



CHAPTER 11

Statistics Troubleshooting

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Introduction

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

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

Statistics Events and Alarms

This section provides a brief overview of all of the statistics events and alarms for the Cisco BTS 10200 Softswitch in numerical order. [Table 11-1](#) lists all of the statistics events and alarms by severity.



Note

Click the statistics message number in [Table 11-1](#) to display information about the event or alarm.

Table 11-1 Statistics Events and Alarms by Severity

Critical	Major	Minor	Warning	Info	Not Used
	STATISTICS (12)	STATISTICS (15)	STATISTICS (8)	STATISTICS (1)	
	STATISTICS (13)		STATISTICS (9)	STATISTICS (2)	
			STATISTICS (10)	STATISTICS (3)	
			STATISTICS (11)	STATISTICS (4)	
			STATISTICS (14)	STATISTICS (5)	
			STATISTICS (16)	STATISTICS (6)	
				STATISTICS (7)	

STATISTICS (1)

For additional information, refer to the [“Test Report—Statistics \(1\)”](#) section on page 11-12.

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

STATISTICS (2)

For additional information, refer to the [“Call Agent Measurement Collection Started—Statistics \(2\)”](#) section on page 11-12.

DESCRIPTION	Call Agent Measurement Collection Started
SEVERITY	INFO
THRESHOLD	100
THROTTLE	0
DATAWORDS	Start Time–STRING [40]
PRIMARY CAUSE	Indicates that the 15-minute traffic measurement collection process has started on the Call Agent.
PRIMARY ACTION	No action is necessary.

STATISTICS (3)

For additional information, refer to the [“Call Agent Measurement Collection Finished—Statistics \(3\)”](#) section on page 11-13.

DESCRIPTION	Call Agent Measurement Collection Finished
SEVERITY	INFO
THRESHOLD	100
THROTTLE	0
DATAWORDS	End Time–STRING [40]
PRIMARY CAUSE	Indicates that the 15-minute traffic measurement collection process has completed on the Call Agent.
PRIMARY ACTION	No action is necessary.

STATISTICS (4)

For additional information, refer to the [“Plain Old Telephone Service/Centrex/Telecommunications Data Link Monitor Feature Server Measurement Collection Started—Statistics \(4\)”](#) section on page 11-13.

DESCRIPTION	Plain Old Telephone Service/Centrex/Telecommunications Data Link Monitor Feature Server Measurement Collection Started (POTS/CTX/TDM Feature Server Measurement Collection Started)
SEVERITY	INFO
THRESHOLD	100
THROTTLE	0
DATAWORDS	Start Time–STRING [40]
PRIMARY CAUSE	Indicates that the 15-minute traffic measurement collection process has started on the plain old telephone service (POTS)/Centrex/Tandem Feature Server.
PRIMARY ACTION	No action is necessary.

STATISTICS (5)

For additional information, refer to the [“Plain Old Telephone Service/Centrex/Telecommunications Data Link Monitor Feature Server Measurement Collection Finished—Statistics \(5\)”](#) section on page 11-13.

DESCRIPTION	Plain Old Telephone Service/Centrex/Telecommunications Data Link Monitor Feature Server Measurement Collection Finished (POTS/CTX/TDM Feature Server Measurement Collection Finished)
SEVERITY	INFO
THRESHOLD	100
THROTTLE	0
DATAWORDS	End Time–STRING [40]
PRIMARY CAUSE	Indicates that the 15-minute traffic measurement collection process has finished on the POTS/Centrex/Tandem Feature Server.
PRIMARY ACTION	No action is necessary.

STATISTICS (6)

For additional information, refer to the [“Advanced Intelligent Network Feature Server Measurement Collection Started—Statistics \(6\)”](#) section on page 11-13.

DESCRIPTION	Advanced Intelligent Network Feature Server Measurement Collection Started (AIN Feature Server Measurement Collection Started)
SEVERITY	INFO
THRESHOLD	100
THROTTLE	0
DATAWORDS	Start Time–STRING [40]
PRIMARY CAUSE	Indicates that the 15-minute traffic measurement collection process has started on the Advanced Intelligent Network (AIN) feature server.
PRIMARY ACTION	No action is necessary.

STATISTICS (7)

For additional information, refer to the [“Advanced Intelligent Network Feature Server Measurement Collection Finished—Statistics \(7\)”](#) section on page 11-13.

DESCRIPTION	Advanced Intelligent Network Feature Server Measurement Collection Finished (AIN Feature Server Measurement Collection Finished)
SEVERITY	INFO
THRESHOLD	100
THROTTLE	0
DATAWORDS	End Time–STRING [40]
PRIMARY CAUSE	Indicates that the 15-minute traffic measurement collection process has completed on the AIN feature server.
PRIMARY ACTION	No action is necessary.

STATISTICS (8)

To monitor and correct the cause of the event, refer to the [“Message Send Failure—Statistics \(8\)”](#) section on page 11-14.

DESCRIPTION	Message Send Failure
SEVERITY	WARNING
THRESHOLD	100
THROTTLE	0
DATAWORDS	Originating Process–STRING [40] Traffic Mgr Msg Type–STRING [40] Traffic Agent Msg Ty–STRING [30]
PRIMARY CAUSE	The originating process (for Call Agent (CA), Feature Server (FS) or Element Management System (EMS)) is not in active state, or is shut down.
PRIMARY ACTION	Check for other alarms and events generated from this component (CA, FS or EMS).
SECONDARY CAUSE	The hub is down.
SECONDARY ACTION	If the originating process is down, try to bring the process back into the normal state.
TERNARY CAUSE	The platform is currently shutting down a process.
TERNARY ACTION	If the hub process is down, try to bring it into a normal state. (Contact Cisco Technical Assistance Center (TAC).)



Note

Refer to the [“Obtaining Documentation and Submitting a Service Request”](#) section on page lvi for detailed instructions on contacting Cisco TAC and opening a service request.

STATISTICS (9)

To monitor and correct the cause of the event, refer to the [“Measurement Table Structured Query Language Read Error—Statistics \(9\)”](#) section on page 11-14.

DESCRIPTION	Measurement Table Structured Query Language Read Error (Measurement Table SQL Read Error)
SEVERITY	WARNING
THRESHOLD	100
THROTTLE	0
DATAWORDS	Measurement Table Na-STRING [40]
PRIMARY CAUSE	There is no database connection or the connection is faulty.
PRIMARY ACTION	Check to see if there are any other events generated that indicate there is a database problem.
SECONDARY CAUSE	The traffic measurement table(s) are corrupted.
SECONDARY ACTION	Correct any database-related problems.
TERTIARY CAUSE	Two processors or more are attempting to access the table at the same time.
TERTIARY ACTION	If all of the database-related problems are cleared, and this warning event report still occurs, contact Cisco TAC for technical support.



Note

Refer to the [“Obtaining Documentation and Submitting a Service Request”](#) section on page 1vi for detailed instructions on contacting Cisco TAC and opening a service request.

STATISTICS (10)

To monitor and correct the cause of the event, refer to the [“Measurement Table Structured Query Language Write Error—Statistics \(10\)”](#) section on page 11-15.

DESCRIPTION	Measurement Table Structured Query Language Write Error (Measurement Table SQL Write Error)
SEVERITY	WARNING
THRESHOLD	100
THROTTLE	0
DATAWORDS	Measurement Table Na-STRING [40]
PRIMARY CAUSE	There is no database connection or the connection is faulty.
PRIMARY ACTION	Check to see if there are any other events are generated that indicate there is a database problem.
SECONDARY CAUSE	The traffic measurement table(s) are corrupted.
SECONDARY ACTION	Correct any database-related problems.
TERNARY CAUSE	Two processors or more are attempting to access the table at the same time.
TERNARY ACTION	If all of the database-related problems are cleared, and this warning event report still occurs, contact Cisco TAC for technical support.



Note

Refer to the [“Obtaining Documentation and Submitting a Service Request”](#) section on page lvi for detailed instructions on contacting Cisco TAC and opening a service request.

STATISTICS (11)

To monitor and correct the cause of the event, refer to the [“Measurement Collection Application Programming Interface Failure—Statistics \(11\)”](#) section on page 11-15.

DESCRIPTION	Measurement Collection Application Programming Interface Failure (Measurement Collection API Failure)
SEVERITY	WARNING
THRESHOLD	100
THROTTLE	0
DATAWORDS	Message Type–STRING [40] Platform Type–STRING [40]
PRIMARY CAUSE	This report is issued when the traffic measurement subsystem on the call agent or the feature server encounters difficulties when it tries to collect measurement values from one of the processes.
PRIMARY ACTION	Execute a status command for the affected call agent or feature server.
SECONDARY CAUSE	The originating process (for CA, FS or EMS) is not in active state or is shut down.
SECONDARY ACTION	If the status report indicates that the originating process is down, try to bring the process back into the normal (In Service) state. If you need assistance in restoring a process, contact Cisco TAC.
TERNARY CAUSE	The platform is currently shutting down the originating process.
TERNARY ACTION	If this event report is being issued every collection period, contact Cisco TAC for assistance.
SUBSEQUENT ACTION	Note Traffic measurements will not be available for the affected call agent or feature server from the measurement period in which this event report was issued.



Note

Refer to the [“Obtaining Documentation and Submitting a Service Request”](#) section on page lvi for detailed instructions on contacting Cisco TAC and opening a service request.

STATISTICS (12)

To troubleshoot and correct the cause of the alarm, refer to the [“Measurement Handshake Error–Schema Inconsistency—Statistics \(12\)”](#) section on page 11-17.

DESCRIPTION	Measurement Handshake Error–Schema Inconsistency
SEVERITY	MAJOR
THRESHOLD	5
THROTTLE	0
DATAWORDS	Schemas Out of Synchronization–STRING [64]
PRIMARY CAUSE	Counters were added or deleted from the schema in Oracle but not in the call agent.
PRIMARY ACTION	Add or delete the counters on the CA.
SECONDARY CAUSE	Load is installed incorrectly.
SECONDARY ACTION	Reinstall the load.

STATISTICS (13)

To troubleshoot and correct the cause of the alarm, refer to the [“Traffic and Measurements Module Application Programming Interface Failure—Statistics \(13\)”](#) section on page 11-17.

DESCRIPTION	Traffic and Measurements Module Application Programming Interface Failure (TMM API Failure)
SEVERITY	MAJOR
THRESHOLD	1
THROTTLE	10
DATAWORDS	TMM Error-FOUR_BYTES
PRIMARY CAUSE	Unable to initialize shared memory.
PRIMARY ACTION	Reconfigure and restart system.
SECONDARY CAUSE	Unable to attach to shared memory.
SECONDARY ACTION	Restart offending process.
TERNARY CAUSE	Shared memory table overflow.
TERNARY ACTION	Reconfigure/restart or fix problematic application.
SUBSEQUENT CAUSE	Shared memory exhaustion.
SUBSEQUENT ACTION	Reconfigure and restart system.

STATISTICS (14)

To monitor and correct the cause of the event, refer to the [“MDII Trunk—Statistics \(14\)”](#) section on page 11-16.

DESCRIPTION	MDII Trunk
SEVERITY	WARNING
THRESHOLD	100
THROTTLE	0
DATAWORDS	Trunk Group-FOUR_BYTES CIC-FOUR_BYTES
PRIMARY CAUSE	Calls on the MDII trunk termination are not being successfully completed.
PRIMARY ACTION	The BTS 10200 system may take this trunk out of service if it does not take the full trunk group out of service.

STATISTICS (15)

To troubleshoot and correct the cause of the alarm, refer to the [“Threshod Crossing Alert—Statistics \(15\)” section on page 11-17](#).

DESCRIPTION	Threshod Crossing Alert
SEVERITY	MINOR
THRESHOLD	100
THROTTLE	0
DATAWORDS	Description–STRING [256]
PRIMARY CAUSE	A threshold crossing has occured.
PRIMARY ACTION	Reduce the provisioning workload.

STATISTICS (16)

To monitor and correct the cause of the event, refer to the [“Trunk Group has Reached the MDII Alarm Threshold—Statistics \(16\)” section on page 16](#).

DESCRIPTION	Trunk Group has Reached the MDII Alarm Threshold
SEVERITY	WARNING
THRESHOLD	100
THROTTLE	0
DATAWORDS	Trunk Group - FOUR_BYTES
PRIMARY CAUSE	The trunk group has reached the MDII alarm threshold.
PRIMARY ACTION	Check the performance status of trunk group.

Monitoring Statistics Events

This section provides the information needed to monitor and correct statistics events. Table 11-2 lists all of the statistics events in numerical order and provides cross reference to each subsection in this section.

Table 11-2 *BTS 10200 Statistics Events*

Event Type	Event Name	Event Severity
STATISTICS(1)	Test Report—Statistics (1)	INFO
STATISTICS(2)	Call Agent Measurement Collection Started—Statistics (2)	INFO
STATISTICS(3)	Call Agent Measurement Collection Finished—Statistics (3)	INFO
STATISTICS(4)	Plain Old Telephone Service/Centrex/Telecommunications Data Link Monitor Feature Server Measurement Collection Started—Statistics (4)	INFO
STATISTICS(5)	Plain Old Telephone Service/Centrex/Telecommunications Data Link Monitor Feature Server Measurement Collection Finished—Statistics (5)	INFO
STATISTICS(6)	Advanced Intelligent Network Feature Server Measurement Collection Started—Statistics (6)	INFO
STATISTICS(7)	Advanced Intelligent Network Feature Server Measurement Collection Finished—Statistics (7)	INFO
STATISTICS(8)	Message Send Failure—Statistics (8)	WARNING
STATISTICS(9)	Measurement Table Structured Query Language Read Error—Statistics (9)	WARNING
STATISTICS(10)	Measurement Table Structured Query Language Write Error—Statistics (10)	WARNING
STATISTICS(11)	Measurement Collection Application Programming Interface Failure—Statistics (11)	WARNING
STATISTICS(12)	Measurement Handshake Error—Schema Inconsistency—Statistics (12)	MAJOR
STATISTICS(13)	Traffic and Measurements Module Application Programming Interface Failure—Statistics (13)	MAJOR
STATISTICS(14)	MDII Trunk—Statistics (14)	WARNING
STATISTICS(15)	Threshod Crossing Alert—Statistics (15)	MINOR
STATISTICS(16)	Trunk Group has Reached the MDII Alarm Threshold—Statistics (16)	WARNING

Test Report—Statistics (1)

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

Call Agent Measurement Collection Started—Statistics (2)

The Call Agent Measurement Collection Started event functions as an informational alert that the call agent measurement collection has started. The event is informational and no further action is required.

Call Agent Measurement Collection Finished—Statistics (3)

The Call Agent Measurement Collection Finished event functions as an informational alert that the call agent measurement collection is finished. The event is informational and no further action is required.

Plain Old Telephone Service/Centrex/Telecommunications Data Link Monitor Feature Server Measurement Collection Started—Statistics (4)

The Plain Old Telephone Service/Centrex/Telecommunications Data Link Monitor Feature Server Measurement Collection Started event functions as an informational alert that the POTS/Centrex (CTX)/telecommunications data link monitor (TDM) feature server measurement collection has started. The event is informational and no further action is required.

Plain Old Telephone Service/Centrex/Telecommunications Data Link Monitor Feature Server Measurement Collection Finished—Statistics (5)

The Plain Old Telephone Service/Centrex/Telecommunications Data Link Monitor Feature Server Measurement Collection Finished event functions as an informational alert that the POTS/CTX/TDM feature server measurement collection has finished. The event is informational and no further action is required.

Advanced Intelligent Network Feature Server Measurement Collection Started—Statistics (6)

The Advanced Intelligent Network Feature Server Measurement Collection Started event functions as an informational alert that the AIN feature server measurement collection has started. The event is informational and no further action is required.

Advanced Intelligent Network Feature Server Measurement Collection Finished—Statistics (7)

The Advanced Intelligent Network Feature Server Measurement Collection Finished event functions as an informational alert that the AIN feature server measurement collection has finished. The event is informational and no further action is required.

Message Send Failure—Statistics (8)

The Message Send Failure event serves as a warning that a message send has failed. The primary cause of the event is that the originating process (for CA, FS or EMS) is not in active state, or is shut down. To correct the primary cause of the event, check for other alarms and events generated from this component (CA, FS or EMS). The secondary cause of the event is that the hub is down. To correct the secondary cause of the event, if the hub process is down, try to bring it into a normal state. The tertiary cause of the event is that the platform is currently shutting down a process. To correct the tertiary cause of the event, if the originating process is down, try to bring the process back into the normal state. If this event report is being issued on every collection interval and there are no other event reports being issued, contact the Cisco TAC to resolve the communication issue.

**Note**

Refer to the [“Obtaining Documentation and Submitting a Service Request”](#) section on page lvi for detailed instructions on contacting Cisco TAC and opening a service request.

Issued when the traffic measurement subsystem in the CA fails to send messages to the EMS due to:

- Originating process (for CA, FS or EMS) is not in active state, or is shut down.
- Hub is down.
- Platform is currently shutting down a process.

If this event is being issued frequently (every collection interval), then there are communication difficulties between the Call Agent and the EMS, and there will be additional events being issued. These other events will indicate the nature of the communication difficulties. The repair procedures for the other event reports should be followed to correct the Call Agent/EMS communication issue:

- Check for other alarms and events generated from this component (CA, FS or EMS).
- If the originating process is down, try to bring the process back into the normal state.
- If the hub process is down, try to bring it into a normal state.

If this event report is being issued on every collection interval and there are no other event reports being issued, contact the Cisco TAC to resolve the communication issue.

Measurement Table Structured Query Language Read Error—Statistics (9)

The Measurement Table Structured Query Language Read Error event serves as a warning that the measurement table had a Structured Query Language (SQL) read error. The primary cause of the event is that there is no database connection, or the connection is faulty. To correct the primary cause of the event, check to see if there are any other events generated that indicate there is a database problem. The secondary cause of the event is that the traffic measurement tables are corrupted. To correct the secondary cause of the event, correct any database-related problems. The tertiary cause of the event is that two processors or more are attempting to access the table at the same time. To correct the tertiary cause of the event, check to see if all of the database-related problems are cleared, and this warning event report still occurs, contact Cisco TAC for technical support.

**Note**

Refer to the [“Obtaining Documentation and Submitting a Service Request”](#) section on page lvi for detailed instructions on contacting Cisco TAC and opening a service request.

Measurement Table Structured Query Language Write Error—Statistics (10)

The Measurement Table Structured Query Language Write Error event serves as a warning that the measurement table has had a SQL write error. The primary cause of the event is that there is no database connection, or the connection is faulty. To correct the primary cause of the event, check to see if there are any other events generated that indicate there is a database problem. The secondary cause of the event is that the traffic measurement tables are corrupted. To correct the secondary cause of the event, correct any database-related problems. The tertiary cause of the event is that two processors or more are attempting to access the table at the same time. To correct the tertiary cause of the event, check to see if all of the database-related problems are cleared, and this warning event report still occurs, contact Cisco TAC for technical support.

**Note**

Refer to the [“Obtaining Documentation and Submitting a Service Request”](#) section on page lvi for detailed instructions on contacting Cisco TAC and opening a service request.

Measurement Collection Application Programming Interface Failure—Statistics (11)

The Measurement Collection Application Programming Interface Failure event serves as a warning that the measurement collection of application programming interface (API) statistics has failed. The primary cause of the event is that the report is issued when the traffic measurement subsystem on the call agent or feature server encounters difficulties when it tries to collect measurement values from one of the processes. To correct the primary cause of the event execute a **status** command for the affected call agent or feature server. The secondary cause of the event is that the originating process (for CA, FS or EMS) is not in active state, or is shut down. To correct the secondary cause of the event, check and see if the status report indicates that the originating process is down, try to bring the process back into the normal (In Service) state. If you need assistance in restoring a process, contact Cisco TAC. The tertiary cause of the event is that the platform is currently shutting down the originating process. To correct the tertiary cause of the event, check and see if this event report is being issued every collection period, contact Cisco TAC for assistance.

**Note**

Refer to the [“Obtaining Documentation and Submitting a Service Request”](#) section on page lvi for detailed instructions on contacting Cisco TAC and opening a service request.

**Note**

Traffic measurements will not be available for the affected call agent or feature server from the measurement period in which this event report was issued.

Measurement Handshake Error–Schema Inconsistency—Statistics (12)

The Measurement Handshake Error–Schema Inconsistency alarm (major) indicates that a measurement handshake error has occurred. To troubleshoot and correct the cause of the Measurement Handshake Error–Schema Inconsistency alarm, refer to the [“Measurement Handshake Error–Schema Inconsistency—Statistics \(12\)”](#) section on page 11-17.

Traffic and Measurements Module Application Programming Interface Failure—Statistics (13)

The Traffic and Measurements Module Application Programming Interface Failure alarm (major) indicates that the Traffic and Measurements module (TMM) API failed. To troubleshoot and correct the cause of the Traffic and Measurements Module Application Programming Interface Failure alarm, refer to the [“Traffic and Measurements Module Application Programming Interface Failure—Statistics \(13\)”](#) section on page 11-17.

MDII Trunk—Statistics (14)

The MDII Trunk event serves as a warning that the calls on the MDII trunk termination are not being successfully completed. The BTS 10200 system may take the MDII trunk out of service if it does not take the full trunk group out of service.

Threshold Crossing Alert—Statistics (15)

The Threshold Crossing Alert alarm (minor) indicates that a threshold crossing has occurred. To troubleshoot and correct the cause of the Threshold Crossing Alert alarm, refer to the [“Threshold Crossing Alert—Statistics \(15\)”](#) section on page 17.

Trunk Group has Reached the MDII Alarm Threshold—Statistics (16)

The Trunk Group has Reached the MDII Alarm Threshold event serves as a warning that the trunk group has reached the MDII alarm threshold. To correct the cause of the event, check the performance status of the trunk group.

Troubleshooting Statistics Alarms

This section provides the information needed to monitor and correct statistics alarms. [Table 11-3](#) lists all of the statistics alarms in numerical order and provides cross reference to each subsection in this section.

Table 11-3 *BTS 10200 Statistics Alarms*

Alarm Type	Alarm Name	Alarm Severity
STATISTICS(12)	Measurement Handshake Error—Schema Inconsistency—Statistics (12)	MAJOR
STATISTICS(13)	Traffic and Measurements Module Application Programming Interface Failure—Statistics (13)	MAJOR
STATISTICS(15)	Threshold Crossing Alert—Statistics (15)	MINOR

Measurement Handshake Error—Schema Inconsistency—Statistics (12)

The Measurement Handshake Error—Schema Inconsistency alarm (major) indicates that a measurement handshake error has occurred. The primary cause of the alarm is that counters have been added or deleted from the schema in Oracle but not in the Call Agent. To correct the primary cause of the alarm, add or delete the counters on the CA. The secondary cause of the alarm is that the software load has been installed incorrectly. To correct the secondary cause of the alarm, re-install the software load.

Traffic and Measurements Module Application Programming Interface Failure—Statistics (13)

The Traffic and Measurements Module Application Programming Interface Failure alarm (major) indicates that the TMM API failed. The primary cause of the alarm is that the system is unable to initialize the shared memory. To correct the primary cause of the alarm, reconfigure and restart the system. The secondary cause of the alarm is that a process is unable to attach to the shared memory. To correct the secondary cause of the alarm, restart the offending process. The tertiary cause of the alarm is that the shared memory table has overflowed. To correct the tertiary cause of the alarm, reconfigure/restart or fix problematic application. The subsequent cause of the alarm is that the shared memory is exhausted. To correct the subsequent cause of the alarm, reconfigure and restart the system.

Threshold Crossing Alert—Statistics (15)

The Threshold Crossing Alert alarm (minor) indicates that a threshold crossing has occurred. To correct the cause of the alarm, reduce the provisioning workload.

