



Release Notes for Cisco BLISS for T1/E1 Release 4.5

Revised: February 3, 2006, OL-9155-01

These release notes for Cisco Broadband Local Integrated Services Solution (BLISS) for T1/E1 describe the new features provided in Release 4.5.



Note

The product name of this solution is the “Cisco Broadband Local Integrated Services Solution (BLISS) for T1/E1.” In the interest of brevity, it is referred to throughout this document as “Cisco BLISS for T1.” All references to T1 apply equally to E1 configurations except where otherwise stated.

For an overview of Cisco BLISS for T1, as well as information about the components supported in the solution, see the *Cisco BLISS for T1/E1 Release 4.5 Information Access Manager* at www.cisco.com/iam/bliss/T1_4_5/index.htm.

The call agent (CA) functions for Cisco BLISS for T1 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*.



Note

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

Contents

This document includes the following sections:

- [Major, Minor, and Maintenance Releases, page 2](#)
- [System Requirements, page 2](#)
- [New Features for Release 4.5, page 8](#)
- [New Documentation, page 8](#)



Corporate Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

© 2006 Cisco Systems, Inc. All rights reserved.

- [Upgrade Procedures, page 8](#)
- [Caveats, page 9](#)
- [Hardware and Software Component Release Notes, page 10](#)
- [Obtaining Documentation, page Boilerplate 1](#)
- [Documentation Feedback, page 11](#)
- [Cisco Product Security Overview, page 11](#)
- [Obtaining Technical Assistance, page 12](#)
- [Obtaining Additional Publications and Information, page 14](#)

Major, Minor, and Maintenance Releases

The following section describes the differences between major, minor, and maintenance releases. Each Cisco BLISS for T1 major release can include a series of minor (4.n) and/or maintenance releases (4.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 (4.1, 4.2, 4.5, 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 (4.2.1, 4.2.3, 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](#) lists the Cisco BLISS for T1 Release 4.5 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 T1 Components

Component	Role in the Solution	Hardware	Software and Release Level
Call agent (CA)	<p>Cisco BLISS for T1 uses the Cisco BTS 10200 Softswitch as the CA. The CA serves as a call management system (CMS) and media gateway controller (MGC). It handles the establishment, processing, and teardown of telephone calls.</p> <p>In addition to the CA, the Cisco BTS 10200 Softswitch contains the following logical components:</p> <ul style="list-style-type: none"> • Feature Servers (FSs) <ul style="list-style-type: none"> – FSPTC—FS for POTS, Tandem, and Centrex services – FSAIN—FS for AIN services • Element Management System (EMS) • Bulk Data Management System (BDMS) • Mini-Browser Adapter (MBA) <p>Note The MBA runs on a separate Sun host machine that is not part of the standard Cisco BTS 10200 Softswitch hardware set.</p>	<p>The Cisco BTS 10200 Softswitch requires four application servers (two for the CA/FSs and two for the EMS/BDMS).</p> <ul style="list-style-type: none"> • 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). <p>The Cisco BTS 10200 Softswitch also requires two AC or two DC system switch routers (the Cisco Catalyst 2950, for example), two power distribution units (PDUs), and a terminal server (Cisco BTS 10200 Alarm Panel).</p> <p>See the Cisco BTS 10200 Softswitch Release Notes for Release 4.5 for more information about hardware requirements.</p>	<p>Cisco BTS 10200 Softswitch, Release 4.5.</p> <p>See the Cisco BTS 10200 Softswitch Release Notes for Release 4.5 for more information about software and release level requirements.</p> <p>Note The Cisco BTS 10200 Softswitch user documentation is password protected. See your Cisco representative for access information.</p>
Signaling gateway (SG)	<p>The Cisco IP Transfer Point (ITP) SG is required in order to provide SS7 interconnectivity for the Cisco BTS 10200 Softswitch in Release 4.5.</p> <p>For more information, see Cisco ITP as the Signaling Gateway for the Cisco BTS 10200 Softswitch.</p>	<ul style="list-style-type: none"> • Cisco 2651XM • Cisco 7301 • Cisco 7507 <p>For more information, see the Cisco IP Transfer Point Data Sheet.</p>	<p>Cisco IOS Release 12.2(25)SW4a.</p> <p>For more information, see the Release Notes for Cisco 7000 Series Routers for Cisco IOS Release 12.2SW and Cisco IP Transfer Point (ITP) in IOS Software Release 12.2(25)SW3.</p>

Table 1 Cisco BLISS for T1 Components (continued)

Component	Role in the Solution	Hardware	Software and Release Level
Media gateway (MG)/Trunking gateway (TGW)	<p>The gateway provides interconnection between IP networks and the PSTN to transmit bearer traffic.</p> <p>The Cisco MGX 8880 Media Gateway enables a range of packet voice applications for wireline, wireless, and cable. The Cisco MGX 8880 includes a comprehensive suite of quality of service (QoS) features and high-availability hardware and software.</p> <p>The Cisco MGX 8850 is a high-density trunking gateway that is superseded by the Cisco MGX 8880. Applications that require a full-featured ATM switch will still require the Cisco MGX 8850, because the Cisco MGX 8880 supports only voice gateway functions. Note that both platforms are functionally equivalent in terms of voice capability using the VISM, but when using the VXSM, the Cisco MGX 8880 provides greater feature depth.</p>	<p>Cisco MGX 8880, Cisco MGX 8850:</p> <ul style="list-style-type: none"> • PXM-45 <ul style="list-style-type: none"> – VXSM – RPM-XF • PXM-1 <ul style="list-style-type: none"> – VISM <p>For more information, see the Guide to MGX 8880 Media Gateway User Documentation and the following data sheets:</p> <ul style="list-style-type: none"> • Cisco MGX 8850 Multiservice Switch • Cisco MGX 8850 PXM-45/C Processor Switch Module • Cisco Voice Switch Service Module (VXSM) • Cisco Route Processor Module XF • Cisco MGX 8800 PXM-1 Processor Switch Module • Cisco Voice Interworking Service Module 	<p>5.2(0.200)</p> <p>5.2(0.200)</p> <p>12.3(11)T7</p> <p>1.3.11</p> <p>3.3</p> <p>For more information, see the Cisco MGX 8800 Series Switches Release Notes.</p>
	<p>The Cisco AS5850 Universal Gateway is designed to meet the demands of large, innovative service providers, supporting up to 5 Channelized T3s (CT3s), 96 T1s, 86 E1s, or 2 STM-1 (108 E1s) of data, voice, and fax services, on any port at any time. The Cisco AS5850 can be used to terminate all trunk types associated with Cisco BLISS for T1.</p>	<p>Cisco AS5850 Universal Gateway.</p> <p>For more information, see the Cisco AS5850 Universal Gateway Introduction.</p> <p>Note The Cisco AS5850 Universal Gateway is not currently supported in a redundant configuration in Release 4.5 of the solution. For more information, see bug ID CSCsc88040 in Bug Toolkit.</p>	<p>Cisco IOS Release 12.3(11)T9.</p> <p>For more information, see the Cross-Platform Release Notes for Cisco IOS Release 12.3 T.</p>

Table 1 Cisco BLISS for T1 Components (continued)

Component	Role in the Solution	Hardware	Software and Release Level
Core routing	<p>The Cisco Catalyst 6509 provides high port density Ethernet/Fast Ethernet/Gigabit Ethernet switching functions and Layer 3 routing. In the Cisco BLISS for T1 solution, it is used to provide Layer 2 connectivity to the Cisco BTS 10200 and to provide Layer 3 functionality for routing signaling packets to the edge and trunking gateways.</p> <p>Note The Cisco Catalyst 6509 is purely a data switch, and there are no features specific to this platform required to support Cisco BLISS for T1. Therefore, other platforms that support IRDP and L2/L3 functionality (such as the Catalyst 4500) could be used. In addition, other configurations of the Catalyst 6500, such as the Catalyst 6506, could be used with the appropriate supervisor module and line cards to meet density and traffic requirements.</p>	<ul style="list-style-type: none"> • Cisco Catalyst 6509 Switch • Cisco Catalyst 6506 Switch • Cisco Catalyst 4500 Series <p>For more information, see:</p> <ul style="list-style-type: none"> • Cisco Catalyst 6500 Series Switches Data Sheets • Cisco Catalyst 6500 Series Switches Introduction • Cisco Catalyst 4506 Switch Introduction 	<p>Cisco IOS Release 12.1(13)E12 or a later release.</p> <p>For more information, see the Release Notes for Cisco IOS Release 12.1E on the Catalyst 6500 and Cisco 7600 Supervisor Engine and MSFC.</p>
Aggregation	<p>An edge services router (ESR) provides broadband aggregation services. In Cisco BLISS for T1, single or multiple T1 uplinks from customer premises equipment (CPE) are multiplexed into T3s and are aggregated at the Cisco 10000 ESR.</p>	<p>Cisco 10000 Series ESR.</p> <ul style="list-style-type: none"> • Performance routing engine (PRE)-1 <p>For more information, see the Cisco 10000 Series Routers Introduction and the Cisco 10000 Series Performance Routing Engine PRE-1 Data Sheet.</p> <p>Note The Cisco 10000 series ESR is not currently supported in a redundant configuration in Release 4.5 of the solution. For more information, see bug ID CSCsa41907 in Bug Toolkit.</p>	<p>Cisco IOS Release 12.0(30)S4.</p> <p>For more information, see the Cross-Platform Release Notes for Cisco IOS Release 12.0 S.</p>

Table 1 Cisco BLISS for T1 Components (continued)

Component	Role in the Solution	Hardware	Software and Release Level
ISP connection gateway	The ISP connection gateway acts as the border router between the service provider network and the Internet.	Cisco 7200 Series Routers. For more information, see the Cisco 7200 Series Routers Introduction .	Cisco IOS Release 12.4T. For more information, see the Cisco IOS Software Releases 12.4 T Release Notes .
Integrated access device (IAD)	Located at the customer site, the Cisco IAD 2431 provides support for analog phones (FXS and FXO ports). The uplink WAN connection is through T1 lines using PPP for Layer 2 link control. The Cisco IAD provides management MIBs and supports SNMP messages and northbound interfaces for network management. The Cisco IAD also provides remote access for element management and element configuration. The Cisco IAD integrates user-side data, voice and fax signals and connects them to the wide area network (WAN) for transport by Voice over IP (VoIP). Interfaces supported will depend on the IAD model.	Cisco IAD 2431. For more information, see the Cisco IAD2400 Series Integrated Access Devices Introduction .	Cisco IOS Release 12.4T. For more information, see the Cisco IOS Software Releases 12.4 T Release Notes .
Call processing	Cisco CallManager Express is a solution embedded in Cisco IOS software that provides call processing for Cisco IP phones. The Cisco CallManager Express solution is best suited for customers who are looking for a low-cost, reliable, feature-rich telephony solution that supports up to 240 users. For more information, see the Cisco CallManager Express Data Sheet .	<ul style="list-style-type: none"> • Cisco IAD 2431 • Cisco 3725 Multiservice Access Router • Cisco 2800 Series Integrated Service Routers (ISRs) For more information, see: <ul style="list-style-type: none"> • Cisco IAD2400 Series Integrated Access Devices Introduction • Cisco 3725 Multiservice Access Router Introduction • Cisco 2800 Series Integrated Services Routers Introduction 	Cisco CallManager Express version 3.4 (compatible with Cisco IOS Release 12.4(4)T) For more information, see Cisco CallManager Express Documentation Roadmaps .

Table 1 Cisco BLISS for T1 Components (continued)

Component	Role in the Solution	Hardware	Software and Release Level
Security appliance	Cisco PIX Security Appliances (firewalls) provide advanced security services for multimedia and voice standards, including H.323 Version 4, Session Initiation Protocol (SIP), Cisco Skinny Client Control Protocol (SCCP), Real-Time Streaming Protocol (RTSP), and Media Gateway Control Protocol (MGCP). The Cisco PIX Security Appliance protects the Cisco BTS 10200 from various IP attacks, including denial of service (DOS) and unauthorized access.	<ul style="list-style-type: none"> • Cisco PIX 525 • Cisco PIX 535 <p>Note Selection of the firewall is based on throughput capacity as well as capacity of the VoIP signaling Application Layer Gateway (ALG). The ALG allows for the dynamic creation of holes in the firewall by examining IP port information in the signaling traffic.</p> <p>For more information, see:</p> <ul style="list-style-type: none"> • Cisco PIX 525 Security Appliance Introduction • Cisco PIX 535 Security Appliance Introduction 	<p>Cisco PIX Security Appliance Software Version 6.3.</p> <p>For more information, see the Cisco PIX Security Appliance Software Version 6.3 data sheet.</p>
IP phones	Cisco CallManager Express call agents control Cisco IP phones using SCCP. Cisco IP phones receive in-line power from Cisco Catalyst LAN switches.	<ul style="list-style-type: none"> • Cisco IP Phone 7905G • Cisco IP Phone 7912G • Cisco IP Phone 7940G • Cisco IP Phone 7960G <p>For more information, see the data sheets for the Cisco 7900 Series IP Phones.</p>	—
Communications Assistance for Law Enforcement Act (CALEA)-compliant server	Lawful Intercept (LI) compliance in the United States is specified by the Communications Assistance for Law Enforcement Act (CALEA).	SS8 Networks Xcipio	For more information, see the SS8 Networks website.
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 T1.	IP Unity Media Server	2.7 For more information, see the IP Unity website.

**Note**

For additional information about component interoperability with the Cisco BTS 10200 Softswitch, see the [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 4.5

Cisco BLISS for T1 Release 4.5 includes the following new features:

- Support for Cisco CallManager Express Release 3.4.
- Support for Cisco 2800 ISRs.
- Support for a triple T1 bundle, which adds one additional uplink T1 and one additional voice T1 (PRI or CAS). The added capacity brings the total number of T1 uplinks to three, which provides bandwidth of 4.5Mbps and sets the maximum number of voice trunks to 48 (with CAS) or 46 (with PRI).
- Support for IAD over a multimedia terminal adapter (MTA), which allows the deployment of commercial services over a cable plant. In this configuration, the IAD is connected to the MTA via an Ethernet interface. The Cisco BTS 10200 Softswitch manages the IAD via MGCP. Up to 16 analog phones can be connected to the IAD.
- Support for split (tandem) line/trunk Cisco BTS 10200 Softswitches. This feature allows multiple CAs in one market, which provides for higher call throughputs and a higher number of subscribers. In this configuration, all trunk/MGC calls are routed from a single Cisco BTS 10200 Softswitch. Line-side control functions are handled by one or more separate Cisco BTS 10200 Softswitches, each responsible for a particular number of endpoints. The signaling between line- and trunk-side Cisco BTS 10200 Softswitches is via SIP.
- Support for T.38 fax relay, call-agent controlled (CAC) mode.
- Support for T.38 fax relay across a SIP trunk interface.
- Cisco BTS 10200 Softswitch hardware platform enhancements:
 - Large platform hardware support: Sun 1280 (eight processors)
 - Support for Solaris 10
 - Support for Oracle 10G
- Scalability:
 - Up to 1500 simultaneous PRI/RUDP sessions
 - Subscriber database (DB) expansion to 125,000 subscriber lines

New Documentation

The *Cisco BLISS for T1/E1 Release 4.5 Information Access Manager* is available at the following location:

www.cisco.com/iam/bliss/T1_4_5/index.htm

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

See the *Cisco BLISS for T1/E1 Release 4.5 Information Access Manager* for upgrade procedures related to other solution components.

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 in to [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 in to [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 in to [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:

- By version:
 - Select **Major** for the major releases, such as 4.5.
 - Select **Minor Release** for more specific information—for example, selecting Major version 4.5 and Minor version 1 queries specifically for Release 4.5.1 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.



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 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, see the release notes for each component. The following links display the release notes for the corresponding component.

- [Release Notes for Cisco 7000 Series Routers for Cisco IOS Release 12.2 SW](#)
- [Cisco MGX 8800 Series Switches Release Notes](#)
- [Cisco BTS 10200 Softswitch Release Notes for Release 4.5](#)
- [Cisco IOS Release 12.0 S Release Notes](#)
- [Cross-Platform Release Notes for Cisco IOS Release 12.3T](#)
- [Cisco IOS Software Releases 12.4 T Release Notes](#)

For release information on Cisco BLISS for T1 components not manufactured by Cisco Systems Inc., please see 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

The Product Documentation DVD is a comprehensive library of technical product documentation on a portable medium. The DVD enables you to access multiple versions of installation, configuration, and command guides for Cisco hardware and software products. With the DVD, you have access to the same HTML 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= or DOC-DOCDVD=SUB) from Cisco Marketplace at this URL:

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

Ordering Documentation

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 submit comments about Cisco documentation 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 will find information about how to:

- 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, security notices, and security responses for Cisco products is available at this URL:

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

To see security advisories, security notices, and security responses as they are updated in real time, you can subscribe to the Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed. Information about how to subscribe to the PSIRT RSS feed is found at 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 have identified a vulnerability in a Cisco product, contact PSIRT:

- For Emergencies only—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.

- For 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 (for example, GnuPG) to encrypt any sensitive information that you send to Cisco. PSIRT can work with information that has been encrypted with PGP versions 2.x through 9.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.

If you do not have or use PGP, contact PSIRT at the aforementioned e-mail addresses or phone numbers before sending any sensitive material to find other means of encrypting the data.

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)—An existing 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 operations 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 the network is impaired, while 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.

- The *Cisco Product Quick Reference Guide* is a handy, compact reference tool that includes brief product overviews, key features, sample part numbers, and abbreviated technical specifications for many Cisco products that are sold through channel partners. It is updated twice a year and includes the latest Cisco offerings. To order and find out more about the Cisco Product Quick Reference Guide, go to this URL:

<http://www.cisco.com/go/guide>

- 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>

iThis document is to be used in conjunction with the documents listed in the “New Documentation” section.

CCSP, CCVP, the Cisco Square Bridge logo, Follow Me Browsing, and StackWise are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn, and iQuick Study are service marks of Cisco Systems, Inc.; and Access Registrar, Aironet, BPX, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Enterprise/Solver, EtherChannel, EtherFast, EtherSwitch, Fast Step, FormShare, GigaDrive, GigaStack, HomeLink, Internet Quotient, IOS, IP/TV, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, LightStream, Linksys, MeetingPlace, MGX, the Networkers logo, Networking Academy, Network Registrar, *Packet*, PIX, Post-Routing, Pre-Routing, ProConnect, RateMUX, ScriptShare, SlideCast, SMARTnet, The Fastest Way to Increase Your Internet Quotient, and TransPath are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0601R)

Any Internet Protocol (IP) addresses used in this document are not intended to be actual addresses. Any examples, command display output, and figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses in illustrative content is unintentional and coincidental.

© 2006 Cisco Systems, Inc. All rights reserved.

