



## Preface

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**Revised: January 5, 2009, OL-12778-14**

The purpose of the *Cisco BTS 10200 Softswitch Billing Interface Guide, Release 5.0.x* is to provide the necessary background information to properly and efficiently manage the Cisco BTS 10200 Softswitch accounting subsystem. This information is applicable to Release 5.0. This document describes both the format of the accounting data generated by the system and the standard operational practices for managing that data.

The BTS 10200 serves as a class-independent switching network element. The solutions in which it is employed also take into account the need to support both traditional PSTN billing needs as well as additional requirements necessitated by the IP, ATM, and PacketCable backbones. Many of the informational elements within the accounting data find their basis in the traditional Bellcore AMA format with modifications and additions to account for the expanded needs and capabilities of the converged network environment.

The BTS 10200 accounting information includes details of service quality and feature invocations within the call context, which are a departure from traditional billing records. The mechanisms used to manage the data generated by and transported from the BTS 10200 follows legacy-type procedures and is documented in the following sections.

The BTS 10200 provides the following billing functions:

- Provides batch record transmission using standard FTP for the transfer of call detail records (CDRs) to a remote billing server or third-party billing mediation device.



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**Note** The BTS 10200 does not currently support the transmission of CDRs to redundant or multiple external billing mediation systems or billing servers.

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- Issues events as appropriate, including potential billing data overwrites.
- Saves billing records based on allocated disk storage.
- Minor, major, and critical alarms.
- Supports user-provisionable billing subsystem parameters.
- Supports on-demand call detail block (CDB) queries based on ranges of timestamps, an originating number, a terminating number, last record written, or other fields in the call detail block.

The Bulk Data Management System (BDMS) application in the BTS 10200 gathers all billing-related call events from call processing, formats them into a standard format, and transmits the billing records using FTP to an external billing collection and mediation device that is part of the service provider's billing system. The FTP transfer occurs automatically every  $n$  minutes, where  $n$  is a number from 1 to

60 that the service provider can provision in the BTS 10200. The default value is 15 minutes. The interface to the external billing mediation device can vary from carrier to carrier, so the BDMS supports a flexible profiling system. This profiling system allows the BTS 10200 to adapt quickly to any variation of the interface to the external billing mediation device, or to variations in the service provider's record keeping system.

**Note**

For information on Billing-related Packet Cable Event Messages, refer to the *Cisco BTS 10200 Softswitch Release 5.0 PacketCable Feature Module*.

## Document Objective

This guide provides billing interface information for the Cisco BTS 10200 Softswitch software Release 5.0. You should read the other documentation supplied with your system before using this guide. A complete list of these documents is included in the *Cisco BTS 10200 Softswitch Release 5.0 Application Installation Guide* which was shipped with your system.

## Audience

This guide is intended for network operators and administrators who have experience with telecommunications networks, protocols, and equipment and who have familiarity with data communications networks, protocols, and equipment.

## Document Change History

[Table 1](#) lists the changes to this document for Release 5.0.

**Table 1** Document Change History

Chapter	Date	Change Made
Appendix F	December 26, 2007	Added Appendix F describing the effect of Enum feature on billing fields
Appendix A	September 10, 2007	Modified billing field ID 50 per CSCsj27455
Appendix A	August 9, 2007	Modified billing field IDs 87 and 138—140 per CSCsj74734
Appendix D	August 9, 2007	Added Local = 0
Appendix A	August 2, 2007	Modified billing field IDs 138 and 139 per CSCsj90638.
Appendix A	July 26, 2007	Modified billing field IDs 138 and 139 per CSCsj74734.
Chapter 1	May 24, 2007	Modified command for enabling CDB-based billing subsystem.
Chapter 2	April 11, 2007	Modified Prepaid and Postpaid descriptions per Limited Call Duration (Prepaid/Postpaid) with RADIUS Interface to AAA feature module (4.5 release)
Chapter 1	January 8, 2007	changed stop-time to end-time in CDB example Moved GMT explanatory note from p11 to p12.

**Table 1** Document Change History (continued)

Chapter	Date	Change Made
	January 16, 2007	Modified timestamp examples to show milliseconds
	December 6, 2007	Updated Orig and Term
	December 17, 2007	Updated EnumRouteUsed definition

## Document Conventions

This document uses the following conventions:



**Note**

Refer to the *Cisco BTS 10200 Softswitch Command Line Interface Reference Guide* for a detailed description of all commands and tokens discussed in this document.

Typographic conventions used in this guide are shown in [Table 2](#).

**Table 2** Conventions Used in this Guide

Convention	Meaning	Description / Comments
<b>Boldface</b>	Commands and keywords you enter as shown.	<b>offset-list</b>
<i>Italics</i>	Variables for which you supply values.	<b>command</b> <i>type interface</i> You replace the variable with specific information. In contexts that do not allow italics, such as online help, arguments are enclosed in angle brackets (< >).
Square brackets ([ ])	Optional elements.	<b>command</b> [abc] abc is optional (not required), but you can choose it.
Vertical bars ( )	Separated alternative elements.	<b>command</b> [ abc   def ] You can choose either abc or def, or neither, but not both.
Braces ( { } )	Required choices.	<b>command</b> { abc   def } You <b>must</b> choose either abc <b>or</b> def, but not both.
Braces and vertical bars within square brackets ( [ {   } ] )	A required choice within an optional element.	<b>command</b> [ abc { def   ghi } ] You have three options: nothing abc def abc ghi

**Table 2**      **Conventions Used in this Guide (continued)**

Convention	Meaning	Description / Comments
Caret character (^)	Control key.	The key combinations ^D and Ctrl-D are equivalent: Both mean “hold down the Control key while you press the D key.” Keys are indicated in capital letters and are not case sensitive.
A non-quoted set of characters	A string.	For example, when setting an SNMP community string to <i>public</i> , do not use quotation marks around the string; otherwise, the string will include the quotation marks.
System prompts	Denotes interactive sessions, indicates that the user enters commands at the prompt.	The system prompt indicates the current command mode. For example, the prompt <code>Router (config) #</code> indicates global configuration mode.
Screen font	Terminal sessions and information the system displays.	
Angle brackets (< >)	Non-printing characters such as passwords.	
Exclamation point (!) at the beginning of a line	A comment line.	Comments are sometimes displayed by the Cisco IOS software.

**Caution**

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

**Timesaver**

Means *reader may be able to save some time*. Taking the action described could achieve a result in less time than might be achieved otherwise.

**Note**

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.

Conventions used in the Cisco BTS 10200 Softswitch software are shown in [Table 3](#).

**Table 3**      **Data Type Conventions**

Data Type	Definition	Example
Integer	A series of decimal digits from the set of 0 through 9 that represents a positive integer. An integer may have one or more leading zero digits (0) added to the left side to align the columns. Leading zeros are always valid as long as the number of digits is less than or equal to ten digits. Values of this type have a range of zero through 4294967295.	123 000123 4200000000
Signed integer	The same basic format as the integer but can be either positive or negative. When negative, it is preceded by the sign character (-). As with the integer data type, this data type can be as many as ten digits in length, not including the sign character. The value of this type has a range of minus 2147483647 through 2147483647.	123 -000123 -21000000001
Hexadecimal	A series of 16-based digits from the set of 0 through 9, a through f, or A through F. The hexadecimal number may have one or more leading zeros (0) added to the left side. For all hexadecimal values, the maximum size is 0xffffffff (eight hexadecimal digits).	1f3 01f3000
Text	A series of alphanumeric characters from the ASCII character set, where defined. Tab, space, and double quote ( " ) characters cannot be used. Text can be as many as 255 characters; however, it is recommended that you limit the text to no more than 32 characters for readability.	EntityID LineSES_Threshold999
String	A series of alphanumeric characters and white-space characters. A string is surrounded by double quotes ( " " ). Strings can be as many as 255 characters; however, it is recommended that you limit the strings to no more than 80 characters for readability.	"This is a descriptive string."

**Note**

Hexadecimal and integer fields in files may have different widths (numbers of characters) for column alignment.

## Documentation Suite

The documents that make up the BTS 10200 documentation set are listed in [Table 3](#).

Table 4 Cisco BTS 10200 Softswitch Documentation

Functional Area	Publication	Description and Audience
Hardware Installation	<i>Cisco BTS 10200 Cisco BTS 10200 Softswitch Site Surveys and Cabling Procedures</i>	<p>Describes the hardware components of the BTS 10200. Includes detailed information on the environmental requirements for all the components. Also provides a checklist of the hardware you should have before starting the installation and a checklist of all the connections for the components.</p> <p>The audience for these publications is the engineering personnel responsible for installing the components and verifying the hardware installation.</p>
Software Release Notes	<i>Cisco BTS 10200 Softswitch Software Release Notes for Release 4.5.X</i>	<p>Provides information that is specific to a particular release of the BTS 10200 software.</p> <p>The audience for these publications is the engineering personnel responsible for installing, configuring, and upgrading software for the respective solutions.</p>
Software Installation	<i>Cisco BTS 10200 Softswitch Release 4.5.X Application Installation Procedures</i>	<p>Describes the steps necessary to install the software components of the BTS 10200.</p> <p>The audience for this publication is the engineering personnel responsible for installing and configuring software for the BTS 10200.</p>
Software Upgrade	<i>Cisco BTS 10200 Softswitch Release 4.5.X Software Upgrade Procedures</i>	<p>Describes the steps necessary to upgrade the software components of the BTS 10200 Softswitch from any previous release to Release 4.4.</p> <p>The audience for this publication is the engineering personnel responsible for upgrading and configuring software for the Cisco BTS 10200 Softswitch.</p>
Operations, Maintenance, and Provisioning	<i>Cisco BTS 10200 Softswitch Release 4.5 Operations Guide</i>	<p>Describes the procedures necessary to conduct day-to-day operations, to perform preventive and corrective maintenance, and to provision the Cisco BTS 10200 Softswitch.</p> <p>The audience for these publications is the engineering personnel responsible for operating, maintaining, and servicing the components of the system.</p>
Reference	<i>Cisco BTS 10200 Softswitch Release 4.5 Command Line Interface Reference Guide</i>	<p>Provide reference information for the hardware and software of the Cisco BTS 10200 Softswitch.</p> <p>The audience for these publications is the engineering personnel responsible for installing, configuring, operating, and upgrading the software for the respective components of the system.</p>

## Related Documentation

Other useful reference publications include:

- Overviews of the related telephony solutions—Describe the Cisco telephony solutions with which the Cisco BTS 10200 Softswitch is associated.
- Gateway installation and configuration guides—Describe how to install and configure the media gateways (MGW) for a particular Cisco telephony solution.

# Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

## World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following sites:

- <http://www.cisco.com>
- <http://www-china.cisco.com>
- <http://www-europe.cisco.com>

## Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

## Ordering Documentation

Cisco documentation is available in the following ways:

- Registered Cisco Direct Customers can order Cisco Product documentation from the Networking Products MarketPlace:  
[http://www.cisco.com/cgi-bin/order/order\\_root.pl](http://www.cisco.com/cgi-bin/order/order_root.pl)
- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:  
<http://www.cisco.com/go/subscription>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, in North America, by calling 800 553-NETS(6387).

## Documentation Feedback

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You can e-mail your comments to [bug-doc@cisco.com](mailto:bug-doc@cisco.com). We appreciate your comments.

To submit your comments by mail, use the response card behind the front cover of your document, or write to the following address:

Attn Document Resource Connection  
Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-9883

# Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain documentation, troubleshooting tips, and sample configurations from online tools. For Cisco.com registered users, additional troubleshooting tools are available from the TAC website.

## Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information and resources at anytime, from anywhere in the world. This highly integrated Internet application is a powerful, easy-to-use tool for doing business with Cisco.

Cisco.com provides a broad range of features and services to help customers and partners streamline business processes and improve productivity. Through Cisco.com, you can find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online technical support, download and test software packages, and order Cisco learning materials and merchandise. Valuable online skill assessment, training, and certification programs are also available.

Customers and partners can self-register on Cisco.com to obtain additional personalized information and services. Registered users can order products, check on the status of an order, access technical support, and view benefits specific to their relationships with Cisco.

To access Cisco.com, go to the following website:

<http://www.cisco.com>

## Technical Assistance Center

The Cisco TAC website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

## Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or level 4 (P4) problem, contact TAC by going to the TAC website:

<http://www.cisco.com/tac>

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

<http://www.cisco.com/register/>

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

<http://www.cisco.com/tac/caseopen>

## Contacting TAC by Telephone

If you have a priority level 1(P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. To obtain a directory of toll-free numbers for your country, go to the following website:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.

P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.

