Cisco BTS 10200 Softswitch Billing Interface Guide, Release 5.0.x

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CONTENTS

Preface

Revised: January 22, 1010, 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.

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

- 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
Boldface	Commands and keywords you enter as shown.	**offset-list**
Italics	Variables for which you supply values.	**command** *type interface* 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.	**command** [abc] abc is optional (not required), but you can choose it.
Vertical bars (|)	Separated alternative elements.	**command** [abc | def] You can choose either abc or def, or neither, but not both.
Braces ({ })	Required choices.	**command** { abc | def } You **must** choose either abc **or** def, but not both.
Braces and vertical bars within square brackets ([{ | }])	A required choice within an optional element.	**command** [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 *public*, 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 `Router (config) #` 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	*Cisco BTS 10200Cisco BTS 10200 Softswitch Site Surveys and Cabling Procedures*	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. The audience for these publications is the engineering personnel responsible for installing the components and verifying the hardware installation.
Software Release Notes	*Cisco BTS 10200 Softswitch Software Release Notes for Release 4.5.X*	Provides information that is specific to a particular release of the BTS 10200 software. The audience for these publications is the engineering personnel responsible for installing, configuring, and upgrading software for the respective solutions.
Software Installation	*Cisco BTS 10200 Softswitch Release 4.5.X Application Installation Procedures*	Describes the steps necessary to install the software components of the BTS 10200. The audience for this publication is the engineering personnel responsible for installing and configuring software for the BTS 10200.
Software Upgrade	*Cisco BTS 10200 Softswitch Release 4.5.X Software Upgrade Procedures*	Describes the steps necessary to upgrade the software components of the BTS 10200 Softswitch from any previous release to Release 4.4. The audience for this publication is the engineering personnel responsible for upgrading and configuring software for the Cisco BTS 10200 Softswitch.
Operations, Maintenance, and Provisioning	*Cisco BTS 10200 Softswitch Release 4.5 Operations Guide*	Describes the procedures necessary to conduct day-to-day operations, to perform preventive and corrective maintenance, and to provision the Cisco BTS 10200 Softswitch. The audience for these publications is the engineering personnel responsible for operating, maintaining, and servicing the components of the system.
Reference	*Cisco BTS 10200 Softswitch Release 4.5 Command Line Interface Reference Guide*	Provide reference information for the hardware and software of the Cisco BTS 10200 Softswitch. 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.

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.

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  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).

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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:

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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

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- 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.

CHAPTER 1

Operational Procedures

Revised: January 22, 1010, OL-12778-14

Revision history for this chapter:

Date	Change Made
July 10, 2007	Modified Call Detail Data Queries section per updated 5.0 billing spec.
May 24, 2007	Modified command for enabling CDB-based billing subsystem.
March 29, 2007	Modified Secured FTP Support for Billing procedures per CSCsi13664
February 28, 2007	Modified p. 1-3 per CSCsh84168.

This chapter describes the Cisco BTS 10200 Softswitch billing operational procedures. The following sections provide detailed information on how to manage and control accounting information generated by the BTS 10200. Actual examples are provided with explanations to illustrate the operational mechanics. These and other commands are documented in the *Cisco BTS 10200 Softswitch Release Command Line Interface Reference Guide* and the *Cisco BTS 10200 Softswitch Release Operations and Troubleshooting Guide*.

Note This guide deals exclusively with the call detail block (CDB) based billing subsystem. For information on the event message (EM) based billing system used in packet cable environments, please refer to the *Cisco BTS 10200 Softswitch Packet Cable Feature Guide*.

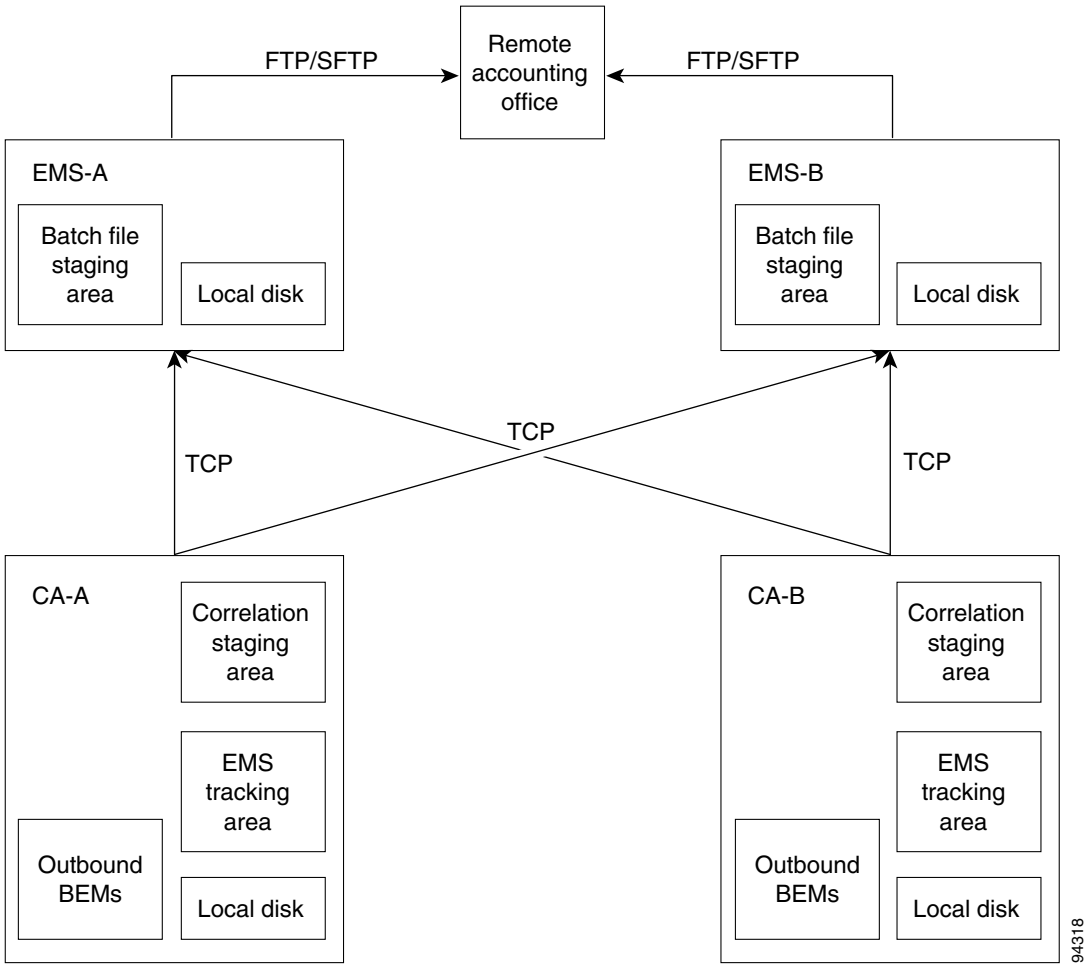
Caution Manual manipulation of billing files can cause billing to fail. Contact Cisco for assistance before manually manipulating any billing file, including clean up.

Call Data Transport Management

Call detail blocks (CDBs) are produced from the current information sent from the billing generator in the Call Agent (CA) to the billing manager in the Element Management System (EMS). Each billing event message (BEM) that is issued by a call in progress is stored in a staging area in the billing generator, waiting for call completion. The Billing Generator determines that a call is in a completed state when a signal stop is detected for the call. After that, the system waits for Quality of Service (QoS) metrics, but it does not wait longer than five seconds. Once this has occurred, the billing generator is triggered to send all data associated with that call to the Billing manager.

The BTS 10200 stores the raw CDBs in flat ASCII files on the persistent store associated with the Bulk Data Management System (BDMS). The BTS 10200 stores from 10 megabytes to 5 gigabytes of billing records in a flat disk partition that is user-definable with respect to size, with the default set at 1 gigabyte. This data is subsequently sent to the specified remote accounting office or billing server or mediation device using the File Transfer Protocol (FTP), as shown in Figure 1-1.

Figure 1-1 Billing Database Redundancy Configuration



The BTS 10200 provides command line interface (CLI) commands to manage the collection and delivery of the accounting information generated.

The user must first ensure that the call detail block (CDB) based billing subsystem is enabled in the call-agent-profile entry for that call agent. The following command enables CDB-based billing:

```
change call-agent-profile id=CA146; cdb-billing-supp=y; em-billing-supp=n;
```

Caution The PacketCable event message (EM) report value must be disabled when the CBD-based reports value is enabled, as shown in the above command example. Refer to File Naming Conventions for additional information.

The **billing-acct-address** command provides the ability to specify how the billing data files are named, where to the send the files to in the network, the directory to place the files into at the destination node, the username and password to use for access to the destination node, and the interval to send the data.

The **show** command displays the current settings for the billing-acct-address, as shown here:

```
CLI> show billing-acct-addr

BILLING_DIRECTORY = /opt/bms/ftp/billing
BILLING_FILE_PREFIX = bil
BILLING_SERVER_DIRECTORY = /dev/null
POLLING_INTERVAL = 15

Reply : Success: Request was successful.
```

The following is an example of the command used to modify the billing-acct-address parameters to setup the FTP transport parameters:

```
CLI> change billing-acct-addr billing-file-prefix=CALL_DETAIL_DATA_;
billing-server-directory=/import/billing/ftp/inbound;
billing-server-addr=rao.customer.com; user-name=customer001; password=test;
polling-interval=15;billing-filename-type=default;sftp_supp=N;
```

The following is a list of the command line tokens associated with this command and the valid values and purpose of each:

- billing-directory—an optional ASCII string from 1 to 64 characters in length.

  This string specifies the directory path on the EMS where the accounting information is stored prior to being sent to the remote mediation system or accounting office via FTP. The default value for this token is “/opt/bms/ftp/billing.” This option is not available for this release.

- **billing-file-prefix**—an optional ASCII string from 1 to 20 characters in length that defaults to “bil.”

  This string is appended to the front of each file sent to the remote mediation system or accounting office via FTP. The files are uniquely identified by appending a timestamp to the end of each filename. The actual name of the files is in the following format: “<billing-file-prefix>_<_yyyymmddhhmmss_pri_element-id_sequence-number.ascii”

- **billing-server-directory**—an optional ASCII character string from 1 to 64 characters in length.

  This string specifies the directory path on the remote mediation system or accounting office to which the accounting information is sent via FTP. The default value for this token is “/dev/null”.

  If a **billing-server-directory** is specified, the following three tokens are mandatory. If not, then they are optional.

  – **billing-server-addr**—an ASCII character string from 1 to 64 characters in length.

    This string specifies the IP address or DNS domain name of the remote mediation system or accounting office to which the accounting information is sent via FTP.

  – **user-name**—an ASCII character string from 1 to 32 characters in length.

This string specifies the FTP login name to use to access the remote mediation system or accounting office.

  - **password**—an ASCII character string from 1 to 32 characters in length.

    This string specifies the FTP password to use to access the remote mediation system or accounting office.

- **polling-interval**—an optional token with a valid range from 1 minute to 60 minutes.

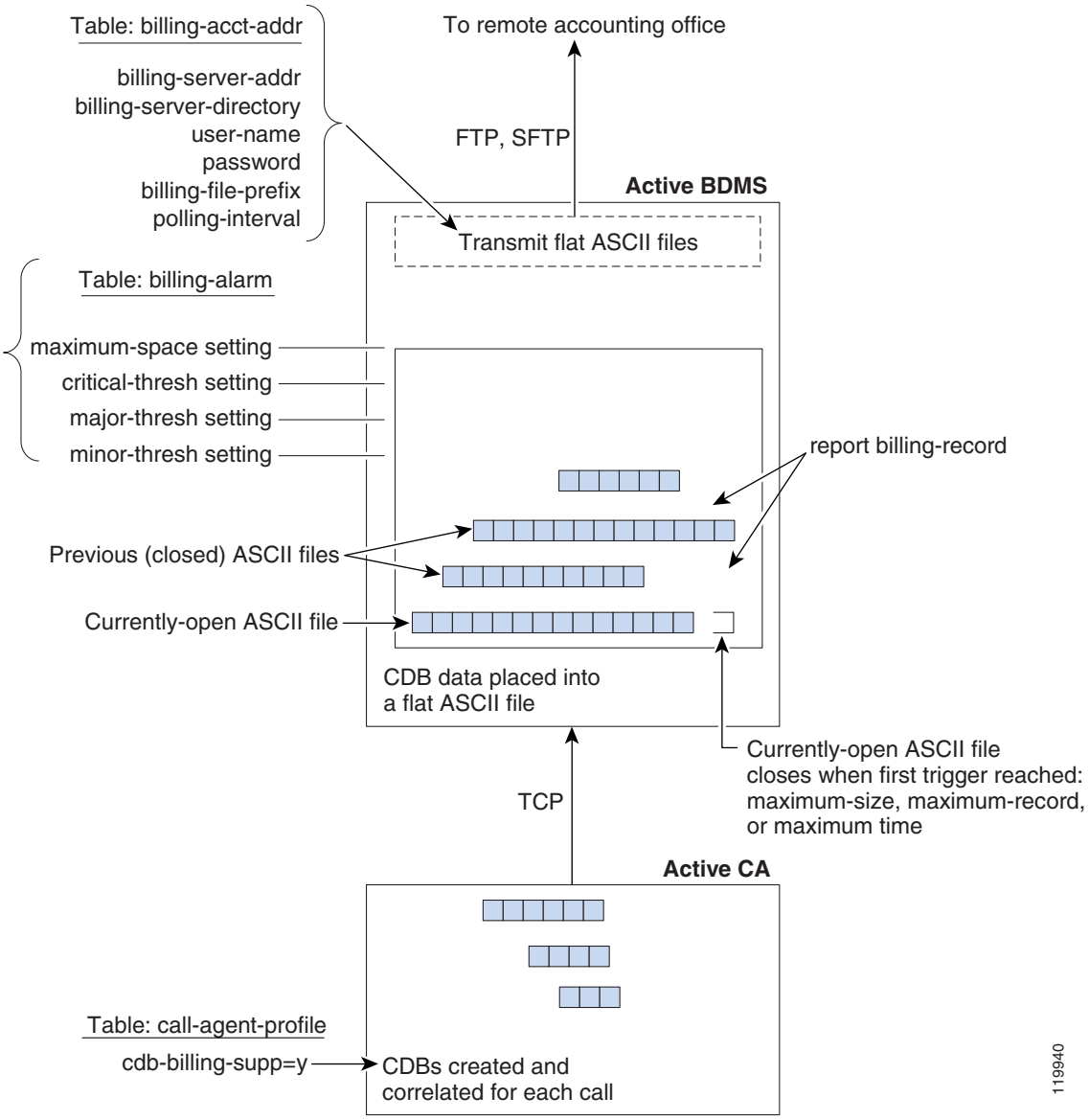
  This token specifies the time, in minutes, between the FTP file transfers from the Cisco BTS 10200 Element Management System and the remote mediation system or accounting office. The default value is 15 minutes. The CDR files size takes precedence over the polling-interval parameter.

Note The CDR files size take precedence over the polling-interval parameter. If there are not enough records to satisfy the size requirements, then the CDR push is delayed. There is a separate billing alarm configuration for this.

- **deposit-confirmation-file—**this flag denotes whether or not an explicit confirmation file is sent after each CDB file is transferred to the remote billing collection system. If this feature is enabled, an empty file with the same name with a suffix of ".done" is appended to the end of the file. The valid choices are Y and N, with N as the default.
- billing-filename-type**—this parameter determines which file naming format to use for the CDR files created on the system. Any changes to this value take effect only when the BDMS platform is restarted. The value of INSTALLED indicates that the value established at sysetm installation should be used. The valid choices are: INSTALLED, PACKET-CABLE, and NON-PACKET-CABLE. The default is set to INSTALLED.**
- **sftp_supp** - This is a boolean flag indicating that theSFTP protocol is supported for the billing file transfer. This flag has either Y for yes or N for no. The default value is N, which means the SFTP transfer is disabled.

If there is any problem transferring the accounting data to the remote mediation system or accounting office, the Element Management System (EMS) issues a BILLING 6 or BILLING 33 event report. This is an indication that billing data is available for transfer, but transport is unable to FTP the data to the proper destination. Use of the above commands is the correct place to start diagnosis of this situation.

Figure 1-2 The CDB Process



Secured FTP Support for Billing Interface

As of Release 4.5, the Cisco BTS 10200 supports secured FTP (SFTP) in billing traffic, and has a new flag, sftp-supp=n. Before you can enable SFTP, the Cisco BTS 10200 and BMS must be configured to allow non-interactive SSH login as described below; however, once non-interactive SSH login has been set up, you must enable SFTP (thereby disabling FTP) by executing the CLI command change billing-acct-addr sftp-supp=y.

The BILLING 6 and Billing 33 alarms changed in Release 4.4. The BILLING 6 (Failed to make ftp transfer) and BILLING 33 (Billing FTP Parameters Invalid) alarm definitions have been modified to read *Failed to make FTP/SFTP transfer* and *Billing FTP/SFTP parameters invalid*, respectively.

As of Release 4.5, the security keys must be manually built in during the installation setup. The following procedure describes how to do the following:

- Generating a Public/Private Key Pair on EMS
- Setting Up a Public Key on the BMS
- Verifying Public Key Authentication

Note For SFTP to work, manually configure Cisco BTS 10200 and BMS to allow non-interactive SSH login.

Generating a Public/Private Key Pair on EMS

Step 1 Log in to the Cisco BTS 10200 primary EMS as root.

Step 2 Create the ssh directory to store the keys:

a. Execute **cd /**.

b. Execute **mkdir .ssh**.

c. Execute **chmod 700 .ssh**.

Step 3 Generate public/private key pair.

a. Execute **cd /.ssh**.

b. Execute **/opt/BTSossh/bin/ssh-keygen -t rsa**.

c. Hit **Enter** to accept the default file name for the key (/.ssh/id_rsa).

d. Enter **y** if prompted to choose whether to overwrite the existing file.

e. Hit **Enter** when prompted to enter a passphrase (no passphrase).

Step 4 Transfer the resulting file /.ssh/id_rsa.pub to a temporary location on the BMS.

/opt/BTSossh/bin/sftp <username><bms_server_ip>

Step 5 Repeat steps 1 through 4 to create a public/private key pair on the secondary EMS.

Setting Up a Public Key on the BMS

Step 1 Login to the BMS.

ssh <username>@<bms_server_ip>

Step 2 Move the public key to a unique name.

Execute **mv id_rsa.pub id_rsa.PRIEMS.pub**.

Step 3 Create the ssh directory to store the public key.

a. Execute **mkdir .ssh**.

b. Execute **chmod 700 .ssh**.

c. Execute **cat id_rsa.PRIEMS.pub>>.ssh/authorized_keys**.

d. Execute **chmod 600 .ssh/authorized_keys**.

e. Execute **rm id_rsa.PRIEMS.pub**. This command is optional.

Step 4 Log out of the BMS.

Execute **exit**.

Step 5 Repeat steps 1 through 4 to set up a public key for the secondary BMS.

Verifying Public Key Authentication

Step 1 Logon to the primary EMS.

Step 2 Execute ssh <username>@abcd, where abcd is the IP address or fully qualified domain name of the BMS.

Step 3 Verify that the login to the BMS is successful and that the system issues no prompts for username or password.

The BILLING 6 and Billing 33 alarms changed in Release 4.4. The BILLING 6 (Failed to make ftp transfer) and BILLING 33 (Billing FTP Parameters Invalid) alarm definitions have been modified to read *Failed to make FTP/SFTP transfer* and *Billing FTP/SFTP parameters invalid*, respectively.

Release 4.5 allows for using secured FTP (sFTP) in billing traffic, and included a new flag, sftp-supp=n. Before you can enable SFTP, the Cisco BTS 10200 and BMS must be configured to allow non-interactive SSH login as described below; however, once non-interactive SSH login has been set up, you must enable SFTP (thereby disabling FTP) by executing the CLI command change billing-acct-addr sftp-supp=y.

Also worth noting in Release 4.5 is that during initial set up, the security keys must be manually built in. To set up the public and private keys for the connection between the Cisco BTS 10200 Softswitch and a mediation device, complete the following steps.

For sFTP to work, manually configure Cisco BTS 10200 and BMS to allow non-interactive SSH login.

SFTP Troubleshooting Information

When SFTP is configured for billing file transfer by set <CmdArg>SFTP_SUPP<noCmdArg> to Y, billing files can not be sent to an external SFTP server. The BDMS log shows following message:

“Error reading from SFTP server: Broken pipe.”

The impact is that the billing file delivery to an external SFTP server does not work.

This is due to a bug in OpenSSH 3.9p1 that causes SSH connection failure if the user root initiates the connection with a group ID other than what is defined in the /etc/passwd file.

This seems to happen if:

1. SSH client is OpenSSH_3.9p1, and
2. BDMS platform is started for first time with a fresh load.

The workaround is to:

1. Upgrade OpenSSH to version 4.1p1 or above, or
2. Try performing “platform stop -i BDMS01” and “platform start -i BDMS01” to restart BDMS. If file transferring over sftp still fails after BDMS restart, use FTP instead of SFTP for billing file transfer.

File Naming Conventions

Cisco BTS 10200 supports two different billing record file naming conventions: **PacketCable** and **Non-PacketCable** (**NPC**). The user can specify the format by setting the BILLING_FILE_NAME token in the BILLING-ACCT-ADDR table. The default format is NPC.

Note Beginning with Release 5.0, the opticall.cfg Billing_File_Name parameter is not considered and is marked for obsolescence.

Default Setting Files

NPC is the default naming convention and generates files in the following format:

<billing-file-prefix>-<call-agent-id>-(0/1){+/-}HHMMSSyyyymmddhhmmss-<sequence-number>-<state>

where:

- <billing-file-prefix> is the billing file prefix from the billing-acct-addr table
- <call-agent-id> is the call agent id from the call-agent table
- (0/1): daylight saving time, on = 1, off = 0
- {+/-}HHMMSS is the UTC offset time
- yyyymmddhhmmss is the local time the file was created
- <sequence-number> is a monotonically increasing 6-digit number from 000001 to 999999 that will roll over to 000001 after the maximum 999999 is reached
- <state> is a letter indicating the state of the file where P indicates primary data (complete file but un-transferred), S indicates secondary data (complete file and transferred), and O indicates open (current open file that is incomplete and un-transferred)

The following is an example from a billing file with the state value at the end of the line.

```
-rw-r--r--1 root other 59 Dec 6 06:14 tb101-CA146-0-060000-20061206051420-000167-S
-rw-r--r--1 root other 59 Dec 6 07:14 tb101-CA146-0-060000-20061206061420-000168-S
-rw-r--r--1 root other 59 Dec 6 08:14 tb101-CA146-0-060000-20061206071420-000169-S
-rw-r--r--1 root other 59 Dec 6 09:14 tb101-CA146-0-060000-20061206081420-000170-P
-rw-r--r--1 root other 36 Dec 6 09:14 tb101-CA146-0-060000-20061206091420-000171-O
```

PacketCable Setting Files

The PacketCable setting generates files in the following format:

<billing-file-prefix>_yyyymmddhhmmss_<priority>_<record-type>_<cms-id>_<sequence-number>.ascii[.tmp]

where:

- **<billing-file-prefix>** is the billing file prefix from the billing-acct-addr table
- **yyyymmddhhmmss** is the time the file was created
- **<priority>** is the default priority of the file—this value is hard coded to 3 for Release 4.5
- **<record-type>** is a binary flag indicating the state of the file where:

  - 0 indicates the file has not been transferred
  - 1 indicates that the file has been transferred off board
- **<cms-id>** is the cms ID from the call-agent-profile table
- **<sequence-number>** is a monotonically increasing 6 digit number from 000001 to 999999 that rolls over to 000001 after the maximum number of 999999 is reached
- **[.tmp]** is an optional, temporary extension of .tmp that indicates the file is the currently open file for writing. Files ending in .tmp are not transferred to the off board billing collection system.

Call Data Alarm Management

The BTS 10200 billing manager (BMG) process in the EMS tracks the total number of records the billing database can store, the number of unacknowledged records, and the current percentage of the database that is occupied by unacknowledged records. This information is then compared against the threshold levels set in the billing alarm database. If the current amount of billing data in the database exceeds thresholds, then the billing manager issues alarms. The billing manager resets the alarms when the storage levels drop below the specified thresholds.

Note In Release 4.5.0, the billing requires a minimum file size of 32 bytes. At system startup, billing goes through the list of existing billing files. If any has a size less than 32 bytes, billing fails to start. You will see the errors similar to the following:

ERROR 21:48:33.858 BMG MainThr ----------|Billing file size is too small: /opt/bms/ftp/billing/tb71-CA146-20050915-1723300-P|bmginit.c:660

ERROR 21:48:33.858 BMG MainThr ----------|Minimum file size is 32 bytes|bmginit.c:661

ERROR 21:48:33.858 BMG MainThr ----------|Bad files need to be removed before restart|bmginit.c:662

The corrective action is to remove this bad filling file and restart.

However, this is not the case with Releases 4.5.1 and 4.5.13. In those releases, the BMG succeeds, and deletes those files less than 32 bytes.

The BTS 10200 provides CLI user commands to manage the thresholds at which alarms are issued pertaining to billing data overwrite scenarios. These commands provide the ability to specify to what levels the billing partition is filled before issuing an alarm of the appropriate level.

The following is an example of the **show billing-alarm** command and the response that displays the current settings for billing alarms:

```
CLI>show billing-alarm

MINOR_THRESH = 70
MAJOR_THRESH = 80
CRITICAL_THRESH = 90
MAXIMUM_SPACE = 1000
MAXIMUM_SIZE = 2
MAXIMUM_RECORD = 1000
MAXIMUM_TIME = 3600
REGULAR_SPACE = 60
```

```
Reply : Success: Request was successful.
```

The following is an example of the **change billing-alarm** command used to set the threshold levels at which billing alarms are issued:

```
change billing-alarm minor-thresh=75; major-thresh=85; critical-thresh=95;
maximum-space=2000; maximum-size=2; maximum-record=3000; maximum-time=30;
regular-space=70;
```

The following is a list of the command line tokens associated with this command and the valid values and purpose of each:

- **minor-thresh**—an optional percentage, from 2 percent to 97 percent, with a default value of 70 percent that represents an initial billing database usage threshold. When this specified percentage of the billing database is consumed by billing records that have not been written into ASCII batch files, a minor alarm is issued. The value of this token must be less than that of the **major-thresh** token.
- **major-thresh**—an optional percentage, from 3 percent to 98 percent, with a default value of 80 percent that represents an intermediate billing database usage threshold. When this specified percentage of the billing database is consumed by billing records that have not been written into ASCII batch files, a major alarm is issued. The value of this token must be less than that of the **critical-thresh** token.
- **critical-thresh**—an optional token with a percentage from 4 percent to 99 percent, with a default value of 90 percent that represents a final billing database usage threshold. When this specified percentage of the billing database is consumed by billing records that have not been written into ASCII batch files, a critical alarm is issued.
- **maximum-space**—an optional token that specifies the allocated storage capacity for billing data in megabytes. This token's value can range from 10 MB to 5 GB and has a default value of 1 GB.
- **maximum-size**—an optional token that specifies the maximum size of a CDB flat file in megabytes. This token's value can range from 1 MB to 10 MB and has a default value of 2 MB.
- **maximum-record**—an optional token that specifies the maximum number of records to be stored in a given flat file. This token's value can range from 500 records to 10,000 records and has a default value of 1,000 records.
- **maximum-time**—an optional token that specifies the maximum number of seconds a given flat file can remain open for addition of new records. This token's value can range from 10 seconds to 3600 seconds and has a default value of 3,600 seconds (1 hour).
- **regular-space**—an optional token that specifies the real time capacity used, as a percentage of the available capacity, before secondary files are deleted. This token's value can range from 1 percent to 90 percent and has a default value of 60 percent. The value of this token must be less than the value for **minor-thresh**.

If there is a problem creating the ASCII accounting information files, the EMS will issue BILLING 14, BILLING 15, or BILLING 52 event reports. This is an indication that ASCII accounting data files cannot be created and stored on disk in the EMS. In these cases, verify that the alarm threshold levels are not set too low and that there is sufficient storage area available on the EMS to hold the FTP files. Use of the above commands is the appropriate place to start diagnosis of this situation.

No Visible Billing Records

The BTS 10200 EMS stops generating billing records when a certain limit is reached. One limit is for the maximum-space parameter described in the previous section. When the total size of the billing files exceeds the disk space specified in maximum-space, no new billing records are created on the EMS.

Another hard limit is a maximum of 10,000 billing files on EMS. To continue receiving billing records, users can reduce the disk space occupied by the billing files, or reduce the number of billing files. The disk space and/or the number of billing files may be increasing because the billing files were not properly transferred to the mediation server. The SFTP or FTP connection failure (for example, the server IP address not correct, SFTP not configured correctly, etc.) results in billing files being backed up on the EMS, where they will either eventually reach either the maximum-space limit, or the 10,000 files limit. In this scenario, check the billing transport set up by using the "change billing-acct-addr" command).

Removing Billing Files

Billing files are system files, and should not be modified, such as renaming or removing files, except by the system administrator. The system administrator should set up proper permission on the billing storage directory and billing files to avoid billing info being compromised.

If for some reason the billing files must be moved or removed (due to disk space alarms, for example), follow these steps:

1. Perform a switchover of the BDMS.
2. Platform stop the newly-standby BDMS.
3. Move the billing files in question.
4. Platform start the BDMS.
5. Repeat Steps 1-4 on the pair node if necessary.

Call File Management

The BTS 10200 provides a command line interface that allows you to view lists of billing files on the Bulk Data Management System (BDMS) platform at any given time. The names of the available files and their operational status can be queried using the commands described.

The following **report billing-file** command examples allow you to query the BDMS for billing files and their associated information:

- **report billing-file filename=%**—displays all file names stored in /opt/bms/ftp/billing. Depending on the number of files stored, this command might take awhile to complete.
- **report billing-file filename=xxx**—displays the filename specified as well as the current state of the file.
- **report billing-file state=xxx—**displays all filenames that are in the state entered by the user.

The following is a list of the command line tokens associated with this command and the valid values and purpose of each:

- **filename**—name of the billing file to report.

  If the file name entered does not exist, the user is notified that the file does not exist currently.
- **state**—current state of a given file. The valid states are:
  - OPEN—file is currently being written to
  - PRIMARY—file has not been sent to or acknowledged by the external billing mediation system
  - SECONDARY—file has been sent to and acknowledged by the external billing mediation system.
- **start-row**—row to start displaying from in the returned result set. The default value is 1.

- **limit**—maximum number of rows to display from the returned result set. The default value is 50.
- **display**—data columns to display from the ones supported by this command. The default is to display all available columns.
- **order**—column that the display is to be ordered by from the returned result set.
- **auto-refresh**—specifies whether a new result set is to be created or the existing result set is to be used (if one is available). The default value is Y (use the existing result set).

Call Detail Data Queries

The BTS 10200 provides a command line interface to query CDB records from the ASCII flat files stored in */opt/bms/ftp/billing* on the EMS. This mechanism provides the ability to specify record(s) to display based on the supplied information.

The following is an example of the command line for searching based on a time interval:

```
report billing-record start-time=2004-03-27 12:00:00:000; end-time=2004-03-27
12:05:00:000; orig-number=9726712355;
```

The example shown above scans the ASCII flat files on the EMS for any call detail records that match the supplied criteria. Each record written between 12:00:00 and 12:05:00 on the 27th of March 2004 with a originating number field containing 972-671-2355 would be displayed to the user.

The following is an example of the command line for searching based on a specified file:

```
report billing-record filename=bil-ca1-20000327-120000; orig-number=9726712355;
```

The example shown above scans the ASCII flat files on the EMS for any call detail records that match the supplied criteria. Each record written to the file *bil-ca1-20000327-120000* with a `originating number` field containing 972-671-2355 would be displayed to the user.

The user can also use this command with no filename or time interval specified. In this case, the system displays the most recently written call record. The following is an example of the command line syntax to request that the most recently written record be displayed (effectively a tail=1 command):

```
report billing-record
```

If a query is entered and no filename or time interval is specified, but a search qualifier is entered (such as call type)—the query is performed over the most recently written filename.

There are several types of searches that can be performed using this query. The billing files can be searched based on filename, start and stop times, or the most recently written file. These searches can be further refined by specifying the call type, orig number, term number, service type, termination cause, or tail parameter. Only one of these refinement parameters can be used at a time.

The following is a list of the search types that can be performed:

- **Filename**—by specifying the actual file name of a group of records, those records can be searched based on the other search qualifiers supplied.
- **Time Interval**—the start and stop times can be specified and all records written within that time period are displayed. This query can be further qualified by combining it with the Call Type or Term Number or Orig Number or Service Type or Termination Cause queries.
- **Call Type**—the type of call is specified so that all records within the database that match this type are displayed to the user.
- **Service Type**—the type of service to search for within a call record(s) is specified and all records within the database that match this service type are displayed to the user.

- **Termination Cause**—the type of call termination cause is specified and all records within the database that match this termination cause are displayed to the user.
- **Term Number**—each record that contains an exact match with the called number field in the database to the specified directory number is displayed to the user.
- **Orig Number**—each record that contains an exact match with the calling number field in the database to the specified directory number is displayed to the user.
- **Tail**—this query type displays the specified number of records most recently written to the billing database. The valid values range from 1 to 50. When this token is used, the most recently written record are searched. Any CDB files that do not contain actual CDB records are skipped.

The following section describes the command line tokens associated with the **report billing-record** command and their valid values and purpose.

Note The time in the command "report billing_record start_time=xxxx;end_time=xxxx" is "GMT" time.

- **start-time**—a time stamp value in the format of YYYY-MM-DD HH:MM:SS.mmm.

  This value indicates the starting time to filter against in the search for when billing records were written to the database. This is an optional token that has no default value. If the milliseconds portion of the time stamp is omitted, a value of 000 is implied.
- **end-time**—a time stamp value in the format of YYYY-MM-DD HH:MM:SS.mmm. If the milliseconds portion of the time stamp is omitted, a value of 000 is implied.

  This value indicates the stopping time to filter against in the search for when billing records were written to the database. This is an optional token that has no default value.
- **term-cause**—an ASCII character string specifying the call termination cause to filter against in the billing database.

  The valid values for this token are:

  AAL_PARAM_NOT_SUPPORTED

  ACCESS_INFO_DISCARDED

  ACCOUNT_LIMIT_EXCEEDED

  AUDIT_RELEASE

  BEARER_CAPAB_INCOMPAT_WITH_SERVICE

  BEARER_CAPABILITY_NOT_IMPLEMENTED

  BEARER_CAPABILITY_UNAVAILABLE

  CALL_AWARDED

  CALL_PROCEEDING

  CALL_REJECTED

  CALL_RESTRICTED_WITH_CLIR

  CALLED_NUMBER_PORTED_OUT

  CHANNEL_DOES_NOT_EXISIT

  CHANNEL_UNACCEPTABLE

  CHANNEL_UNAVAILABLE

  CIRCUIT_CHANNEL_CONGESTED

DESTINATION_OUT_OF_ORDER
EXCESS_DIGIT_RECD
FACILITY_NOT_IMPLEMENTED
FACILITY_NOT_SUBSCRIBED
FACILITY_REJECTED
INCOMPATIBLE_DESTINATION
INCORRECT_MESSAGE_LENGTH
INFOELEMENT_NONEXISTENT
INTERNETWORKING_ERROR_UNSPECIFIED
INVALID_CALL_REFERENCE
INVALID_ENDPOINT_REFERENCE
INVALID_INFOELEMENT
INVALID_NUMBER_FORMAT
INVALID_TRANSIT_NETW_SELECTION
MANDATORY_INFOELEMENT_MISSING
MESSAGE_INCOMPAT_WITH_CALL_STATE
MESSAGE_TYPE_NONEXISTENT
MISROUTED_PORTED
NE_CAUSE_AUDIT_RELEASE
NETWORK_OUT_OF_ORDER
NO_ROUTE_DESTINATION
NO_ROUTE_TRANSIT_NETWORK
NO_VPCI_VCI_AVAILABLE
NORMAL_CALL_CLEARING
NORMAL_UNSPECIFIED
NUMBER_CHANGED
ONE_DIALED_IN_ERROR
ONE_NOT_DIALED
PROTOCOL_ERROR_THRESHOLD_XCEEDED
PROTOCOL_ERROR_UNSPECIFIED
QOS_UNAVAILABLE
RESOURCE_UNAVAILABLE
RESPONSE_STATIC_ENQ_MSG
SERVICE_DENIED
SERVICE_NOT_IMPLEMENTED
SERVICE_OPERATION_VIOLATED
SERVICE_UNSPECIFIED
SESSION_TIMER_REFRESH_TIMEOUT

SWITCH_EQUIP_CONGESTED

TEMPORARY_FAILURE

TIMER_EXPIRY_RECOVERY

TOO_MANY_PENDING_ADD_PARTY_REQ

UNAUTHORIZED_BEARER_CAPABILITY

UNASSIGNED_NUMBER

UNSUPPORTED_TRAFFIC_PARAMS

USER_ALERTED_NO_ANSWER

USER_BUSY

USER_CELLRATE_UNAVAILABLE

USER_NOT_RESPONDING

VACANT_CODE

VPCI_VCI_ASSIGNMENT_FAIL

VPCI_VCI_NOT_AVAILABLE

ZERO_DIALED_IN_ERROR

- **call-type**—an ASCII character string specifying the type of call record to filter against in the billing database. The valid values for this token are the same as those listed for the **billing-cdb** command.

* In Release 4.5, it is possible to provision the Destination table with any one of the following:

- call-type=EMG
- call-type=AMBULANCE
- call-type=FIRE
- call-type=POLICE

Alternatively, it is possible to provision the following (one pair per DEST-ID):

- call-type=EMG; call-subtype=AMBULANCE
- call-type=EMG; call-subtype=FIRE
- call-type=EMG; call-subtype=POLICE
- call-type=EMG; call-subtype=NONE (default)

For service providers in the U.S., it is typical to provision the Destination table with call-type=EMG for the digit string 911, and call-subtype=NONE (default), because 911 is a central dispatch point for all emergency, ambulance, fire, and police calls.

Caution On the BTS 10200, to consider a call an emergency, it must be provisioned as call-type EMG. If using separate DNs for ambulance, fire, and police service (typically applies to networks outside the U.S.A.), Cisco strongly recommends that you provision these as call-type EMG and call-subtype <AMBULANCE or FIRE or POLICE> in the Destination table. This is the only way to be sure they are given all the treatment of the EMG call-type.

- **term-number**—an ASCII character string that is 4 characters to 15 characters long.

  This value indicates the actual called party directory number to filter against in the billing database. This is an optional token that has no default value.

- **orig-number**—an ASCII character string that is 4 characters to 15 characters long.

  This value indicates the actual calling party directory number to filter against in the billing database. This is an optional token that has no default value.

- **tail**—a decimal value from 1 to 50.

  This value indicates the number of most recently written records to query. This is an optional token that has no default value

- **service-type**—an ASCII character string specifying the type of service to filter against in the billing database.

  The valid values for this token are:

  911 HANDLING

  ACCOUNT CODE

  AIN HANDLING

  ANONYMOUS CALL REJECTION

  AUTHORIZATION CODE

  AUTO RECALL

  AUTOMATIC CALLBACK

  BUSY LINE VERIFICATION

  CALLBLOCK

  CALL FORWARD BUSY

  CALL FORWARD COMBINATION

  CALL FORWARD NO ANSWER

  CALL FORWARD REDIRECT

  CALL FORWARD UNCONDITIONAL

  CALL HOLD

  CALL PARK

  CALL PARK REOFFERED

  CALL PARK RETRIEVAL

  CALL TRANSFER

  CALL WAITING

  CALL WAITING DELUXE

  CALL WAITING WITH CALLER IDENTITY

  CALLING ID DELIVERY BLOCK PERMANENT

  CALLING IDENTITY DELIVERY SUPPRESSION

  CALLING NAME DELIVERY

  CALLING NAME DELIVERY BLOCKING

  CALLING NUMBER DELIVERY

  CALLING NUMBER DELIVERY BLOCK

  CANCELLED CALL WAITING

CLASS OF SERVICE
CNAM SCP QUERY
CUSTOM DIALING PLAN
CUSTOMER ORIGINATED TRACE
DIRECTED CALL PICKUP WITH BARGE IN
DIRECTED CALL PICKUP WITHOUT BARGE IN
DO NOT DISTURB
DRCW
HOTLINE
HOTLINE VARIABLE
LCD PREPAID
LCD POSTPAID
LIMITED CALL DURATION—PREPAID
LIMITED CALL DURATION—POSTPAID
LNP
MULTIPLE DIRECTORY NUMBER
NO SOLICITATION ANNOUNCEMENT
OFF HOOK TRIGGER
OUTGOING CALL BARRING
PRIVACY SCREENING
REJECT CALLER
REMOTE ACTIVATION OF CALL FORWARDING
REMOTE ACTIVATION OF CALL FORWARDING PIN
REPEAT CALL
RETURN CALL
SCREENING LIST EDIT DRCW
SCREENING LIST EDIT SCA
SCREENING LIST EDIT SCF
SCREENING LIST EDIT SCR
SELECTIVE CALL ACCEPTANCE
SELECTIVE CALL FORWARDING
SELECTIVE CALL REJECTION
SERIVCE FEATURE GROUP INCOMING
SERVICE FEAURE GROUP OUTGOING
SIP OFF-HOOK TRIGGER
SIP REFER
SIP REPLACE
SIP TERMINATION ATTEMPT TRIGGER

SPEED CALLING

TERMINATION ATTEMPT TRIGGER

THREE WAY CALL

THREE WAY CALL DELUXE

TOLL FREE

USER SENSITIVE THREE WAY CALL

VOICE MAIL

VOICE MAIL ACCESS

WAKEUP CALL (Release 4.5.1)

WARMLINE

Call Data Provisioning

The BTS 10200 provides a command line interface to manage the types of call detail records generated. This mechanism provides the ability to specify which call detail block types are generated by the system on a per-call-type basis. When the system is installed, all CDB types are enabled by default.

The following is an example of the **show billing-cdb** command to display the current enable/disable setting for billing CDBs for a specific call type:

```
CLI>show billing-cdb type=LRN

TYPE=LRN
ENABLE=Y

Reply : Success: Request was successful.
```

The following is an example of the **change billing-cdb** command to enable local billing:

```
change billing-cdb type=LOCAL; enable=y;
```

The command line tokens associated with the **show billing-cdb** command and their valid values and purpose are as follows:

- **type**—an ASCII character string specifying the type of call record to provision.

  This is a mandatory token with no default value. The valid values for this token are the same as those listed in the previous section for the **report billing-record** command.

- **enable**—an ASCII character (Y or N).

  This string specifies whether the specified CDB type should be enabled or disable for generation. This is an optional token with a default value of Y.

Caution for USE-PAI-HDR-FOR-ANI Token

The USE-PAI-HDR-FOR-ANI token in the softswitch trunk group profile controls the P-Asserted-ID (PAID) header used to send and receive calling party information.

With the USE-PAI-HDR-FOR-ANI token set to Y, the calling party information is derived exclusively from the PAID header on inbound calls, so when a SIP INVITE arrives at the BTS 10200 without PAID header, the Cisco BTS 10200 treats the call as though it does not have a calling party number.

For the billing record, the following is recorded for such a call:

ORIGNUMBER -> Null (empty)

CHARGENUMBER -> Null (empty)

ORIGCALLINGNAME -> OUT OF AREA

The BTS 10200 records the user part of the From: header in ORIGINATINGSIPUSERNAME field of the billing record.

Note Customer Originated Trace (COT, *57) does not work with USE-PAI-HDR-FOR-ANI=Y, and the incoming SIP INVITE does not have the PAID header.

For more information about using USE-PAI-HDR-FOR-ANI=Y or about which other features/functions may not work properly because of USE-PAI-HDR-FOR-ANI=Y and the incoming SIP INVITE not having the PAID header, contact your Cisco representative.

CHAPTER 2

Feature Server Derived Call Data

Revised: January 22, 1010, OL-12778-14

This chapter describes feature related data that is placed within various fields in the call detail block (CDB) records. This data is generated by the Feature Servers, either internal or external, whenever a feature is invoked during the context of a given call. Up to three feature instances can be captured in a single call detail block. The format of the data and the possible values are shown in the following sections. Each block of feature data contains up to four sub-fields, as follows:

- **ServiceId**—a string describing which services/features were involved in this billing event. The possible values are: (Blue typeface indicates a hyperlink to the associated CDB table.)
  - 1 = CB—Call Block (not used)
  - 2 = CFU—Call Forward Unconditional
  - 3 = CW—Call Waiting
  - 4 = RPC—Repeat Call (not used)
  - 5 = RTC—Return Call (not used)
  - 6 = CHD—Call Hold
  - 7 = TWC—Three-way Calling
  - 8 = CT—Call Transfer
  - 9 = CND—Calling Number Delivery
  - 10 = CNDB—Calling Number Delivery Blocking
  - 11 = CFB—Call Forward on Busy
  - 12 = COS—Class of Service
  - 13 = CNAM_SCP (13 or 60) (not used)
  - 14 = CFNA—Call Forward No Answer
  - 15 = AIN—AIN Handling (not used)
  - 16 = EMG—911 Handling
  - 17 = CDP—Custom Dialing Plan
  - 18 = CIDBP—Calling ID Delivery Block Permanent (not used)
  - 19 = SFGI—Service Feature Group Incoming
  - 20 = SFGO—Service Feature Group Outgoing
  - 21 = CCW—Cancel Call Waiting

- 22 = USTWC—Usage Sensitive Three-way Calling
- 23 = TOLL-FREE—Toll Free Service (not used)
- 24 = ACCT—Account Code Service
- 25 = AUTH—Authorization Code Service
- 26 = LNP—Local Number Portability (not used)
- 27 = CIDS—Caller Identity Delivery Suspension
- 28 = CNAB—Calling Name Delivery Blocking
- 29 = CIDCW—Call Waiting with Caller Identity
- 30 = ACR—Anonymous Call Rejection
- 31 = TOLL-FREE-CALL—Toll Free Service
- 32 = COT—Customer Originated Trace
- 33 = CPRK—Call Park
- 34 = CPRK-RETRIEVAL—Call Park Retrieval
- 35 = CPRK-REOFFER—Call Park Reoffer
- 36 = DPU—Directed Call Pickup with Barge-In
- 37 = DPN—Directed Call Pickup without Barge-In
- 38 = HOTLINE—Hotline
- 39 = WARMLINE—Warmline
- 40 = BLV—Busy Line Verification Busy Line Interruption
- 41 = SCR—Selective Call Rejection
- 42 = SCF—Selective Call Forwarding
- 43 = SCA—Selective Call Acceptance
- 44 = AUTO-CALLBACK—Automatic Call Back
- 45 = AUTO-RECALL—Automatic Recall
- 46 = SPEED-CALL—Speed Calling
- 47 = DND—Do Not Disturb
- 48 = RACF—Remote Activation of Call Forwarding
- 49 = RACF_PIN—Remote Activation of Call Forwarding PIN Change
- 50 = DRCW—Distinctive Ring Call Waiting
- 51 = SLE_SCF—SLE-SCA SLE-SCF SLE-SCR SLE-DRCW
- 52 = SLE_SCA—SLE-SCA SLE-SCF SLE-SCR SLE-DRCW
- 53 = SLE_SCR—SLE-SCA SLE-SCF SLE-SCR SLE-DRCW
- 54 = SLE_DRCW—SLE-SCA SLE-SCF SLE-SCR SLE-DRCW
- 55 = REJECT-CALLER—Reject Caller
- 56 = CWD—Call Waiting Deluxe
- 57 = TWCD—Three-way Calling Deluxe
- 58 = OCB—Outgoing Call Barring
- 59 = HOTV—Hotline Variable

  - 60 = CNAM SCP Query
  - 61 = SIP REFER
  - 62 = CFC—Call Forwarding Combination
  - 63 = NSA—No Solicitation Announcement
  - 64 = PS—Privacy Screening
  - 65 = VM—Voice Mail
  - 66 = VM_ACCESS—Voice Mail Access
  - 67 = Limited Call Duration—PREPAID
  - 68 = Limited Call Duration—POSTPAID
  - 69=MULTIPLE_DIRECTORY_NUMBER
  - 70=SIP_REPLACE
  - 71=CFR
  - 72=OHT
  - 73=TAT
  - 74=OCNA
  - 75=SEAS
  - 76=ENUM
  - 77=ENUM LNP
  - 78=TMB
  - 79=GMB
- **ServiceStatus1, ServiceStatus2, ServiceStatus3**—a string denoting the type of invocation that occurred. This is not a field within the billing records, but rather an indication of service invocation types that can occur for a given service, and an indication of the corresponding timestamp field that is populated as a result. The valid invocation types are:
  - INSTANCE
  - ACTIVATION
  - DEACTIVATION
  - INTERROGATION
- **FeatureDataOne, FeatureDataTwo, FeatureDataThree**—a string containing the service/feature specific billing data as described in the following sections.
- **Result**—a string indicating if the action taken was successful or not. The valid values are:
  - SUCCESS
  - FAILURE
  - ANI_INVALID
  - ANI_BLOCKED
  - CASUAL_BLOCKED
  - II_SCREENED
  - BW_SCREENED
  - COS_RESTRICTED

- 2L-ACT ABANDONED VOICEBACK DN
- 2L-ACT CONNECTED ANONYMOUS DN
- COS_INTERNAL_ERROR
- CALL_BLOCKED
- RESULT_ UNKNOWN
- USER_ ABANDONED
- INVALID_PIN
- PIN_BLOCKED
- BILLING_INFO_ TDISC_CALL_ BLOCKED—Calls blocked due to the subscriber being temporarily disconnected
- BILLING_INFO_ VALID—Call was allowed for a temporarily disconnected subscriber
- BILLING_INFO_ ABANDON_ WHILE_ ANNOUNCE
- BILLING_INFO_SEASON_SUSPEND_CALL_BLOCKED (22)
- INSUFFICIENT_QUOTA
- MEDIATION_REQUIRED
- 305_FAILURES—IP Trigger processing failure based on reciept of a SIP 305 response

- **UsageFlag**—A string indicating if the service invoked is considered usage sensitive or not. The valid values are:
  - FALSE
  - TRUE

Table 2-1 lists the available features including the fields, values, and associated CDB fields.

Table 2-1 Features and the Associated Call Detail Block Fields

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	ACCT	n/a
	ServiceStatus	INSTANCE	n/a
	FeatureData	Account Code	AccountCode
Account Code Service	**Result**	n/a	n/a
	ServiceId	AUTH	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	n/a
	FeatureData	Auth Code	AuthCode
Authorization Code Service	**Result**	n/a	n/a

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	reject-caller	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
Reject Caller	**Result**	n/a	n/a
	ServiceId	ACR	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
	FeatureData	n/a	n/a
	Result	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Anonymous Call Rejection			
	ServiceId	CHD	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
	Result	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Call Hold			

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	CT	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
Call Transfer	**FeatureData**	n/a	n/a
Call Transfer feature data blocks appear in the second call leg.	**Result**	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
	ServiceId	CNAB	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
Calling Name Delivery Blocking	**Result**	n/a	n/a
	ServiceId	CNDB	ServiceType1, ServiceType2,or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
	Result	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Calling Number Delivery Blocking			
	ServiceId	CW	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
	Result	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Call Waiting			

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	CCW	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
Cancel Call Waiting	**Result**	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
	ServiceId	CIDCW	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
Call Waiting with Caller Identity	**Result**	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
	ServiceId	CIDS	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
Caller Identity Delivery Suspension	**Result**	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	CFU	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	FORWARDED	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		INTERROGATION	ServiceInterrogationTime1, ServiceInterrogationTime2, or ServiceInterrogationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
	FeatureData	Forwarded to DN (Forwarded)	Forwarded, Instance
		Related BCID (Instance)	FeatureData1, FeatureData2, or FeatureData3
		DN (Activation)	Activation
		N/A (Deactivation & Interrogation)	FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3
			Deactivation, Interrrogation
Call Forward Unconditional			N/A
Call Forward Unconditional data block appears on the second call leg created by BTS when the CFU feature is invoked.	**Result**	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	CFNA	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		INTERROGATION	ServiceInterrogationTime1, ServiceInterrogationTime2, or ServiceInterrogationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
	FeatureData	Redirected Number (Instance) DN (Activation) N/A (Deactivation & Interrogation)	Instance FeatureData1, FeatureData2, or FeatureData3 In the case of Instance, this field is used only if CFNA uses 302 to redirect the call. Activation FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3 Deactivation, Interrogation N/A
	Result	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Call Forward No Answer			

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	CFB	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		INTERROGATION	ServiceInterrogationTime1, ServiceInterrogationTime2, or ServiceInterrogationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
	FeatureData	DN (On Activation)	Activation
			FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3
			Instance, Deactivation,Interrogation
			N/A
	Result	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Call Forward on Busy			
	ServiceId	CPRK	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
Call Park	**Result**	n/a	n/a
	ServiceId	CPRK-REOFFER	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
Call Park Reoffer	**Result**	n/a	n/a

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	CPRK-RETRIEVAL	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
Call Park Retrieval	**Result**	n/a	n/a
	ServiceId	BLV	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
Busy Line Verification	**FeatureData**	n/a	n/a
Busy Line Interruption	**Result**	n/a	n/a
	ServiceId	DPU	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	DN from where the call was picked up	FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3
Directed Call Pickup with Barge-In	**Result**	n/a	n/a
	ServiceId	DPN	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	DN from where the call was picked up	FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3
Directed Call Pickup without Barge-In	**Result**	n/a	n/a

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	TWC	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
Three-way Calling	**Result**	n/a	n/a
	ServiceId	USTWC	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
	Result	n/a	n/a
	Usage Flag	Y / N	ServiceUsageSensitive1 or ServiceUsageSensitive2 or ServiceUsageSensitive3
Usage Sensitive Three-way Calling			
	ServiceId	TOLL-FREE-SCP TOLL-FREE-LOCAL	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	NPA-NXX-XXXX	ReturnedNumber
	Result	SUCCESS FAILURE ANI_INVALID ANI_BLOCKED CASUAL_BLOCKED II_SCREENED BW_SCREENED COS_RESTRICTED	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Toll Free Service			

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	COT	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	Last Calling Number (DN)	FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3
	Result	SUCCESS FAILURE ANI_INVALID ANI_BLOCKED CASUAL_BLOCKED II_SCREENED BW_SCREENED COS_RESTRICTED	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
	Usage Flag	Y / N	ServiceUsageSensitive1, ServiceUsageSensitive2, or ServiceUsageSensitive3
Customer Originated Trace			
	ServiceId	SCA	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
Selective Call Acceptance **Note** This FCI is generated only when the call is rejected because of SCA.	**FeatureData**	n/a	n/a
	Result	n/a	n/a

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	SCF	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
Selective Call Forwarding **Note** This FCI is generated only when the call is rejected because of SCA.	**FeatureData**	n/a	n/a
	Result	n/a	n/a
	ServiceId	SCR	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
Selective Call Rejection **Note** This FCI is generated only when the call is rejected because of SCR.	**FeatureData**	n/a	n/a
	Result	n/a	n/a

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	AUTO-CALLBACK	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
	FeatureData	n/a	n/a
	Result	n/a	n/a
	Usage Flag	Y/N	ServiceUsageSensitive1, ServiceUsageSensitive2, or ServiceUsageSensitive3
Automatic Call Back			

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	AUTO-RECALL	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
	FeatureData	1-LEVEL or 2-LEVEL (Activation)	Activation FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3
		N/A (Instance & Deactivation)	Instance, Deactivation N/A
	Result	SUCCESS, FAILURE, 2L-ACT ABANDONED VOICEBACK DN, 2L-ACT CONNECTED ANONYMOUS DN	ServiceResultCode1, ServiceResultCode2, ServiceResultCode3
	Usage Flag	Y/N	ServiceUsageSensitive1, ServiceUsageSensitive2, or ServiceUsageSensitive3
Automatic Recall			

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	SPEED-CALL	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
	FeatureData	Speed Dial Code	FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3
	Result	SUCCESS FAILURE ANI_INVALID ANI_BLOCKED CASUAL_BLOCKED II_SCREENED BW_SCREENED COS_RESTRICTED CALL_BLOCKED RESULT_UNKNOWN	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Speed Calling			
	ServiceId	dnd	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		activation	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		deactivation	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
	FeatureData	n/a	n/a
Do Not Disturb	**Result**	n/a	n/a

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	racf	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	activation	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		deactivation	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
	FeatureData	n/a	n/a
Remote Activation of Call Forwarding	**Result**	n/a	n/a
	ServiceId	racf-pin	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	instance	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
	Result	SUCCESS	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
		FAILURE	
		ANI_INVALID	
		ANI_BLOCKED	
		CASUAL_BLOCKED	
		II_SCREENED	
Remote Activation of Call Forwarding PIN Change		BW_SCREENED	
		COS_RESTRICTED	

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	SLE-SCA SLE-SCF SLE-SCR SLE-DRCW	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	Size of list at end of the editing session	FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3
	Result	SUCCESS FAILURE ANI_INVALID ANI_BLOCKED CASUAL_BLOCKED II_SCREENED BW_SCREENED COS_RESTRICTED CALL_BLOCKED RESULT_UNKNOWN	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Screening List Editing Session			
	ServiceId	LNP	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
	Result	SUCCESS FAILURE ANI_INVALID ANI_BLOCKED CASUAL_BLOCKED II_SCREENED BW_SCREENED COS_RESTRICTED	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Local Number Portability			

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	OCB	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		INTERROGATION	ServiceInterrogationTime1, ServiceInterrogationTime2, or ServiceInterrogationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
	FeatureData	"1", "2", "3", "4", "5", "6", "7", "8", or "9" (Activation)	Activation FeatureDataOne1 FeatureDataOne2, or FeatureDataOne3
		N/A (Instance, Deactivation & Interrovation)	Instance, Deactivation, Interrogation
			N/A
Outgoing Call Barring	**Result**	n/a	n/a
	ServiceId	CWD	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		INTERROGATION	ServiceInterrogationTime1, ServiceInterrogationTime2, or ServiceInterrogationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
	FeatureData	n/a	n/a
Call Waiting Deluxe	**Result**	n/a	n/a

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	TWCD	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
Three-way Calling Deluxe	**Result**	n/a	n/a
	ServiceId	WARMLINE	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
Warmline	**FeatureData**	n/a	n/a
Note This FCI is generated only when the user does not dial any number.	**Result**	n/a	n/a
	ServiceId	HOTLINE	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
Hotline	**Result**	n/a	n/a

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	HOTV	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
		ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		INTERROGATION	ServiceInterrogationTime1, ServiceInterrogationTime2, or ServiceInterrogationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
	FeatureData	DN (Activation)	Activation
		N/A (Instance, Deactivation & Interrogation)	FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3
			Instance, Deactivation, Interrogation
			N/A
Hotline Variable	**Result**	VALID	n/a

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceId	COS	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
	Result	SUCCESS, FAILURE, ANI_INVALID, ANI_BLOCKED, CASUAL_ BLOCKED, II_SCREENED, BW_SCREENED, COS_ RESTRICTED, COS_INTERNAL_E RROR, CALL_BLOCKED, RESULT_ UNKNOWN, USER_ ABANDONED, INVALID_PIN, PIN_BLOCKED BILLING_INFO_ TDISC_CALL_ BLOCKED, BILLING_INFO_	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Class of Service		VALID	

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
SIP Refer **SIP REFER feature data blocks appear in the second call leg instead of the first as they did in the previous release.**	**ServiceId**	REFER	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	Refer To	FeatureDataOne1, FeatureDataOne2, orFeatureDataOne3
	FeatureDataTwo	Referred By	FeatureDataTwo1, FeatureDataTwo2, or FeatureDataTwo3
	FeatureDataThree	Replaced Call ID	FeatureDataThree1, FeatureDataThree2, or FeatureDataThree3
	Result	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Call Forwarding Combination	**ServiceId**	CFC	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
		INTERROGATION	ServiceInterrogationTime1, ServiceInterrogationTime2, or ServiceInterrogationTime3
		INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData For Instance, the field is used only if CFC uses 302 to redirect the call.	DN (Activation)	Activation
		Redirected Number (Instance)	FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3
		N/A (Deactivation & Interrogation)	Instance
			FeatureData1, FeatureData2, or FeatureData3
			Deactivation, Interrogation
			N/A

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	Result	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
No Solicitation Announcement	**ServiceId**	NSA	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
		INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	n/a	n/a
	Result	SUCCESS (all), FAILURE (all), BILLING_INFO_ ABANDON_ WHILE_ ANNOUNCE (Instance)	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Privacy Screening	**ServiceId**	PS	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
		INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	NONE, NUMBER, NAME-NUMBER (Instance) N/A (Activation and Deactivation	Instance FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3 Activation, Deactivation N/A
	Result	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
Voice Mail	**ServiceId**	VM	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	ACTIVATION	ServiceActivationTime1, ServiceActivationTime2, or ServiceActivationTime3
		DEACTIVATION	ServiceDeactivationTime1, ServiceDeactivationTime2, or ServiceDeactivationTime3
		INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	N/A	N/A
	Result	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Voice Mail Access	**ServiceId**	VM ACCESS	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	N/A	N/A
	Result	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Limited Call Duration—PREPAID	**ServiceId**	LCD_PREPAID	ServiceType1, ServiceType2, or ServiceType3

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
This is a unique identifier associated with each call originating on the Cisco 10200 Softswitch and authenticated through the prepaid server. It is a 16-byte value in hexadecimal notation, for example, 0f3322110a3322558976767389878 3ff. This identifier is generated by the Cisco BTS 10200 Softswitch and passed to the prepaid server in the RADIUS "accounting start" message. This allows the call data block in the BTS 10200 to contain the same identifier as the call record in the prepaid server. This is typically used to uniquely correlate call records in the BTS 10200 with call records in the prepaid server. **Note** For feature calls involving multiple calls (call transfer, three-way call, etc.) and use prepaid authentication, each call has its own unique H.323 Conference ID. For example, if A calls B using a prepaid card, and then A uses a hookflash to call C using a prepaid card, and sets up a three-way call, each call (A-to-B and A-to-C) has its own unique H.323 Conference ID. **Note** This identifier applies to all prepaid calls, regardless of signaling protocol. It is not related to (and should not be confused with) the billing fields named Originating H323 Conference ID and Terminating H323 Conference ID.	**ServiceStatus**	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	H323 Conference Id	FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3
	Result	SUCCESS, FAILURE, INSUFFICIENT_ QUOTA, MEDIATION_ REQUIRED	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
	Usage Flag	FALSE, TRUE	ServiceUsageSensitive1, ServiceUsageSensitive2, or ServiceUsageSensitive3

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
Limited Call Duration—POSTPAID This is a unique identifier associated with each call originating on the Cisco 10200 Softswitch and authenticated through the postpaid server. It is a 16-byte value in hexadecimal notation, for example, 0f3322110a3322558976767389878 3ff. This identifier is generated by the BTS 10200 and passed to the postpaid server in the RADIUS "accounting start" message. This allows the call data block in the BTS 10200 to contain the same identifier as the call record in the postpaid server. This is typically used to uniquely correlate call records in the BTS 10200 with call records in the postpaid server. **Note** For feature calls that involve multiple calls (call transfer, three-way call, and so forth) and use postpaid authentication, each call has its own unique H323 Conference ID. For example, if A calls B using a postpaid card, and then A uses a hookflash to call C using a postpaid card, and sets up a three-way call, each of the calls (A-to-B and A-to-C) has its own unique H323 Conference Id. **Note** This identifier is applicable to all postpaid calls, regardless of signaling protocol. It is not related to (and should not be confused with) the billing fields named Originating H323 Conference ID and Terminating H323 Conference ID.	**ServiceId**	LCD_POSTPAID	ServiceType1, ServiceType2, or ServiceType3

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	H323 Conference Id	FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3
	Result	SUCCESS, FAILURE, INSUFFICIENT_ QUOTA, MEDIATION_ REQUIRED	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
	Usage Flag	FALSE, TRUE	ServiceUsageSensitive1, ServiceUsageSensitive2, or ServiceUsageSensitive3
Multiple Directory Number	ServiceID	MDN	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	Main DN associated with the dialed virtual DN	FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3
	Result	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
	UsageFlag	FALSE, TRUE	ServiceUsageSensitive1, ServiceUsageSensitive2, or ServiceUsageSensitive3
SIP Replace	ServiceID	SIP REPLACE	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	Replaced Call ID	FeatureDataOne1, FeatureDataOne2, or FeatureDataOne3
	FeatureDataTwo	Referred By	FeatureDataTwo1, FeatureDataTwo2, or FeatureDataTwo3
	FeatureDataThree	N/A	N/A
	Result	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
Call Forwarding Redirect	ServiceID	CFR	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	Redirected Number	FeatureData1, FeatureData2, or FeatureData3
	Result	SUCCESS, FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
SIP Off Hook Trigger	ServiceID	OHT	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	IMMEDIATE DELAYED	FeatureData1, FeatureData2, or FeatureData3
	Result	SUCCESS, FAILURE, 305 FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
SIP Termination Attempt Trigger	ServiceID	TAT	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	N/A	N/A
	Result	SUCCESS, FAILURE, 305 FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Own Calling Number Announcement	ServiceID	OCNA	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	N/A	N/A
	Result	BILLING INFO VALID	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Seasonal Suspend	ServiceID	SEAS	ServiceType1, ServiceType2, or ServiceType3

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	N/A	N/A
	Result	SUCCESS SEASONAL SUSPEND CALL BLOCKED	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Privacy Plus	ServiceID	AS SERVICE 221	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	INSTANCE	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	N/A	N/A
	Result	SUCCESS	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Terminal Make Busy Activation	ServiceID	Terminal Make Busy	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	ACTIVATION	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	N/A	N/A
	Result	SUCCESS FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Terminal Make Busy Deactivation	ServiceID	Terminal Make Busy	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	DEACTIVATION	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	N/A	N/A
	Result	SUCCESS FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Group Make Busy Activation	ServiceID	Group Make Busy	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	ACTIVATION	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	N/A	N/A

Table 2-1 Features and the Associated Call Detail Block Fields (continued)

Feature Name	Field	Value	Associated CDB Fields
	Result	SUCCESS FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
Group Make Busy Deactivation	ServiceID	Group Make Busy	ServiceType1, ServiceType2, or ServiceType3
	ServiceStatus	DEACTIVATION	ServiceInstanceTime1, ServiceInstanceTime2, or ServiceInstanceTime3
	FeatureData	N/A	N/A
	Result	SUCCESS FAILURE	ServiceResultCode1, ServiceResultCode2, or ServiceResultCode3
ENUM Database Query	Database Query Type	ENUM	DatabaseQueryType1, DatabaseQueryType2, or DatabaseQueryType3
	Database Query Time	timestamp	DatabaseQueryTime1, DatabaseQueryTime2, or DatabaseQueryTime3
	Database Query Returned Data	Location Routing Number	DatabaseQueryReturnedData1, DatabaseQueryReturnedData2, or DatabaseQueryReturnedData3
	Result	SUCCESS FAILURE	DatabaseQueryResultCode1, DatabaseQueryResultCode2, or DatabaseQueryResultCode3
ENUM LNP Database Query	Database Query Type	ENUM LNP	DatabaseQueryType1, DatabaseQueryType2, or DatabaseQueryType3
	Database Query Time	timestamp	DatabaseQueryTime1, DatabaseQueryTime2, or DatabaseQueryTime3
	Database Query Returned Data	Address of Record	DatabaseQueryReturnedData1, DatabaseQueryReturnedData2, or DatabaseQueryReturnedData3
	Result	SUCCESS FAILURE	DatabaseQueryResultCode1, DatabaseQueryResultCode2, or DatabaseQueryResultCode3

APPENDIX A

Call Detail Block File Fields 5.0

Revised: January 22, 1010, OL-12778-14

The Cisco BTS 10200 system stores the raw call detail blocks (CDBs) in a flat file ASCII-based format on the persistent store associated with the Bulk Data Management System (BDMS) for retention purposes. The BTS 10200 stores a minimum of 10 megabytes of billing records in a circular file implementation. This data is subsequently sent to the specified remote accounting office or billing server or mediation device via the File Transfer Protocol (FTP).

This appendix illustrates the format of each field in a Call Detail Block (CDB), the order in which it occurs, the possible values for the individual fields and the meaning of the data within the field where applicable. The delimiters used to separate fields within a record or records within a file can be any one of the following:

- semi-colon ";"
- vertical bar "|"
- linefeed
- comma ","
- caret "^".

Note The same character (value) cannot be used as both a field delimiter and a record delimiter. Different delimiters must be used to separate fields within a record and records within a file.

The CDB field and record separators are defined in the platform.cfg file that is read at initialization time. The platform.cfg file associated with the BDMS platform must be updated for changes to take affect; however, the file cannot be changed without a system restart. Both active and standby BDMS platforms must be restarted to pick up any change of delimiters.

The [ProcessParameter] block to update is "ProcName=BMG." The parameter to update is "Args." To change the field delimiter you must update the "-FD" option. To change the record delimiter you must update the "-RD" option. Both of the BDMS computing platforms must be restarted to pick up this change of delimiters.

Caution Once the delimiters are changed and the BDMSs are restarted, any billing files created with different delimiters are inaccessible by the billing query command. An example of an actual call detail block FTP file containing one CDB is shown in Appendix C, "Example Call Detail Block File."
The steps to follow are:
1. Stop the platform on the EMS.
2. Change the platform.cfg on the EMS.
3. Flush the old billing records from the EMS before starting the platform.
4. Start the platform. All new billing records now use the new format.

Table A-1 provides information detailing the information contained in the fields in the output files transmitted from the Element Management System (EMS) on the BTS 10200.

Table A-1 Call Detail Block Field Descriptions

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
1	Call Type	Numeric		0=NULL 1=TEST-CALL 2=INTL 3=LOCAL 4=TOLL 5=INTERLATA 6=TANDEM 7=EMG 8=NON-EMG 9=DA 10=DA-TOLL 11=REPAIR 12=RELAY 13=BUSINESS 14=TOLL-FREE 15=900 16=500 17=700 18=976 19=VACANT 20=PCS 21=INVALID 22=NONE 23=LRN 24=EXTENSION 25=CUT-THRU 26=OPERATOR 27=CARRIER-OPERATOR 28=OPERATOR-ASSISTED	Destination: CallType OR derived based on the dialing pattern—for example: 0-, 00 calls OR SpecialCallType:: CallType OR LSA table for determining LOCAL OR LATA table used for determining TOLL and INTERLATA of CallType = NATIONAL in Destination table.	The nature of the call, which indicates the type of accounting processing to apply to it. Call Type "NULL" is used for any calls that do not progress to the point where a lookup in the Destination table occurs, or if routing is not needed—as in cases of feature activation or deactivation. In Release 4.5, it is possible to provision the Destination table with any one of the following: • call-type=EMG • call-type=AMBULANCE • call-type=FIRE • call-type=POLICE Alternatively, it is possible to provision the following (one pair per DEST-ID): call-type=EMG; call-subtype=AMBULANCE call-type=EMG; call-subtype=FIRE call-type=EMG; call-subtype=POLICE call-type=EMG; call-subtype=NONE (default) For service providers in the U.S., it is typical to provision the Destination table with call-type=EMG for the digit string 911, and call-subtype=NONE (default), because 911 is a central dispatch point for all emergency, ambulance, fire, and police calls.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
1	Call Type	Numeric		29=BLV 30=SPEED-DIAL 31=NATIONAL 32= TW 33=INFO 34=PREMIUM 35=ATTENDANT 36=NAS 37=POLICE* 38=FIRE* 39=AMBULANCE* 40=TIME* 41=WEATHER* 42=TRAFFIC* 43=LOOPBACK_TEST (Deprecated) 44=INTL_OPERATOR 45=NATL_OPERATOR 46=AIRLINES* 47=RAILWAYS* 48=SERVICE_CODE 49=INTL_WORLD_ZONE_1 50=CALLING_NUMBER_ANNC 51=DA_INTERLATA 52=DA_INTL 53=UNIV_ACCESS_NUM 54=MOBILE 55=WAKE_UP 56=AS * - not used in NANP areas	Destination: CallType OR derived based on the dialing pattern—for example: 0-, 00 calls OR SpecialCallType:: CallType OR LSA table for determining LOCAL OR LATA table used for determining TOLL and INTERLATA of CallType = NATIONAL in Destination table.	**Caution** On the Cisco BTS 10200, to consider a call an emergency, it must be provisioned as call-type EMG. If using separate DNs for ambulance, fire, and police service (typically applies to networks outside the U.S.A.), Cisco strongly recommends that you provision these as call-type EMG and call-subtype <AMBULANCE or FIRE or POLICE> in the Destination table. This is the only way to be sure they are given all the treatment of the EMG call-type.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
2	Signal Start Time	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	Time starts on receipt of an MGCP NTFY, SS7 IAM or SIP SETUP.
3	Signal Stop Time	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	Time stops on the last of the following signaling events: 1) MGCP DLCX receipt 2) transmission/receipt of an RLC 3) transmission/receipt of last signaling message to/from a peer CMS/MGC.
4	Interconnect Start Time	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	Time starts on commitment of bandwidth between the IP/ATM and PSTN networks.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
5	Interconnect Stop Time	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	Time stops on release of bandwidth between the IP/ATM and PSTN networks.
6	Call Connect Time	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	Time starts on receipt of an MGCP NTFY indicating off-hook, or SS7 ANS, or answer indication from the media gateway for an operator services trunk.
7	Call Answer Time	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	Upon both parties being off-hook for at least 2 seconds. Currently the Cisco BTS 10200 does not support Short Supervisory Transitions, so the contents of this field and field #6 are identical.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
8	Call Disconnect Time	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	Time starts on receipt of an MGCP NTFY indicating on-hook of the calling party, or expiration of the call-continuation timer, an SS7 REL, or an indication from the media gateway that the operator services trunk has disconnected.
9	Database Query Time1	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time the first database query response was received for this call.
10	Service Instance Time1	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time the instance of Service Type 1 occurred.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
11	Service Instance Time2	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time the instance of Service Type 2 occurred.
12	Service Instance Time3	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time the instance of Service Type 3 occurred.
13	Service Activation Time1	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time the activation of Service Type 1 occurred.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
14	Service Activation Time2	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time the activation of Service Type 2 occurred.
15	Service Activation Time3	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time the activation of Service Type 3 occurred.
16	Service Deactivation Time1	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time the deactivation of Service Type 1 occurred.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
17	Service Deactivation Time2	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time the deactivation of Service Type 2 occurred.
18	Service Deactivation Time3	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time the deactivation of Service Type 3 occurred.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
19	Call Elapsed Time	String	12-17	(dddd):hh:mm:ss.mmm	Calculated value.	The duration that the voice path was established. The days (DDDDD) portion of this field is optional and variable in length depending on the number of days the calls has been connected. If this field is NULL, then no data was captured for this record. RecordGenTime is an optional parameter. It gives the time of day at which the first time BLG should check to see whether any long-during billing records need to be generated. If it is not specified, it defaults to midnight. 2) LongDurationAllowance is an optional parameter. It gives the length of time, in minutes, that a call must have been in the answered state at the time when records are generated, in order for a long -duration record to be generated for it. It is also the interval of record generated time. After RecordGenTime generates billing records for the first time, every LongDurationAllowance minutes interval BLG checks to see whether any long-during billing records need to be generated. If it is not specified, it defaults to 1,440 minutes (24 hours). For example, if RecordGenTime is 12:00:00, LongDurationAllowance is 60. At 12:00:00, BLG checks the long-duration call the first time. Then every 60 minutes, BLG checks again and again.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
20	Interconnect Elapsed Time	String	12-17	(dddd):hh:mm:ss.mmm	Calculated value.	The duration that bandwidth was established with another carrier. The days (DDDDD) portion of this field is optional and variable in length depending on the number of days the calls has been connected. If this field is NULL, then no data was captured for this record.
21	Originating QOS Time	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	Receipt of the MGCP DLCX ACK message. The time the originating side quality of service measurements were collected. This information is collected on a best effort basis and will not be present if the QoS collection timeout is exceeded. If this field is NULL—then the associated Originating QOS parameters are to be ignored.
22	Terminating QOS Time	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	Receipt of the MGCP DLCX ACK message. The time the terminating side quality of service measurements were collected. This information is collected on a best effort basis and will not be present if the QoS collection timeout is exceeded. If this field is NULL—then the associated Terminating QOS parameters are to be ignored.
23	Originating Number	String	64	DIGITS	Subscriber::DN1, ISDN SETUP, SS7 IAM, or SIP INVITE, for example.	This field contains the calling party number after it has gone through the complete translation process on the Cisco BTS 10200 including any possible overriding. If the originator of a SIP field contains the tel-number in the "From" field between the ":" and the "@" characters if the PAI flag is not set. If the PAI flag is set, this field contains the tel-num from the "P-Asserted-Identity" field between the ":" and the "@" characters. If this field is NULL, then no data was captured for this field.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
24	Terminating Number	String	64	DIGITS	Subscriber::DN1, ISDN SETUP, SS7 IAM, or SIP INVITE, for example.	The directory number of the terminating party. For outbound LNP calls, this field contains the dialed DN. For calls inbound to the Cisco BTS 10200, this field will contain DN of the terminating subscriber. If this field is NULL, then no data was captured for this record.
25	Charge Number	String	64	DIGITS	Subscriber:: BillingDn or FCP Message.	Directory number of the billable party. For Mexican ISUP scenarios this field is populated with the tarrification number. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
26	Location Routing Number	String	64	DIGITS	LNP Query or SS7 IAM.	The location routing number of the switch where the directory number is ported to. The Cisco BTS 10200 does an LNP query on outbound calls if the called number is addressed in the Ported Office Code table. This field is then populated with the LRN obtained from doing the LNP query as long as the returned LRN is not equal to the LRN of the reporting Cisco BTS 10200. For calls that are inbound to the Cisco BTS 10200, if the called number is addressed by the Ported Office Code table and the LNP-TRIGGER flag is set (meaning the reporting Cisco BTS 10200 is the recipient switch), then a query to the DN2SUBSCRIBER table determines if an LNP query is performed or not. For inbound calls that are addressed by the Ported Office Code table but the Cisco BTS 10200 is not the recipient switch, then the service-id assigned to the incoming trunk group determines if an LNP query is launched or not. In addition, for inbound SS7 calls the M-bit in the IAM is checked to see if an LNP query has already been performed—if not—then the Ported Office Code table is queried before making an LNP dip. This field is populated with the received LRN if one is presented for inbound calls to the reporting Cisco BTS 10200 for called numbers that are homed on the Cisco BTS 10200. The Ported Office Code table is typically populated via LERG updates received by the service provider.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
26 (cont)	Location Routing Number	String	64	DIGITS	LNP Query or SS7 IAM.	If an LRN is returned from an LNP query—it is used in routing the call, otherwise the dialed digits are used to route the call. The Cisco BTS 10200 only makes one attempt per call to query the LNP database—if the query fails, the call is routed as if the dialed number was not ported. If this field is NULL, then no data was captured for this record.
27	Dialed Digits	String	64	DIGITS This field contains the actual digits dialed by the originator of the call. This field only contains digits dialed in the first stage of the call when dialed by a subscriber that is homed on the BTS 10200.	MGCP NTFY, SS7 IAM, ISDN SETUP, SIP INVITE or H.323 SETUP, for example.	This field contains the actual digits dialed by the originator of the call. The field only contains digits dialed in the first stage of the call when dialed by a subscriber that is homed on the Cisco BTS 10200. This field is intended for basic troubleshooting purposes only. If the call is terminating to this Cisco BTS 10200 from a subscriber homed elsewhere, then this field will contain the information in the ieCldPartyNum field. In this case, the digits stored may have been manipulated after the originator dialed. Due to the fact that this field only contains the 1st stage digits, the collection of digits will cease once the media gateway on the originating side of the call sends the initial digits, which is digit map based in the gateway. Once a match to the digit map is accomplished, the digits are packaged up and sent to the Cisco BTS 10200 in the appropriate NCS/MGCP message which triggers the Signaling Start event within the Cisco BTS 10200 for that call. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
28	Forwarding Number	String	64	DIGITS	SS7 IAM or original dialed number.	Directory number that is forwarding the call to another subscriber's DN. This field is populated only in the call forwarding instance record leg, not in the normal call leg that terminated to the forwarding number. If this field is NULL, then no data was captured for this record.
29	Service Type 1	Numeric		1 = CALL_BLOCK (not used) 2 = CALL_ FORWARD_ UNCONDITIONAL 3 = CALL_WAITING 4 = REPEAT_CALL 5 = RETURN_CALL 6 = CALL_HOLD 7 = THREE_WAY_CALL 8 = CALL_TRANSFER 9 = CALLING_NUMBER_DELIVERY 10 = CALLING_NUMBER_DELIVERY_BLOCK 11 = CALL_FORWARD_BUSY 12 = CLASS_OF_SERVICE 13= CALLING_NAME_DELIVERY (not used) 14 = CALL_FORWARD_NO_ANSWER 15 = AIN_HANDLING (not used) 16 = 911_HANDLING 17 = CUSTOM_DIALING_PLAN 18 = CALLING_ID_DELIVERY_BLOCK_PERM (not used) 19 = SFG_INCOMING 20 = SFG_OUTGOING 21 = CANCELLED_CALL_WAITING 22 = USER_SENSITIVE_3WAY_CALL 23 = TOLL_FREE (not used) 24 = ACCT_CODE 25 = AUTH_CODE 26 = LOCAL_NUMBER_PORTABILITY (not used) 27 = CALLING_IDENTITY_DELIVERY_SUSPENSION 28 = CALLING_NAME_DELIVERY_BLOCKING	Internal FCP message sent from the feature server to call processing.	Class type name of the first service invoked in call. If this field is NULL, then no data was captured for this record. Service Types that are greater than 200 are reported as AS SERVICE_XXX, where XXX is the value of the service type stored in the CDR. This is done to provide App-Server-Specific Service Types.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
				29 = CALL_WAITING_WITH_CALLER_IDENTITY 30 = ANONYMOUS_CALL_REJECTION 31 = TOLL_FREE_CALL (not used) 32 = CUSTOMER_ORIGINATED_TRACE 33 = CALL_PARK 34 = CALL_PARK_RETRIEVAL 35 = CALL_PARK_REOFFERED 36 = DIRECTED_CALL_PICKUP WITH BARGE-IN 37 = DIRECTED_CALL_PICKUP WITHOUT BARGE-IN 38 = HOTLINE 39 = WARMLINE 40= BUSY_LINE_ VERIFICATION 41 = SELECTIVE_CALL_REJECTION 42 = SELECTIVE_CALL_FORWARDING 43 = SELECTIVE_CALL_ACCEPTANCE 44 = AUTOMATIC_CALLBACK 45 = AUTO_RECALL 46 = SPEED_CALLING 47 = DO_NOT_DISTURB 48 = REMOTE_ACTIVATION OF CALL_FORWARDING 49 = REMOTE_ACTIVATION OF CALL_FORWARDING PIN 50 = DRCW DISTINCTIVE_RING_CALL_WAITING 51 = SCREENING_LIST_EDIT SCF 52 = SCREENING_LIST_EDIT SCA 53 = SCREENING_LIST_EDIT SCR 54 = SCREENING_LIST_EDIT DRCW 55 = REJECT_CALLER 56 = CALL WAITING DELUXE 57 = THREE WAY CALL DELUXE 58 = OUTGOING CALL BARRING 59 = HOTLINE VARIABLE 60 = CNAM SCP QUERY 61 = SIP REFER 62 = CALL FORWARD COMBINATION 63 = NO SOLICITATION ANNOUNCEMENT		

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
				64 = PRIVACY SCREENING 65 = VOICE MAIL 66 = VOICE MAIL ACCESS 67 = LCD PREPAID 68 = LCD POSTPAID 69= MULTIPLE DIRECTORY NUMBER 70=SIP REPLACE 71=CALL FORWARD REDIRECT 72=OFF HOOK TRIGGER 73=TERM ATTMP TRIGGER 74=OCNA 75=SEAS 76=ENUM 77=ENUM LNP 78=TMB 79=GMB AS SERVICE XXX when XXX is greater than 200		
30	Service Type 2	Numeric		(Same as Service Type 1 above)	Internal FCP message sent from the feature server to call processing.	The class type name of the second service invoked within the call.
31	Service Type 3	Numeric		(Same as Service Type 1 above)	Internal FCP message sent from the feature server to call processing.	The class type name of the third service invoked within the call.
32	Feature Data One1	String	130	See Chapter 2, "Feature Server Derived Call Data"for specifics on feature data.	Internal FCP message sent from the feature server to call processing.	The first datum of feature specific data provided by the associated Feature Server for the Service Type 1 of a call. If this field is NULL, then no data was captured for this record.
33	Feature Data One2	String	130	See Chapter 2, "Feature Server Derived Call Data" for specifics on feature data.	Internal FCP message sent from the feature server to call processing.	The first datum of feature specific data provided by the associated Feature Server for the Service Type 2 of a call. If this field is NULL, then no data was captured for this record.
34	Feature Data One 3	String	130	See Chapter 2, "Feature Server Derived Call Data" for specifics on feature data.	Internal FCP message sent from the feature server to call processing.	The first datum of feature specific data provided by the associated Feature Server for the Service Type 3 of a call. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
35	Authorization Code	String	25	DIGITS	Internal FCP message sent from the feature server to call processing.	Authorization code information. If this field is NULL, then no data was captured for this record.
36	Account Code	String	15	DIGITS	Internal FCP message sent from the feature server to call processing.	Account code information. If this field is NULL, no data was captured for this record.
37	Database Query Type1	Numeric		1 = TOLL_FREE_ SCP 2 = TOLL_FREE_ LOCAL 3 = LNP 4 = CNAM_SCP 5=ENUM 6=ENUM LNP	Internal FCP message sent from the feature server to call processing.	Indicator of the specific type of 800 or LNP query performed on the first database query for the call. If this field is a value of NULL, then no data was captured for this record.
38	Database Query Result Code1	Numeric		1 = SUCCESS 2 = FAILURE	Internal FCP message sent from the feature server to call processing.	Indication of the disposition of the first database query for the call. If this field is a value of NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
39	Database Query	String	128	For CNAM_SCP: Caller's Name or P (private) or O (out of area) For TOLL_FREE_SCP and TOLL_FREE_LOCAL: original called digits or new called digits returned For LNP: original called DN or new LRN (ANSI w/LNP profile=LRN) For LNP: original called DN or concatenated RN plus DN (non-ANSI w/LNP profile=PREFIX-METHOD) For LNP: original called DN or RN (non-ANSI w/LNP profile=SEPARATE-RN) For ENUM: AOR or domain name For ENUM LNP: new LRN	Internal FCP message sent from the feature server to call processing.	Directory number, RN and/or NAME returned from the first database query for the call. If this field is NULL, then no data was captured for this record. CAVEAT: If this field contains a character that coincides with the character specified as the field or record delimiter for the Cisco BTS 10200 billing records, it is replaced with a SPACE character to ensure the integrity of the billing data.
40	MLH Group	String	16	Up to a 16-character group name	Subscriber::MlhgId	The multi-line hunt group that this call is associated with. If this field is null, then no data is captured for this record.
41	Called Party Off Hook Indicator	Numeric		0 = NO 1 = YES	SS7 ANM, MGCP Offhook NTFY, ISDN ACK, for example.	Indication that the terminating party went off-hook. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
42	Called Party Short Off Hook Indicator	Numeric		0 = NO 1 = YES	N/A	An indication that the called party was off hook for less than two seconds. This field is currently not supported on the Cisco BTS 10200, and will always be populated with a value of NULL.
43	Call Termination Cause	Numeric		See Appendix C, "Release Cause Codes," in the *Cisco BTS 10200 Operations, Maintenance, and Troubleshooting Guide*.	Release indications are both internally and externally detected—dynamic runtime data.	The reason the call was released. If this field is a value of NULL, then no data was captured for this record.
44	Operator Action	Numeric		0 = AUTO_ IDENTIFIED_ CUSTOMER_ DIALED 1 = AUTO_ IDENTIFIED_ OPERATOR_ DIALED 2 = OPER_ DENTIFIED_ CUSTOMER_ DIALED 3 = OPER_ IDENTIFIED_ OPERATOR_ DIALED		Operator action with respect to the originating party: automatically identified— customer dialed (0) or operator dialed (1) or operator identified— customer dialed (2) or operator dialed (3) If this field is NULL, then no data was captured for this record.
45	Originating Signaling Type	Numeric		0 = MGCP or SIP LINE 1 = SS7 2 = ISDN 3 = CAS 4 = MGCP 5 = SIP 6 = H323	TrunkGroup:: TGType	This denotes the trunk type of the originator. The value of MGCP TRUNK is indicative of an Announcement Trunk.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
46	Termination Signaling Type	Numeric		0 = MGCP or SIP LINE 1 = SS7 2 = ISDN 3 = CAS 4 = MGCP 5 = SIP 6 = H323	TrunkGroup:: TGType	This denotes the trunk type of the originator. The value of MGCP TRUNK is indicative of an Announcement Trunk.
47	Originating Trunk Number	Numeric		32 bit unsigned integer in the range of 1-99999999	TrunkGroup::Id	Identity of the originating trunk. It is recommended the upper end of this range be limited to 9999 when converting these records to BAF AMA format for compatibility. If this field is a value of NULL, then no data was captured for this record.
48	Terminating Trunk Number	Numeric		32 bit unsigned integer in the range of 1-99999999	TrunkGroup::Id	Identity of the terminating trunk. It is recommended the upper end of this range be limited to 9999 when converting these records to BAF AMA format for compatibility. If this field is a value of NULL, then no data was captured for this record.
49	Outgoing Trunk Number	Numeric		16 bit unsigned integer	SS7 EXM	The outgoing trunk is on the network facing side of the access tandem. When a call is terminated to the access tandem it is over a generic trunk group and the TNS is passed, and, based on the TNS, the access tandem will select the trunk for routing, for example 0288 will select an AT&T trunk. The access tandem then sends an exit message back with the trunk number from the network facing side. That is the number that appears in this field.
50	Carrier Identification Code	String	5	DIGITS	SS7 IAM or Subscriber::PICn or dialed digits for casual dialing scenarios.	Identification of the carrier that transported the call, either an inter-exchange carrier or an international carrier. This value is typically 3- or 4-digits, not necessarily 5-digits. If this field is NULL, then no data was captured for this record. For a toll-free call, if the returned SCP message contains the carrier ID, the billing record will show the carrier ID.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
51	Originating Circuit Identifier			16 bit unsigned integer in the range of 0 - 16383	Trunk::Id	This field is used to represent the Circuit Id of Inc ISUP trunk. If this field is a value of NULL, then no data was captured for this record.
52	Terminating Circuit Identifier	Numeric		16 bit unsigned integer in the range of 0 - 16383	Trunk::Id	This field is used to represent the Circuit Id of Outgoing ISUP trunk. If this field is a value of NULL, then no data was captured for this record.
53	PIC Source	Numeric		1 = PIC_DIALED 2 = PIC_DEFAULT	Dialed digits.	Indication of how the carrier's access code was entered—dialed or via PIC. If this field is a value of NULL, then no data was captured for this record.
54	Inter-exchange carrier or international carrier indicator	Numeric		0 = CIC_FGD_ OPERATOR_ INVOLVED 1 = CIC_FGD_ OPERATOR_ NOT_INVOLVED 2 = CIC_FGD_ OPERATOR_ INVOLVED_ UNKNOWN 7 = CIC_UNKNOWN_ OPERATOR_ INVOLVED 8 = CIC_UNKNOWN_ OPERATOR_NOT_ INVOLVED 9 = CIC_UNKNOWN_ OPERATOR_ INVOLVED_ UNKNOWN	Dialed digits.	Describes operator involvement: FGD CIC with (1) operator involvement, (2) dialed direct with no operator, (3) with undetermined operator involvement, or unknown CIC with (1) operator involvement, (2) dialed direct with no operator, or (3) undetermined operator involvement. This field is applicable only in calls interconnected to other carriers. If this field is NULL, then no data was captured for this record.
55	Inter-exchange carrier or international carrier Event Status Indicator	Numeric		Call is abandoned or release before IAM is sent by originating EC = 15 Call is abandoned or release after IAM is received by originating EC = 20	Dynamic call data.	Indication of how far a call has progressed before terminating when an IC/INC is involved. This field is only applicable to SS7 calls that are interconnected to another carrier. If this field is a value of NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
56	Inter-exchange carrier or international carrier Routing Indicator	Numeric		0 = DIRECT 1= TANDEM 2 = CAP_ENDOFFICE 3 = CAP_TANDEM 4 = TANDEM_TSP	Hard coded.	Describes how the call was routed to/from the IC/INC: EAEO direct to IC/INC, or EAEO via AT to INC/IC, or CAP direct from EO, or CAP direct from AP tandem. This field is only applicable in calls that are interconnected to other carriers. Currently only the values of 0 and 1 are supported. Values 2, 3, and 4 are reserved for future use. In general, the rule for setting the routing indicator is: • if carrier-id field in trunk-grp is NOT NULL, then the call is set as direct interconnect (ROUTING_INDICATOR_DIRECT 0) • if carrier-id field in trunk-grp is NULL, then the call is set as a non- direct interconnect (ROUTING_INDICATOR_TANDEM 1)
57	QoS Orig Local Packets Sent	Numeric		0-999, 999, 999	MGCP DLCX ACK, DLCX	The total number of RTP data packets transmitted by the originating end point since starting transmission. If this field is NULL, then no data was captured for this record.
58	QoS Orig Packets Received	Numeric		0-999, 999, 999	MGCP DLCX ACK, DLCX	The total number of RTP data packets received by the originating end point since starting reception. If this field is NULL, then no data was captured for this record.
59	QoSOrig Local Octets Sent	Numeric		0-999, 999, 999	MGCP DLCX ACK, DLCX	The total number of payload octets transmitted in RTP data packets by the originating endpoint since starting transmission. This count does not include headers or padding. This count can be used to estimate the average payload rate. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
60	QoS Orig Octets Received	Numeric		0-999, 999, 999	MGCP DLCX ACK, DLCX	The total number of payload octets received in RTP data packets by the originating endpoint since starting reception. This count does not include headers or padding. This count can be used to estimate the average payload rate. If this field is NULL, then no data was captured for this record.
61	QoS Orig Local Packets Lost	Numeric		0-999, 999, 999	MGCP DLCX ACK, DLCX	The total number of RTP data packets that have been lost since the beginning of reception by the originating endpoint. This number is defined as the number of packets expected less the number of packets actually received, where the number of packets received includes any which are late or duplicates. The packets that arrive late are not counted as lost and the loss may be negative if they are duplicates. The number of packets expected is defined as the extended last sequence number received less the initial sequence number received. If this field is NULL, then no data was captured for this record.
62	Qos Orig Local Average Inter-arrival Jitter	Numeric		0-999, 999, 999	MGCP DLCX ACK, DLCX	This is an estimate of the average statistical variance of the RTP data packet inter-arrival time measured in timestamp units and expressed as an unsigned integer by the originating endpoint. The inter-arrival jitter is defined as the mean deviation (smoothed absolute value) of the difference in packet spacing at the receiver compared to the sender for a pair of packets. This is equivalent to the difference between a packet's RTP timestamp and the receiver's clock at the time arrival. The value is calculated in terms of 125 microsend ticks and converted to milliseconds for storage in the CDR. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
63	QoS Orig Average Transmission Delay	Numeric		0-999, 999, 999	MGCP DLCX ACK, DLCX	The average network transmission delay as measured from the RTP interface of the originating endpoint. The boundaries of this interface include: • multiplexing/demultiplexing multiple RTP packets into or out of a single UDP packet • all subsequent handling of transmission and reception of UDP frames • network delays and peer processing up to the peer's RTP interface. This is the Average Latency field from previous releases. A value of zero indicates that this calculation was not supported by the originating endpoint. If this field is NULL, then no data was captured for this record.
64	QoS Term Local Packets Sent	Numeric		0-999, 999, 999	MGCP DLCX ACK, DLCX	The total number of RTP data packets transmitted by the terminating end point since starting transmission. If this field is NULL, then no data was captured for this record.
65	QoS Term Packets Received	Numeric		0-999, 999, 999	MGCP DLCX ACK, DLCX	The total number of RTP data packets received by the terminating end point since starting reception. If this field is NULL, then no data was captured for this record.
66	QoS Term Local Octets Sent	Numeric		0-999, 999, 999	MGCP DLCX ACK, DLCX	The total number of payload octets transmitted in RTP data packets by the terminating endpoint since starting transmission. This count does not include headers or padding but can be used to estimate the average payload rate. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
67	QoS Term Octets Received	Numeric		0-999, 999, 999	MGCP DLCX ACK, DLCX	The total number of payload octets received in RTP data packets by the terminating endpoint since starting reception. This count does not include headers or padding but can be used to estimate the average payload rate. If this field is NULL, then no data was captured for this record.
68	QoS Term Local Packets Lost	Numeric		0-999, 999, 999	MGCP DLCX ACK, DLCX	The total number of RTP data packets that have been lost since the beginning of reception by the terminating endpoint. his number is defined as the number of packets expected less the number of packets actually received, where the number of packets received includes any which are late or duplicates. The packets that arrive late are not counted as lost and the loss may be negative if there are duplicates. The number of packets expected is defined as the extended last sequence number received less the initial sequence number received. If this field is NULL, then no data was captured for this record.
69	QoS Term Local Average Inter-arrival Jitter	Numeric		0-999, 999, 999	MGCP DLCX ACK, DLCX	This is an estimate of the average statistical variance of the RTP data packet inter-arrival time measured in timestamp units and expressed as an unsigned integer by the terminating endpoint. The inter-arrival jitter is defined as the mean deviation (smoothed absolute value) of the difference in packet spacing at the receiver compared to the sender for a pair of packets. This is equivalent to the difference between a packet's RTP timestamp and the receiver's clock at the time arrival. The value is calculated in terms of 125 microsend ticks and converted to milliseconds for storage in the CDR. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
70	QoS Term Average Transmission Delay	Numeric		0-999, 999, 999	MGCP DLCX ACK, DLCX	The average network transmission delay as measured from the RTP inerface of the terminating endpoint. The boundaries of this interface include: • multiplexing/demultiplexing multiple RTP packets into or out of a single UDP packet • all subsequent handling of transmission and reception of UDP frames • network delays and peer processing up to the peer's RTP interface. This is the Average Latency field from previous releases. A value of zero indicates that this calculation was not supported by the originating endpoint. If this field is NULL, then no data was captured for this record.
71	Operator Involvement	Numeric		0 = NO, 1 = YES	Dialed digits.	Determines if operator is involved in the call for 0-, 0+, or 01+. If this field is NULL, then no data was captured for this record.
72	Casual Dialing	Numeric		0 = NO, 1 = YES	Dialed digits.	Determines whether it is a casual call (CIC) or PIC call. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
73	Connection Type	Numeric		0 = IP 1 = HAIRPIN 3 = ATM SVC 4 = ATM PVC	Dialed digits.	Type of connection the gateway is making, so the reader of the record knows why the QoS parameters are different then expected. For example, if a Hairpin connection is used, then the QoS will be zeros. This field currently only contains a value of 0 or 1. This field can be derived from either the Originating or Terminating endpoint. If it is returned from one of the endpoints, then that is what is presented in this field; if it is not returned by either endpoint, then this field contains a NULL. If a value is returned by both endpoints, then the value from the originating endpoint is used. If this field contains a value of NULL, then no data was captured for this record.
74	Packet Time	Numeric		8 bit unsigned value	MGCP DLCX ACK.	Packetization period for voice sampling. This field can be derived from either the Originating or Terminating endpoint. If it is returned from one of the endpoints, then that is what is presented in this field. If it is not returned by either endpoint, then this field contains a NULL. If a value is returned by both endpoints, then the value from the originating endpoint is used. If this field contains a value of NULL, then no data was captured for this record.
75	Silence Suppression	Numeric		0 = NO, 1 = YES	MGCP DLCX ACK.	Indicates if silence suppression is enabled or not. This field can be derived from either the Originating or Terminating endpoint. If it is returned from one of the endpoints, then that is what is presented in this field. If it is not returned by either endpoint, then this field contains a NULL. If a value is returned by both endpoints, then the value from the originating endpoint is used. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
76	Echo Cancellation	Numeric		0 = NO, 1 = YES	MGCP DLCX ACK.	Indicates if echo cancellation at far end is enabled or not. This field can be derived from either the Originating or Terminating endpoint. If it is returned from one of the endpoints, then that is what is presented in this field. If it is not returned by either endpoint, then this field contains a NULL. If a value is returned by both endpoints, then the value from the originating endpoint is used. If this field is NULL, then no data was captured for this record.
77	Codec Type	Numeric		1= PCMU G711 2 = PCMA G711 3 = G729A 4 = G729B 5 = G729E 6 = G729 7 = G726-40 8 = G726-32 9 = G726-24 10 = G726-16 11 = G728 12 = G723-H 13 = G723A-H 14 = G723-L 15 = G723A-L 16 = G723	MGCP DLCX ACK.	Codec used to transport RTP traffic. This field is produced internally by BTS and is the perception of the Codec used in the call. If this field is a value of NULL, then no data was captured for this record.
78	Interstate Indicator	Numeric		0 = NO, 1 = YES	Destination:: Intrastate or LATA::Id	Indicates whether call crossed a state boundary or not. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
79	Record Type	Numeric		0 = NORMAL_ RECORD 1 = FIRST_LONG_ DURN_RECORD 2 = CONTINUATION_ LONG_DURN_ RECORD 3 = LAST_LONG_ DURN _RECORD 4 = INVALID_ RECORD	Dynamic run time data.	Indicates whether record is involved in long duration call accounting or not. If this field is NULL, then no data was captured for this record.
80	Timer Indicator	Numeric		32-bit unsigned value 0 (for normal call) 1, 2, 3, 4, 5,...(for long duration call)	Dynamic run time data.	Indication of the sequence number of the long duration record. If the record is of a normal call, the value of this field is 0. For the long duration record, the value of this field indicates the sequence number. If this field contains a value of NULL, then no data was captured for this record.
81	Present Time	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time the continuation record was created. This field is only populated for long duration calls. If this field contains a value of NULL, then no data was captured for this record.
82	Overall Correlation Identifier	String	25	Alphanumeric characters	System generated.	This field is unique on a per call scenario basis, not on a per record basis. Any call scenario that results in multiple call records being generated by the Cisco BTS 10200, each will contain the same value in this field. The main use at this time is within the real time Event Message billing stream that is supported by the BTS for PacketCable compliancy and for correlation of multiple record call scenarios. This field should always be populated.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
83	JIP	String	10	Alphanumeric characters	Pop::Jip or TrunkGroup::Jip or SS7 IAM	This field contains the JIP of the originating switch for calls inbound to the Cisco BTS 10200. The JIP is populated with the value received in the IAM if available, or the value provisioned into the Trunk Group table of the inbound trunk group for the call. If the JIP is not provisioned in the Trunk Group table and not received in the IAM, then the field contains a NULL.
84	Originating CLLI	String	11	Alphanumeric characters	TrunkGroup::Clli	The CLLI of the switch the call originated from. The CLLI is provisioned into the trunk group that was used to deliver the call to the Cisco BTS 10200. If this field is NULL, then no data was captured for this record.
85	Terminating CLLI	String	11	Alphanumeric characters	TrunkGroup::Clli	The CLLI of the switch the call was terminated to. The CLLI is provisioned into the trunk group that was used to deliver the call to the terminating switch. If this field is NULL, then no data was captured for this record.
86	Call Agent Id	String	8	Alphanumeric characters	CallAgent::Id	Identifies Call Agent on which CDB is created. If this field is NULL, then no data was captured for this record.
87	Originating POP Time Zone	Numeric		Refer to Appendix D, "Time Zone Mapping Table"for the potential values.	Pop::Timezone, Timezone::Id	This is the point of presence time zone of the originating POP. This field provides information on the locale to which the POP is a member. This information can also be leveraged for partitioning subscribers on a single BTS into multiple business entities for billing purposes. A zero value (0) indicates LOCAL BTS time zone. A NULL indicates no value captured for this field.
88	Service Usage Sensitive 1	Numeric		0 = FALSE, 1 = TRUE This field is applicable only if Service Type 1 field is populated.	Internal FCP message sent from the feature server to call processing.	Indication of whether first service usage within the call context was usage sensitive or not. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
89	Service Usage Sensitive 2	Numeric		0 = FALSE, 1 = TRUE This field is applicable only if Service Type 2 field is populated.	Internal FCP message sent from the feature server to call processing.	Indication of whether second service usage within the call context was usage sensitive or not. If this field is NULL, then no data was captured for this record.
90	Service Usage Sensitive 3	Numeric		0 = FALSE, 1 = TRUE This field is applicable only if Service Type 3 field is populated.	Internal FCP message sent from the feature server to call processing.	Indication of whether third service usage within the call context was usage sensitive or not. If this field is NULL, then no data was captured for this record.
91	Originating H323 Call Origin	Numeric		0 = NULL 1 = ANSWER 2 = ORIGINATE	Various H.323 messages.	ANSWER indicates call terminated on reporting gateway. ORIGINATE indicates call was outbound from reporting gateway for originating half of call. This field is populated only for calls over an H.323 network. If this field is a value of NULL, no data was captured for this record.
92	Originating H323 Call Type	Numeric		1 = VOIP 2 = TELEPHONY 3 = VIDEO	Bearer Capability field of incoming SETUP messages and the VIDEO_SUPP field in the H323-TG-PROFILE and H323-TERM-PROFILE tables	Value indicates protocol family used on originating leg of the call. This field is populated only for calls over an H.323 network. If this field is a value of NULL, no data was captured for this record.
93	Originating H323 Conference Id	String	32	Alphanumeric characters.	Various H.323 messages.	Unique identifier generated by originating PSTN gateway for each unique call scenario within a given call context. This field is populated only for calls over an H.323 network. If this field is NULL, no data was captured for this record.
94	Originating H323 Remote Address	String	16	Alphanumeric characters.	Various H.323 messages.	IP address of originating remote gateway. This field is populated only for calls over an H.323 network. If this field is NULL, no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
95	Originating H323 Time Day	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	Time of day terminating number was dialed for originating half of call. This field is populated only for calls over an H.323 network.
96	Originating H323 Voice Quality	Numeric		This field is not populated for this release.	Various H.323 messages.	Quality of voice connection for originating side of call. This is a decimal number from the ICPIF table of G.113.
97	Originating H323 Subscriber	Numeric		This field is not populated for this release.	Various H.323 messages.	Subscriber T1/CAS signaling information from originating side of call.
98	Originating H323 Gateway Id	String	16	Alphanumeric characters.	Various H.323 messages.	For incoming calls from an H.323 network, this field will contain the h323-id of the originating (peer) H.323 gateway/endpoint. If this parameter is not available in the incoming H.323 call, the Cisco BTS 10200 will populate this field with local h323-id from the H.323-GW that received the call. For incoming calls from non-H.323 networks, this field is NULL. This field is only populated for calls over an H.323 network. If this field is NULL, no data was captured for this record.
99	Originating H323 Gatekeeper Id	String	16	Alphanumeric characters.	Various H.323 messages.	The hostname of the originating primary gatekeeper for the call. This field is only populated for calls over an H.323 network. If this field is NULL, no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
100	Terminating H323 Call Origin	Numeric		0 = NULL 1 = ANSWER 2 = ORIGINATE	Various H.323 messages.	ANSWER indicates the call terminated on the reporting gateway. ORIGINATE indicates the call was outbound from the reporting gateway for the terminating half of the call. This field is only populated for calls over an H.323 network. If this field is a value of NULL, no data was captured for this record.
101	Terminating H323 Call Type	Numeric		1 = VOIP 2 = TELEPHONY 3 = VIDEO	Bearer Capability field of incoming SETUP messages and the VIDEO_SUPP field in the H323-TG-PROFILE and H323-TERM-PROFILE tables.	Indication of the protocol family used on the terminating leg of the call. This field is only populated for calls over an H.323 network. If this field is a value of NULL, no data was captured for this record
102	Terminating H323 Conference Id	String	32	Alphanumeric characters.	Various H.323 messages.	A unique identifier generated by the terminating PSTN gateway for each unique call scenario within a given call context. This field is only populated for calls over an H.323 network. If this field is NULL, no data was captured for this record.
103	Terminating H323 Remote Address	String	16	Alphanumeric characters.	Various H.323 messages.	The IP address of the terminating remote gateway. This field is only populated for calls over an H.323 network. If this field is NULL, no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
104	Terminating H323 Time Day	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time of day that the terminating number was dialed for the terminating half of the call. This field is populated only for calls over an H.323 network.
105	Terminating H323 Voice Quality	Numeric		This field is not populated for this release.	Various H.323 messages.	The quality of voice connection for the terminating side of the call. This is a decimal number from the ICPIF table of G.113. If this field is a value of NULL, no data was captured for record.
106	Terminating H323 Subscriber	Numeric		This field is not populated for this release.	Various H.323 messages.	Subscriber T1/CAS signaling information from terminating side of call. If this field is a value of NULL, no data was captured for this record.
107	Terminating H323 Gateway Id	String	16	Alphanumeric characters.	Various H.323 messages.	For outgoing calls from Cisco BTS 10200 and terminating to an H.323 network, this field will contain h323-Id of the terminating (peer) H.323 gateway/endpoint if available in backward Call signaling message. If this parameter is not available from terminating H.323 Gateway/endpoint Cisco BTS 10200 will populate the local h323-id from H323-GW which is used to send out the call. For outgoing calls to no H.323 network, this field is NULL. This field is populated only for calls over an H.323 network. If this field is NULL, no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
108	Terminating H323 Gatekeeper Id	String	16	Alphanumeric characters.	Various H.323 messages.	The symbolic host name assigned to the terminating primary gatekeeper for the call. This field is populated only for calls over an H.323 network. If this field is NULL, no data was captured for this record.
109	Orig Type	Numeric		0 = INTRASWITCH 1 = INTERSWITCH	Dialed digits.	Indication of whether call was originated by a subscriber homed on the reporting Cisco BTS 10200 Softswitch. INTRASWITCH - call was originated on local Switch. INTERSWITCH - call was originated on remote Switch. If a MAIN-SUB-ID is provisioned on the inbound TG, this field is set to INTRASWITCH. If the MAIN-SUB-ID is NULL on the inbound TG, this field is set to INTERSWITCH. A MAIN-SUB-ID is typically associated with a trunk group from a PBX, voicemail server, or other local application server. If this field contains a value of NULL, then no data was captured for this record.
110	Term Type	Numeric		0 = INTRASWITCH 1 = INTERSWITCH	Dialed digits.	Indication of whether call was terminated by a subscriber homed on the reporting Cisco BTS 10200 Softswitch. INTRASWITCH - call was terminated on local Switch. INTERSWITCH - call was terminated on remote Switch. If this field contains a value of NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
111	Source Service Provider Id	String	16	Alphanumeric characters	TrunkGroup::Spid or Carrier::Spid or TechPrefix::Spid	This field contains the network provided or Service Provider Identifier configured for incoming calls to the Cisco BTS 10200. For incoming calls from the PSTN network, this field contains the service provider ID value after finding a matching entry in the CARRIER table for the TNS/CIP parameter against the Carrier ID. For incoming calls from an H.323 network, this field contains the value in the field "circuitInfo.destinationCircuitId" (H323v4) or Service Provider ID derived from tech-prefix received in the SETUP message. When this parameter does not exist in the SETUP message, the service provider ID configured for the incoming trunk group will be used to populate this field. When source based routing is enabled, the Cisco BTS 10200 selects the trunk group based on the source IP address and circuitInfo.sourceCircuitId field from the SETUP message received. When the circuitInfo.destinationCircuitId does not match the service provider ID configured on the incoming trunk group, the call is routed using the default route. If this field is NULL, then no data was captured for this record.
112	Destination Service Provider Id	String	16	Alphanumeric characters	TrunkGroup::Spid or Carrier::Spid or TechPrefix::Spid	This field contains the identifier of the destination service provider which is used to route the call. For outgoing calls to an H.323 network, this field is populated with destinationCarrierId from the IZCT (Intra Zone Clear Token) parameter of the ACF message returned by the outgoing Gatekeeper. If this value is not received from the Gatekeeper, the value provisioned in the service provider ID of the outgoing trunk group is used. For outgoing calls to the PSTN network, this field is populated with a value of the service provider ID provisioned in the outgoing trunk group. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
113	Source Carrier Id	String	4	Numeric characters	TrunkGroup:: CarrierId or SS7 IAM	This field contains a 4-digit value form the Transit Network Selection (TNS) or Carrier Identification code Parameter (CIP) parameter of the IAM/SETUP message received from the PSTN network. If TNS or CIP is not received, this field is populated with the Carrier ID field provisioned in the incoming trunk group. This field is only applicable to tandem call scenarios. If this field is NULL, then no data was captured for this record.
114	Destination Carrier Id	String	4	Numeric characters	TrunkGroup:: CarrierId or SS7 IAM	This field contains the 4-digit carrier ID of the outgoing trunk group used to route the call. For calls routed to the PSTN network, this field contains the value provisioned into the Carrier ID field of the trunk group table. If this field is NULL, then no data was captured for this record.
115	Originating SIP Username	String	64	Alphanumeric characters.	Originating SIP INVITE message.	The username value of the "From" field on the originating side for all incoming SIP calls. This field is populated only for SIP calls. The value for the field is specified between the ":" and "@" characters. If this field is NULL, no data is captured for this record.
116	Originating SIP Call Id	String	64	Alphanumeric characters.	Originating SIP INVITE message.	SIP Call Id header field. This field is a truncation of SIP Call Id header field received via SIP if it is over 64 characters in length. This value for this field appears after the ":". This field is populated only for SIP calls. If this field is NULL, no data was captured for this record.
117	Originating SIP Adjacent Hop Address	String	16	Alphanumeric characters.	Originating SIP INVITE message.	IP address of last proxy that forwarded calls inbound to BTS 10200. IP address of proxy to which outbound calls from the Cisco BTS 10200 are forwarded. This field is only populated for SIP calls. If this field is NULL, no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
118	Database Query Time 2	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, then the timestamp is ignored.	Dynamic run time data from the system clock.	Time the second database query response was received for this call. If the value is NULL, timestamp is ignored.
119	Database Query Result Code 2	Numeric		1 = SUCCESS 2 = FAILURE	Internal FCP message sent from the feature server to call processing.	Indicates disposition of the second database query for call. If this field is a value of NULL, no data was captured for this record.
120	Database Query Type 2	Numeric		1 = TOLL_FREE_ SCP 2 = TOLL_FREE_ LOCAL 3 = LNP 4 = CNAM_SCP 5=ENUM 6=ENUM LNP	Internal FCP message sent from the feature server to call processing.	Indicates specific type of 800 or LNP query performed on second database query for call. If this field is a value of NULL, no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
121	Database Query Returned Data 2	String	128	For CNAM_SCP: Caller's Name or P (private) or O (out of area) For TOLL_FREE_SCP and TOLL_FREE_LOCAL: original called digits or new called digits returned For LNP: original called DN or new LRN (ANSI w/LNP profile=LRN) For LNP: original called DN or concatenated RN plus DN (non-ANSI w/LNP profile=PREFIX-METHOD) For LNP: original called DN or RN (non-ANSI w/LNP profile=SEPARATE-RN) For ENUM: AOR or domain name For ENUM_LNP: new LRN	Internal FCP message sent from the feature server to call processing.	The directory number, RN and/or NAME returned from the second database query for the call. If field is NULL, no data was captured for this record. CAVEAT: If this field is found to contain a character coinciding with the character specified as the field or record delimiter for the Cisco BTS 10200 billing records, it is replaced with a SPACE character to ensure the integrity of the billing data.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
122	Database Query Time 3	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, then the timestamp is ignored.	Dynamic run time data from the system clock.	The time the third database query response was received for this call.
123	Database Query Result Code 3	Numeric		1 = SUCCESS 2 = FAILURE	Internal FCP message sent from the feature server to call processing.	Indicates disposition of third database query for call. If this field is a value of NULL, no data was captured for this record.
124	Database Query Type 3	Numeric		1 = TOLL_FREE_ SCP 2 = TOLL_FREE_ LOCAL 3 = LNP 4 = CNAM_SCP 5 = ENUM 6 = ENUM LNP	Internal FCP message sent from the feature server to call processing.	Indicates specific type of 800 or LNP query performed on the third database query for the call. If this field is a value of NULL, no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
125	Database Query Returned Data 3	String	128	For CNAM_SCP: Caller's Name or P (private) or O (out of area) For TOLL_FREE_SCP and TOLL_FREE_LOCAL: original called digits or new called digits returned For LNP: original called DN or new LRN (ANSI w/LNP profile=LRN) For LNP: original called DN or concatenated RN plus DN (non-ANSI w/LNP profile=PREFIX-METHOD) For LNP: original called DN or RN (non-ANSI w/LNP profile=SEPARATE-RN) For ENUM: AOR or domain name For ENUM LNP: new LRN	Internal FCP message sent from the feature server to call processing.	Directory number, RN and/or NAME returned from third database query for call. If this field is NULL, no data was captured for this record. CAVEAT: If this field contains a character that coincides with the character specified as the field or record delimiter for the Cisco BTS 10200 billing records, it is replaced with a SPACE character to ensure the integrity of the billing data.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
126	Service Result Code1	Numeric		1 = SUCCESS 2 = FAILURE 3 = ANI INVALID 4 = ANI BLOCKED 5 = CASUAL CALLS NOT ALLOWED 6 = II SCREENING REJECT 7 = BW SCREENING REJECT 8 = COS RESTRICTED 9 = 2L-ACT ABANDONED VOICE BACK DN 10 = 2l_ACT CONNECTED ANONYMOUS DN 11 = COS INTERNAL ERROR 12 = CALL BLOCKED 13 = RESULT UNKNOWN 14 = USER ABANDONED 15 = INVALID PIN 16 = PIN BLOCKED 17 = TEMP DISC BLOCKED 18 = VALID 19 = ABANDON WHILE ANNOUNCE 20 = INSUFFICIENT QUOTA 21 = MEDIATION REQUIRED 22=Billing Info Season Suspend Call Blocked	Internal FCP message sent from the feature server to call processing.	Indicates disposition of first service activation, service deactivation, or service instance within the call context. This field is applicable only if the Service Type 1 field is populated. If this field is a value of NULL, no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
127	Service Result Code 2	Numeric		(Same as Service Result Code 1)	Internal FCP message sent from the feature server to call processing.	Indicates disposition of second service activation, service deactivation, or service instance within the call context. This field is applicable only if the Service Type 2 field is populated. If this field is a value of NULL, no data was captured for this record
128	Service Result Code 3	Numeric		(Same as Service Result Code 1)	Internal FCP message sent from the feature server to call processing.	Indicates disposition of third service activation, service deactivation, or service instance within the call context. This field is applicable only if the Service Type 3 field is populated. If this field is a value of NULL, no data was captured for this record
129	NAS Error Code	Numeric		800 = ISP PORT LIMIT OVERRUN 801 = NO MODEMS AVAILABLE 802 = CALLING NUMBER UNACCEPTABLE 803 = CALLED NUMBER UNACCEPTABLE	Internally generated by call processing.	Specific error code explaining reason that this NAS call could not be completed. If this field is a value of NULL, no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
130	NAS DLCX Reason	Numeric		801 = USER REQUEST 802 = LOST CARRIER 803 = LOST SERVICE 804 = IDLE TIMEOUT 805 = SESSION TIMEOUT 806 = ADMIN RESET 807 = ADMIN REBOOT 808 = PORT ERROR 809 = NAS ERROR 810 = NAS REQUEST 811 = NAS REBOOT 812 = PORT UN-NEEDED 813 = PORT PRE-EMPTED 814 = PORT SUSPENDED 815 = SERVICE UNAVAILABLE 816 = CALLBACK 817 = USER ERROR 818 = HOST REQUEST	MGCP DLCX	Reason code returned in the DLCX message for NAS calls. If this field is a value of NULL, no data was captured for this record.
131	NAS Pre-Authorization Result	Numeric		0 = NULL 1 = AU—EVERYTHING IS OK 2 = AX—CGN/CDN NUMBERS ARE NOT GOOD 3 = OF—MODEM FAILURE	MGCP NTFY	Indicates result of performing pre-authorization on a NAS-based call. If this field is a value of NULL, no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
132	Fax Indicator	Numeric		0 = VOICE ONLY 1 = VOICE AND FAX	Internally generated by call processing.	Indicates whether the call involved any fax transmissions. This field will contain a zero when operating in an mgw to mgw controlled mode. When a fax is sent under mgw control but no indication of the fax transmission is sent to the call agent, then this field is set to zero. If this field contains a value of NULL, then no data was captured for this record.
133	Fax Pages Sent	Numeric		Value provided by fax component	MGCP DLCX ACK, DLCX	The number of fax pages that were sent during this call. If the Fax Indicator field is set to NULL, then this field is ignored. This field is only populated by the Cisco BTS 10200 for calls that use the MGCP, NCS or TGCP interface.
134	Fax Pages Received	Numeric		Value provided by fax component	MGCP DLCX ACK, DLCX	The number of fax pages that were received during this call. If the Fax Indicator field is set to NULL, then field is ignored. This field is only populated by the Cisco BTS 10200 for calls that use the MGCP, NCS or TGCP interface.
135	Service Interrogation Time 1	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time the interrogation of Service Type 1 occurred. This field is only used when the Service Interrogation capabilities of various features are deployed. Typically these are only supported in Asia-Pacific regions.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
136	Service Interrogation Time 2	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time the interrogation of Service Type 2 occurred. This field is only used when the Service Interrogation capabilities of various features are deployed. Typically these are only supported in Asia-Pacific regions.
137	Service Interrogation Time 3	Numeric		128-bit unsigned value in total 64-bit seconds and 64-bit milliseconds in GMT epoch time format. The number of seconds since Jan 1, 1970 0:00:000h. If the value is NULL, the timestamp is to be ignored.	Dynamic run time data from the system clock.	The time the interrogation of Service Type 3 occurred. This field is only used when the Service Interrogation capabilities of various features are deployed. Typically these are only supported in Asia-Pacific regions.
138	Originating Pop Id	String	16	Alphanumeric characters	SubscriberProfile::PopId	This is the point of presence that the originating subscriber on the BTS is provisioned into. This field provides information on the locale of which the subscriber is a member. For LINE type termination, the pop index is populated from the calling party's subscriber profile pop id. For TRUNK_CLASS termination, the pop index is populated from the trunk-group pop index. This information can also be leveraged for partitioning subscribers on a single BTS into multiple business entities for billing purposes. If this field is NULL, no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
139	Terminating Pop Id	String	16	Alphanumeric characters	SubscriberProfile::PopId	This is the point of presence that the terminating subscriber on the BTS is provisioned into. This field provides information on the locale of which the subscriber is a member. For LINE type termination, the pop index is populated from the called party's subscriber profile pop id. For TRUNK_CLASS termination, the pop index is populated from the trunk-group attached pop index. This information can also be leveraged for partitioning subscribers on a single BTS into multiple business entities for billing purposes. If this field is NULL, no data was captured for this record.
140	Terminating POP Time Zone	Numeric		Refer to Appendix D, "Time Zone Mapping Table" for the potential values.	Pop::Timezone, Timezone::Id	This is the point of presence time zone that the terminating POP is provisioned into. This field provides information on the locale to which the terminating POP is a member. This information can also be leveraged for partitioning subscribers on a single BTS into multiple business entities for billing purposes. If this field contains a value of ZERO, then the timestamps within this record are based on the local time zone. A NULL indicates no value captured for this field.
141	Dial Plan Id	String	16	Alphanumeric characters.	SubscriberProfile::DialPlanId	Dial plan used for call routing purposes by originating subscriber on Cisco BTS 10200. The dial plan defines valid digit patterns for the subscriber in addition to routing based on the dialed digits. If this field is NULL, no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
142	GTD Global Call Indicator	String	32	Alphanumeric characters including hyphens.	If incoming GTD contains GCI, it is used; otherwise, the Cisco BTS 10200 internally generates it.	GTD Global Call Identification field populated only for H.323 calls with GTD enabled. The Cisco BTS 10200 will use the GCI format consistent with the IOS GTD implementation, which is in the form of a 16-character ASCII representation of a UTC timestamp followed by a 4-character ASCII representation of the clock sequence, plus a 12-character ASCII representation of the MAC address This field will always be in the length of 32 characters. If this field is NULL, no data was captured for this record.
143	Terminating SIP Username	String	64	Alphanumeric characters.	Incoming 18x or 200 SIP message to outgoing (outbound) initial SIP INVITE message.	The username value of the “From” field on the terminating side for all outgoing SIP calls. This field is populated only for SIP calls. The value for the field is specified between the ":" and "@" characters. If this field is NULL, no data was captured for this record.
144	Terminating SIP Call Id	String	64	Alphanumeric characters.	Incoming 18x or 200 SIP message to outgoing (outbound) initial SIP INVITE message.	The SIP Call ID header field. This field is a truncation of the SIP Call ID header field received via SIP if it is over 64 characters in length. This field is populated only for outgoing SIP calls. If this field is NULL, no data was captured for this record.
145	Terminating SIP Adjacent Hop Address	String	16	Alphanumeric characters	Incoming 18x or 200 SIP message to outgoing (outbound) initial SIP INVITE message.	The IP address of the proxy or SIP User Agent that the call is sent to for calls outbound from the Cisco BTS 10200. This field is only populated for outgoing SIP calls. The value for the field after “.” If this field is NULL, then no data was captured for this record.
146	Originating SIP Type	Numeric		1 = SUBSCRIBER 2 = SIP 3 = SIP-T 4 = CMSS	Combination of Incoming initial SIP INVITE message and provisioning (TrunkGroup, TrunkGroupProfile, Subscriber).	The type of SIP call on the inbound side. This field is only populated for SIP originations. If this field is a value of NULL, no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
147	Terminating SIP Call Type	Numeric		1 = SUBSCRIBER 2 = SIP 3 = SIP-T 4 = CMSS	Based on dynamic data; the outbound SIP call type is based on routing.	The type of SIP call on the outbound side. This field is only populated for SIP terminations. If this field is a value of NULL, no data was captured for this record.
148	Originating H.323 Network Provider Id	String	16	Alphanumeric characters.	H.323 ACF	This field contains the value contained in the IZCT source zone parameter of the ACF message for the outgoing call leg. If this field is NULL, then no data was captured for this record.
149	Destination H.323 Network Provider Id	String	16	Alphanumeric characters.	H.323 ACF	This field contains the identifier of the destination service provider which is used by external route servers to route the call to the final destination. This field is only applicable for outgoing calls to an H.323 network. This field contains the IntermediateCarrierId field from the IZCT parameter of the ACF message received from the outgoing Gatekeeper. If this field is NULL, then no data was captured for this record.
150	Video Codec	Numeric		0 = None (future) 1 = H.261 (future) 2 = H.263 (future) 3 = H.264 (future)	n/a	The codec used to transport the RTP traffic. The value in this field is pulled from the provisioning of the BTS 10200, not from the actual SDP message. This field is always zero in this release.
151	Original Originating Number	String	64	DIGITS	SETUP Message	This field contains the calling number received in the SETUP Message after digit manipulation is performed but before any overriding occurs, such as overwriting with a billing DN. If this field is NULL, then no data was captured for this field.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
152	Calling Party Category	Numeric		0 = Unknown 9 = National Operator 10 = Ordinary Subscriber 11 = Subscriber w/Priority 12 = Voice Band Data 13 = Test Call 15 = Pay Phone 249 = Line Test Desk 250 = Interception Operator 251 = Immediate Charge Info	SS7 IAM message.	The Calling Party Category value that was received in the SS7 IAM. If this field is NULL, then no data was captured for this record.
153	Called Party Category Indicator	Numeric		0 = No Indication 1 = Ordinary Subscriber 2 = Payphone	SS7 BCI field.	The Called Party Category Indicator value is derived from the FE bits of the Backward Call Indicator received via SS7. If this field is NULL, then no data was captured for this record.
154	Called Party Ported In Indicator	Numeric		0 = No 1 = Yes	Subscriber:: Ported-In	Indication of whether or not the Called Number (for terminating records) is ported into the reporting Cisco BTS 10200. If this field is NULL, then no data was captured for this record.
155	Calling Party Ported In Indicator	Numeric		0 = No 1 = Yes	Subscriber:: Ported-In	Indication of whether or not the Called Number (for terminating records) is ported into the reporting Cisco BTS 10200. If this field is NULL, then no data was captured for this record.
156	Billing Rate Indicator	Numeric		1 = Flat Rate 1 2 = Flat Rate 2 3 = Measured Rate 1 4 = Measured Rate 2	Subscriber:: Billing-Type	The type of SIP call on the inbound side. This field is only populated for SIP originations. If this field contains a value of NULL, then no data was captured for this record.
157	Account Id	String	20	Alphanumeric characters.	Subscriber:: Account	The account ID that the subscriber is associated with. If this field is NULL, then no data was captured for this record. This is a future field for Release 5.0. It will always contain NULL in this release.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
158	Originating End Point TSAP Address	String	64	DNS or IP Address	Mgw::TSAP-Address or TrunkGroup::Softsw-TSAP-Address or H323-Term::TSAP-Address	The IP address or DNS for the originating endpoint. For an on-net call, this is the TSAP Address of the IAD, SIP phone, ATA, or MTA. This address is indicative of the signaling address for the originating endpoint, which can be different from the bearer (RTP) address. For an off-net call, this is the IP address of the trunking gateway. This information is useful for generating usage reports on a per gateway basis or in troubleshooting errors encountered during a call. If this field is NULL, then no data was captured for this record.
159	Terminating End Point TSAP Address	String	64	DNS or IP Address	Mgw::TSAP- Address or TrunkGroup::Softsw-TSAP-Address or H323-Term::TSAP-Address	The IP address or DNS for the originating endpoint. For an on-net call, this is the TSAP Address of the IAD, SIP phone, ATA, or MTA. For an off-net call, this is the IP address of the trunking gateway. This information is useful for generating usage reports on a per gateway basis or in troubleshooting errors encountered during a call. If this field is NULL, then no data was captured for this record.
160	Originating CMTS Id	String	64	Alphanumeric characters.	Aggregation::TSAP-Address	The IP address or DNS of the aggregation router on the originating side of the call for on-net originators. If this field is NULL, then no data was captured for this record.
161	Terminating CMTS Id	String	64	Alphanumeric characters.	Aggregation::TSAP-Address	The IP address or DNS of the aggregation router on the originating side of the call for on-net originators. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
162	Originating Fiber Node Id	String	20	Alphanumeric characters.	Mgw::Fiber-Node	The name of the fiber node that the terminating MTA is assigned to. An HCF fiber node sits between the CMTS and MTA with each MTA assigned to a particular fiber node. One or more fiber nodes are assigned to a given CMTS. If this field is NULL, then no data was captured for this record.
163	Terminating Fiber Node Id	String	20	Alphanumeric characters.	Mgw::Fiber-Node	The name of the fiber node that the terminating MTA is assigned to. An HCF fiber node sits between the CMTS and MTA with each MTA assigned to a particular fiber node. One or more fiber nodes are assigned to a given CMTS. If this field is NULL, then no data was captured for this record.
164	Call Subtype	Numeric		TEST-CALL subtypes: NONE = 0 NCT_LINE_TEST = 15 NCT_TRUNK_TEST = 16 NLB_LINE_TEST = 17 NLB_TRUNK_TEST = 18 TEST_ROUTE = 19 EMG subtypes: AMBULANCE = 2 FIRE = 6 POLICE = 9 INFO subtypes: AIRLINES = 1 ANALOG = 3 DIGITAL = 4 DYNAMIC = 5 LB_TEST = 7 NLB_TEST = 8 RAILWAYS = 10 TIME = 11	Destination:: CallSubtype	This field further defines the call based on the Call-Type field. In this release, only CallType=TEST-CALL, EMG, or INFO causes this field to be populated. If this field contains a NULL, then it should be ignored. NCT-LINE-TEST is a Network Continuity Test call on a subscriber line. The calling party number format is: <test-prefix><DN> NCT-TRUNK-TEST is a Network Continuity Test call on a trunking endpoint. The calling party number format is: <test-prefix><TG><TM>. The number of digits in the trunk group number and trunk member number is determined based on test-trunk-grp-digits and test-trunk-member- digits value set in the Call Agent Configuration table. NLB-LINE-TEST is a Network Loopback Test call using a network loop connection on the terminating endpoint. The calling party number format is: <test-prefix><DN>.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
	Call Subtype	Numeric		TRAFFIC = 12 TW(Time&Weather) =13 WEATHER = 14		LB-TRUNK-TEST is a Network Loopback Test call on a trunking endpoint. The calling party number is in the format <test-prefix><TG><TM>. The number of digits in the trunk group number and trunk member number is determined based on test-trunk-grp-digits and test-trunk-member- digits value set in the Call Agent Configuration table. TEST-ROUTE routes the test call based on <DN>. The calling party number is in the format <test-prefix><TG><TM>. The number of digits in the trunk group number and trunk member number is determined based on test-trunk-grp-digits and test-trunk-member-digits value set in the Call Agent Configuration table.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
165	Sensor Id	String	6	Numeric characters.	Pop::SensorId	The field contains 6 numeric characters defined in the POP Table Sensor ID field. The first character contains a value of 0 if the record was not previously output to a downstream system (primary data), a 1 if the record was previously output (secondary data), or a 2 if the record was output but not confirmed. The 2nd through 7th characters contain a 6 digit identification code assigned by the service provider of the sensor that generated or formatted the billing record. The values can range from 000000 to 999998. 999999 is reserved for sensors that output only AMA test tapes. The POP table contains the 6 characters that represent the actual Sensor ID; the Cisco BTS 10200 does not support the 1st character as stated in GR-1100. The sensor ID is chosen based on: Offnet to Onnet call: Use the POP index for the originating party (incoming trunk group's POP) Onnet to Offnet call: Use the POP index for the originating subscriber on that Cisco BTS 10200 (subscriber's associated POP) Onnet to Onnet call (same POP on same Cisco BTS 10200): Use the POP index for the originating subscriber

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
165	Sensor Id	String				Onnet to Onnet call (different POPs on same Cisco BTS 10200): Use the POP index for the originating subscriber Onnet to Onnet call (different Cisco BTS 10200s): Use the POP index for the originating subscriber homed on the reporting Cisco BTS 10200 If this field is NULL, no data was captured for this record. This field indicates if the call terminating to this Cisco BTS 10200 originated internationally. NO indicates the call is domestic in origin. This field is only populated for incoming SS7 calls. A value of NULL indicates that information was not gathered for this field.
166	Originating International Indicator	Numeric		1 = No 2 = Yes (call is international in origin)	Signaling parameters	This field indicates if the call terminating to this Cisco BTS 10200 was originated internationally or not. A value of NO indicates the call was domestic in origin. This field is only populated for incoming SS7 calls. A value of NULL indicates that information was not gathered for this field.
167	Originating Calling Name	String	15	Null character, "PRIVATE," "OUT OF AREA," "Name string returned from CNAM query"	CNAM Query	The calling name for the originating party of this call terminating on the Cisco BTS 10200 as returned from the CNAM database query. The strings for PRIVATE and OUT OF AREA are mapped internally in the Cisco BTS 10200 and presented in a format compliant with GR-1188 in this field. If this field is NULL, then no data was captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
168	Originating Privacy Indicator	Numeric		1 = NONE, 2 = NAME, 3 = FULL	Signaling parameters	The privacy indicator for the originating party of this call on the Cisco BTS 10200. The field is used for both originating and terminating calls. The field is derived from the appropriate signaling fields as the call terminates to this Cisco BTS 10200. A value of NONE indicates that both calling name and number are displayed—there is no restriction; a value of NAME indicates just the calling number is displayed (name privacy is active); and a value of FULL indicates neither the number or name is displayed to the terminating subscriber (full privacy) on the Cisco BTS 10200. This is only applicable to subscribers on the Cisco BTS 10200 that have calling name and/or calling number as a feature, assigned to them. If this field is NULL, then no data was captured for this record.
169	Originating Called Party Ported NoA	Numeric		1 = Concatenated RN with DN 2 = Separate RN		For an incoming trunk call, if the received Called Party Number has a Nature of Address (NoA) indicating ported number, then one of the following values is provided. Otherwise, the value is NULL. These fields are only applicable for ITU-based Local Number Portability (LNP) when LNP Profile LNP-DB-TYPE=RN. Values: • "WITH RN"—Indicates the digits are a Routing Number (RN), or concatenated RN + DN, depending on country specific requirements. • "WITHOUT RN"—Indicates the digits are for a ported DN, but with no RN present.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
170	Terminating Called Party Ported NoA	Numeric		1 = Concatenated RN with DN 2 = Separate RN		For a call terminating to a Cisco BTS 10200 subscriber, or outgoing trunk call, when LNP Profile LNP-DB-TYPE=RN and the final called party number (after digit translation and manipulation) nature of address indicates ported number, then this field is present and is set to one of the values shown above for Originating Called Ported NoA. If this field is NULL, then no data was captured for this record.
171	Charging Information	Numeric		Number of metered or pulsed charge units or Charge Band number. This is a dual purpose field.	ISUP ITX messages	The number of metered or pulsed billing units recorded for this call. This is initially only used in conjunction with French and Polish ISUP. No value is recorded in this field for calls that are transiting the BTS. The BTS acts as a CGP node based on the "AOC Enabled" property associated with the outgoing trunk groups. The property's "enabled" or "disabled" status determines whether the received CRG message in the backward direction should be validated. If this field is NULL, then no data was captured for this record.
173	Centrex Group	String	16	Up to a 16- character group name	Subscriber:CtxgId	Identity of the Centrex group that this call is associated with. If this field is NULL, then no data was captured for this record.
174	Country Code	String	3	Numeric Characters	Intl_dial_plan:Padded_cc	3 numeric characters Automatically generated by ems if not provisioned If 1 digic cc, pad cc with 2 zeros (2 becomes 002) If 2 digit cc, pad cc with 1 zero (44 becomes 044). If 3 digit cc, no padding required, copy as is. If cc > 3 digits, copy the 1st 3 digits here

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
175	Feature Data Two 1	String	130	See Chapter 2, "Feature Server Derived Call Data"for specifics on feature data.	Internal FCP Message sent from the feature server to call processing	The second datum of feature specific data provided by the associated feature server for the Service Type 2 of a given call. If this field is NULL, then no data is captured for this record.
176	Feature Data Two 2	String	130	See Chapter 2, "Feature Server Derived Call Data"for specifics on feature data.	Internal FCP Message sent from the feature server to call processing	The second datum of feature specific data provided by the associated feature server for the Service Type 2 of a given call. If this field is NULL, then no data is captured for this record.
177	Feature Data Two 3	String	130	See Chapter 2, "Feature Server Derived Call Data"for specifics on feature data.	Internal FCP Message sent from the feature server to call processing	The second datum of feature specific data provided by the associated feature server for the Service Type 2 of a given call. If this field is NULL, then no data is captured for this record.
178	Feature Data Two 1	String	130	See Chapter 2, "Feature Server Derived Call Data"for specifics on feature data.	Internal FCP Message sent from the feature server to call processing	The second datum of feature specific data provided by the associated feature server for the Service Type 2 of a given call. If this field is NULL, then no data is captured for this record.
179	Feature Data Two 2	String	130	See Chapter 2, "Feature Server Derived Call Data"for specifics on feature data.	Internal FCP Message sent from the feature server to call processing	The second datum of feature specific data provided by the associated feature server for the Service Type 2 of a given call. If this field is NULL, then no data is captured for this record.
180	Feature Data Two 3	String	130	See Chapter 2, "Feature Server Derived Call Data"for specifics on feature data.	Internal FCP Message sent from the feature server to call processing	The second datum of feature specific data provided by the associated feature server for the Service Type 2 of a given call. If this field is NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
181	QoS Orig Average Network Packet Round Trip Delay	Numeric		0, 1-65, 535	MGCP DLCX ACK, DLCX	The average network packet round trip delay as measured from the RTP inerface of the originating endpoint. The boundaries of this interface include: • multiplexing/demultiplexing multiple RTP packets into or out of a single UDP packet • all subsequent handling of transmission and reception of UDP frames in addition to the network delays and peer processing up to the peer's RTP interface. A value of zero indicates that this calculation was not supported by the originating endpoint. If this field contains a value of NULL, then no data is captured for this record
182	QoS Term Average Network Packet Round Trip Delay	Numeric		0, 1-65, 535	MGCP DLCX ACK, DLCX	The average network packet round trip delay as measured from the RTP inerface of the terminating endpoint. The boundaries of this interface include: • multiplexing/demultiplexing multiple RTP packets into or out of a single UDP packet • all subsequent handling of transmission and reception of UDP frames in addition to the network delays and peer processing up to the peer's RTP interface. A value of zero indicates that this calculation was not supported by the originating endpoint. If this field contains a value of NULL, then no data is captured for this record
183	QoS Orig Codec Framesize	Numeric		0, 1-65,535	MGCP DLCX ACK, DLCX	The codec framesize in bytes that is used by the originating endpoint. If this field contains a value of NULL, then no data is captured for this record.
184	QoS Term Codec Framesize	Numeric		0, 1-65,535	MGCP DLCX ACK, DLCX	The codec framesize in bytes that is used by the terminating endpoint. If this field contains a value of NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
185	Qos Orig Dead Connection Detection	Numeric		1 = Dead Connection Detected, 2= No Dead Connection Detected	MGCP DLCX ACK, DLCX	Indicates whether the dead connection timer expired either at the beginning of the call or during non-silence receiver states. This metric is reported by the originating endpoint. If this field contains a value of NULL, then no data is captured for this record.
186	QoS Term Dead Connection Detection	Numeric		1 = Dead Connection Detected, 2= No Dead Connection Detected	MGCP DLCX ACK, DLCX	Indicates whether the dead connection timer expired either at the beginning of the call or during non-silence receiver states. This metric is reported by the terminating endpoint. If this field contains a value of NULL, then no data is captured for this record.
187	QoS Orig Concealed Seconds	Numeric		0-65, 535	MGCP DLCX ACK, DLCX	Contains the number of elapsed seconds reported by the originating endpoint during which some concealment event has occurred. Concealment invents are defined as any action when 1 - 50 ms of missing audio information is accounted for in the RTP stream. If this field contains a value of NULL, then no data is captured for this record.
188	QoS Term Concealed Seconds	Numeric		0-65, 535	MGCP DLCX ACK, DLCX	Contains the number of elapsed seconds reported by the terminating endpoint during which some concealment event has occurred. Concealment invents are defined as any action when 1 - 50 ms of missing audio information is accounted for in the RTP stream. If this field contains a value of NULL, then no data is captured for this record.
189	Qos Orig Severely Concealed Seconds	Numeric		0-65, 535	MGCP DLCX ACK, DLCX	Contains the number of elapsed seconds reported by the originating endpoint during which some severe concealment event has occurred. Severe concealment invents are defined as any action when >50 ms of missing audio information is accounted for in the RTP stream. If this field contains a value of NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
190	QoS Term Severely Concealed Seconds	Numeric		0-65, 535	MGCP DLCX ACK, DLCX	Contains the number of elapsed seconds reported by the terminating endpoint during which some severe concealment event has occurred. Severe concealment invents are defined as any action when >50 ms of missing audio information is accounted for in the RTP stream. If this field contains a value of NULL, then no data is captured for this record.
191	QoS Orig Mos LQK	Numeric		10-50	MGCP DLCX ACK, DLCX	Contains the computed average MOS score for the listening quality of the call based on the K-factor at the originating endpoint. The K-factor is a clarity of MOS-LQ (listening quality) estimator. It is a predicted MOS score based entirely on impairments due to frame loss and codec. The K-factor does not include any impairments due to delay or channel factors. On a per call basis, only the K-factor or the R-factor is reported, but not both. If this field contains a value of NULL, then no data is captured for this record. A value of 127 iindicates that information was collected but the endpoint is stating thatthis metric is not available for this call.
192	QoS Term Mos LQK	Numeric		10-50	MGCP DLCX ACK, DLCX	Contains the computed average MOS score for the listening quality of the call based on the K-factor at the terminating endpoint. The K-factor is a clarity of MOS-LQ (listening quality) estimator. It is a predicted MOS score based entirely on impairments due to frame loss and codec. he K-factor does not include an impairments due to delay or channel factors. On a per call basis, only the K-factor or the R-factor is reported, but not both. If this field contains a value of NULL, then no data is captured for this record. Avalue of 127 indicates that information was collected but the endpoint is stating that this metric is not available for this call.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
193	QoS Orig Local Total Packet Loss Rate	Numeric		0-255	MGCP DLCX ACK, DLCX	Represents the total number of packets sent or expected minus the total number of packets received divided by the total number of packets sent or expected. The total packet loss ratio is equivalent to the average of the interval packet loss ratio. This is the ratio calculated by the originating endpoint. The value represented in this field is the number of 1/256ths of loss that occurred. For example, a value of 12 indicates that 12/256 of the packets over the duration of the call was lost. If this field contains a value of NULL, then no data is captured for this record.
194	QoS Term Local Total Packet Loss Rate	Numeric		0-255	MGCP DLCX ACK, DLCX	Represents the total number of packets sent or expected minus the total number of packets received divided by the total number of packets sent or expected. The total packet loss ratio is equivalent to the average of the interval packet loss ratio. This is the ratio calculated by the terminating endpoint. The value represented in this field is the number of 1/256ths of loss that occurred. For example, a value of 12 indicates that 12/256 of the packets over the duration of the call was lost. If this field contains a value of NULL, then no data is captured for this record.
195	QoS Orig Local End System Delay	Numeric		0, 1-65, 535	MGCP DLCX ACK, DLCX	The average end system delay at the originating endpoint is the sum of the accumulated send delay plus the accumulated received delay expressed in milliseconds. The end system fixed delay is computed based on codec selection, frame size, number of frames per packet, and typical or expected nominal queuing delays. This number will vary from endpoint to endpoint based on the specfic endpoint's implementation details. A value of zero is present if the endpoint does not support the calculation of this metric. If this field contains a value of NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
196	QoS Term Local End System Delay	Numeric		0, 1-65, 535	MGCP DLCX ACK, DLCX	The average end system delay at the terminating endpoint is the sum of the accumulated send delay plus the accumulated received delay expressed in milliseconds. The end system fixed delay is computed based on codec selection, frame size, number of frames per packet, and typical or expected nominal queuing delays. This number will vary from endpoint to endpoint based on the specfic endpoint's implementation details. A value of zero is present if the endpoint does not support the calculation of this metric. If this field contains a value of NULL, then no data is captured for this record.
197	QoS Orig Local Cummulative Packet Discard Count	Numeric		0-255	MGCP DLCX ACK, DLCX	Represents the number of packets discarded by the originating endpoint since the inception of the call. Packets are considered discarded if they arrive too late to be played out or too early to be buffered. Packets received which are duplicates of previously received packets and hence are discarded, are not counted. If this field contains a value of NULL, then no data is captured for this record.
198	QoS Term Local Cummulative Packet Discard Count	Numeric		0-255	MGCP DLCX ACK, DLCX	Represents the number of packets discarded by the terminating endpoint divided since the inception of the call. Packets are considered discarded if they arrive too late to be played out or too early to be buffered. Duplicates of previously received packets are discarded and are not counted. If this field contains a value of NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
199	QoS Orig Local Mos R Factor	Numeric		0-100, 127	MGCP DLCX ACK, DLCX	This is a configured MOS R-factor value reported by the originating endpoint. The R-factor is based on ITU-T g.107 which was developed primarily for network planning. The MOS R-factor has three basic components: • a fudge factor which depends on the equipment and codec used - it is constant for the connection • the delay impariment factor which depends on real time round trip delay and echo • a component that depends on real time packet loss. A value of 127 indicates that information was collected but the endpoint is stating that this metric is not available for this call. If this field contains a value of NULL,then no data is captured for this record
200	QoS Term Local Mos R Factor	Numeric		0-100, 127	MGCP DLCX ACK, DLCX	This is a configured MOS R-factor value reported by the terminating endpoint. The R-factor is based on ITU-T g.107 which was developed primarily for network planning. The MOS R-factor has three basic components: • a fudge factor which depends on the equipment and codec used - it is constant for the connection • the delay impariment factor which depends on real time round trip delay and echo • a component that depends on real time packet loss. A value of 127 indicates that information was collected but the endpoint is stating that this metric is not available for this call. If this field contains a value of NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
201	Qos Orig Local Mos LQR	Numeric		10-50, 127	MGCP DLCX ACK, DLCX	This is the estimated receiving and listening quality MOS value reported by the originating endpoint. The nominal reange of MOS scores is 0 - 5. Before being expressed in MGCP, the MOS scored is multiplied by 10 and any fractional part is truncated. This parameter is computed from the start of metrics collection. A value of 127 indicates that information was collected but the endpoint is stating that this metric is not available for this call. If this field contains a value of NULL, then no data is captured for this record.
202	QoS Term Local Mos LQR	Numeric		10-50, 127	MGCP DLCX ACK, DLCX	This is the estimated receiving and listening quality MOS value reported by the terminating endpoint. The nominal reange of MOS scores is 0 - 5. Before being expressed in MGCP, the MOS scored is multiplied by 10 and any fractional part is truncated. This parameter is computed from the start of metrics collection. A value of 127 indicates that information was collected but the endpoint is stating that this metric is not available for this call. If this field contains a value of NULL, then no data is captured for this record.
203	QoS Orig Local Jitter Buffer Mode	Numeric		0=unknown 1=reserved 2=non-adaptive 3=adaptive	MGCP DLCX ACK, DLCX	The jitter buffer mode configuration of the originating endpoint. If this field contains a value of NULL, then no data is captured for this record.
204	QoS Term Local Jitter Buffer Mode	Numeric		0=unknown 1=reserved 2=non-adaptive 3=adaptive	MGCP DLCX ACK, DLCX	The jitter buffer mode configuration of the terminating endpoint. If this field contains a value of NULL, then no data is captured for this record.
205	QoS Orig Local Rtp Ip Address	String		Dotted Decimal IP Address	MGCP DLCX ACK, DLCX	The ip address of the originating endpoint from a bearer (RTP) perspective. If this field contains a value of NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
206	Qos Term Local Rtp Ip Address	String		Dotted Decimal IP Address	MGCP DLCX ACK, DLCX	The ip address of the terminating endpoint from a bearer (RTP) perspective. If this field contains a value of NULL, then no data is captured for this record.
207	Qos Orig Local Rtp Port	Numeric		1-65535	MGCP DLCX ACK, DLCX	The rtp port used by the originating endpoint. If this field contains a value of NULL, then no data is captured for this record.
208	Qos Term Local Rtp Port	Numeric		1-65535	MGCP DLCX ACK, DLCX	The rtp port used by the terminating endpoint. If this field contains a value of NULL, then no data is captured for this record.
209	QoS Orig Local Address Type	Numeric		IPV4=0 IPV6=1	MGCP DLCX ACK, DLCX	The address type (version 4 or 6) of the originating endpoint. If this field contains a value of NULL, then no data is captured for this record.
210	QoS Term Local Address Type	Numeric		IPV4=0 IPV6=1	MGCP DLCX ACK, DLCX	The address type (version 4 or 6) of the terminating endpoint. If this field contains a value of NULL, then no data is captured for this record.
211	QoS Orig Codec Type	Numeric		1=PCMU G711 2=PCMA G711 3=G729A 4=G729B 5=G729E 6=G729 7=G726-40 8=G726-32 9=G726-24 10=G726-16 11=G728 12=G723-H 13=G723A-H 14=G723-L 15=G723A-L 16=G723	MGCP DLCX ACK, DLCX	The negotiated codec used by the originating endpoint. If this field contains a value of NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
212	QoS Term Codec Type	Numeric		1=PCMU G711 2=PCMA G711 3=G729A 4=G729B 5=G729E 6=G729 7=G726-40 8=G726-32 9=G726-24 10=G726-16 11=G728 12=G723-H 13=G723A-H 14=G723-L 15=G723A-L 16=G723	MGCP DLCX ACK, DLCX	The negotiated codec used by the terminating endpoint. If this field contains a value of NULL, then no data is captured for this record.
213	QoS Orig R Factor LQ	Numeric		0-120, 127	MGCP DLCX ACK, DLCX	R factor (listening quality) parameter collected from the originating endpoint involved in the call. This value represents the listening quality of the RTP session calculated as per ITU-T Recommendation G.107. The parameter is computed from the start of metrics computation. If this field contains a value of NULL, then no data is captured for this record.
214	QoS Term R Factor LQ	Numeric		0-120, 127	MGCP DLCX ACK, DLCX	R factor (listening quality) parameter collected from the terminating endpoint involved in the call. This value represents the listening quality of the RTP session calculated as per ITU-T Recommendation G.107. The parameter is computed from the start of metrics computation. If this field contains a value of NULL, then no data is captured for this record.
215	DQoS Orig Buffer Size	Numeric		32 bit IEEE floating point number	DQOS GATESPEC - Token Bucket Size field	The buffer size used by the originating endpoint as reported in the Dqos Gatespec message's Token Bucket Size field. If this field contains a value of NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
216	DQoS Term Buffer Size	Numeric		32 bit IEEE floating point number	DQOS GATESPEC - Token Bucket Size field	The buffer size used by the terminating endpoint as reported in the Dqos Gatespec message's Token Bucket Size field. If this field contains a value of NULL, then no data is captured for this record.
217	DQoS Orig Packet Size	Numeric		32 bit integer	DQOS GATESPEC - Maximum Packet Size field	The maximum packet size reported by the originating endpoint as reported in the Dqos Gatespec message's Maximum Packet Size field. If this field contains a value of NULL, then no data is captured for this record.
218	DQoS Term Packet Size	Numeric		32 bit integer	DQOS GATESPEC - Maximum Packet Size field	The maximum packet size reported by the terminating endpoint as reported in the Dqos Gatespec message's Maximum Packet Size field. If this field contains a value of NULL, then no data is captured for this record.
219	DQoS Orig Speech Size	Numeric		32 bit integer	DQOS GATESPEC - Maximum Packet Size field	The speech size reported by the originating endpoint. For voice calls, this is the same as the Dqos Gatespec message's Maximum Packet Size field. If this field contains a value of NULL, then no data is captured for this record.
220	DQoS Term Speech Size	Numeric		32 bit integer	DQOS GATESPEC - Maximum Packet Size field	The speech size reported by the terminating endpoint. For voice calls, this is the same as the Dqos Gatespec message's Maximum Packet Size field. If this field contains a value of NULL, then no data is captured for this record.
221	DQoS Orig Bandwidth	Numeric		32 bit IEEE floating point number	DQOS GATESPEC - Rate field	The allocated bandwidth reported by the originating endpoint as reported in the Dqos Gatespec message's Rate field. If this field contains a value of NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
222	DQoS Term Bandwidth	Numeric		32 bit IEEE floating point number	DQOS GATESPEC	The allocated bandwidth reported by the terminating endpoint as reported in the Dqos Gatespec message's Rate field. If this field contains a value of NULL, then no data is captured for this record.
223	Orig CAC Type	Numeric		1=DQOS 2=PCMM_COPS 3=NONE	Qos::ClientType	The type of admission control used for the originating side of the call. The type of admission control to be used for the call half can be determined from the provisioned value in the CLIENT-TYPE field of the QOS table. This field is set to NONE in the case BTS did not use the Admission Control mechanism for the originating call half because of an error scenario such as provisioning errors or the connection to CMTS/Policy Server is down. If this field contains a value of NULL, then no data is captured for this record.
224	Term CAC Type	Numeric		1=DQOS 2=PCMM_COPS 3=NONE	Qos::ClientType	The type of admission control used for the terminating side of the call. The type of admission control to be used for the call half can be determined from the provisioned value in the CLIENT-TYPE field of the QOS table. This field is set to NONE in the case BTS did not use the Admission Control mechanism for the terminating call half because of an error scenario such as provisioning errors or the connection to CMTS/Policy Server is down. If this field contains a value of NULL, then no data is captured for this record.
225	Modem Indicator	Numeric		0=FALSE 1=TRUE	MgwProfile::ModemToneSupp and TGCP/NCS NTFY message	This is an indication of whether or not the call used a modem. This field is populated based on the setting in the media gateway profile table and if an up-speed fax is sent during the call. This is only applicable to TGCP and NCS controlled end point only. If this field contains a value of NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
226	TDD Indicator	Numeric		0=FALSE 1=TRUE	MgwProfile::TddToneSupp and TGCP/NCS NTFY message	This is an indication of whether or not the call used a TDD relay device. This field is populated based on the setting in the media gateway profile table and if triggered by the appropriate NTFY event during the call. This is only applicable to TGCP and NCS controlled end point only. f this field contains a value of NULL, then no data is captured for this record.
227	CTRAC Id	Numeric		Unsigned 32 bit integer	System Generated	This is a unique identifer generated by the BTS on a per call basis. The scope of this indentifier does not span outside of a single BTS instance. The value is used for troubleshooting purposes to correlate between the CDR and the associated trace statements produced by the system on a per call basis. If this field contains a value of 0, then no data is captured for this record.
228	Originating NE Type	Numeric		1=CMS 3=MGC	CallAgentProfile::CMS-Id or CallAgentProfile::MGC-Id	This field indicates the type of network element that is reporting the originating side call detail record. If this field contains a value of NULL, then no data is captured for this record. For a SIP based call, the types supported are derived below: • Voice Mail - CMS • SIP subscriber - CMS • CMSS TG - MGC • non CMSS TG - CMS

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
229	Terminating NE Type	Numeric		1=CMS 3=MGC	CallAgentProfile::CMS-Id or CallAgentProfile::MGC-Id	This field indicates the type of network element that is reporting the terminating side call detail record If this field contains a value of NULL, then no data is captured for this record. For a SIP based call, the types supported are derived below: • Voice Mail - CMS • SIP subscriber - CMS • CMSS TG - MGC • non CMSS TG - CMS
230	Originating BCID	ASCII	40	The format of this field is: Timestamp converted to ascii concatenated to ElementId concatenated to TimeZone concatenated to EventCounter converted to ascii. Each of these fields is separated by an underscore resulting in: TimeStamp_ElementId_TimeZone_EventCounter	System Generated	This field is system-generated by the Event Messageing (EM) billing subsystem if it is used in conjuction with post call billing. This field is populated by the originating side of the call. It is used to correlate billing information within a network element or between network elements in a PacketCable compliant deployment. If this field contains a value of NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
231	Terminating BCID	ASCII	40	The format of this field is: Timestamp converted to ascii concatenated to ElementId concatenated to TimeZone concatenated to EventCounter converted to ascii. Each of these fields is separated by an underscore resulting in: TimeStamp_ElementId _TimeZone_EventCoun ter	System Generated	This field is system-generated by the Event Messageing (EM) billing subsystem if it is used in conjuction with post call billing. This field is populated by the terminating side of the call. It is used to correlate billing information within a network element or between network elements in a PacketCable compliant deployment. If this field contains a value of NULL, then no data is captured for this record.
232	SIP Originating Context Id	ASCII	64		SIP INVITE - Context-id field	Contanins the originating side context id received in the SIP INVITE message. This is used to correlate calls made to application servers as part of origination side SIP trigger processing.
233	SIP Terminating Context Id	ASCII	64		SIP INVITE - Context-id field	Contanins the terminating side context id received in the SIP INVITE message. This is used to correlate calls made to application servers as part of termination side SIP trigger processing.
234	QoS Orig Remote Packets Sent	Numeric		0-4, 294, 967, 295	MGCP DLCX ACK, DLCX	The total number of RTP data packets transmitted by the originating end point since starting transmission. If this field contains a value of NULL, then no data is captured for this record.
235	QoS Term Remote Packets Sent	Numeric		0-4, 294, 967, 295	MGCP DLCX ACK, DLCX	The total number of RTP data packets transmitted by the terminating end point since starting transmission. If this field contains a value of NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
236	QoS Orig Remote Octets Sent	Numeric		0-4, 294, 967, 295	MGCP DLCX ACK, DLCX	The total number of payload octets transmitted in RTP data packets by the originating endpoint since starting transmission. This count does not include headers or padding. This count can be used to estimate the average payload rate. If this field contains a value of NULL, then no data is captured for this record.
237	QoS Term Remote Octets Sent	Numeric		0-4, 294, 967, 295	MGCP DLCX ACK, DLCX	The total number of payload octets transmitted in RTP data packets by the terminating endpoint since starting transmission. This count does not include headers or padding. This count can be used to estimate the average payload rate. If this field contains a value of NULL, then no data is captured for this record.
238	QoS Orig Remote Packets Lost	Numeric		0-16, 717, 215	MGCP DLCX ACK	The total number of RTP data packets from the terminating endpoint that have been lost since the beginning of reception by the originating endpoint. This number is defined as the number of packets expected less the number of packets actually received, where the number of packets received includes any which are late or duplicates. The packets that arrive late are not counted as lost and the loss may be negative if there are duplicates. The number of packets expected is definedas the extended last sequence number received less the initial sequence number received. If this field contains a value of NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
239	QoS Term Remote Packets Lost	Numeric		0-16, 717, 215	MGCP DLCX ACK	The total number of RTP data packets from the originating endpoint that have been lost since the beginning of reception by the terminating endpoint. This number is defined as the number of packets expected less the number of packets actually received, where the number of packets received includes any which are late or duplicates. The packets that arrive late are not counted as lost and the loss may be negative if there are duplicates. The number of packets expected is defined as the extended last sequence number received less the initial sequence number received. If this field contains a value of NULL, then no data is captured for this record.
240	QoS Orig Remote Average Inter-arrival Jitter	Numeric		0-536, 870, 912	MGCP DLCX ACK, DLCX	This is an estimate of the average statistical variance of the RTP data packet interarrival time, measured in timestamp units and expressed as an unsigned integer by the originating endpoint. The inter-arrival jitter is defined as the mean deviation (smoothed absolute value) of the difference in packet spacing at the receiver compared to the sender for a pair of packets. This is equivalent to the difference between a packet's RTP timestamp and the receiver's clock at the time arrival. The value is calculated in terms of 125 microsend ticks and converted to milliseconds for storage in the CDR. If this field contains a value of NULL, then no data is captured for this record.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
241	QoS Term Remote Average Inter-arrival Jitter	Numeric		0-536, 870, 912	MGCP DLCX ACK, DLCX	This is an estimate of the average statistical variance of the RTP data packet interarrival time, measured in timestamp units and expressed as an unsigned integer by the terminating endpoint. The interarrival jitter is defined to be the mean deviation (smoothed absolute value) of the difference in packet spacing at the receiver compared to the sender for a pair of packets. This is equivalent to the difference between a packet's RTP timestamp and the receiver's clock at the time arrival. The value is calculated in terms of 125 microsend ticks and converted to milliseconds for storage in the CDR. If this field contains a value of NULL, then no data is captured for this record.
242	QoS Orig Local External Mos R Factor	Numeric		0-100	MGCP DLCX, DLCX ACK	A value (XSR) representing the effects of any call segment carried over a network segment external to the one on which the endpoint resides. Calculated as per ITU-T Recommendation G.107.
243	QoS Term Local External Mos R Factor	Numeric		0-100	MGCP DLCX, DLCX ACK	A value (XSR) representing the effects of any call segment carried over a network segment external to the one on which the endpoint resides. Calculated as per ITU-T Recommendation G.107.
244	QoS Orig Local Estimated MOS-CQ	Numeric		0-50	MGCP DLCX, DLCX ACK	An estimated receiving end Conversational Quality MOS. The nominal range of MOS scores is 0-5. Before being expressed in MGCP, the MOS score is multiplied by 10 and any fractional part is truncated.
245	QoS Term Local Estimated MOS-CQ	Numeric		0-50	MGCP DLCX, DLCX ACK	An estimated receiving end Conversational Quality MOS. The nominal range of MOS scores is 0-5. Before being expressed in MGCP, the MOS score is multiplied by 10 and any fractional part is truncated.
246	QoS Orig Local Minimum Gap Threshold	Numeric		1-255	MGCP DLCX, DLCX ACK	The gap/burst transition threshold. The recommended value is 16.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
247	QoS Term Local Minimum Gap Threshold	Numeric		1-255	MGCP DLCX, DLCX ACK	The gap/burst transition threshold. The recommended value is 16.
248	QoS Orig Local Packet Loss Concealment Type	Numeric		0=UNSPECIFIED 1=DISABLED 2=ENHANCED 3=STANDARD	MGCP DLCX, DLCX ACK	The type of packet loss concealment algorithm in use.
249	QoS Term Local Packet Loss Concealment Type	Numeric		0=UNSPECIFIED 1=DISABLED 2=ENHANCED 3=STANDARD	MGCP DLCX, DLCX ACK	The type of packet loss concealment algorithm in use.
250	QoS Orig Local Jitter Buffer Rate	Numeric		0-15	MGCP DLCX, DLCX ACK	The jitter buffer adjustment rate(JBR).
251	QoS Term Local Jitter Buffer Rate	Numeric		0-15	MGCP DLCX, DLCX ACK	The jitter buffer adjustment rate(JBR).
252	QoS Orig Local Nominal Jitter Buffer Delay	Numeric		0-65535	MGCP DLCX, DLCX ACK	Current nominal delay (JBN) in milliseconds that corresponds to the nominal jitter buffer delay for packets that arrive exactly on time.
253	QoS Term Local Nominal Jitter Buffer Delay	Numeric		0-65535	MGCP DLCX, DLCX ACK	Current nominal delay (JBN) in milliseconds that corresponds to the nominal jitter buffer delay for packets that arrive exactly on time.
254	QoS Orig Local Maximum Jitter Buffer Delay	Numeric		0-65535	MGCP DLCX, DLCX ACK	Current maximum delay (JBM) in milliseconds that corresponds to the earliest arriving packet that would not be discarded. In simple queue implementations, this may correspond to the nominal jitter buffer delay. In adaptive jitter buffer implementations, this value may dynamically vary up to the absolute maximum jitter buffer delay.

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
255	QoS Term Local Maximum Jitter Buffer Delay	Numeric		0-65535	MGCP DLCX, DLCX ACK	Current maximum delay (JBM) in milliseconds that corresponds to the earliest arriving packet that would not be discarded. In simple queue implementations, this may correspond to the nominal jitter buffer delay. In adaptive jitter buffer implementations, this value may dynamically vary up to the absolute maximum jitter buffer delay.
256	QoS Orig Local Absolute Maximum Jitter Buffer Delay	Numeric		0-65535	MGCP DLCX, DLCX ACK	Absolute maximum delay (JBS) in milliseconds that an adaptive jitter buffer can reach under worst case conditions. For fixed jitter buffers, this must be set to the maximum jitter buffer delay.
257	QoS Term Local Absolute Maximum Jitter Buffer Delay	Numeric		0-65535	MGCP DLCX, DLCX ACK	Absolute maximum delay (JBS) in milliseconds that an adaptive jitter buffer can reach under worst case conditions. For fixed jitter buffers, this must be set to the maximum jitter buffer delay.
258	ServiceStatus1	Numeric		0-4		The defined values related to ServiceType1 are: • INSTANCE(1), • ACTIVATION (2), • DEACTIVATION (3), • INTERROGATION (4), • FORWARDED(5)
259	ServiceStatus2	Numeric		0-4		The defined values related to ServiceType2 are: • INSTANCE(1), • ACTIVATION (2), • DEACTIVATION (3), • INTERROGATION (4), • FORWARDED(5)

Table A-1 Call Detail Block Field Descriptions (continued)

Field Number	Common Name	Field Type	Field Size*	Potential Values	Data Source	Field Description
260	ServiceStatus3	Numeric		0-4		The defined values related to Ser • INSTANCE(1), • ACTIVATION (2), • DEACTIVATION (3), • INTERROGATION (4), • FORWARDED(5)
261	EnumRoute Used	Numeric		0=No 1=Yes		This flag shall be set in case call domain2route table/ default dom positive ENUM response.
262	Reserved					
263	Reserved					
264	Reserved					

APPENDIX B

Call Termination Cause Codes

Revised: January 22, 1010, OL-12778-14

Introduction

This appendix lists call termination cause values and definitions.

BTS 10200 Call Termination Values and Definitions

Table B-1 lists the BTS 10200 call termination values and definitions.

Note A "*" next to the value in Table B-1 indicates the cause code is not a standard BAF cause code; it is unique to the Cisco BTS 10200 Softswitch. All values of 400 or higher are used internally only and do not appear in the billing records transmitted from the EMS.

Table B-1 Call Termination Cause Values and Definitions

Value	Cause Definition	In 5.0
1	Attempted termination to an unallocated or unassigned directory number	Yes
2	No route available to the specified transit network	Yes
3	No route available to the specified destination	Yes
4	Vacant code	Yes
6	Channel unacceptable	Yes
7	Call awarded and being delivered in an established channel	Yes
8	Prefix 0 was dialed in error	Yes
9	Prefix 1 was dialed in error	Yes
10	Prefix 1 was not dialed when required	Yes
11	Excessive digits received, call is progressing	Yes
12	Call is proceeding	Yes
13	The requested service was denied	Yes

Table B-1 Call Termination Cause Values and Definitions (continued)

Value	Cause Definition	In 5.0
14	Indicates an exchange detected that the called number was ported out	Yes
16	Normal call clearing	Yes
17	Termination called is busy	Yes
18	No user responding	Yes
19	User altering, no answer	Yes
21	Call was rejected	Yes
22	The terminating number was changed	Yes
23	Terminating party rejects all calls with Calling Line Identification Restriction	Yes
24	The destination business group is not defined.	Yes
25*	Exchange routing error occurred	Yes
26*	For ANSI calls, the desitnation is misrouted because the number is ported out of the switch. For ISDN calls, the destination is able to accept calls calls but no user is assigned to the endpoint.	Yes
27	The specified destination was out of order	Yes
28	Invalid number format or incomplete address	Yes
29	Facility rejected	Yes
30	Response to STATUS ENQ message	Yes
31	Normal, unspecified	Yes
34	Circuit or channel congestion	Yes
35	Requested VPCI/VCI was not available	Yes
36	VPCI/VCI assignment failure	Yes
37	The user cell rate was unavailable	Yes
38*	Network out of order	Yes
39	The destination Permanent Virtual Circuit (PVC) is out of order.	Yes
41	Temporary failure	Yes
42	Switching Equipment Congestion	Yes
43	Access information discarded	Yes
44	Requested channel not available	Yes
45	No VPCI/VCI available	Yes
46	Precedence call blocked	Yes
47	Network resource unavailable or unspecified	Yes
49	Quality of service unavailable	Yes
50	Requested facility not subscribed to	Yes
51	Bearer capability incompatible with service request	Yes
53	Service operation violated	Yes
57	Bearer capability not authorized	Yes

Table B-1 Call Termination Cause Values and Definitions (continued)

Value	Cause Definition	In 5.0
58	Bearer capability not presently available	Yes
63	Service or option unspecified	Yes
65	Bearer capability not implemented	Yes
66*	Channel type not implemented	No
69	Requested facility not implemented	Yes
70	Restoration digital bearer capacity only available	No
73	Unsupported combination of traffic parameters	Yes
78	AAL parameter cannot be supported	Yes
79	Service or option not implemented	Yes
81	Invalid call reference value	Yes
82	Identified channel does not exist	Yes
84*	Call id already in use	No
85*	No call suspended	No
86*	Call id cleared	No
88	Incompatible destination	Yes
89	Invalid endpoint reference	Yes
90*	Unspecified invalid message error	No
91	Invalid transit network selection	Yes
92	Too many pending add party requests	Yes
96	Mandatory information element missing	Yes
97	Message type nonexistent or not implemented	Yes
98*	Message type not compatible	No
99	Information element nonexistent or not implemented	Yes
100	Invalid information element contents	Yes
101	Message not compatible with call state	Yes
102	Recovery on timer expiration	Yes
104	Incorrect message length	Yes
111	Protocol error - unspecified	Yes
112	Protocol error - threshold exceeded	Yes
120	Special intercept announcement	No
121	Special intercept announcement—undefined code	No
122	Special intercept announcement—call blocked due to group restriction	No
127	Interworking error—unspecified	Yes
150	Call Terminated due to Session Timer Refresh Request Time Out	Yes
901	NE Cause Audit Release	Yes

BTS 10200 Bye Message Cause Code to GR-1100 Cause Code Mapping

The call termination cause code contained in a CDR is a mapping of the BTS 10200 call termination code to a GR-1100 code. In several cases, the cause code used during call processing does not map directly into a GR-1100. In these instances, the mapping shown in Table B-2 is performed to generate the CDR call termination cause code:

Table B-2 BTS 10200 Bye Message Cause Code to GR-1100 Cause Code Mapping

Bye Message Cause Code	Bye Message Cause Code Definition	Mapped BAF GR-1100 Cause Code	Mapped BAF GR-1100 Cause Code Definition
5	CA CCITT NE CAUSE TRUNKPREF MISDIAL	41	TEMPORARY FAILURE
8	CA ANSI NE CAUSE PREFIX 0 ERROR	8	ZERO DIALED IN ERROR
20	CA CCITT NE SUBSCRIBER ABSENT	1	UNASSIGNED NUMBER
23	CA ANSI NE DEST NUMBER UNALLOCATED	1	UNASSIGNED NUMBER
24	CA ANSI NE BUSINESS GRP UNDEFINED	1	UNASSIGNED NUMBER
25	CA ANSI NE CAUSE EXCHG ROUTE ERROR	47	RESOURCE UNAVAILABLE
38	CA CCITT NRU CAUSE NET OUTOFORDER	47	RESOURCE UNAVAILABLE
39	CA CCITT NRU CAUSE PVC OUTOFORDER	47	RESOURCE UNAVAILABLE
46	CA CCITT NRU PRECEDENCE CALL BLOCKED	21	CALL REJECTED
54	CA ANSI SNA GRP RESTR CALL BLOCKED	21	CALL REJECTED
55	CA CCITT SNA IN CUG CALL BARRED	21	CALL REJECTED
62	CA CCITT SNA CAUSE SERVICE INCONSISTENCY	13	SERVICE DENIED
66	CA CCITT SNI CAUSE CHANNELTYPE UNIMPLEMENTED	65	BEARER CAPABILITY NOT IMPLEMENTED
70	CA CCITT SNI CAUSE RESTDIGITAL BEARERCAP ONLYAVAIL	49	QOS UNAVAILABLE

Table B-2 BTS 10200 Bye Message Cause Code to GR-1100 Cause Code Mapping (continued)

Bye Message Cause Code	Bye Message Cause Code Definition	Mapped BAF GR-1100 Cause Code	Mapped BAF GR-1100 Cause Code Definition
83	CA CCITT IM CAUSE SUSP CALLID NOTEXIST	31	NORMAL UNSPECIFIED
84	CA CCITT IM CAUSE CALLID INUSE	31	NORMAL UNSPECIFIED
85	CA CCITT IM CAUSE NOCALL SUSPENDED	31	NORMAL UNSPECIFIED
86	CA CCITT IM CAUSE CALLID CLEARED	31	NORMAL UNSPECIFIED
87	CA CCITT IM CAUSE USER NOT CUG MEMBER	31	NORMAL UNSPECIFIED
90	CA CCITT IM CAUSE CUG NOT EXIST	31	NORMAL UNSPECIFIED
95	CA CCITT IM CAUSE UNSPECIFIED	31	NORMAL UNSPECIFIED
98	CA CCITT PE CAUSE MSGTYPE NOTCOMPAT	101	MESSAGE INCOMPATIBLE WITH CALLSTATE
103	CA CCITT PE CAUSE NOTEXIST UNIMPL PARAM PASSON	100	INVALID INFOELEMENT
110	CA CCITT PE CAUSE UNRECOGNIZE PARAM DISCARD	100	INVALID INFOELEMENT

APPENDIX C

Example Call Detail Block File

Revised: January 22, 1010, OL-12778-14

This section provides an example of an actual call detail block (CDB) record generated by the Cisco BTS 10200 Softswitch's Element Management System (EMS) for a Local POTS SIP to MGCP Line Call. The ASCII text as created is depicted below with a translation matrix after it to decode the contents of the record within the file. The billing file shown contains only a single record.

Note The times shown in the record below are in Pacific Standard Time (PST), which is offset minus 8 hours from Greenwich Mean Time (GMT).

This CDB is configured to use the semicolon (;) as a field separator and the vertical bar (|) as a record separator. Where the value for a given field is denoted by an empty field, two field separators in a row [semicolons (;;)], it indicates that the field is irrelevant in the call context shown.

The contents of the billing file are:

```
001;05.0.0;2002-01-01 10:35:10;CA146||
3;1009190106000;1009190127000;;;1009190108000;1009190108000;1009190127000;;;;;;;;;;00:00:
19.000;;;1009190127000;9725581000;9775551232;9725581000;;9775551232;;;;;;;;;;;;;1;0;16;0;
5;0;158;;;;;;;;0;;;;;;;;1056;515;168960;80608;0;344;2;0;0;0;;0;0;1;0;0;;0;CA146381;;;;CA1
46;2;;;;;;;;;;;;;;;;;;;;;;;0;0;;;;;9725581000;757C88A2-3AA111CC-81B98F4D-B468D474@10.9.27.4
;10.89.227.58;;;;;;;;;;;;;;;;;;;;;8;10;2;;;;;;1;;;;9725581000;0;0;0;0;0;1;DAL00022;10.0.1.
4;10.0.4.9;;;;;;223344;1;ANONYMOUS;3;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
;;;;;;;;;;;;;;0;12345;;;;;;;;;;;;||1;
2002-01-01 10:35:30
```

Header information:

```
Header/TrailerVersionNumber=001
CDBVersion=05.0.0
StartingTime=2004-09-01 10:35:10.000
CAName=CA146
```

Trailer information:

```
NumberOfRecords=1
Close/FinishTime=2004-09-01 10:35:30.000
```

Below is an example of a decoded terminating billing record.

Note This is not intended to mirror the CDB REPORT command on the Cisco BTS 10200 exactly; this is for illustrative purposes only.

```
CALLTYPE=LOCAL
SIGSTARTTIME=2007-07-11 14:31:10.774
SIGSTOPTIME=2007-07-11 14:31:14.121
SERVICEINSTANCETIME1=2007-07-11 14:31:10.783
CALLELAPSEDTIME=00:00:00.000
ORIGNUMBER=2012520203
TERMNUMBER=2012520201
CHARGENUMBER=2012520203
DIALEDDIGITS=2012520201
SERVICETYPE1=Class Of Service
USAGESENSITIVE1=False
SERVICERESULTCODE1=BW Screening Reject
CALLTERMINATIONCAUSE=SERVICE_DENIED
ORIGSIGNALINGTYPE=0
TERMSIGNALINGTYPE=4
ORIGTRUNKGROUPNUMBER=0
TERMTRUNKGROUPNUMBER=10012
OUTGOINGTRUNKNUMBER=0
ORIGCIRCUITID=0
TERMCIRCUITID=1
ORIGQOSTIME=2007-07-11 14:31:14.161
ORIGQOSPACKETSSENT=0
ORIGQOSPACKETSRECD=110
ORIGQOSOCTETSSENT=0
ORIGQOSOCTETSRECD=26400
ORIGQOSPACKETSLOST=0
ORIGQOSJITTER=0
ORIGQOSAVGLATENCY=0
PACKETIZATIONTIME=20
SILENCESUPPRESSION=0
ECHOCANCELLATION=0
CODECTYPE=PCMU
CONNECTIONTYPE=IP
OPERATORINVOLVED=0
CASUALCALL=0
INTERSTATEINDICATOR=0
OVERALLCORRELATIONID=CA146169
TIMERINDICATOR=0
RECORDTYPE=NORMAL RECORD
JIP=201999
CALLAGENTID=CA146
ORIGPOPTIMEZONE=CDT
ORIGTYPE=INTRASWITCH
TERMTYPE=INTERSWITCH
NASERRORCODE=0
NASDLCXREASON=0
FAXINDICATOR=NOT A FAX
ORIGPOPID=tb01
DIALPLANID=tb01
CALLINGPARTYCATEGORY=Ordinary Subscriber
CALLEDPARTYINDICATOR=No Indication
CALLEDPARTYPORTEDIN=No
CALLINGPARTYPORTEDIN=No
BILLINGRATEINDICATOR=None
ORIGENDPOINTADDR=x1-6-00-00-CA-E5-F5-4C.ipclab.cisco.com
ORIGCMTSID=c7246-227-104
SENSORID=000000
ORIGPRIVACYINDICATOR=FULL
```

```
ORIGLINEINFO=0
ORIGBUFFERSIZE=1128792064
ORIGPACKETSIZE=200
ORIGSPEECHSIZE=200
ORIGBANDWIDTH=1176256512
ORIGADMISSIONCTRLTYPE=DQOS
MODEMINDICATOR=False
TDDINDICATOR=False
CTRACID=M00003e
ORIGNETYPE=CMS
ORIGBCID=3393171070_55555_1-050000_104
ORIGREMOTEPACKETSSENT=71
ORIGREMOTEOCTETSSENT=17892
ORIGREMOTEPACKETSLOST=0
ORIGREMOTEAVERAGEINTERARRIVALJITTER=0
SERVICESTATUS1=INSTANCE
```

Below is an example of a decoded originating billing record.

```
CALLTYPE=LOCAL
SIGSTARTTIME=2007-07-11 14:32:26.406
SIGSTOPTIME=2007-07-11 14:32:32.170
SERVICEINSTANCETIME1=2007-07-11 14:32:26.416
CALLELAPSEDTIME=00:00:00.000
ORIGNUMBER=2012520201
TERMNUMBER=2012520203
CHARGENUMBER=2012520201
DIALEDDIGITS=2012520203
SERVICETYPE1=Seasonal Suspend
USAGESENSITIVE1=False
SERVICERESULTCODE1=Success
CALLTERMINATIONCAUSE=CALL_REJECTED
ORIGSIGNALINGTYPE=0
TERMSIGNALINGTYPE=4
ORIGTRUNKGROUPNUMBER=0
TERMTRUNKGROUPNUMBER=10012
OUTGOINGTRUNKNUMBER=0
ORIGCIRCUITID=0
TERMCIRCUITID=1
ORIGQOSTIME=2007-07-11 14:32:32.195
ORIGQOSPACKETSSENT=0
ORIGQOSPACKETSRECD=191
ORIGQOSOCTETSSENT=0
ORIGQOSOCTETSRECD=45680
ORIGQOSPACKETSLOST=0
ORIGQOSJITTER=0
ORIGQOSAVGLATENCY=0
PACKETIZATIONTIME=20
SILENCESUPPRESSION=0
ECHOCANCELLATION=0
CODECTYPE=PCMU
CONNECTIONTYPE=IP
OPERATORINVOLVED=0
CASUALCALL=0
INTERSTATEINDICATOR=0
OVERALLCORRELATIONID=CA146170
TIMERINDICATOR=0
RECORDTYPE=NORMAL RECORD
JIP=201999
CALLAGENTID=CA146
ORIGPOPTIMEZONE=CDT
ORIGTYPE=INTRASWITCH
TERMTYPE=INTRASWITCH
NASERRORCODE=0
```

```
NASDLCXREASON=0
FAXINDICATOR=NOT A FAX
ORIGPOPID=tb01
TERMPOPID=tb01
TERMPOPTIMEZONE=CDT
DIALPLANID=tb01
CALLINGPARTYCATEGORY=Ordinary Subscriber
CALLEDPARTYINDICATOR=No Indication
CALLEDPARTYPORTEDIN=No
CALLINGPARTYPORTEDIN=No
BILLINGRATEINDICATOR=None
ORIGENDPOINTADDR=x1-6-00-00-CA-E5-F7-A4.ipclab.cisco.com
ORIGCMTSID=c7246-227-104
SENSORID=000000
ORIGPRIVACYINDICATOR=FULL
ORIGLINEINFO=0
ORIGBUFFERSIZE=1128792064
ORIGPACKETSIZE=200
ORIGSPEECHSIZE=200
ORIGBANDWIDTH=1176256512
ORIGADMISSIONCTRLTYPE=DQOS
MODEMINDICATOR=False
TDDINDICATOR=False
CTRACID=M00003f
ORIGNETYPE=CMS
ORIGBCID=3393171146_55555_1-050000_105
TERMBCID=3393171146_55555_1-050000_106
ORIGREMOTEPACKETSSENT=78
ORIGREMOTEOCTETSSENT=19656
ORIGREMOTEPACKETSLOST=0
ORIGREMOTEAVERAGEINTERARRIVALJITTER=0
SERVICESTATUS1=INSTANCE
```

APPENDIX D

Time Zone Mapping Table

Revised: January 22, 1010, OL-12778-14

This appendix defines the various time zones supported by the Cisco BTS 10200 softswitch for localization of the various timestamps in the billing records. The table below contains the CLI string used to provision each and the associated value that appears in the billing record fields of Originating Pop Time Zone and/or Terminating Pop Time Zone.

The times shown in the record below are in Pacific Standard Time (PST), which is offset minus 8 hours from Greenwich Mean Time (GMT).

Table D-1 Time Zone Mapping Table

Provisioning String	CDB Value
Local	0
EST	1
CST	2
MST	3
AST	4
PST	5
EDT	6
CDT	7
MDT	8
PDT	9
ADT	10
GMT	11
PRC	12
HONGKONG	13
CET	14
CEST	15
UTC	16
US_ALASKA	17
US_ALEUTIAN	18

Table D-1 Time Zone Mapping Table (continued)

Provisioning String	CDB Value
US_ARIZONA	19
US_CENTRAL	20
US_EAST_INDIANA	21
US_EASTERN	22
US_HAWAII	23
US_MICHIGAN	24
US_MOUNTAIN	25
US_PACIFIC	26
US_SAMOA	27
GMT_MINUS1	28
GMT_MINUS2	29
GMT_MINUS3	30
GMT_MINUS4	31
GMT_MINUS5	32
GMT_MINUS6	33
GMT_MINUS7	34
GMT_MINUS8	35
GMT_MINUS9	36
GMT_MINUS10	37
GMT_MINUS11	38
GMT_MINUS12	39
GMT_PLUS1	40
GMT_PLUS2	41
GMT_PLUS3	42
GMT_PLUS4	43
GMT_PLUS5	44
GMT_PLUS6	45
GMT_PLUS7	46
GMT_PLUS8	47
GMT_PLUS9	48
GMT_PLUS10	49
GMT_PLUS11	50
GMT_PLUS12	51
HST	52
PST8PDT	53
MST7MDT	54

Table D-1 Time Zone Mapping Table (continued)

Provisioning String	CDB Value
CST6CDT	55
EST5EDT	56
CANADA_ATLANTIC	57
CANADA_EAST_SASKATCHEWAN	58
CANADA_MOUNTAIN	59
CANADA_PACIFIC	60
CANADA_CENTRAL	61
CANADA_EASTERN	62
CANADA_NEWFOUNDLAND	63
CANADA_YUKON	64
AUSTRALIA_ACT	65
AUSTRALIA_LHI	66
AUSTRALIA_NSW	67
AUSTRALIA_SOUTH	68
AUSTRALIA_VICTORIA	69
AUSTRALIA_YANCOWINNA	70
AUSTRALIA_BROKEN_HILL	71
AUSTRALIA_NORTH	72
AUSTRALIA_QUEENSLAND	73
AUSTRALIA_TASMANIA	74
AUSTRALIA_WEST	75
JAMAICA	76
MEXICO_BAJANORTE	77
MEXICO_BAJASUR	78
MEXICO_GENERAL	79
TAIWAN	80
ROK	81
EUROPE_LONDON	82
EUROPE_BELFAST	83
EUROPE_DUBLIN	84
EUROPE_TIRANE	85
EUROPE_ANDORRA	86
EUROPE_VIENNA	87
EUROPE_MINSK	88
EUROPE_BRUSSELS	89
EUROPE_SOFIA	90

Table D-1 Time Zone Mapping Table (continued)

Provisioning String	CDB Value
EUROPE_PRAGUE	91
EUROPE_COPENHAGEN	92
EUROPE_TALLINN	93
EUROPE_HELSINKI	94
EUROPE_PARIS	95
EUROPE_BERLIN	96
EUROPE_GIBRALTAR	97
EUROPE_ATHENS	98
EUROPE_BUDAPEST	99
EUROPE_ROME	100
EUROPE_RIGA	101
EUROPE_VADUZ	102
EUROPE_VILNIUS	103
EUROPE_LUXEMBOURG	104
EUROPE_MALTA	105
EUROPE_CHISINAU	106
EUROPE_MONACO	107
EUROPE_AMSTERDAM	108
EUROPE_OSLO	109
EUROPE_WARSAW	110
EUROPE_LISBON	111
EUROPE_BUCHAREST	112
EUROPE_KALININGRAD	113
EUROPE_MOSCOW	114
EUROPE_SAMARA	115
EUROPE_MADRID	116
EUROPE_STOCKHOLM	117
EUROPE_ZURICH	118
EUROPE_ISTANBUL	119
EUROPE_KIEV	120
EUROPE_SIMFEROPOL	121
EUROPE_BELGRADE	122
EUROPE_VATICAN	123
EUROPE_SAN_MARINO	124
EUROPE_BRATISLAVA	125
EUROPE_LJUBLJANA	126

Table D-1 Time Zone Mapping Table (continued)

Provisioning String	CDB Value
EUROPE_SARAJEVO	127
EUROPE_SKOPJE	128
EUROPE_ZAGREB	129
AFRICA_CEUTA	130
AFRICA_ALGIERS	131
AFRICA_LUANDA	132
AFRICA_PORTO_NOVO	133
AFRICA_GABORONE	134
AFRICA_OUAGADOUGOU	135
AFRICA_BUJUMBURA	136
AFRICA_DOUALA	137
AFRICA_BANGUI	138
AFRICA_NDJAMENA	139
AFRICA_KINSHASA	140
AFRICA_LUBUMBASHI	141
AFRICA_BRAZZAVILLE	142
AFRICA_ABIDJAN	143
AFRICA_DJIBOUTI	144
AFRICA_CAIRO	145
AFRICA_MALABO	146
AFRICA_ASMERA	147
AFRICA_ADDIS_ABABA	148
AFRICA_LIBREVILLE	149
AFRICA_BANJUL	150
AFRICA_ACCRA	151
AFRICA_CONAKRY	152
AFRICA_BISSAU	153
AFRICA_NAIROBI	154
AFRICA_MASERU	155
AFRICA_MONROVIA	156
AFRICA_TRIPOLI	157
AFRICA_BLANTYRE	158
AFRICA_BAMAKO	159
AFRICA_TIMBUKTU	160
AFRICA_NOUAKCHOTT	161
AFRICA_CASABLANCA	162

Table D-1 Time Zone Mapping Table (continued)

Provisioning String	CDB Value
AFRICA_EL_AAIUN	163
AFRICA_MAPUTO	164
AFRICA_WINDHOEK	165
AFRICA_NIAMEY	166
AFRICA_LAGOS	167
AFRICA_KIGALI	168
AFRICA_SAO_TOME	169
AFRICA_DAKAR	170
AFRICA_FREETOWN	171
AFRICA_MOGADISHU	172
AFRICA_JOHANNESBURG	173
AFRICA_KHARTOUM	174
AFRICA_MBABANE	175
AFRICA_DAR_ES_SALAAM	176
AFRICA_LOME	177
AFRICA_TUNIS	178
AFRICA_KAMPALA	179
AFRICA_LUSAKA	180
AFRICA_HARARE	181
AMERICA_SCORESBYSUND	182
AMERICA_GODTHAB	183
AMERICA_THULE	184
AMERICA_BUENOS_AIRES	185
AMERICA_ROSARIO	186
AMERICA_CORDOBA	187
AMERICA_JUJUY	188
AMERICA_CATAMARCA	189
AMERICA_MENDOZA	190
AMERICA_ARUBA	191
AMERICA_LA_PAZ	192
AMERICA_NORONHA	193
AMERICA_BELEM	194
AMERICA_FORTALEZA	195
AMERICA_ARAGUAINA	196
AMERICA_MACEIO	197
AMERICA_SAO_PAULO	198

Table D-1 Time Zone Mapping Table (continued)

Provisioning String	CDB Value
AMERICA_CUIABA	199
AMERICA_PORTO_VELHO	200
AMERICA_MANAUS	201
AMERICA_PORTO_ACRE	202
AMERICA_SANTIAGO	203
AMERICA_BOGOTA	204
AMERICA_CURACAO	205
AMERICA_GUAYAQUIL	206
AMERICA_CAYENNE	207
AMERICA_GUYANA	208
AMERICA_ASUNCION	209
AMERICA_LIMA	210
AMERICA_PARAMARIBO	211
AMERICA_PORT_OF_SPAIN	212
AMERICA_MONTEVIDEO	213
AMERICA_CARACAS	214
AMERICA_NEW_YORK	215
AMERICA_CHICAGO	216
AMERICA_DENVER	217
AMERICA_LOS_ANGELES	218
AMERICA_JUNEAU	219
AMERICA_YAKUTAT	220
AMERICA_ANCHORAGE	221
AMERICA_NOME	222
AMERICA_ADAK	223
AMERICA_PHOENIX	224
AMERICA_BOISE	225
AMERICA_INDIANAPOLIS	226
AMERICA_INDIANA_MARENGO	227
AMERICA_INDIANA_KNOX	228
AMERICA_INDIANA_VEVAY	229
AMERICA_INDIANA_INDIANAPOLIS	230
AMERICA_LOUISVILLE	231
AMERICA_DETROIT	232
AMERICA_MENOMINEE	233
AMERICA_ST_JOHNS	234

Table D-1 Time Zone Mapping Table (continued)

Provisioning String	CDB Value
AMERICA_GOOSE_BAY	235
AMERICA_HALIFAX	236
AMERICA_GLACE_BAY	237
AMERICA_MONTREAL	238
AMERICA_THUNDER_BAY	239
AMERICA_NIPIGON	240
AMERICA_RAINY_RIVER	241
AMERICA_WINNIPEG	242
AMERICA_REGINA	243
AMERICA_SWIFT_CURRENT	244
AMERICA_EDMONTON	245
AMERICA_VANCOUVER	246
AMERICA_DAWSON_CREEK	247
AMERICA_PANGNIRTUNG	248
AMERICA_IQALUIT	249
AMERICA_RANKIN_INLET	250
AMERICA_YELLOWKNIFE	251
AMERICA_INUVIK	252
AMERICA_WHITEHORSE	253
AMERICA_DAWSON	254
AMERICA_CANCUN	255
AMERICA_MEXICO_CITY	256
AMERICA_CHIHUAHUA	257
AMERICA_MAZATLAN	258
AMERICA_TIJUANA	259
AMERICA_ENSENADA	260
AMERICA_ANGUILLA	261
AMERICA_ANTIGUA	262
AMERICA_NASSAU	263
AMERICA_BARBADOS	264
AMERICA_BELIZE	265
AMERICA_CAYMAN	266
AMERICA_COSTA_RICA	267
AMERICA_HAVANA	268
AMERICA_DOMINICA	269
AMERICA_SANTO_DOMINGO	270

Table D-1 Time Zone Mapping Table (continued)

Provisioning String	CDB Value
AMERICA_EL_SALVADOR	271
AMERICA_GRENADA	272
AMERICA_GUADELOUPE	273
AMERICA_GUATEMALA	274
AMERICA_PORT_AU_PRINCE	275
AMERICA_TEGUCIGALPA	276
AMERICA_JAMAICA	277
AMERICA_MARTINIQUE	278
AMERICA_MONTSERRAT	279
AMERICA_MANAGUA	280
AMERICA_PANAMA	281
AMERICA_PUERTO_RICO	282
AMERICA_ST_KITTS	283
AMERICA_ST_LUCIA	284
AMERICA_MIQUELON	285
AMERICA_ST_VINCENT	286
AMERICA_GRAND_TURK	287
AMERICA_TORTOLA	288
AMERICA_ST_THOMAS	289
AMERICA_SHIPROCK	290
ASIA_YEKATERINBURG	291
ASIA_OMSK	292
ASIA_NOVOSIBIRSK	293
ASIA_KRASNOYARSK	294
ASIA_IRKUTSK	295
ASIA_YAKUTSK	296
ASIA_VLADIVOSTOK	297
ASIA_MAGADAN	298
ASIA_KAMCHATKA	299
ASIA_ANADYR	300
ASIA_ISTANBUL	301
ASIA_KABUL	302
ASIA_YEREVAN	303
ASIA_BAKU	304
ASIA_BAHRAIN	305
ASIA_DACCA	306

Table D-1 Time Zone Mapping Table (continued)

Provisioning String	CDB Value
ASIA_THIMBU	307
ASIA_BRUNEI	308
ASIA_RANGOON	309
ASIA_PHNOM_PENH	310
ASIA_HARBIN	311
ASIA_SHANGHAI	312
ASIA_CHUNGKING	313
ASIA_URUMQI	314
ASIA_KASHGAR	315
ASIA_HONG_KONG	316
ASIA_TAIPEI	317
ASIA_MACAO	318
ASIA_NICOSIA	319
ASIA_TBILISI	320
ASIA_CALCUTTA	321
ASIA_JAKARTA	322
ASIA_UJUNG_PANDANG	323
ASIA_JAYAPURA	324
ASIA_TEHRAN	325
ASIA_BAGHDAD	326
ASIA_JERUSALEM	327
ASIA_TOKYO	328
ASIA_AMMAN	329
ASIA_ALMATY	330
ASIA_AQTOBE	331
ASIA_AQTAU	332
ASIA_BISHKEK	333
ASIA_SEOUL	334
ASIA_PYONGYANG	335
ASIA_KUWAIT	336
ASIA_VIENTIANE	337
ASIA_BEIRUT	338
ASIA_KUALA_LUMPUR	339
ASIA_KUCHING	340
ASIA_ULAN_BATOR	341
ASIA_KATMANDU	342

Table D-1 Time Zone Mapping Table (continued)

Provisioning String	CDB Value
ASIA_MUSCAT	343
ASIA_KARACHI	344
ASIA_GAZA	345
ASIA_MANILA	346
ASIA_QATAR	347
ASIA_RIYADH	348
ASIA_SINGAPORE	349
ASIA_COLOMBO	350
ASIA_DAMASCUS	351
ASIA_DUSHANBE	352
ASIA_BANGKOK	353
ASIA_ASHKHABAD	354
ASIA_DUBAI	355
ASIA_SAMARKAND	356
ASIA_TASHKENT	357
ASIA_SAIGON	358
ASIA_ADEN	359

APPENDIX E

QoS Metrics in CDRs

Revised: January 22, 1010, OL-12778-14

This appendix describes the metrics that can be collected and stored in the call detail records created by the Cisco BTS 10200 softswitch. The system collects the metrics post-call through a best-effort mechanism. The available metrics can be collected from the originating and/or terminating endpoints. If the defined wait period for receiving metrics from the endpoints is exceeded, then the corresponding fields within the CDR are NULL filled for any information not collected. Also, if the reporting endpoints do not support any of the listed metrics, then those too are NULL filled.

Currently the BTS 10200 supports QoS metrics collection from endpoints controlled via NCS/MGCP protocols. The BTS 10200 supports both RTCP and RTCP-XR based metrics, and these metrics are reported if supported by the endpoints associated with the call.

Many of the metrics peered between the two endpoints via RTP, RTCP, or RTCP-XR are gathered from both the local and remote sides of the originating and terminating endpoints. Only a concise set of these metrics is reported in the CDRs produced by the BTS. If the reporting BTS controls both endpoints of the call, then only the "local" metrics of each endpoint are stored in the CDR. If only one of the endpoints is controlled by the reporting BTS, then the local metrics for that endpoint and the remote metrics for the other endpoint as peered to the endpoint controlled by the BTS are stored in the corresponding CDR.

The following table details the metrics that can be collected per call along with information on how to best leverage the data collected:

Table E-1 Call Termination Cause Values and Definitions

Name	Category	MGCP Field	RTCP Field	RTCP-XR Field	Peer Reporting	Valid Range	Units Type
Codec Type	Basic Mandatory	CDC			No		enum
Codec Framesize	Basic Mandatory	FRSZ			No	0-65535	bytes
Possible Dead Connection Detection	Basic Mandatory	DCD			No	0=timed out 1=good	enum
Cumulative Packets Sent	Basic Mandatory	PS, RPS	Sender's Packet Count		Yes	0-4, 294, 967, 295	Packets

Table E-1 Call Termination Cause Values and Definitions (continued)

Name	Category	MGCP Field	RTCP Field	RTCP-XR Field	Peer Reporting	Valid Range	Units Type
Cumulative Octets Sent	Basic Mandatory	OS, ROS	Sender's Octet Count		No	0-4, 294, 967, 295	Octets
Cumulative Packets Received	Basic Mandatory	PR			No	0-4, 294, 967, 295	Packets
Cumulative Octets Received	Basic Mandatory	OR			No	0-4, 294, 967, 295	Octets
Concealed Seconds	Basic Mandatory	CNS			No	0-65535	Seconds
Severely Concealed Seconds	Basic Mandatory	SCS			No	0-65535	Seconds
Average Inter-Arrival Jitter	Basic Mandatory	JI, RJI	IAJ		Yes	0-536, 870, 912	milliseconds
Jitter Buffer Mode	Basic Mandatory	JBA			Yes	0-3	type
Average MOS LQK	Basic Mandatory	MLK			Yes	10-50, 127	mos
Average Transmission Delay (old latency field)	Basic Mandatory	LA			No	0-65535	milliseconds
Average Network Packet Round Trip Time	RTCP Detailed	RTD		Round Trip Delay	Yes	0-65535	milliseconds
Cunmulative Packet Loss Count	RTCP Mandatory	PL, RPL	Cumulative Number of Packets Lost		Yes	0-16, 717, 215	packets
Cumulative Packet Loss Rate	RTCP Detailed	NLR	Fraction Lost	Loss Rate	Yes	0-255	ratio
Average End System Delay	RTCP-XR Mandatory	ESD		End System Delay	Yes	0, 1-65535	milliseconds
Cumulative Jitter Buffer Packet Discard Count	RTCP-XR Detailed	JDR		Discard Rate	Yes	0-16, 717, 215	packets
Average MOS R Factor	RTCP-XR Mandatory	RCQ		R Factor	Yes	0-100, 127	mos
Average MOS LQR	RTCP-XR Mandatory	MLQ		MOS LQ	Yes	10-50, 127	Mos
IP Address	RTCP-XR Mandatory	IPAS, IPAD			No		Dotted Decimal
Address Type	RTCP-XR Mandatory	IPTS, IPTD			No	string	
RTP Port	RTCP-XR Mandatory	RTUS, RTUD			No		Port number

Table E-1 Call Termination Cause Values and Definitions (continued)

Name	Category	MGCP Field	RTCP Field	RTCP-XR Field	Peer Reporting	Valid Range	Units Type
Negotiated Codec	RTCP-XR Mandatory	VCD			No	string	
R Factor Listening Quality	RTCP-XR Mandatory	RLQ		R Factor	Yes	0-100, 127	mos

APPENDIX F

Enum Capability

Revised: January 22, 1010, OL-12778-14

This appendix describes the effect of the Enum Capability feature introduced in Release 5.0 of BTS 10200 Softswitch on the billing fields.

Note For more details on the ENUM Capability feature, refer to *Cisco BTS 10200 Softswitch Network and Subscriber Feature Descriptions Guide*.

Billing Fields

The system captures the following information in the call detail records (CDR):

- Whether the ENUM query was performed for the call and the result of the query (success/failure)
- Time stamp
- URI returned from the ENUM server

Note If multiple URIs are returned, the BTS 10200 captures only the URI that has the highest priority after the ENUM response processing.

The system adds the ENUM-ROUTE-USED flag to the CDR. The flag is set to **Y** if you select on-net route to route the call as specified by the E2U+SIP NAPTR record in the ENUM server and the domain2route table in the BTS 10200.