Release Notes for Cisco BLISS for Cable Release 2.2

These release notes for the Cisco Broadband Local Integrated Services Solution (BLISS) for Cable describe the new features provided in Release 2.2.

For an overview of Cisco BLISS for Cable Release 2.2, as well as the components supported in Cisco BLISS for Cable, search for the BLISS for Cable Information Access Manager on www.cisco.com.

The call management server (CMS) and media gateway controller (MGC) functions are provided by the Cisco BTS 10200 Softswitch. For an overview of the components, functions, and signaling protocols supported by the Cisco BTS 10200 Softswitch, see the Cisco BTS 10200 *System Description (Release 4.5)*. For information on the latest release, see the *Cisco BTS 10200 Softswitch Release Notes for Release 4.5*.

Contents

This document includes the following sections:

CISCO SYSTEMS

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Note These release notes are updated periodically on an as-needed basis. Please read the applicable sections in their entirety, because they contain important operational information that can impact your network.

Major, Minor, and Maintenance Releases

This section describes the differences between major, minor, and maintenance releases. Each Cisco BLISS for Cable major release can include a series of minor (2.n) and/or maintenance releases (2.n.n) following the major release. Release notes are issued only if new information is available.

- **Major Release**—Major software releases contain significant new features, enhancements, changes, and/or defect fixes. The major release number increments with each new version (1.0, 2.0, 3.0, and so on), and numbers cannot be skipped. Subsequent major releases are based on previous major releases and contain defect fixes from each previous release throughout the life cycle of the release.

- **Minor Release**—Minor (or "point") software releases usually have a few new features of limited scope, enhancements, and/or defect fixes. The minor release number increments as content is added, and minor release numbers can be nonsequential (2.1, 2.2, 2.4, and so on). Subsequent minor releases are based on previous major or minor releases and contain defect fixes from each previous major or minor release throughout the life cycle of the release.

- **Maintenance Release**—Maintenance software releases have no new features or enhancements. Maintenance releases include only defect fixes to address specific problems. Maintenance release numbers increment as content is added, and numbers can be nonsequential (2.2.1, 2.2.3, and so on). Subsequent maintenance releases are based on previous major, minor, or maintenance releases and contain defect fixes from previous releases throughout the life cycle of the release.

System Requirements

Table 1 details the Cisco BLISS for Cable Release 2.2 components, their role in the solution, and supported hardware platforms and software releases.

Note The Cisco BTS 10200 Softswitch user documentation is password protected. See your Cisco representative for access information.

Table 1 Cisco BLISS for Cable Components

Component	Role in the Solution	Hardware	Software and Release Level
Call Management Server (CMS)	The CMS: • Provides the call-control intelligence for establishing, maintaining, routing, and terminating voice calls. • Provides call-feature intelligence for telephony services. • Serves as an interface to enhanced application platforms, such as voice mail and unified messaging.	The Cisco BTS 10200 Softswitch requires four application servers (two for the Call Agent/Feature Server and two for the Element Management System/Bulk Data Management System). • Small Platform Option—Requires four Sun Microsystems 240 hosts (Netra or Sunfire). • Medium Platform Option—Requires four Sun Microsystems 440 hosts (Netra or Sunfire). • Large Platform Option—Requires four Sun Microsystems 1280 hosts (Netra or Sunfire). The Cisco BTS 10200 also requires two AC or two DC system switches (the Cisco Catalyst 2950, for example), two power distribution units (PDUs), and a terminal server (Cisco BTS 10200 Alarm Panel). See the *Cisco BTS 10200 Softswitch Release Notes for Release 4.5* for more information about hardware requirements.	Cisco BTS 10200 Softswitch, Release 4.5. See the *Cisco BTS 10200 Softswitch Release Notes for Release 4.5* for more information about software and release level requirements. **Tip** The Cisco BTS 10200 Softswitch user documentation is password protected. See your Cisco representative for access information.

Table 1   *Cisco BLISS for Cable Components (continued)*

Component	Role in the Solution	Hardware	Software and Release Level
Media Gateway Controller (MGC)	The MGC provides direct control over the media gateways that provide bearer interconnection to the PSTN.	—	Cisco BTS 10200 Softswitch, Release 4.5. See the *Cisco BTS 10200 Softswitch Release Notes for Release 4.5* for more information about software and release level requirements. **Tip** The Cisco BTS 10200 Softswitch user documentation is password protected. See your Cisco representative for access information.
Cisco IP Transfer Point (ITP) Signaling Gateway (SG)	The Cisco IITP is required in order to provide SS7 interconnectivity for the Cisco BTS 10200 Softswitch in Release 4.5. For more information, see *Cisco ITP as the Signaling Gateway for the Cisco BTS 10200 Softswitch.*	Cisco ITP 7301 Cisco ITP 7507 For more information, see the *Cisco IP Transfer Point Data Sheet*.	Cisco IOS Release 12.2(25)SW3. For more information, see the *Release Notes for Cisco 7000 Series Routers for Cisco IOS Release 12.2 SW* and *Cisco IP Transfer Point (ITP) in IOS Software Release 12.2(25)SW3.*

Table 1   *Cisco BLISS for Cable Components (continued)*

Component	Role in the Solution	Hardware	Software and Release Level

Cable Modem Termination System (CMTS)	The CMTS is a Cisco Universal Broadband Router (uBR) with features that enable it to communicate with a Hybrid Fiber Coaxial (HFC) Cable network via a Cisco MCxx cable modem card. Cisco MCxx cable modem cards allow you to connect cable modems on the HFC network to a Cisco uBR in a Community Antenna Television (CATV) headend facility. The modem card provides the interface between the Cisco uBR protocol control information (PCI) bus and the radio frequency (RF) signal on the DOCSIS HFC network.
	
	For more information, see the *CMTS Introduction* and the *Cisco CMTS Feature Guide.*
		Cisco uBR7246VXR
		• Network Processing Engine: NPE-G1
		• Broadband Processing Engine:
		  – Cisco MC28U
		  – Cisco MC28X
		  – Cisco MC16U
		  – Cisco MC16X
		Cisco uBR10012
		• Performance Routing Engine:
		  – PRE-1
		  – PRE-2
		• Broadband Processing Engine:
		  – Cisco 5x20U
		  – Cisco 5x20S
		For more information, see
		• *Cisco uBR7200 Universal Broadband Router* documentation
		• *Cisco 7200 Series Network Processing Engine NPE-G1 Data Sheet*
		• *Cisco uBR 10012 Universal Broadband Router* documentation
		• *Cisco 10000 Series Performance Routing Engine (PRE-1) Data Sheet*
		• *Cisco 10000 Series Performance Routing Engine (PRE-2) Data Sheet*
		• *Cisco Broadband Processing Engines Introduction.*
			Cisco IOS 12.3(9a)BC3.
			
			For more information, see the *Release Notes for Cisco uBR7200 Series for Cisco IOS Release 12.3 BC* and the
			
			Release Notes for Cisco uBR10012 Universal Broadband Router for Cisco IOS Release 12.3 BC.

Table 1 *Cisco BLISS for Cable Components (continued)*

Component	Role in the Solution	Hardware	Software and Release Level

Media Gateway (MG)	The MG provides interconnection between IP networks and the PSTN to transmit bearer traffic.	MGX8880, 8850:
		• PXM-45
		  – VXSM
		  – RPM-XF
		• PXM-1
		  – VISM
		
		For more information, see the *Guide to MGX 8880 Media Gateway User Documentation* and the following data sheets:
		• *Cisco MGX 8850 Multiservice Switch*
		• *Cisco MGX8850 PXM-45/C Processor Switch Module*
		• *Cisco Voice Switch Service Module (VXSM)*
		• *Cisco Route Processor Module XF*
		• *Cisco MGX 8800 PXM1 Processor Switch Module*
		• *Cisco Voice Interworking Service Module.*
			5.2(0.200)
			
			5.2(0.200)
			
			12.3(11)T7
			
			1.3.11
			
			3.3
			
			For more information, see the *Cisco MGX 8800 Series Switches Release Notes.*

Embedded Multimedia Terminal Adapter (eMTA)	Residential gateways in the form of MTAs embedded in a cable modem (embedded MTA [eMTA]) provide access at the customer premises. By plugging a standard analog telephone into the MTA device, a user can make phone calls to another MSO's customer directly across the IP network or to anyone outside the network through a media gateway.	Arris Touchstone eMTA For more information, see the Arris Touchstone data sheet.	4.1.34

Table 1   *Cisco BLISS for Cable Components (continued)*

Component	Role in the Solution	Hardware	Software and Release Level
Aggregation	Cisco Catalyst 6509 Ethernet switches are used in Cisco BLISS for Cable to provide Layer 2 connectivity among the IP core, Cisco BTS 10200 Softswitch, and ancillary servers and element management components necessary to provision and maintain certain features in Cisco BLISS for Cable. The Cisco Catalyst 6509 also provides Layer 3 functionality for routing signaling packets to edge and trunking gateways, and to interconnect all servers within the SuperPOP. The Cisco Catalyst 6509 can also be used to aggregate the traffic from multiple CMTSs into a single interface on a Cisco 12000 series Internet router.	Cisco Catalyst 6509 For more information, see the *Cisco Catalyst 6500 Series Switches Data Sheets*.	Cisco IOS Release 12.1(13)E12 or later For more information, see the *Release Notes for Cisco IOS Release 12.1E on the Catalyst 6500 and Cisco 7600 Supervisor Engine and MSFC*.
Core	Core routing functions.	Cisco 12000 Series Internet Router For more information, see the *Cisco XR 12000 Series Router Introduction.*	Cisco IOS Release 12.0(13.3)S or later For more information, see the Cisco IOS Release 12.0S documentation.
Communications Assistance for Law Enforcement Act (CALEA)-Compliant Server	Lawful Intercept (LI) compliance in the United States is specified by CALEA.	SS8 Networks Xcipio	For more information, see the SS8 Networks site.
Media Server	The IP Unity Media Server can be used as an announcement server, voice-mail server, media server and/or application server in Cisco BLISS for Cable.	IP Unity Media Server	2.7 For more information, see the IP Unity site.

Table 1　　　　*Cisco BLISS for Cable Components (continued)*

Component	Role in the Solution	Hardware	Software and Release Level
Record Keeping Server (RKS)	The RKS monitors and collects PacketCable™ event message data over LAN/WAN networks for Cable VoIP and content-based services, utilizing the PacketCable™ protocol standards. The application extracts all the relevant parts of a call and creates a Call Detail Record (CDR) in the appropriate format for the billing and operations support systems.	See manufacturer's recommendations.	Primal Solutions, Inc. RKS Software Access IM, 8.2.3 Rater 5.4.3 WPM 2.4.0 For more information, see the Primal Solutions, Inc. site. **Note**　Primal Solutions RKS Software has been tested only for integration.

Table 1   *Cisco BLISS for Cable Components (continued)*

Component	Role in the Solution	Hardware	Software and Release Level
Network Management	Cisco Broadband Access Center for Cable (BACC) is a distributed, scalable, subscriber-device management application that enables automated flow-through provisioning of subscriber services. For more information, see the *Cisco Broadband Access Center Introduction* and the Cisco BACC *Administrator's Guide for Release 2.6*.	Sun 240 or 440 (large environment)	Release 2.6 For more information, see the *Cisco Broadband Access Center for Cable Release Notes for Release 2.6.*
	JacobsRimell's APS Softswitch Manager for Cisco BLISS Customers can be used to provide subscriber provisioning and infrastructure configuration for call management servers, signaling gateways, media gateways, softswitches, and BACC.	See manufacturer's recommendations.	JacobsRimell APS Softswitch Manager, Version 3.2 For more information, see the JacobsRimell site. **Note** JacobsRimell software has been tested only for integration.
	Auspice's Cisco Cactus Correlation Solution product can be used to provide service assurance.	See manufacturer's recommendations.	Auspice Cisco Cactus Correlation Solution: • TLX 4.2 • CCC 1.0 For more information, see the Auspice site. **Note** The Auspice products have been tested only for integration.

Note For additional information about component interoperability with the Cisco BTS 10200 Softswitch, see the *Cisco BTS 10200 Softswitch Release Notes for Release 4.5*. The Cisco BTS 10200 Softswitch user documentation is password protected. See your Cisco representative for access information.

New Features for Release 2.2

This section lists the new features for Cisco BLISS for Cable Release 2.2. Detailed information about many of these features can be found in the *Cisco BTS 10200 Softswitch Release Notes for Release 4.5*.

Note The Cisco BTS 10200 Softswitch user documentation is password protected. See your Cisco representative for access information.

New Components and Protocols

New components and protocols for Cisco BLISS for Cable Release 2.2 include:

- Cisco ITP SG: A-links
- Cisco MGX 8880 with VxSM
- High availability CMTS
- Call admission control (CAC) for CMTS
- Enhanced network management system (NMS) tools (JacobsRimell and Auspice; see Table 1 for more information)
- External log server
- T.38 fax relay call-agent controlled mode across SIP trunk interface

Telephony Features

New telephony features for Cisco BLISS for Cable Release 2.2 include:

- Block toll free calls per subscriber
- Star code to access voice mail
- Single vertical service code (VSC) to activate or deactivate call forwarding no answer (CFNA) and call forwarding on busy (CFB)
- Stand-alone call redirection to voice-mail
- No solicitation announcement
- Incoming privacy indicator flag on call detail record (CDR)

Operations, Architecture, and Security Features

New operations, architecture, and security features for Cisco BLISS for Cable Release 2.2 include:

- Call data block (CDB) filename based on PC filenaming conventions
- .DONE indicator after successful transmission of call DB records to billing mediation server
- Trace active call per directory number and trunk identification
- Network continuity test and TDM test enhancements
- Support for Communications Assistance for Law Enforcement Act (CALEA)

- 30 originating point codes
- Scalability Features:
  - Subscriber database (DB) expansion to 125k subscriber lines
  - Large-hardware support: Sun 1280 (eight processors)

New Documentation

The *Cisco BLISS for Cable Release 2.2 Information Access Manager* is available from www.cisco.com.

Upgrade Procedures

Cisco BTS 10200 Softswitch upgrade procedures are available at the following location:

http://www.cisco.com/univercd/cc/td/doc/product/voice/bts10200/bts4_5/upgrade/index.htm

Caveats

Open and resolved caveats are not listed in the release notes. Instead, the latest information on caveats is available through an online tool, Bug Toolkit, available for customers to query defects according to their own needs.

> **Note** If you have already logged into www.cisco.com with the BTS guest username and password, you may receive an error message when attempting to access the Bug Toolkit. If you receive an error message, close all open instances of your browser, restart your browser program, and log into www.cisco.com with your own registered username and password.

Bug Toolkit

To access Bug Toolkit, you must have an Internet connection and a web browser, as well as a Cisco.com username and password. See your Cisco representative if you need assistance obtaining a username and password.

To use Bug Toolkit, follow this procedure.

Step 1 Click here to log in to Bug Toolkit. You must have a Cisco.com username and password.

> **Note** If you have already logged into www.cisco.com with the BTS guest username and password, you may receive an error message when attempting to access the Bug Toolkit. If you receive an error message, close all open instances of your browser, restart your browser program, and log into www.cisco.com with your own registered username and password.

Step 2 Click the **Launch Bug Toolkit** hyperlink.

Step 3 If you are looking for information about a specific caveat, enter the ID number in the "Enter known bug ID:" field.

To view all caveats for Cisco BTS 10200, for example, go to the "Search for bugs in other Cisco software and hardware products" section, and start typing **BTS** in the Product Name field. The Cisco BTS 10200 Softswitch listing should appear after typing the first two letters, **B** and **T**.

Step 4 Click **Next**. The Cisco BTS 10200 Softswitch search page appears.

Step 5 Select the filters to query for caveats. You can choose any or all of the available options:

> **Note** To make less specific queries, you can simply leave the default "All" option for the Major/Minor release, Features/Components, and keyword options; however, you should be aware that general queries may take longer and may return a large number of caveats. Be as specific as necessary in setting options.

Step 6 By version:

- Select **Major** for the major releases, such as 3.5.
- Select **Minor Release** for more specific information—for example, selecting Major version 3.5 and Minor version 3 queries specifically for Release 3.5.3 caveats.
- Select the **Features or Components** to query.
- Use keywords to search for a caveat title and description.
- Select the **Advanced Options**, including the Bug Severity level, Bug Status Group, and Release Note Enclosure options.
- Click **Next**.

  Bug Toolkit returns a list of caveats based on your query.

Hardware and Software Component Release Notes

For platform-specific documents and release notes for the components in this solution, refer to the release notes for each component. The following links display the release notes for the corresponding component.

- *Cisco BTS 10200 Softswitch Release Notes for Release 4.5*
- Cisco IOS Release 12.0 S Release Notes
- *Cisco MGX 8800 Series Switches Release Notes*
- *Release Notes for Broadband Access Center for Cable Release 2.6*
- *Release Notes for Cisco 7000 Series Routers for Cisco IOS Release 12.2 SW*
- *Release Notes for Cisco uBR10012 Universal Broadband Router for Cisco IOS Release 12.3 BC*
- *Release Notes for Cisco uBR7200 Series for Cisco IOS Release 12.3 BC*

For release information on Cisco BLISS for Cable components not manufactured by Cisco Systems Inc., please refer to the user documentation that came with the component.

Obtaining Documentation

Cisco documentation 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 at this URL:

http://www.cisco.com/techsupport

You can access the Cisco website at this URL:

http://www.cisco.com

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

Product Documentation DVD

Cisco documentation and additional literature are available in the Product Documentation DVD package, which may have shipped with your product. The Product Documentation DVD is updated regularly and may be more current than printed documentation.

The Product Documentation DVD is a comprehensive library of technical product documentation on portable media. The DVD enables you to access multiple versions of hardware and software installation, configuration, and command guides for Cisco products and to view technical documentation in HTML. With the DVD, you have access to the same documentation that is found on the Cisco website without being connected to the Internet. Certain products also have .pdf versions of the documentation available.

The Product Documentation DVD is available as a single unit or as a subscription. Registered Cisco.com users (Cisco direct customers) can order a Product Documentation DVD (product number DOC-DOCDVD=) from Cisco Marketplace at this URL:

http://www.cisco.com/go/marketplace/

Ordering Documentation

Beginning June 30, 2005, registered Cisco.com users may order Cisco documentation at the Product Documentation Store in the Cisco Marketplace at this URL:

http://www.cisco.com/go/marketplace/

Nonregistered Cisco.com users can order technical documentation from 8:00 a.m. to 5:00 p.m. (0800 to 1700) PDT by calling 1 866 463-3487 in the United States and Canada, or elsewhere by calling 011 408 519-5055. You can also order documentation by e-mail at tech-doc-store-mkpl@external.cisco.com or by fax at 1 408 519-5001 in the United States and Canada, or elsewhere at 011 408 519-5001.

Documentation Feedback

You can rate and provide feedback about Cisco technical documents by completing the online feedback form that appears with the technical documents on Cisco.com.

You can send comments about Cisco 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.

Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

http://www.cisco.com/go/psirt

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies—security-alert@cisco.com

  An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- Nonemergencies—psirt@cisco.com

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

Tip We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.*x* through 8.*x*.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

The link on this page has the current PGP key ID in use.

Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

Cisco Technical Support & Documentation Website

The Cisco Technical Support & Documentation website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support & Documentation website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

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

Note Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request 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 list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—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.

Severity 2 (S2)—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.

Severity 3 (S3)—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.

Severity 4 (S4)—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, documentation, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

  http://www.cisco.com/go/marketplace/

- *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 at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

  or view the digital edition at this URL:

  http://ciscoiq.texterity.com/ciscoiq/sample/

- *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/ipj

- Networking products offered by Cisco Systems, as well as customer support services, can be obtained at this URL:

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

- Networking Professionals Connection is an interactive website for networking professionals to share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:

  http://www.cisco.com/discuss/networking

- World-class networking training is available from Cisco. You can view current offerings at this URL:

  http://www.cisco.com/en/US/learning/index.html