



Preface

This preface describes the objectives and organization of this document and explains how to find additional information on related products and services. This preface contains the following sections:

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Document Revision History

[Table 1](#) records technical changes to this document.

Table 1 Document Revision History

Release No.	Revision	Date	Change Summary
12.3(33)SCB	OL-10705-04	March 2009	<p>The following features have been implemented in this release:</p> <ul style="list-style-type: none"> • DOCSIS 3.0 support for Cisco 10000 SIP-600 SPA Interface Processor. • Support for 5-port Gigabit Ethernet SPA. • Support for 1-port 10 Gigabit Ethernet SPA. • Voice support on wideband (WB) modems for DOCSIS 3.0. • Dynamic Bandwidth Sharing support for DOCSIS 3.0. • Support for DOCSIS 3.0 WQF Scheduler for QoS congestion management. • DOCSIS 3.0 Downstream Bonding for Bronze Certification
12.3(23)BC	OL-10705-03	December 2007	<p>The following key features have been implemented in this release:</p> <ul style="list-style-type: none"> • Channel bonding of downstream channels from the SPA for DOCSIS 3.0 modem support. • DOCSIS 1.x/2.0 modem support from SPA RF channels. • Primary-capable SPA RF channels used for Mac Management Messages traffic. • Modular-cable interfaces to support narrowband channels. • Concept of Channel Grouping Domain. • RF channel bandwidth sharing between modular-cable and wideband interfaces. • Downstream External PHY Interface (DEPI). • Primary downstream channel selection. • High availability support for cable modems.
12.3(21a)BC3	OL-10705-02	August 2007	Added information on the Linksys WCM300-NA, WCM300-EURO, WCM300-J modems.
12.3(21)BC	OL-10705-01	February 2007	First release.

Objectives

This document describes the Cisco DOCSIS 3.0 Downstream Solution for Cisco IOS Releases 12.2(33)SCB, 12.3(23)BC and 12.3(21)BC. It explains how to design and implement a cable network that uses the DOCSIS 3.0 Downstream features. In this document, Cisco DOCSIS 3.0 Downstream Solution, Release 2 is used synonymously with the Cisco IOS Release 12.3(23)BC.

Document Organization

This publication is organized as follows:

Chapter	Title	Description
Chapter 1	Solution Overview	Provides an overview of the Cisco DOCSIS 3.0 Downstream Solution.
Chapter 2	Cisco DOCSIS 3.0 Downstream Solution Components	Describes the components of the Cisco DOCSIS 3.0 Downstream Solution.
Chapter 3	Cisco DOCSIS 3.0 Downstream Solution Architecture	Explains the architecture used for the Cisco DOCSIS 3.0 Downstream Solution.
Chapter 4	Implementing and Configuring the Solution	Provides implementation and configuration information for the Cisco DOCSIS 3.0 Downstream Solution.
Chapter 5	Monitoring and Troubleshooting Narrowband and Wideband Components	Provides an introduction to monitoring and troubleshooting the wideband components of the Cisco DOCSIS 3.0 Downstream Solution.
Appendix A	Cisco DOCSIS 3.0 Downstream Solution, Component Compatibility Matrix	Provides a summary of component compatibility between Cisco Wideband Cable Solution, Release 1.0 and Cisco DOCSIS 3.0 Downstream Solution for Cisco IOS Releases 12.3(23)BC and 12.2(33)SCB.

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

Related Topic	Document Title
Documentation roadmap	<ul style="list-style-type: none"> • <i>Cisco uBR7200 Series Routers and Cisco uBR10012 Universal Broadband Router Documentation Roadmap</i> http://www.cisco.com/en/US/partner/products/hw/cable/ps2209/products_documentation_roadmap09186a0080733a04.html
Cisco uBR10012 hardware installation	<ul style="list-style-type: none"> • Cisco uBR10012 Universal Broadband Router SIP and SPA Hardware Installation Guide http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/install_upgrade/uBR10012/hwsipspa.html • Cisco uBR10012 Universal Broadband Router Hardware Installation Guide http://www.cisco.com/en/US/docs/cable/cmts/ubr10012/installation/guide/hig.html • <i>Regulatory Compliance and Safety Information for the Cisco uBR10012 Universal Broadband Router</i> http://www.cisco.com/en/US/docs/cable/cmts/ubr10012/regulatory/compliance/ub10rcsi.html • <i>Cisco uBR10012 Universal Broadband Router Performance Routing Engine Module</i> http://www.cisco.com/en/US/docs/interfaces_modules/cable/performance_routing_engine/installation/guide/pre5096.html

Related Topic	Document Title
Cisco uBR10012 field-replaceable units (FRUs) and fiber-optic maintenance	<ul style="list-style-type: none"> <li data-bbox="440 260 1482 373">• <i>Cisco uBR10012 Install and Upgrade Guides</i> http://www.cisco.com/en/US/products/hw/cable/ps2209/prod_installation_guides_list.html <li data-bbox="440 380 1482 499">• 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
Cisco uBR10012 software, configuration, and features	<ul style="list-style-type: none"> <li data-bbox="440 506 1482 646">• <i>Cisco uBR10012 Universal Broadband Router SIP and SPA Software Configuration Guide</i> http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/configuration/ubr10012/12.3_21_bc/swsipspa_book.html <li data-bbox="440 653 1482 766">• <i>Cisco Cable Wideband Solution Design and Implementation Guide, Release 1.0</i> http://www.cisco.com/en/US/docs/cable/cmts/wideband/solution/guide/release_1.0/2compon.html <li data-bbox="440 772 1482 913">• Release Notes for Cisco uBR10012 Universal Broadband Router for Cisco IOS Release 12.3 BC http://www.cisco.com/en/US/docs/cable/cmts/ubr10012/release/notes/12_3bc/ubr10k_123bc_rn.html <li data-bbox="440 919 1482 1012">• <i>Cisco uBR10012 Universal Broadband Router Software Configuration Guide</i> http://www.cisco.com/en/US/docs/cable/cmts/ubr10012/configuration/guide/scg.html <li data-bbox="440 1018 1482 1131">• Cisco uBR10012 Router Software Features http://www.cisco.com/en/US/products/hw/cable/ps2217/products_feature_guides_list.html <li data-bbox="440 1138 1482 1230">• <i>Cisco Cable Modem Termination System Feature Guide</i> http://www.cisco.com/en/US/docs/cable/cmts/feature/guide/cmtsfg.html <li data-bbox="440 1236 1482 1350">• <i>Wideband Modem Resiliency Feature Guide</i> http://www.cisco.com/en/US/docs/ios/cable/configuration/guide/ubr_wm_resiliency.html <li data-bbox="440 1356 1482 1470">• <i>Dynamic Bandwidth Sharing on the Cisco CMTS Router Feature Guide</i> http://www.cisco.com/en/US/docs/ios/cable/configuration/guide/cmts_dyn_bw_sharing.html <li data-bbox="440 1476 1482 1589">• <i>DOCSIS WFQ Scheduler on the Cisco CMTS Routers Feature Guide</i> http://www.cisco.com/en/US/docs/ios/cable/configuration/guide/ubr_docsis_wfq_sch.html

Related Topic	Document Title
Cisco IOS command reference and related information	<ul style="list-style-type: none"> For Cisco Wideband SIP and Wideband SPA commands, see Chapter 11, “SIP and SPA Commands” in the <i>Cisco uBR10012 Universal Broadband Router SIP and SPA Software Configuration Guide</i>. <i>Cisco Broadband Cable Command Reference Guide</i> http://www.cisco.com/en/US/docs/ios/cable/command/reference/cbl_book.html <i>Cisco IOS Release 12.3 web page</i> http://www.cisco.com/en/US/products/sw/iosswrel/ps5187/index.html <i>Cisco CMTS Error Messages</i> http://www.cisco.com/en/US/docs/cable/cmts/system/message/uberrchap2.html <i>Cisco CMTS Universal Broadband Router MIB Specifications Guide</i> http://www.cisco.com/en/US/docs/cable/cmts/mib/reference/guide/mibv5ubr.html
Additional cable/broadband information resources	<ul style="list-style-type: none"> Cisco uBR10012 troubleshooting and alerts http://www.cisco.com/en/US/products/hw/cable/ps2209/tsd_products_support_troubleshoot_and_alerts.html Cisco Cable/Broadband Software Center web page http://www.cisco.com/en/US/products/ps6895/serv_group_home.html Cisco Cable/Broadband Technical Support web page http://www.cisco.com/cisco/web/psa/default.html?mode=tech Cisco Multiservice Broadband Cable Guide http://www.cisco.com/en/US/prod/collateral/video/ps8806/ps5684/ps2209/prod_brochure09186a008014eeb0.pdf

Conventions

This guide uses the following conventions for command syntax descriptions and textual emphasis:

Table 2 Command Syntax and Emphasis Conventions

Convention	Description
boldface font	Commands and keywords are in boldface .
<i>italic font</i>	Arguments for which you supply values are in <i>italics</i> .
[]	Elements in square brackets are optional.
{x y z}	Alternative, mutually exclusive, keywords are grouped in braces and separated by vertical bars.
[x y z]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
screen font	Terminal sessions and information the system displays are in screen font.
boldface screen font	Information you must enter is in boldface screen font .

Table 2 *Command Syntax and Emphasis Conventions (continued)*

Convention	Description
<i>italic screen font</i>	Arguments for which you supply values are in <i>italic screen font</i> .
^	The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key.
< >	Nonprinting characters, such as passwords, are in angle brackets in contexts where italics are not available.
[]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

Note This symbol means *reader take note*. Notes contain helpful suggestions or references to material not This symbol means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation* at:

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