



CHAPTER 6

Database Troubleshooting

Revised: October 23, 2008, OL-11335-06

Introduction

This chapter provides the information needed to monitor and troubleshoot Database events and alarms. This chapter is divided into the following sections:

- [Database Events and Alarms](#) – Provides a brief overview of each Database event and alarm.
- [Monitoring Database Events](#) – Provides the information needed to monitor and correct Database events.
- [Troubleshooting Database Alarms](#) – Provides the information needed to troubleshoot and correct Database alarms.

Database Events and Alarms

This section provides a brief overview of the Database events and alarms for the Cisco BTS 10200 Softswitch in numerical order. [Table 6-1](#) lists all Database events and alarms by severity.



Note

Click the Database message number in [Table 6-1](#) to display information about the event or alarm.

Table 6-1 Database Events and Alarms by Severity

CRITICAL	MAJOR	MINOR	WARNING	INFO
DATABASE (3)	DATABASE (6)	DATABASE (7)	DATABASE (2)	DATABASE (1)
DATABASE (4)	DATABASE (8)	DATABASE (14)	DATABASE (11)	DATABASE (19)
DATABASE (5)	DATABASE (10)		DATABASE (18)	
DATABASE (9)	DATABASE (13)			
DATABASE (12)	DATABASE (15)			
DATABASE (16)	DATABASE (17)			
	DATABASE (20)			

DATABASE (1)

For additional information, refer to the “[Test Report - Database \(1\)](#)” section on page 6-15.

DESCRIPTION	Test Report
SEVERITY	Information (INFO)
THRESHOLD	10000
THROTTLE	0

DATABASE (2)

To monitor and correct the cause of the event, refer to the [“Database Management Update Failure: Master/Slave Database Out of Sync - Database \(2\)”](#) section on page 6-16.

DESCRIPTION	Database Management Update Failure: Master/Slave Database Out of Sync (DBM Update Failure: Master/Slave Database Out of Synch)
SEVERITY	WARNING
THRESHOLD	100
THROTTLE	0
DATAWORDS	Error Code - TWO_BYTES Error String - STRING [20] Provisioning String - STRING [80]
PRIMARY CAUSE	The master database under Oracle control in the Element Management System (EMS) was successfully updated, but the subsequent update of the shared memory tables in the Call Agents (CAs) and/or Feature Servers (FSs) were not properly updated.
PRIMARY ACTION	Perform an audit of the database in question to correct the data stored in shared memory.
SECONDARY ACTION	Use command line interface (CLI) to show and delete the transaction queue, and to audit and manage the queue.

DATABASE (3)

To troubleshoot and correct the cause of the alarm, refer to the [“There Are Errors in Element Management System Database DefError Queue; Contact Database Administrator - Database \(3\)”](#) section on page 6-21.

DESCRIPTION	There Are Errors in Element Management System Database DefError Queue; Contact Database Administrator (There are Errors in EMS Database DefError Queue; Contact DBA)
SEVERITY	CRITICAL
THRESHOLD	100
THROTTLE	0
DATAWORDS	Host Name - STRING [30] Database Name - STRING [10] Error Count - ONE_BYTE Time Stamp - STRING [20]
PRIMARY CAUSE	Replication data conflicts.
PRIMARY ACTION	May require manual update on database tables. Call Cisco Support. (Contact Cisco Technical Assistance Center (TAC).)
SECONDARY CAUSE	Update/delete on non-existing data.
TERNARY CAUSE	Unique constraint (primary key) violated.

Refer to the [“Obtaining Technical Assistance”](#) section on page xxxviii for detailed instructions on contacting Cisco TAC and opening a service request.

DATABASE (4)

To troubleshoot and correct the cause of the alarm, refer to the “[Element Management System Database HeartBeat: Replication PUSH Job Broken - Database \(4\)](#)” section on page 6-21.

DESCRIPTION	Element Management System Database HeartBeat: Replication PUSH Job Broken (EMS DB_Heart_Beat: Replication PUSH Job Broken)
SEVERITY	CRITICAL
THRESHOLD	100
THROTTLE	0
DATAWORDS	Host Name - STRING [30] Local Database - STRING [10] Remote Database - STRING [10] Job - STRING [5] Time Stamp - STRING [20]
PRIMARY CAUSE	Remote database is not accessible.
PRIMARY ACTION	Re-start up or restore remote database.
SECONDARY CAUSE	Remote database is down.
SECONDARY ACTION	Restart remote listener process.
TERNARY CAUSE	Remote Oracle listener process died.
TERNARY ACTION	Correct network connection problem.
SUBSEQUENT CAUSE	Network connection is broken.

DATABASE (5)

To troubleshoot and correct the cause of the alarm, refer to the [“Element Management System Database HeartBeat Process Died - Database \(5\)”](#) section on page 6-21.

DESCRIPTION	Element Management System Database HeartBeat Process Died (EMS DBHeartBeat Process Died)
SEVERITY	CRITICAL
THRESHOLD	100
THROTTLE	0
DATAWORDS	Host Name - STRING [30] Database Name - STRING [10] Time Stamp - STRING [20]
PRIMARY CAUSE	Terminated by the system manager program (SMG) or stopped by the platform.
PRIMARY ACTION	Restart DBHeartBeat by “dbinit -H -i start” as oracle user, or by platform start command as root.

DATABASE (6)

To troubleshoot and correct the cause of the alarm, refer to the [“Element Management System Database Replication DefTranDest Queue Overloaded - Database \(6\)”](#) section on page 6-22.

DESCRIPTION	Element Management System Database Replication DefTranDest Queue Overloaded (EMS Database Replication DefTranDest Queue Overloaded)
SEVERITY	MAJOR
THRESHOLD	100
THROTTLE	0
DATAWORDS	Host Name - STRING [30] Database Name - STRING [10] Threshold - FOUR_BYTES Time Stamp - STRING [20]
PRIMARY CAUSE	Replication PUSH job is broken.
PRIMARY ACTION	Correct problems on remote database.
SECONDARY CAUSE	Remote database is not accessible.
SECONDARY ACTION	Make sure db_heart_beat process is up.
TERNARY CAUSE	Database is overloaded.
TERNARY ACTION	Troubleshoot database performance.

DATABASE (7)

To troubleshoot and correct the cause of the alarm, refer to the [“Element Management System Database DefTran Queue is Overloaded - Database \(7\)”](#) section on page 6-22.

DESCRIPTION	Element Management System Database DefTran Queue is Overloaded (EMS Database DefTran Queue is Overloaded)
SEVERITY	MINOR
THRESHOLD	100
THROTTLE	0
DATAWORDS	Host Name - STRING [30] Database Name - STRING [10] Threshold - TWO_BYTES Time Stamp - STRING [20]
PRIMARY CAUSE	Replication DefTranDest queue is overloaded.
PRIMARY ACTION	Resume replication activities.
SECONDARY CAUSE	Too many errors in DefError queue.
SECONDARY ACTION	Correct replication errors.
TERNARY CAUSE	Replication PURGE job is broken or overloaded.
TERNARY ACTION	Enable replication PURGE job.

DATABASE (8)

To troubleshoot and correct the cause of the alarm, refer to the [“Element Management System Database Tablespace is Out of Free Space - Database \(8\)”](#) section on page 6-22.

DESCRIPTION	Element Management System Database Tablespace is Out of Free Space (EMS Database Tablespace is Out of Free Space)
SEVERITY	MAJOR
THRESHOLD	100
THROTTLE	0
DATAWORDS	Host Name - STRING [30] Database Name - STRING [10] Tablespace Name - STRING [30] Total Free Space - TWO_BYTES Time Stamp - STRING [20]
PRIMARY CAUSE	Increased data volume or transactions.
PRIMARY ACTION	Add more space to tablespace.

DATABASE (9)

To troubleshoot and correct the cause of the alarm, refer to the [“Urgent: Element Management System Database Archive Log Directory is Getting Full - Database \(9\)”](#) section on page 6-22.

DESCRIPTION	Urgent: Element Management System Database Archive Log Directory is Getting Full (URGENT: EMS Database Archive Log Directory is Getting Full)
SEVERITY	CRITICAL
THRESHOLD	100
THROTTLE	0
DATAWORDS	Host Name - STRING [30] Database Name - STRING [10] Directory Name - STRING [100] Free Space - TWO_BYTES Time Stamp - STRING [20]
PRIMARY CAUSE	Transaction volume increased.
PRIMARY ACTION	Backup and cleanup archive log files.
SECONDARY ACTION	Add more space to archive log directory.

DATABASE (10)

To troubleshoot and correct the cause of the alarm, refer to the “[Element Management System Database: Backup Fails - Database \(10\)](#)” section on page 6-22.

DESCRIPTION	Element Management System Database: Backup Fails (EMS Database: Backup Fails)
SEVERITY	MAJOR
THRESHOLD	100
THROTTLE	0
DATAWORDS	Host Name - STRING [30] Database Name - STRING [10] Message 1 - STRING [200] Message 2 - STRING [200] Time Stamp - STRING [20]
PRIMARY CAUSE	System or hardware unstable.
PRIMARY ACTION	Re-start backup process.

DATABASE (11)

To troubleshoot and correct the cause of the alarm, refer to the “[Element Management System Database Alert.log Alerts - Database \(11\)](#)” section on page 6-23.

DESCRIPTION	Element Management System Database Alert.log Alerts (EMS Database Alert.log Alerts)
SEVERITY	MAJOR
THRESHOLD	100
THROTTLE	0
DATAWORDS	Host Name - STRING [30] Database Name - STRING [10] Message 1 - STRING [200] Message 2 - STRING [200] Time Stamp - STRING [20]
PRIMARY CAUSE	The probable cause of the ORA- errors report in alert.log file is documented in the \$ORACLE_HOME/rdbms/mesg/oraus.msg file. Login to EMS system as oracle user (or su - oracle) to view this file. If more information is needed, contact Cisco TAC for database support, or query Oracle Metalink library at http://metalink.oracle.com .
PRIMARY ACTION	The corrective action is documented in the \$ORACLE_HOME/rdbms/mesg/oraus.msg file. Login to EMS system as oracle user (or su - oracle) to view this file. If more information is needed, contact Cisco TAC for database support, or query Oracle Metalink library at http://metalink.oracle.com . The alert.log file is the global message file for errors issued by all Oracle background processes. The majority of error conditions may require administrator's investigation and manual correction. (Contact Cisco TAC.)

Refer to the “[Obtaining Technical Assistance](#)” section on page xxxviii for detailed instructions on contacting Cisco TAC and opening a service request.

DATABASE (12)

To troubleshoot and correct the cause of the alarm, refer to the [“Element Management System Database Process Died - Database \(12\)”](#) section on page 6-23.

DESCRIPTION	Element Management System Database Process Died (EMS Database Process Died)
SEVERITY	CRITICAL
THRESHOLD	100
THROTTLE	0
DATAWORDS	Host Name - STRING [30] Database Name - STRING [10] Error Source - STRING [40] Message - STRING [200] Time Stamp - STRING [20]
PRIMARY CAUSE	Possible Error Source: 1. Process Name, if local process is not running. 2. “Cannot_connect_database” if local database (DB) is unreachable. 3. “Cannot_connect_” if remote DB is unreachable.
PRIMARY ACTION	Re-start process.
SECONDARY ACTION	Contact Cisco Support. (Contact Cisco TAC.)

Refer to the [“Obtaining Technical Assistance”](#) section on page xxxviii for detailed instructions on contacting Cisco TAC and opening a service request.

DATABASE (13)

To troubleshoot and correct the cause of the alarm, refer to the [“Element Management System Database Performance Alert - Database \(13\)” section on page 6-23](#).

DESCRIPTION	Element Management System Database Performance Alert (EMS Database Performance Alert)
SEVERITY	MAJOR
THRESHOLD	100
THROTTLE	0
DATAWORDS	Host Name - STRING [30] Database Name - STRING [10] Stat Event Name - STRING [80] Value 1 - STRING [50] Value 2 - FOUR_BYTES Message - STRING [200] Time Stamp - STRING [20]
PRIMARY CAUSE	See Stat Event Name.
PRIMARY ACTION	Contact Cisco Support. (Contact Cisco TAC.)
SECONDARY ACTION	Perform database performance tuning.

Refer to the [“Obtaining Technical Assistance” section on page xxxviii](#) for detailed instructions on contacting Cisco TAC and opening a service request.

DATABASE (14)

To troubleshoot and correct the cause of the alarm, refer to the [“Table Size Exceeds Minor Threshold Limit - Database \(14\)” section on page 6-23](#).

DESCRIPTION	Table Size Exceeds Minor Threshold Limit
SEVERITY	MINOR
THRESHOLD	100
THROTTLE	0
DATAWORDS	Table Name - STRING [32]
PRIMARY CAUSE	The pre-provisioned size for the stated table is nearing the licensed limit on the number of entries it can hold.
PRIMARY ACTION	Contact Cisco to purchase additional entry space for this particular table. (Contact Cisco TAC.)

Refer to the [“Obtaining Technical Assistance” section on page xxxviii](#) for detailed instructions on contacting Cisco TAC and opening a service request.

DATABASE (15)

To troubleshoot and correct the cause of the alarm, refer to the [“Table Size Exceeds Major Threshold Limit - Database \(15\)” section on page 6-24](#).

DESCRIPTION	Table Size Exceeds Major Threshold Limit
SEVERITY	MAJOR
THRESHOLD	100
THROTTLE	0
DATAWORDS	Table Name - STRING [32]
PRIMARY CAUSE	Major threshold limit exceeded.
PRIMARY ACTION	N/A

DATABASE (16)

To troubleshoot and correct the cause of the alarm, refer to the [“Table Size Exceeds Critical Threshold Limit - Database \(16\)” section on page 6-24](#).

DESCRIPTION	Table Size Exceeds Critical Threshold Limit
SEVERITY	CRITICAL
THRESHOLD	100
THROTTLE	0
DATAWORDS	Table Name - STRING [32]
PRIMARY CAUSE	Critical threshold limit exceeded.
PRIMARY ACTION	N/A

DATABASE (17)

To troubleshoot and correct the cause of the alarm, refer to the [“Data Replication Failed - Database \(17\)” section on page 6-24](#).

DESCRIPTION	Data Replication Failed
SEVERITY	MAJOR
THRESHOLD	100
THROTTLE	0
DATAWORDS	Replication-Stage - STRING [40] Table Name - STRING [40] Index - FOUR_BYTES Table ID - TWO_BYTES
PRIMARY CAUSE	Index out of range.
SECONDARY CAUSE	Record size mismatch.

DATABASE (18)

To monitor and correct the cause of the event, refer to the [“Unexpected Runtime Data Interaction - Database \(18\)” section on page 6-18](#).

DESCRIPTION	Unexpected Runtime Data Interaction
SEVERITY	WARNING
THRESHOLD	100
THROTTLE	0
DATAWORDS	Internal/External In - STRING [10] Table Name - STRING [32] Table Entry - STRING [10] Table Field Name - STRING [32] Descriptive Data 1 - STRING [64] Descriptive Data 2 - STRING [64] Descriptive Data 3 - STRING [64] Descriptive Data 4 - STRING [64]
PRIMARY CAUSE	Unexpected data interaction has been detected at runtime in the call agent or feature server.
PRIMARY ACTION	Collect logs and contact Cisco Support. (Contact Cisco TAC.)

Refer to the [“Obtaining Technical Assistance” section on page xxxviii](#) for detailed instructions on contacting Cisco TAC and opening a service request.

DATABASE (19)

For additional information, refer to the [“Daily Database Backup Completed Successfully - Database \(19\)” section on page 6-19.](#)

DESCRIPTION	Daily Database Backup Completed Successfully
SEVERITY	INFO
THRESHOLD	0
THROTTLE	0
DATAWORDS	Host Name - STRING [60] ORACLE_SID - STRING [30] Process - STRING [60] Message 1 - STRING [100] Message 2 - STRING [100] Message 3 - STRING [100]
PRIMARY CAUSE	Normal operation.
PRIMARY ACTION	N/A

DATABASE (20)

To troubleshoot and correct the cause of the alarm, refer to the [“Replication Data Flush Timeout During Switchover - Database \(20\)” section on page 6-24.](#)

DESCRIPTION	Replication Data Flush Timeout During Switchover
SEVERITY	MAJOR
THRESHOLD	100
THROTTLE	0
DATAWORDS	Tables Failed - STRING [20]
PRIMARY CAUSE	Replication module software problem.
PRIMARY ACTION	Database restore procedure needs to be executed on side which goes active after switchover. Alarm should be cleared manually after recovery action is taken.

Monitoring Database Events

This section provides the information needed to monitor and correct Database events. [Table 6-2](#) lists all Database events in numerical order and provides cross reference to each subsection in this section.

Table 6-2 *Cisco BTS 10200 Softswitch Database Events*

Event Type	Event Name	Event Severity
DATABASE(1)	Test Report - Database (1)	INFO
DATABASE(2)	Database Management Update Failure: Master/Slave Database Out of Sync - Database (2)	WARNING
DATABASE(3)	There are Errors in Element Management System Database DefError Queue; Contact Database Administrator - Database (3)	CRITICAL
DATABASE(4)	Element Management System Database HeartBeat: Replication PUSH Job Broken - Database (4)	CRITICAL
DATABASE(5)	Element Management System Database HeartBeat Process Died - Database (5)	CRITICAL
DATABASE(6)	Element Management System Database Replication DefTranDest Queue Overloaded - Database (6)	MAJOR
DATABASE(7)	Element Management System Database DefTran Queue is Overloaded - Database (7)	MINOR
DATABASE(8)	Element Management System Database Tablespace is Out of Free Space - Database (8)	MAJOR
DATABASE(9)	Urgent: Element Management System Database Archive Log Directory is Getting Full - Database (9)	CRITICAL
DATABASE(10)	Element Management System Database: Backup Fails - Database (10)	MAJOR
DATABASE(11)	Element Management System Database Alert.log Alerts - Database (11)	MAJOR
DATABASE(12)	Element Management System Database Process Died - Database (12)	CRITICAL
DATABASE(13)	Element Management System Database Performance Alert - Database (13)	MAJOR
DATABASE(14)	Table Size Exceeds Minor Threshold Limit - Database (14)	MINOR
DATABASE(15)	Table Size Exceeds Major Threshold Limit - Database (15)	MAJOR
DATABASE(16)	Table Size Exceeds Critical Threshold Limit - Database (16)	CRITICAL
DATABASE(17)	Data Replication Failed - Database (17)	MAJOR
DATABASE(18)	Unexpected Runtime Data Interaction - Database (18)	WARNING
DATABASE(19)	Daily Database Backup Completed Successfully - Database (19)	INFO
DATABASE(20)	Replication Data Flush Timeout During Switchover - Database (20)	MAJOR

Test Report - Database (1)

The Test Report is for testing the database event category. The event is informational and no further action is required.

Database Management Update Failure: Master/Slave Database Out of Sync - Database (2)

The Database Management Update Failure: Master/Slave Database Out of Sync event functions as a warning that master and slave databases are out of sync. The primary cause of the event is that the master database under Oracle control in the EMS was successfully updated, but the subsequent update of the shared memory tables in the Call Agent (CA) servers and/or Feature Servers (FS) were not properly updated. To correct the primary cause of the event, perform an audit of the database in question to correct the data stored in shared memory. Additionally, use the CLI to show and delete the transaction queue, and to audit and manage the queue.

There are Errors in Element Management System Database DefError Queue; Contact Database Administrator - Database (3)

The There are Errors in Element Management System Database DefError Queue; Contact Database Administrator alarm (critical) indicates that there are errors in the EMS database DefError queue. To troubleshoot and correct the cause of the There are Errors in Element Management System Database DefError Queue; Contact Database Administrator alarm, refer to the [“There Are Errors in Element Management System Database DefError Queue; Contact Database Administrator - Database \(3\)”](#) section on page 6-21.

Element Management System Database HeartBeat: Replication PUSH Job Broken - Database (4)

The Element Management System Database HeartBeat: Replication PUSH Job Broken alarm (critical) indicates that the replication PUSH job is broken. To troubleshoot and correct the cause of the of the Element Management System Database HeartBeat: Replication PUSH Job Broken alarm, refer to the [“Element Management System Database HeartBeat: Replication PUSH Job Broken - Database \(4\)”](#) section on page 6-21.

Element Management System Database HeartBeat Process Died - Database (5)

The Element Management System Database HeartBeat Process Died alarm (critical) indicates that the EMS database heartbeat process has died. To troubleshoot and correct the cause of the Element Management System Database HeartBeat Process Died alarm, refer to the [“Element Management System Database HeartBeat Process Died - Database \(5\)”](#) section on page 6-21.

Element Management System Database Replication DefTranDest Queue Overloaded - Database (6)

The Element Management System Database Replication DefTranDest Queue Overloaded alarm (major) indicates that the EMS database replication DefTranDest queue is overloaded. To troubleshoot and correct the cause of the Element Management System Database Replication DefTranDest Queue Overloaded alarm, refer to the [“Element Management System Database Replication DefTranDest Queue Overloaded - Database \(6\)”](#) section on page 6-22.

Element Management System Database DefTran Queue is Overloaded - Database (7)

The Element Management System Database DefTran Queue is Overloaded alarm (minor) indicates that the EMS database DefTran queue is overloaded. To troubleshoot and correct the cause of the Element Management System Database DefTran Queue is Overloaded alarm, refer to the [“Element Management System Database DefTran Queue is Overloaded - Database \(7\)”](#) section on page 6-22.

Element Management System Database Tablespace is Out of Free Space - Database (8)

The Element Management System Database Tablespace is Out of Free Space alarm (major) indicates that the EMS database table space is out of free space. To troubleshoot and correct the cause of the Element Management System Database Tablespace is Out of Free Space alarm, refer to the [“Element Management System Database Tablespace is Out of Free Space - Database \(8\)”](#) section on page 6-22.

Urgent: Element Management System Database Archive Log Directory is Getting Full - Database (9)

The Urgent: Element Management System Database Archive Log Directory is Getting Full alarm (critical) indicates that the EMS database archive log directory is getting full. To troubleshoot and correct the cause of the Urgent: Element Management System Database Archive Log Directory is Getting Full alarm, refer to the [“Urgent: Element Management System Database Archive Log Directory is Getting Full - Database \(9\)”](#) section on page 6-22.

Element Management System Database: Backup Fails - Database (10)

The Element Management System Database: Backup Fails alarm (major) indicates that the EMS database backup has failed. To troubleshoot and correct the cause of the Element Management System Database: Backup Fails alarm, refer to the [“Element Management System Database: Backup Fails - Database \(10\)”](#) section on page 6-22.

Element Management System Database Alert.log Alerts - Database (11)

The Element Management System Database Alert.log Alerts alarm (major) indicates that the EMS database alerts are being received and logged into the alert log. To troubleshoot and correct the cause of the Element Management System Database Alert.log Alerts alarm, refer to the [“Element Management System Database Alert.log Alerts - Database \(11\)”](#) section on page 6-23.

Element Management System Database Process Died - Database (12)

The Element Management System Database Process Died alarm (critical) indicates that the EMS database process has died. To troubleshoot and correct the cause of the Element Management System Database Process Died alarm, refer to the [“Element Management System Database Process Died - Database \(12\)”](#) section on page 6-23.

Element Management System Database Performance Alert - Database (13)

The Element Management System Database Performance Alert alarm (major) indicates that the EMS database performance has degraded. To troubleshoot and correct the cause of the Element Management System Database Performance Alert alarm, refer to the [“Element Management System Database Performance Alert - Database \(13\)”](#) section on page 6-23.

Table Size Exceeds Minor Threshold Limit - Database (14)

The Table Size Exceeds Minor Threshold Limit alarm (minor) indicates that the table size has exceeded the minor threshold crossing limit. To troubleshoot and correct the cause of the Table Size Exceeds Minor Threshold Limit alarm, refer to the [“Table Size Exceeds Minor Threshold Limit - Database \(14\)”](#) section on page 6-23.

Table Size Exceeds Major Threshold Limit - Database (15)

The Table Size Exceeds Major Threshold Limit alarm (major) indicates that the table size has exceeded the major threshold crossing limit. To troubleshoot and correct the cause of the Table Size Exceeds Major Threshold Limit alarm, refer to the [“Table Size Exceeds Major Threshold Limit - Database \(15\)”](#) section on page 6-24.

Table Size Exceeds Critical Threshold Limit - Database (16)

The Table Size Exceeds Critical Threshold Limit alarm (critical) indicates that the table size has exceeded the critical threshold crossing limit. To troubleshoot and correct the cause of the Table Size Exceeds Critical Threshold Limit alarm, refer to the [“Table Size Exceeds Critical Threshold Limit - Database \(16\)”](#) section on page 6-24.

Data Replication Failed - Database (17)

The Data Replication Failed alarm (major) indicates that the data replication failed. To troubleshoot and correct the cause of the Data Replication Failed alarm, refer to the [“Data Replication Failed - Database \(17\)”](#) section on page 6-24.

Unexpected Runtime Data Interaction - Database (18)

The Unexpected Runtime Data Interaction event functions as a warning that an unexpected runtime data interaction has occurred. The primary cause of the event is that an unexpected data interaction has been detected at runtime in the call agent or feature server. To correct the primary cause of the event, collect the logs and contact Cisco TAC. Refer to the [“Obtaining Technical Assistance”](#) section on page xxxviii for detailed instructions on contacting Cisco TAC and opening a service request.

Daily Database Backup Completed Successfully - Database (19)

The Daily Database Backup Completed Successfully event functions as an informational alert that the daily database backup has completed successfully. The event is informational and no further action is required.

Replication Data Flush Timeout During Switchover - Database (20)

The Replication Data Flush Timeout During Switchover alarm (major) indicates that the replication data flush timed out during a switchover. To troubleshoot and correct the cause of the Replication Data Flush Timeout During Switchover alarm, refer to the [“Replication Data Flush Timeout During Switchover - Database \(20\)”](#) section on page 6-24.

Troubleshooting Database Alarms

This section provides the information needed to monitor and correct Database alarms. [Table 6-3](#) lists all Database alarms in numerical order and provides cross reference to each subsection in this section.

Table 6-3 *Cisco BTS 10200 Softswitch Database Alarms*

Alarm Type	Alarm Name	Alarm Severity
DATABASE(3)	There Are Errors in Element Management System Database DefError Queue; Contact Database Administrator - Database (3)	CRITICAL
DATABASE(4)	Element Management System Database HeartBeat: Replication PUSH Job Broken - Database (4)	CRITICAL
DATABASE(5)	Element Management System Database HeartBeat Process Died - Database (5)	CRITICAL
DATABASE(6)	Element Management System Database Replication DefTranDest Queue Overloaded - Database (6)	MAJOR
DATABASE(7)	Element Management System Database DefTran Queue is Overloaded - Database (7)	MINOR
DATABASE(8)	Element Management System Database Tablespace is Out of Free Space - Database (8)	MAJOR
DATABASE(9)	Urgent: Element Management System Database Archive Log Directory is Getting Full - Database (9)	CRITICAL
DATABASE(10)	Element Management System Database: Backup Fails - Database (10)	MAJOR
DATABASE(11)	Element Management System Database Alert.log Alerts - Database (11)	MAJOR
DATABASE(12)	Element Management System Database Process Died - Database (12)	CRITICAL
DATABASE(13)	Element Management System Database Performance Alert - Database (13)	MAJOR
DATABASE(14)	Table Size Exceeds Minor Threshold Limit - Database (14)	MINOR
DATABASE(15)	Table Size Exceeds Major Threshold Limit - Database (15)	MAJOR
DATABASE(16)	Table Size Exceeds Critical Threshold Limit - Database (16)	CRITICAL
DATABASE(17)	Data Replication Failed - Database (17)	MAJOR
DATABASE(20)	Replication Data Flush Timeout During Switchover - Database (20)	MAJOR

There Are Errors in Element Management System Database DefError Queue; Contact Database Administrator - Database (3)

The There Are Errors in Element Management System Database DefError Queue; Contact Database Administrator alarm (critical) indicates that there are errors in the EMS database DefError queue. The primary cause of the alarm is that replication data conflicts have occurred. The additional causes of the alarm are that a request for update or delete on non-existing data occurred, or an unique constraint (primary key) was violated. Correcting the cause of the alarm may require a manual update on database tables. Contact Cisco TAC for assistance. Refer to the [“Obtaining Technical Assistance” section on page xxxviii](#) for detailed instructions on contacting Cisco TAC and opening a service request.

Prior to opening the Cisco TAC service request, take the following steps:

-
- Step 1** Login to the EMS reported in the “Hostname” dataword and execute the following commands and collect the reported information.
- ```
su - oracle
dbadm -C rep
dbadm -r get_deferror
dbadm -r get_defcall_order
```
- Step 2** Check the collected information against any known field notices at the following link:  
[http://www.cisco.com/en/US/products/hw/vcallcon/ps531/prod\\_field\\_notices\\_list.html](http://www.cisco.com/en/US/products/hw/vcallcon/ps531/prod_field_notices_list.html)
- 

## Element Management System Database HeartBeat: Replication PUSH Job Broken - Database (4)

The Element Management System Database HeartBeat: Replication PUSH Job Broken alarm (critical) indicates that the replication PUSH job is broken. The primary cause of the alarm is that the remote database is down or the remote database is not accessible. To correct the primary cause of the alarm, re-start or restore remote database. The secondary cause of the alarm is that network connections in broken. To correct the secondary cause of the alarm, correct the network connection problem. The ternary cause of the alarm is that the remote Oracle Listener process died. To correct the ternary cause of the alarm, restart the remote Listener process.

## Element Management System Database HeartBeat Process Died - Database (5)

The Element Management System Database HeartBeat Process Died alarm (critical) indicates that the EMS database heartbeat process has died. The primary cause of the alarm is that the EMS DBHeartBeat Process was terminated by SMG, or stopped by the platform. To correct the primary cause of the alarm, restart the DBHeartBeat by executing the “dbinit -H -i start” command as an Oracle user, or by executing the platform start command as a root user.

## Element Management System Database Replication DefTranDest Queue Overloaded - Database (6)

The Element Management System Database Replication DefTranDest Queue Overloaded alarm (major) indicates that the EMS database replication DefTranDest queue is overloaded. The primary cause of the alarm is that the replication PUSH job is broken. To correct the primary cause of the alarm, correct the problems on remote database. The secondary cause of the alarm is that the remote database is not accessible. To correct the secondary cause of the alarm, verify that the db\_heart\_beat process is up. The ternary cause of the alarm is that the database is overloaded. To correct the ternary cause of the alarm, troubleshoot database performance.

## Element Management System Database DefTran Queue is Overloaded - Database (7)

The Element Management System Database DefTran Queue is Overloaded alarm (minor) indicates that the EMS database DefTran queue is overloaded. The primary cause of the alarm is that the replication DefTranDest queue is overloaded. To correct the primary cause of the alarm, resume replication activities. The secondary cause of the alarm is that there are too many errors in DefError queue. To correct the secondary cause of the alarm, correct the replication errors. The ternary cause of the alarm is the replication PURGE job is broken or overloaded. To correct the ternary cause of the alarm, enable the replication PURGE job.

## Element Management System Database Tablespace is Out of Free Space - Database (8)

The Element Management System Database Tablespace is Out of Free Space alarm (major) indicates that the EMS database table space is out of free space. The primary cause of the alarm is that there has been an increase in data volume or transactions. To correct the primary cause of the alarm, add more space to the tablespace.

## Urgent: Element Management System Database Archive Log Directory is Getting Full - Database (9)

The Urgent: Element Management System Database Archive Log Directory is Getting Full alarm (critical) indicates that the EMS database archive log directory is getting full. The primary cause of the alarm is that transaction volume has increased. To correct the primary cause of the alarm, backup and cleanup the archive log files. Additionally, add more space to archive log directory.

## Element Management System Database: Backup Fails - Database (10)

The Element Management System Database: Backup Fails alarm (major) indicates that the EMS database backup has failed. The primary cause of the alarm is that the system or hardware is unstable. To correct the primary cause of the alarm, re-start the backup process.

## Element Management System Database Alert.log Alerts - Database (11)

The Element Management System Database Alert.log Alerts alarm (major) indicates that the EMS database alerts are being received and logged into the alert log. The probable cause of the ORA- error reported in this event is documented in the \$ORACLE\_HOME/rdbms/mesg/oraus.msg file. Login to EMS system as oracle user (or su - oracle) to view this file. If more information is needed, contact Cisco TAC support, or query Oracle Metalink library at <http://metalink.oracle.com>. The corrective action is documented in the \$ORACLE\_HOME/rdbms/mesg/oraus.msg file. To view the file, login to EMS system as root, then su - oracle. After the situation is corrected, user will need to manually clear this event. This event does not automatically clear the alarm. If further support is needed, contact Cisco TAC support, or query Oracle Metalink library at <http://metalink.oracle.com>. Refer to the [“Obtaining Technical Assistance” section on page xxxviii](#) for detailed instructions on contacting Cisco TAC and opening a service request.

## Element Management System Database Process Died - Database (12)

The Element Management System Database Process Died alarm (critical) indicates that the EMS database process has died. The primary possible causes of the alarm are:

- Process Name, if local process is not running.
- “Cannot\_connect\_database” if local DB is unreachable.
- “Cannot\_connect\_” if remote DB is unreachable.

To correct the possible causes of the alarm, re-start process and contact Cisco TAC. Refer to the [“Obtaining Technical Assistance” section on page xxxviii](#) for detailed instructions on contacting Cisco TAC and opening a service request.

## Element Management System Database Performance Alert - Database (13)

The Element Management System Database Performance Alert alarm (major) indicates that the EMS database performance has degraded. To identify the primary cause of the alarm, check the “StatEventName” dataword information. To correct the primary cause of the alarm, perform database performance tuning and contact Cisco TAC. Refer to the [“Obtaining Technical Assistance” section on page xxxviii](#) for detailed instructions on contacting Cisco TAC and opening a service request.

## Table Size Exceeds Minor Threshold Limit - Database (14)

The Table Size Exceeds Minor Threshold Limit alarm (minor) indicates that the table size has exceeded the minor threshold crossing limit. The primary cause of the alarm is that the pre-provisioned size for the stated table is nearing the licensed limit on the number of entries it can hold. To correct the primary cause of the alarm, contact Cisco TAC to purchase additional entry space for this particular table. Refer to the [“Obtaining Technical Assistance” section on page xxxviii](#) for detailed instructions on contacting Cisco TAC and opening a service request.

## Table Size Exceeds Major Threshold Limit - Database (15)

The Table Size Exceeds Major Threshold Limit alarm (major) indicates that the table size has exceeded the major threshold crossing limit. The primary cause of the Table Size Exceeds Major Threshold Limit alarm is the major threshold crossing limit has been exceeded. No further action is required.

## Table Size Exceeds Critical Threshold Limit - Database (16)

The Table Size Exceeds Critical Threshold Limit alarm (critical) indicates that the table size has exceeded the critical threshold crossing limit. The primary cause of the alarm is that the critical threshold limit was exceeded. No corrective action is required.

## Data Replication Failed - Database (17)

The Data Replication Failed alarm (major) indicates that the data replication failed. The primary cause of the alarm is that an index is out of range. The secondary cause of the alarm is that a record size mismatch occurred. No corrective action is required.

## Replication Data Flush Timeout During Switchover - Database (20)

The Replication Data Flush Timeout During Switchover alarm (major) indicates that the replication data flush timed out during a switchover. The primary cause of the alarm is that a Replication Module software problem has occurred. To correct the primary cause of the alarm, a database restore procedure needs to be executed on the side which goes active after a switchover. The alarm should be cleared manually after recovery action is taken.