cable/cmts/ubr10012/configuration/guide/scg.html

- *Cisco uBR10012 Universal Broadband Router Hardware Installation Guide*—Contains information about the hardware of the Cisco uBR10012 router, how to install the router, connect its cables, and start the system up for the first time. See the following URL:

  http://www.cisco.com/en/US/docs/cable/cmts/ubr10012/installation/guide/hig.html

For more information about the IOS software that runs on the Cisco uBR10012 router, see the Cisco IOS command reference books and configuration guides:

- *Cisco Broadband Cable Command Reference Guide*—Describes the cable specific commands used on the Cisco uBR10012 router. See the following URL:

    http://www.cisco.com/en/US/docs/ios/cable/command/reference/cbl_book.html

- Cisco IOS Release 12.2 Configuration Guides and Command References—Describes the commands and configuration used in Cisco IOS Release 12.2. See the following URL:

    http://www.cisco.com/en/US/docs/ios/12_2/ip/configuration/guide/fipr_c.html

Obtaining Documentation

Cisco documention 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 on the World Wide Web at this URL:

http://www.cisco.com/cisco/web/psa/default.html?mode=prod

You can access the Cisco website at this URL:

http://www.cisco.com

International Cisco websites can be accessed from this URL:

http://www.cisco.com/web/siteassets/locator/index.html

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/en/US/docs/general/Illus_process/PDI/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/docs/general/Illus_process/PDI/pdi.htm

- 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).

Documentation Feedback

You can submit e-mail comments about technical documentation to 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.

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, the Cisco Technical Assistance Center (TAC) provides 24-hour-a-day, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance. If you do not hold a valid Cisco service contract, please contact your reseller.

Cisco TAC Website

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

http://www.cisco.com/cisco/web/support/index.html

Accessing all the tools on the Cisco TAC website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a login ID or password, register at this URL:

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

Opening a TAC Case

Using the online TAC Case Open Tool is the fastest way to open P3 and P4 cases. (P3 and P4 cases are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using the recommended resources, your case will be assigned to a Cisco TAC engineer. The online TAC Case Open Tool is located at this URL:

http://tools.cisco.com/ServiceRequestTool/create/launch.do

For P1 or P2 cases (P1 and P2 cases are those in which your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case 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 listing of Cisco TAC contacts, go to this URL:

http://www.cisco.com/en/US/support/tsd_cisco_worldwide_contacts.html

TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

Priority 1 (P1)—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.

Priority 2 (P2)—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.

Priority 3 (P3)—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.

Priority 4 (P4)—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. Go to this URL to visit the company store:

  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://www.cisco.com/en/US/products/index.html

- *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 online at this URL:

  http://www.ciscopress.com/index.asp

- *Packet* magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/web/about/ac123/ac114/about_cisco_packet_magazine.html

- *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/web/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html

- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:

  http://www.cisco.com/web/learning/index.html