



Cisco BTS 10200 Softswitch 8XX Caching Feature, Release 6.0.3

Last Updated: August 10, 2011

The Cisco BTS 10200 Softswitch 8XX Caching feature is an enhancement to improve the 8XX call setup by using cache (a shared memory table) to store recent 8XX Transaction Capabilities Application Part (TCAP) query response.

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Overview

The 8XX toll-free calling enables the called party, rather than the calling party, to be charged for a call. These calls are prefixed with the 1+8XX service access codes. The seven digits following the 8XX codes are used for routing the call.

Currently, for any inbound or outbound 8XX call, the BTS 10200 checks the local toll-free database first. If the corresponding Directory Number (DN) is not found in the local toll-free database, the system sends a query to the SCP to request the corresponding DN.

For more information on the [8XX \(Toll-Free Calling\)](#) feature, see the *Cisco BTS 10200 Softswitch Network and Subscriber Feature Descriptions Guide*.

The current [8XX Call Processing](#) is explained in the [Network Features](#) chapter of the *Cisco BTS 10200 Softswitch Network and Subscriber Feature Descriptions Guide*.



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The 8XX Caching feature is an enhancement to improve the 8XX call setup by using cache (a shared memory table) to store recent 8XX TCAP query responses received from the Service Control Point (SCP). This allows BTS 10200 to first check the cache for any subsequent 8XX calls to the same number. When a match is found in the cache, the translated number and the routing information received from the cache is used for downstream call processing, instead of sending a query again to the SCP for each call.

This feature improves the processing of 8XX toll-free calling and optimizes the use of existing resources available to route the call. It also reduces the CPU overhead when traffic to a specific 8XX number increases.

The enhanced 8XX call processing sequence occurs as follows:

- A subscriber dials an 8XX number.
- The system attempts to translate the 8XX call to a DN in its local database.
- If there is no record in the local database, the system queries the 8XX cache table for the translated DN and routing information. If the DN is found, the system routes the call to the appropriate subscriber.
- If the DN is not found in the 8XX cache, the system sends a query to the SCP and receives a translated DN.
- The system routes the call to the appropriate subscriber (on-net call) or external network (off-net call).
- The routing information the SCP sends is stored in the 8XX cache table in BTS 10200.

Provisioning the Feature

This section explains how to provision the feature.



Note

The commands shown in this section are only examples; you need to enter values that are appropriate for your network and service requirements. The CLI syntax allows you to use commands in uppercase or lowercase. It also allows you to enter hyphens (-) or underscores (_) interchangeably. (Exceptions, if any, are noted in the procedures.)

For a complete list of tokens for each CLI table, as well as the allowed values, default values, and detailed descriptions for each token, see the *Cisco BTS 10200 Softswitch CLI Database* at this website: http://www.cisco.com/en/US/docs/voice_ip_comm/bts/6.0.3/BTS603_Mainpage.html

Configure the 8XX Caching feature in the **CA_CONFIG** table by setting the **USE-8XX-CACHING** token to Y.

A new table called **8XX_CACHE** stores the information received from the TCAP response. It stores the following information.

- **8XX_CALLED_DN**—Identifies the 8XX number.
- **LATA_ID**—Specifies the Local Access and Transport Area (LATA) ID.
- **TRANSLATED_DN**—Specifies the translated number corresponding to the 8XX number.
- **CARRIER_ID**—Specifies the ID of the carrier for routing the call.
- **TIMESTAMP**—Specifies the time when a record is added to the 8XX_CACHE table for a call.

**Note**

The 8XX query responses are not stored in cache when the cache is full or when the data is already present in the cache. However, this does not affect the routing of the call.

Additionally, a token called **TIME-TO-LIVE-FOR-8XX-CACHED-DATA** is set for each 8XX cached record in the **CA_CONFIG** table. When this timer expires, the record is deleted from the **8XX_CACHE** table. The timer value can be between 15 and 86400 seconds. The default value of this token is 30 seconds.

A maximum of 60 records can be stored in the **8XX_CACHE** table.

**Note**

Use a hyphen (-) instead of an underscore (_) when specifying the **TIME-TO-LIVE-FOR-8XX-CACHED-DATA** and **USE-8XX-CACHING** tokens. Using an underscore in these commands results in command failure.

SUMMARY STEPS

- **add ca_config**
- **status 8XX_cache**

DETAILED STEPS

Command	Purpose
add ca_config type=use-8XX-caching; VALUE=Y;	Enables the 8XX caching feature.
add ca_config type= time-to-live-for-8xx-cached-data; value=60;	Sets an expiration timer for each 8XX cached data record.
status 8XX_cache 8xx_called_dn=22334455;lata_id=lata_a;	Displays the 8XX cached data for a specific DN.
status 8XX_cache	Displays all entries in the 8XX_CACHE table.

Managing the Feature

This section provides information on managing the feature.

AIN Services FS Measurements

For more information on the BTS 10200 traffic measurements, see the *Cisco BTS 10200 Softswitch Operations and Maintenance Guide*.

- **AINSVC_CACHE_8XX_QUERY_SUCC**—8XX translation queries that resulted in a successful query to the 8XX cache attempted on the reporting FS. Incremented when a search in the 8XX cache table is successful.
- **AINSVC_CACHE_8XX_QUERY_FAIL**—8XX queries that failed when the queries to the 8XX cache were attempted by the reporting FS. Incremented when a search in the 8XX cache table is unsuccessful.

Additional References

Related Documents

Related Topic	Document Title
Summary of features and usage guidelines for this release	Cisco BTS 10200 Softswitch Release Notes
Reference listing of all CLI tables and tokens	Cisco BTS 10200 Softswitch CLI Database
8XX (Toll-free Calling)	Cisco BTS 10200 Network and Subscriber Feature Descriptions Guide

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