



# 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 Statistics events.
- [Troubleshooting Statistics Alarms](#) – Provides the information needed to troubleshoot and correct Statistics alarms.

# Statistics Events and Alarms

This section provides a brief overview of the Security 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
	<a href="#">STATISTICS (12)</a>		<a href="#">STATISTICS (8)</a>	<a href="#">STATISTICS (1)</a>
	<a href="#">STATISTICS (13)</a>		<a href="#">STATISTICS (9)</a>	<a href="#">STATISTICS (2)</a>
			<a href="#">STATISTICS (10)</a>	<a href="#">STATISTICS (3)</a>
			<a href="#">STATISTICS (11)</a>	<a href="#">STATISTICS (4)</a>
				<a href="#">STATISTICS (5)</a>
				<a href="#">STATISTICS (6)</a>
				<a href="#">STATISTICS (7)</a>

## STATISTICS (1)

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

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 11-11.

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 11-11.](#)

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 11-12.](#)

DESCRIPTION	Plain Old Telephone Service/Centrex/Telecommunications Data Link Monitor 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 11-12.

DESCRIPTION	Plain Old Telephone Service/Centrex/Telecommunications Data Link Monitor 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 11-12.

DESCRIPTION	Advanced Intelligent Network 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 11-12.

DESCRIPTION	Advanced Intelligent Network 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 11-13.

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	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	Hub is down.
SECONDARY ACTION	If the originating process is down, try to bring the process back into the normal state.
TERNARY CAUSE	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).)

Refer to the [“Obtaining Documentation and Submitting a Service Request”](#) section on page liii 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 11-13.

DESCRIPTION	Measurement Table Structured Query Language 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	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.

Refer to the [“Obtaining Documentation and Submitting a Service Request”](#) section on page liii 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 11-14.

DESCRIPTION	Measurement Table Structured Query Language 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 generated that indicate there is a database problem.
SECONDARY CAUSE	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.

Refer to the [“Obtaining Documentation and Submitting a Service Request”](#) section on page liii 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 11-14.

DESCRIPTION	Measurement Collection Application Programming Interface 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 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	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	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	<b>Note</b> 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.

Refer to the [“Obtaining Documentation and Submitting a Service Request”](#) section on page liii 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 11-16.

DESCRIPTION	Measurement Handshake Error - Schema Inconsistency
SEVERITY	MAJOR
THRESHOLD	5
THROTTLE	0
DATAWORDS	Schemas Out of Synchronization - STRING [64]
PRIMARY CAUSE	Counters added/deleted from schema in Oracle but not in the call agent.
PRIMARY ACTION	Add/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 11-16.

DESCRIPTION	Traffic and Measurements Module Application Programming Interface 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.

# Monitoring Statistics Events

This section provides the information needed to monitor and correct Statistics events. [Table 11-2](#) lists all Statistics events in numerical order and provides cross reference to each subsection in this section.

**Table 11-2** *Cisco BTS 10200 Softswitch Statistics Events*

Event Type	Event Name	Event Severity
STATISTICS(1)	<a href="#">Test Report - Statistics (1)</a>	INFO
STATISTICS(2)	<a href="#">Call Agent Measurement Collection Started - Statistics (2)</a>	INFO
STATISTICS(3)	<a href="#">Call Agent Measurement Collection Finished - Statistics (3)</a>	INFO
STATISTICS(4)	<a href="#">Plain Old Telephone Service/Centrex/Telecommunications Data Link Monitor Feature Server Measurement Collection Started - Statistics (4)</a>	INFO
STATISTICS(5)	<a href="#">Plain Old Telephone Service/Centrex/Telecommunications Data Link Monitor Feature Server Measurement Collection Finished - Statistics (5)</a>	INFO
STATISTICS(6)	<a href="#">Advanced Intelligent Network Feature Server Measurement Collection Started - Statistics (6)</a>	INFO
STATISTICS(7)	<a href="#">Advanced Intelligent Network Feature Server Measurement Collection Finished - Statistics (7)</a>	INFO
STATISTICS(8)	<a href="#">Message Send Failure - Statistics (8)</a>	WARNING
STATISTICS(9)	<a href="#">Measurement Table Structured Query Language Read Error - Statistics (9)</a>	WARNING
STATISTICS(10)	<a href="#">Measurement Table Structured Query Language Write Error - Statistics (10)</a>	WARNING
STATISTICS(11)	<a href="#">Measurement Collection Application Programming Interface Failure - Statistics (11)</a>	WARNING
STATISTICS(12)	<a href="#">Measurement Handshake Error - Schema Inconsistency - Statistics (12)</a>	MAJOR
STATISTICS(13)	<a href="#">Traffic and Measurements Module Application Programming Interface Failure - Statistics (13)</a>	MAJOR

## 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, is if the hub process is down, try to bring it into a normal state. The ternary cause of the event is that the platform is currently shutting down a process. To correct the ternary cause of the event, is 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. Refer to the [“Obtaining Documentation and Submitting a Service Request”](#) section on page liii 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 ternary cause of the event is that two processors or more are attempting to access the table at the same time. To correct the ternary 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. Refer to the [“Obtaining Documentation and Submitting a Service Request”](#) section on page liii 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. Refer to the [“Obtaining Documentation and Submitting a Service Request” section on page liii](#) 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. Refer to the [“Obtaining Documentation and Submitting a Service Request” section on page liii](#) for detailed instructions on contacting Cisco TAC and opening a service request.

**Note**

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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.

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## 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 11-16](#).

## 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 11-16](#).

# Troubleshooting Statistics Alarms

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

**Table 11-3** *Cisco BTS 10200 Softswitch Statistics Alarms*

Alarm Type	Alarm Name	Alarm Severity
STATISTICS(12)	<a href="#">Measurement Handshake Error - Schema Inconsistency - Statistics (12)</a>	MAJOR
STATISTICS(13)	<a href="#">Traffic and Measurements Module Application Programming Interface Failure - Statistics (13)</a>	MAJOR

## 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.