



Performance Measurements Reference

This appendix provides details on the performance measurements you might see in the Cisco MNM Performance Manager. It includes:

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- [Performance Data Collected for the Cisco MGC Host, page B-3](#)
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Common Performance Data Collected for Several Devices

Many devices collect the same performance data. Common performance attributes are listed in [Table B-1](#), [Table B-2](#), and [Table B-3](#) and are referenced in the following sections.

Table B-1 IP Performance Counters

Counter	Description
SNMP:RFC1213-MIB.ipInReceived	Number of input datagrams received from interfaces, including those received in error.
SNMP:RFC1213-MIB.ipInHdrErrors	Number of input datagrams discarded due to errors in their IP headers including bad checksums.
SNMP:RFC1213-MIB.ipInAddrErrors	Number of input datagrams discarded because of invalid IP header destination address.
SNMP:RFC1213-MIB.ipForwDatagrams	Number of input datagrams for which this entity was not their final IP destination.
SNMP:RFC1213-MIB.ipInUnknownProtos	Number of locally addressed datagrams discarded because of an unknown or unsupported protocol.

Table B-1 IP Performance Counters (continued)

Counter	Description
SNMP:RFC1213-MIB.ipInDiscards	Number of input IP datagrams that were discarded for some reason (such as lack of buffer space).
SNMP:RFC1213-MIB.ipInDelivers	Total number of input datagrams successfully delivered to IP user-protocols.
SNMP:RFC1213-MIB.ipOutRequests	Total number of IP datagrams that local IP user-protocols supplied to IP in requests for transmission.
SNMP:RFC1213-MIB.ipOutDiscards	Number of output IP datagrams that were discarded for some reason (such as lack of buffer space).
SNMP:RFC1213-MIB.ipOutNoRoutes	Number of IP datagrams discarded because no route was found to transmit them to their destination.
SNMP:RFC1213-MIB.ipFragOKs	Number of IP datagrams that have been successfully fragmented at this entity.
SNMP:RFC1213-MIB.ipFragFails	Number of IP datagrams that have been discarded because they could not be fragmented.
SNMP:RFC1213-MIB.ipFragCreates	Number of IP datagram fragments that have been generated as a result of fragmentation.

Table B-2 TCP Performance Counter

Counter	Description
RFC1213-MIB.tcpActiveOpens	Number of times TCP ¹ connections have made a direct transition to the SYN-SENT state from the CLOSED state.
RFC1213-MIB.tcpAttemptFails	Number of times TCP connections have made a direct transition to the CLOSED state from either the SYN-SENT state or the SYN-RCVD state, plus the number of times TCP connections have made a direct transition to the LISTEN state from the SYN-RCVD state.
RFC1213-MIB.tcpCurrEstab	Number of TCP connections for which the current state is either ESTABLISHED or CLOSE-WAIT.
RFC1213-MIB.tcpEstabResets	Number of times TCP connections have made a direct transition to the CLOSED state from either the ESTABLISHED state or the CLOSE-WAIT state.
RFC1213-MIB.tcpInErrs	Total number of segments received in error (for example, bad TCP checksums)
RFC1213-MIB.tcpInSegs	Total number of segments received, including those received in error.
RFC1213-MIB.tcpMaxConn	Total number of TCP connections the entity can support.
RFC1213-MIB.tcpOutRsts	Number of TCP segments sent containing the RST flag.
RFC1213-MIB.tcpOutSegs	Total number of segments sent, including those on current connections but excluding those containing only retransmitted octets.

Table B-2 TCP Performance Counter (continued)

Counter	Description
RFC1213-MIB.tcpPassiveOpens	Number of times TCP connections have made a direct transition to the SYN-RCVD state from the LISTEN state.
RFC1213-MIB.tcpRetransSegs	Total number of segments retransmitted—that is, the number of TCP segments transmitted containing one or more previously transmitted octets.
RFC1213-MIB.udpInDatagrams	Total number of UDP ² datagrams delivered to UDP users.

1. Transmission Control Protocol
2. User Datagram Protocol

Table B-3 UDP Performance Counters

Counter	Description
RFC1213-MIB.udpInDatagrams	Total number of UDP datagrams delivered to UDP users.
RFC1213-MIB.udpInErrors	Number of received UDP datagrams that could not be delivered for reasons other than the lack of an application at the destination port.
RFC1213-MIB.udpNoPorts	Total number of received UDP datagrams for which there was no application at the destination port.
RFC1213-MIB.udpOutDatagrams	Total number of UDP datagrams sent from this entity.

Performance Data Collected for the Cisco MGC Host

The following performance counts are collected for each Cisco MGC host:

- IP performance counters (see [Table B-1](#))
- TCP performance counters (see [Table B-2](#))
- UDP performance counters (see [Table B-3](#))

Other performance information collected for the active Cisco MGC host are:

- The usage attributes shown in [Table B-4](#)
- The CALL measurement group, tracking call processing volume (see [Table B-5](#))
- The OVL (overload) group, tracking overload statistics (see [Table B-6](#))
- The STATE group, tracking user-defined statistics (see [Table B-7](#))
- Data on system components, such as RAM and disk space. See the “[Performance Data Collected for System Components](#)” section on page B-8.
- Data on signaling and trunk group components. See the “[Performance Data Collected for Signaling and Trunk Group Components](#)” section on page B-10.

Table B-4 Cisco MGC Host Performance Counters

Counter	Description
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Table B-4 Cisco MGC Host Performance Counters (continued)

SNMP:HOST-RESOURCES-MIB.hrSystemNumUsers	Number of users on the host
SNMP:HOST-RESOURCES-MIB.hrSystemProcesses	Number of processes running on the system

Table B-5 CALL Measurement Group

Counter	Description
CALL:SuccCall TOT	Number of successful calls
CALL:FailCall TOT	Number of failed calls
CALL:RUFailCall TOT	Number of failed calls due to resource unavailable
CALL:ORFailCall TOT	Number of failed calls due to other reasons
CALL:OLFailCall TOT	Number of failed calls due to overload
CALL:PrepaidAccess	This counter is incremented each time a prepaid IN service is invoked
CALL:PrepaidComple	This counter is incremented each time a prepaid call reaches the connected state
CALL:RLFailCall TOT	Total number of failed calls due to route list exhaustion
CALL:INC T38 FAX REQUEST	This counter is incremented each time T.38 Fax tone is reported for H.323 – SS7 calls
CALL:INC T38 FAX USED	This counter is incremented for each T.38 Fax Call successfully completed for H.323 – SS7 calls
CALL:OTG T38 FAX REQUEST	This counter is incremented each time T.38 Fax tone is reported for SS7 – H.323 calls
CALL:OTG T38 FAX USED	This counter is incremented for each T.38 Fax Call successfully completed for SS7 – H.323 calls
CALL: CoFailCallTOT	Number of calls that failed due to a codec being unavailable

Table B-6 OVL Group Performance Counters

Counter	Description
OVL:LVL1 Duration	Minutes in Level1 Overload Condition
OVL:LVL2 Duration	Minutes in Level2 Overload Condition
OVL:LVL3 Duration	Minutes in Level3 Overload Condition
OVL:LVL0 Duration	Minutes in Level0 Overload Condition
OVL:LVL0-LVL1 TOT	Transitions from Level0 to Level1 Overload Condition
OVL:LVL0-LVL2 TOT	Transitions from Level0 to Level2 Overload Condition
OVL:LVL0-LVL3 TOT	Transitions from Level0 to Level3 Overload Condition

Table B-7 STATE Group Performance Counters

Counter	Description
STATE: CDB ReCord Xmit	Number of CDBs transmitted
STATE: User Count1	User-defined count 1
STATE: User Count2 ... User Count25	User-defined counts 2 through 25

Performance Data Collected for the BAMS

The following performance counts are collected for each BAMS:

- IP performance counters (see [Table B-1](#))
- TCP performance counters (see [Table B-2](#))
- UDP performance counters (see [Table B-3](#))

Other performance information collected for the BAMS are:

- The usage attributes shown in [Table B-8](#)
- Data on system components, such as RAM and disk space. See the “[Performance Data Collected for System Components](#)” section on page B-8.
- Trunk group data. See the “[Performance Data Collected for Signaling and Trunk Group Components](#)” section on page B-10.

Table B-8 BAMS Performance Counters

Counter	Description
SNMP:HOST-RESOURCES-MIB.hrSystemNumUsers	Number of users on the host
SNMP:HOST-RESOURCES-MIB.hrSystemProcesses	Number of processes running on the system

**Note**

In the Map Viewer, access the Performance Manager for the trunk groups by selecting the Trunk Groups folder under the Cisco MGC Host.

Performance Data Collected for the HSI Server

The following performance counts are collected for each HSI server:

Table B-9 HSI Performance Counters

Counter	Description
H323:FAIL H323 ORIG	Number of failed calls that originated in an H323 network
H323:FAIL H323 TERM	Number of failed calls that terminated in an H323 network
H323: SUCC H323 ORIG	Number of successful calls that originated in an H323 network.
H323: SUCC H323 TERM	Number of successful calls that terminated in an H323 network

The following measurement group counts are collected for each HSI server:

- RAS Statistics (see [Table B-38 on page B-29](#))
- Q931 Statistics (see [Table B-39 on page B-30](#))
- H245 Statistics (see [Table B-40 on page B-30](#))

Performance Data Collected for the Cisco SLT

The following performance counts are collected for each Cisco SLT:

- IP performance counters (see [Table B-1](#))
- TCP performance counters (see [Table B-2](#))
- UDP performance counters (see [Table B-3](#))

In addition, the attributes in [Table B-10](#) are collected.

Table B-10 Cisco SLT Performance Counters

Counter	Description
SNMP:OLD-CISCO-CHASSIS-MIB.nvRamUsed	Amount of RAM in use

Performance Data Collected for Cisco SLT TDM Interfaces

The performance counts in [Table B-11](#) are collected for each Cisco SLT TDM interface to the SS7 network.

**Note**

Data can be viewed only in raw, not summarized, form.

Table B-11 TDM Interface Performance Counters

Counter	Description
SNMP:RFC1406-MIB.dsx1TableBESs ¹	Number of bursty errored seconds
SNMP:RFC1406-MIB.dsx1TableCSSs	Number of controlled slip seconds

SNMP:RFC1406-MIB.dsx1	DMs	Number of degraded minutes
SNMP:RFC1406-MIB.dsx1	ESs	Number of errored seconds
SNMP:RFC1406-MIB.dsx1	LCVs	Number of line code violations
SNMP:RFC1406-MIB.dsx1	LESs	Number of line errored seconds
SNMP:RFC1406-MIB.dsx1	PCVs	Number of path coding violations
SNMP:RFC1406-MIB.dsx1	SEFSs	Number of severely errored framing seconds
SNMP:RFC1406-MIB.dsx1	SESs	Number of severely errored seconds
SNMP:RFC1406-MIB.dsx1	UASs	Number of unavailable seconds

1. *Table* refers to the RFC-1406 DSX1 table and is either Current or Total.

Performance Data Collected for the Cisco LAN Switch

The following performance counts are collected for each Cisco LAN switch:

- IP performance counters (see [Table B-1](#))
- TCP performance counters (see [Table B-2](#))
- UDP performance counters (see [Table B-3](#))

In addition, the attributes in [Table B-12](#) are collected for the IOS LAN switch.

IOS LAN Switch Performance Counters

SNMP:OLD-CISCO-CHASSIS-MIB.nvRamUsed	Amount of RAM in use
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The attributes in [Table B-13](#) are collected for the Catalyst LAN switch.

Table B-13 Catalyst LAN Switch Performance Counters

SNMP:CISCO-STACK-MIB.sysTrafficPeak	Peak traffic utilization
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Performance Data Collected for the Cisco 2900XL LAN Switch Port

In addition to the standard interface attributes, the performance counts in [Table B-14](#) are also collected for the Cisco 2900XL port.



Note

Data can be viewed only in raw, not summarized, form.

Table B-14 Cisco 2900XL LAN Switch Port Performance Counters

Counter	Description
SNMP:CISCO-C2900-MIB.c2900PortRxNoBwFrames	Frames discarded due to lack of bandwidth
SNMP:CISCO-C2900-MIB.c2900PortRxNoBufferFrames	Frames discarded due to lack of buffer
SNMP:CISCO-C2900-MIB.c2900PortRxNoDestUniFrames	Number of unicast frames discarded
SNMP:CISCO-C2900-MIB.c2900PortRxNoDestMultiFrames	Number of multicast frames discarded
SNMP:CISCO-C2900-MIB.c2900PortRxFcsErrFrames	Frames received with an FCS error
SNMP:CISCO-C2900-MIB.c2900PortCollFragFrames	Frames whose length was less than 64kb
SNMP:CISCO-C2900-MIB.c2900PortTxMulticastFrames	Frames successfully transmitted (multicast)
SNMP:CISCO-C2900-MIB.c2900PortTxBroadcastFrames	Frames successfully transmitted (broadcast)

Performance Data Collected for Network Interfaces


Note

The TDM interface data applies only to the Cisco SLT; see that section ([Table B-11 on page B-6](#)) for those measurements.

Table B-15 Network Interface Performance Counters¹

Counter	Description
SNMP:IF-MIB.ifInErrors	Number of inbound packets that contained errors preventing them from being delivered to a higher-layer protocol
SNMP:IF-MIB.ifInOctets	Total number of octets received on the interface, including framing characters
SNMP:IF-MIB.ifOutErrors	Number of outbound packets that could not be transmitted because of errors
SNMP:IF-MIB.ifOutOctets	Total number of octets transmitted out of the interface, including framing characters

¹No performance attributes are collected for loopback interfaces.

Performance Data Collected for System Components

The performance of Cisco MGC host and BAMS system components (fixed disks, processors, RAM, and virtual memory) is monitored as described in the following tables.

**Note**

Data can be viewed only in raw, not summarized, form. Performance measurements on system components are collected by the CIAgent application, resident in Cisco MGC Node Manager.

**Note**

Cisco MNM also traps application- and file-system-related events (resource alarms) that occur on the Cisco MGC host and BAMS. See [Appendix A, “Alarm Message Reference.”](#)

**Tip**

System component measurements can be used for threshold crossing alarms. See [Chapter 6, “Managing Faults with Cisco MGC Node Manager.”](#)

Fixed Disk Measurements

The performance counts in [Table B-16](#) are collected for each fixed disk object.

Fixed Disk Performance Counters

Counter	Description
SNMP:HOST-RESOURCES-MIB.hrStorageAllocationFailures	Number of failed allocation requests
SNMP:HOST-RESOURCES-MIB.hrStorageUsed	Amount of storage used

Processor Measurements

The counters in [Table B-17](#) are collected for each processor object.

Table B-17 Processor Performance Counters

Counter	Description
SNMP:HOST-RESOURCES-MIB.hrDeviceErrors	Number of errors detected on the device
SNMP:HOST-RESOURCES-MIB.hrProcessorLoad	Average load on the processor

RAM Measurements

The performance counts in [Table B-18](#) are collected for each RAM object.

Table B-18 RAM Performance Counters

Counter	Description
SNMP:HOST-RESOURCES-MIB.hrStorageAllocationFailures	Number of failed allocation requests
SNMP:HOST-RESOURCES-MIB.hrStorageUsed	Amount of storage used

Table B-22 C7SP Measurement Group

Measurement	Description
C7SP: SP DUR UNAVAIL	Duration unavailable (in seconds)
C7SP: XMIT MSU DROP/RTE	Total number of messages dropped due to routing failure

Table B-23 Data Link (DL) Measurement Group

Measurement	Description
DL: RCV FRMR RESP	Number of bad FRMR responses
DL: RCV SABME	Total number of SABME received
DL: RCV SABMR	Number of DPNSS SABMR received
DL: RCV SEQ	Total number of bad N(R) received
DL: RCV SIZE	Bad frame size
DL: RCV UNSOL	Total number of unsolicited frames
DL: XMIT T200	Total number of T200 expires sent

Table B-24 ISDN User Part (ISUP) Measurement Group

Measurement	Description
ISUP: ABN REL TOT	Total number of abnormal clears
ISUP: AOC TOT	Total number of calls that have invoked the Advice-of-Charge feature
ISUP: CHAN MATE UNAVAILABLE	Total number of channel mates that are unavailable
ISUP: RCV ACM TOT	Number of ACMs received
ISUP: RCV ANM TOT	Number of ANMs received
ISUP: RCV BLA TOT	Number of BLAs received
ISUP: RCV BLO TOT	Number of BLOs received
ISUP: RCV CCR TOT	Number of CCRs received
ISUP: RCV CFN TOT	Number of CFNs received
ISUP: RCV CGBA TOT	Number of CGBAs received
ISUP: RCV CGB TOT	Number of CGBs received
ISUP: RCV CGUA TOT	Number of CGUAs received
ISUP: RCV CGU TOT	Number of CGUs received
ISUP: RCV CON TOT	Number of CONs received
ISUP: RCV COT TOT	Number of COTs received
ISUP: RCV CPG TOT	Number of CPGs received
ISUP: RCV CQM TOT	Number of CQMs received
ISUP: RCV CQR TOT	Number of CQRs received

Table B-24 ISDN User Part (ISUP) Measurement Group (continued)

Measurement	Description
ISUP: RCV CRA TOT	Number of CRAs received
ISUP: RCV CRM TOT	Number of CRMs received
ISUP: RCV CVR TOT	Number of CVRs received
ISUP: RCV CVT TOT	Number of CVTs received
ISUP: RCV EXM TOT	Number of EXMs received
ISUP: RCV FAA TOT	Number of FAAs received
ISUP: RCV FAC TOT	Number of FACs received
ISUP: RCV FAD TOT	Number of FADs received
ISUP: RCV FAR TOT	Number of FARs received
ISUP: RCV FOT TOT	Number of FOTs received
ISUP: RCV FRJ TOT	Number of FRJs received
ISUP: RCV GRA TOT	Number of GRAs received
ISUP: RCV GRS TOT	Number of GRSs received
ISUP: RCV IAM TOT	Number of IAMs received
ISUP: RCV INF TOT	Number of INFs received
ISUP: RCV INR TOT	Number of INRs received
ISUP: RCV LPA TOT	Number of LPAs received
ISUP: RCV MPM TOT	Number of MPMs received
ISUP: RCV MSG TOT	Total messages received
ISUP: RCV PAM TOT	Number of PAMs received
ISUP: RCV REL TOT	Number of RELs received
ISUP: RCV RES TOT	Number of RESs received
ISUP: RCV RLC TOT	Number of RLCs received
ISUP: RCV RSC TOT	Number of RSCs received
ISUP: RCV SAM TOT	Number of SAMs received
ISUP: RCV SGM TOT	Number of SGMs received
ISUP: RCV SUS TOT	Number of SUSs received
ISUP: RCV UBA TOT	Number of UBAs received
ISUP: RCV UBL TOT	Number of UBLs received
ISUP: RCV UCIC TOT	Number of UCICs received
ISUP: RCV USR TOT	Number of USRs received
ISUP: UNEX MSG TOT	Total number of unexpected messages
ISUP: UNREC MSG TOT	Total number of unrecognized messages
ISUP: XMIT ACM TOT	Number of ACMs transmitted
ISUP: XMIT ANM TOT	Number of ANMs transmitted
ISUP: XMIT BLA TOT	Number of BLAs transmitted

Table B-24 ISDN User Part (ISUP) Measurement Group (continued)

Measurement	Description
ISUP: XMIT BLO TOT	Number of BLOs transmitted
ISUP: XMIT CCR TOT	Number of CCRs transmitted
ISUP: XMIT CFN TOT	Number of CFNs transmitted
ISUP: XMIT CGBA TOT	Number of CGBAs transmitted
ISUP: XMIT CGB TOT	Number of CGBs transmitted
ISUP: XMIT CGUA TOT	Number of CGUAs transmitted
ISUP: XMIT CGU TOT	Number of CGUs transmitted
ISUP: XMIT CON TOT	Number of CONs transmitted
ISUP: XMIT COT TOT	Number of COTs transmitted
ISUP: XMIT CPG TOT	Number of CPGs transmitted
ISUP: XMIT CQM TOT	Number of CQMs transmitted
ISUP: XMIT CQR TOT	Number of CQRs transmitted
ISUP: XMIT CRA TOT	Number of CRAs transmitted
ISUP: XMIT CRM TOT	Number of CRMs transmitted
ISUP: XMIT CVR TOT	Number of CVRs transmitted
ISUP: XMIT CVT TOT	Number of CVTs transmitted
ISUP: XMIT EXM TOT	Number of EXMs transmitted
ISUP: XMIT FAA TOT	Number of FAAs transmitted
ISUP: XMIT FAC TOT	Number of FACs transmitted
ISUP: XMIT FAD TOT	Number of FADs transmitted
ISUP: XMIT FAR TOT	Number of FARs transmitted
ISUP: XMIT FOT TOT	Number of FOTs transmitted
ISUP: XMIT FRJ TOT	Number of FRJs transmitted
ISUP: XMIT GRA TOT	Number of GRAs transmitted
ISUP: XMIT GRS TOT	Number of GRSs transmitted
ISUP: XMIT IAM TOT	Number of IAMs transmitted
ISUP: XMIT INF TOT	Number of INFs transmitted
ISUP: XMIT INR TOT	Number of INRs transmitted
ISUP: XMIT LPA TOT	Number of LPAs transmitted
ISUP: XMIT MPM TOT	Number of MPMs transmitted
ISUP: XMIT MSG TOT	Total messages transmitted
ISUP: XMIT PAM TOT	Number of PAMs transmitted
ISUP: XMIT REL TOT	Number of RELs transmitted
ISUP: XMIT RES TOT	Number of RESs transmitted
ISUP: XMIT RLC TOT	Number of RLCs transmitted
ISUP: XMIT RSC TOT	Number of RSCs transmitted

Table B-24 ISDN User Part (ISUP) Measurement Group (continued)

Measurement	Description
ISUP: XMIT SAM TOT	Number of SAMs transmitted
ISUP: XMIT SGM TOT	Number of SGMs transmitted
ISUP: XMIT SUS TOT	Number of SUSs transmitted
ISUP: XMIT UBA TOT	Number of UBAs transmitted
ISUP: XMIT UBL TOT	Number of UBLs transmitted
ISUP: XMIT UCIC TOT	Number of UCICs transmitted
ISUP: XMIT USR TOT	Number of USRs transmitted
ISUP: XMIT UPA TOT	Number of UPAs transmitted
ISUP: RCV UPA TOT	Number of UPAs received
ISUP: XMIT UPT TOT	Number of UPTs transmitted
ISUP: RCV UPT TOT	Number of UPTs received
ISUP: XMIT BELGACOM1 TOT	ISDN UserPart: BELGACOM1 xmitted total.
ISUP: RCV BELGACOM1 TOT	ISDN UserPart: BELGACOM1 rcv total.
ISUP: XMIT BELGACOM2 TOT	ISDN UserPart: BELGACOM2 xmitted total.
ISUP: RCV BELGACOM2 TOT	ISDN UserPart: BELGACOM2 rcv total.
ISUP: XMIT EOH TOT	ISDN UserPart: EOH xmitted total.
ISUP: RCV EOH TOT	ISDN UserPart: EOH rcv total.
ISUP: XMIT EOHA TOT	ISDN UserPart: EOHA xmitted total.
ISUP: RCV EOHA TOT	ISDN UserPart: EOHA rcv total.
ISUP: XMIT NRM TOT	ISDN UserPart: RNG xmitted total.
ISUP: RCV NRM TOT	ISDN UserPart: NRM rcv total.
ISUP: XMIT PRI TOT	ISDN UserPart: PRI xmitted total.
ISUP: RCV PRI TOT	ISDN UserPart: PRI rcv total.
ISUP: XMIT OPR TOT	ISDN UserPart: OPR xmitted total.
ISUP: RCV OPR TOT	ISDN UserPart: OPR rcv total.
ISUP: XMIT CHG TOT	ISDN UserPart: CHG xmitted total.
ISUP: RCV CHG TOT	ISDN UserPart: CHG rcv total.
ISUP: XMIT FWT TOT	ISDN UserPart: FWT xmitted total.
ISUP: RCV FWT TOT	ISDN UserPart: FWT rcv total.
ISUP: XMIT IDR TOT	ISDN UserPart: IDR xmitted total.
ISUP: RCV IDR TOT	ISDN UserPart: IDR rcv total.
ISUP: XMIT IRS TOT	ISDN UserPart: IRS xmitted total.
ISUP: RCV IRS TOT	ISDN UserPart: IRS rcv total.
ISUP: XMIT LPM TOT	ISDN UserPart: LPM xmitted total.
ISUP: RCV LPM TOT	ISDN UserPart: LPM rcv total.
ISUP: XMIT MCID TOT	ISDN UserPart: MCID xmitted total.

Table B-24 ISDN User Part (ISUP) Measurement Group (continued)

Measurement	Description
ISUP: RCV MCID TOT	ISDN UserPart: MCID rcv total.
ISUP: XMIT MCP TOT	ISDN UserPart: MCP xmitted total.
ISUP: RCV MCP TOT	ISDN UserPart: MCP rcv total.

Table B-25 Line Interface (LIF) Measurement Group

Measurement	Description
LIF: CODING VIOLATION	Number of coding violations
LIF: ES	Errored seconds
LIF: FRAME SLIP	Frame slips
LIF: SES	Severely errored seconds

Table B-26 National User Part (NUP) Measurement Group

Measurement	Description
NUP: RCV MSG TOT	Total number of messages received
NUP: UNEX MSG TOT	Total number of unexpected messages
NUP: XMIT MSG TOT	Total number of messages transmitted

Table B-27 PRI Measurement Group

Measurement	Description
PRI: CHAN MATE UNAVAILABLE	Total number of channel mates unavailable

Table B-28 Signal Channel (SC) Measurement Group

Measurement	Description
SC: RCV BAD CRC	Number of frames received with bad CRC
SC: RCV BAD TOT	Total number of bad frames received
SC: RCV FRMR	Number of bad FRMR responses
SC: RCV FRM TOT	Total number of frames received
SC: RCV RESET	Total number of resets received
SC: XMIT FRM TOT	Total number of frames transmitted

Table B-29 Signal Path (SP) Measurement Group

Measurement	Description
SP: Blacklist Call Ctr	Black list threshold counter
SP: cInit in	Number of call-init messages received
SP: cInit out	Number of call-init messages sent
SP: PDU in	Number of messages received
SP: PDU out	Number of messages sent

Table B-30 Telephone User Part (TUP) Measurement Group

Measurement	Description
TUP: ABN REL TOT	Total number of abnormal clears
TUP: CHAN MATE UNAVAILABLE	Total number of channel mates that are unavailable
TUP: RCV ACB TOT	Number of ACBs received
TUP: RCV ACC TOT	Number of ACCs received
TUP: RCV ACM TOT	Number of ACMs received
TUP: RCV ADI TOT	Number of ADIs received
TUP: RCV ANC TOT	Number of ANCs received
TUP: RCV ANN TOT	Number of ANNs received
TUP: RCV ANU TOT	Number of ANUs received
TUP: RCV BLA TOT	Number of BLAs received
TUP: RCV BLO TOT	Number of BLOs received
TUP: RCV CBK TOT	Number of CBKs received
TUP: RCV CCF TOT	Number of CCFs received
TUP: RCV CCL TOT	Number of CCLs received
TUP: RCV CCR TOT	Number of CCRs received
TUP: RCV CFL TOT	Number of CFLs received
TUP: RCV CGC TOT	Number of CGCs received
TUP: RCV CHG TOT	Number of CHGs received
TUP: RCV CLF TOT	Number of CLFs received
TUP: RCV COT TOT	Number of COTs received
TUP: RCV DPN TOT	Number of DPNs received
TUP: RCV EUM TOT	Number of EUMs received
TUP: RCV FOT TOT	Number of FOTs received
TUP: RCV GRA TOT	Number of GRAs received
TUP: RCV GRQ TOT	Number of GRQs received
TUP: RCV GRS TOT	Number of GRSs received

Table B-30 Telephone User Part (TUP) Measurement Group (continued)

Measurement	Description
TUP: RCV GSM TOT	Number of GSMs received
TUP: RCV HBA TOT	Number of HBAs received
TUP: RCV HGB TOT	Number of HGBs received
TUP: RCV HGU TOT	Number of HGUs received
TUP: RCV HUA TOT	Number of HUAs received
TUP: RCV IAI TOT	Number of IAIs received
TUP: RCV IAM TOT	Number of IAMs received
TUP: RCV LOS TOT	Number of LOSs received
TUP: RCV MAL TOT	Number of MALs received
TUP: RCV MBA TOT	Number of MBAs received
TUP: RCV MGB TOT	Number of MGBs received
TUP: RCV MGU TOT	Number of MGUs received
TUP: RCV MPM TOT	Number of MPMs received
TUP: RCV MSG TOT	Total number of messages received
TUP: RCV MUA TOT	Number of MUAs received
TUP: RCV NNC TOT	Number of NNCs received
TUP: RCV OPR TOT	Number of OPRs received
TUP: RCV RAN TOT	Number of RANs received
TUP: RCV RLG TOT	Number of RLGs received
TUP: RCV RSC TOT	Number of RSCs received
TUP: RCV SAM TOT	Number of SAMs received
TUP: RCV SAO TOT	Number of SAOs received
TUP: RCV SBA TOT	Number of SBAs received
TUP: RCV SEC TOT	Number of SECs received
TUP: RCV SGB TOT	Number of SGBs received
TUP: RCV SGU TOT	Number of SGUs received
TUP: RCV SLB TOT	Number of SLBs received
TUP: RCV SSB TOT	Number of SSBs received
TUP: RCV SST TOT	Number of SSTs received
TUP: RCV STB TOT	Number of STBs received
TUP: RCV SUA TOT	Number of SUAs received
TUP: RCV UBA TOT	Number of UBAs received
TUP: RCV UBL TOT	Number of UBLs received
TUP: RCV UNN TOT	Number of UNNs received
TUP: UNEX MSG TOT	Total number of unexpected messages
TUP: UNREC MSG TOT	Total number of unrecognized messages

Table B-30 Telephone User Part (TUP) Measurement Group (continued)

Measurement	Description
TUP: XMIT ACB TOT	Number of ACBs transmitted
TUP: XMIT ACC TOT	Number of ACCs transmitted
TUP: XMIT ACM TOT	Number of ACMs transmitted
TUP: XMIT ADI TOT	Number of ADIs transmitted
TUP: XMIT ANC TOT	Number of ANCs transmitted
TUP: XMIT ANN TOT	Number of ANNs transmitted
TUP: XMIT ANU TOT	Number of ANUs transmitted
TUP: XMIT BLA TOT	Number of BLAs transmitted
TUP: XMIT BLO TOT	Number of BLOs transmitted
TUP: XMIT CBK TOT	Number of CBKs transmitted
TUP: XMIT CCF TOT	Number of CCFs transmitted
TUP: XMIT CCL TOT	Number of CCLs transmitted
TUP: XMIT CCR TOT	Number of CCRs transmitted
TUP: XMIT CFL TOT	Number of CFLs transmitted
TUP: XMIT CGC TOT	Number of CGCs transmitted
TUP: XMIT CHG TOT	Number of CHGs transmitted
TUP: XMIT CLF TOT	Number of CLFs transmitted
TUP: XMIT COT TOT	Number of COTs transmitted
TUP: XMIT DPN TOT	Number of DPNs transmitted
TUP: XMIT EUM TOT	Number of EUMs transmitted
TUP: XMIT FOT TOT	Number of FOTs transmitted
TUP: XMIT GRA TOT	Number of GRAs transmitted
TUP: XMIT GRQ TOT	Number of GRQs transmitted
TUP: XMIT GRS TOT	Number of GRSs transmitted
TUP: XMIT GSM TOT	Number of GSMs transmitted
TUP: XMIT HBA TOT	Number of HBAs transmitted
TUP: XMIT HGB TOT	Number of HGBs transmitted
TUP: XMIT HGU TOT	Number of HGUs transmitted
TUP: XMIT HUA TOT	Number of HUAs transmitted
TUP: XMIT IAI TOT	Number of IAIs transmitted
TUP: XMIT IAM TOT	Number of IAMs transmitted
TUP: XMIT LOS TOT	Number of LOSs transmitted
TUP: XMIT MAL TOT	Number of MALs transmitted
TUP: XMIT MBA TOT	Number of MBAs transmitted
TUP: XMIT MGB TOT	Number of MGBs transmitted
TUP: XMIT MGU TOT	Number of MGUs transmitted

Table B-30 Telephone User Part (TUP) Measurement Group (continued)

Measurement	Description
TUP: XMIT MPM TOT	Number of MPMs transmitted
TUP: XMIT MSG TOT	Number of messages transmitted
TUP: XMIT MUA TOT	Number of MUAs transmitted
TUP: XMIT NNC TOT	Number of NNCs transmitted
TUP: XMIT OPR TOT	Number of OPRs transmitted
TUP: XMIT RAN TOT	Number of RANs transmitted
TUP: XMIT RLG TOT	Number of RLGs transmitted
TUP: XMIT RSC TOT	Number of RSCs transmitted
TUP: XMIT SAM TOT	Number of SAMs transmitted
TUP: XMIT SAO TOT	Number of SAOs transmitted
TUP: XMIT SBA TOT	Number of SBAs transmitted
TUP: XMIT SEC TOT	Number of SECs transmitted
TUP: XMIT SGB TOT	Number of SGBs transmitted
TUP: XMIT SGU TOT	Number of SGUs transmitted
TUP: XMIT SLB TOT	Number of SLBs transmitted
TUP: XMIT SSB TOT	Number of SSBs transmitted
TUP: XMIT SST TOT	Number of SSTs transmitted
TUP: XMIT STB TOT	Number of STBs transmitted
TUP: XMIT SUA TOT	Number of SUAs transmitted
TUP: XMIT UBA TOT	Number of UBAs transmitted
TUP: XMIT UBL TOT	Number of UBLs transmitted
TUP: XMIT UNN TOT	Number of UNNs transmitted

Table B-31 CAS Measurement Group

Measurement	Description
CAS: IN CALL ATMPT TOT	Number of incoming CAS call attempt
CAS: IN CALL SUCC TOT	Number of incoming CAS call successes
CAS: IN SZR ATMPT TOT	Number of incoming CAS seizure attempt
CAS: IN SZR SUCC TOT	Number of incoming CAS seizure success
CAS: IN UNEXPECTED MSG	Number of incoming unexpected messages
CAS: OUT CALL ATMPT TOT	Number of outgoing CAS call attempt
CAS: OUT CALL SUCC TOT	Number of outgoing CAS call successes
CAS: OUT SZR ATMPT TOT	Number of outgoing CAS seizure attempts
CAS: OUT SZR SUCC TOT	Number of outgoing CAS seizure successes

Table B-32 TALI Measurement Group

Measurement	Description
TALI: AVG RSP TIME	Average response time (in milliseconds)
TALI: MAX RSP TIME	Maximum response time (in milliseconds)
TALI: MIN RSP TIME	Minimum response time (in milliseconds)
TALI: RCV ALLO TOT	Allow messages received
TALI: RCV INVALID TOT	Total invalid messages received
TALI: RCV ISUP TOT	ISUP service messages received
TALI: RCV MGMT TOT	Management messages received
TALI: RCV MONA TOT	Monitor acknowledge messages received
TALI: RCV MONI TOT	Monitor messages received
TALI: RCV MTP3 TOT	MTP3 service messages received
TALI: RCV PROA TOT	Prohibit acknowledge messages received
TALI: RCV PROH TOT	Prohibit messages received
TALI: RCV RKRTP TOT	Routing key registration messages received
TALI: RCV SCCP TOT	SCCP service messages received
TALI: RCV TEST TOT	Test service messages received
TALI: RCV VALID TOT	Total valid messages received
TALI: XMIT ALLO TOT	Allow messages sent
TALI: XMIT ISUP TOT	ISUP service messages sent
TALI: XMIT MGMT TOT	Management messages sent
TALI: XMIT MONA TOT	Monitor acknowledge messages sent
TALI: XMIT MONI TOT	Monitor messages sent
TALI: XMIT MTP3 TOT	MTP3 service messages sent
TALI: XMIT PROA TOT	Prohibit acknowledge messages sent
TALI: XMIT PROH TOT	Prohibit messages sent
TALI: XMIT RKRTP TOT	Routing key registration messages sent
TALI: XMIT SCCP TOT	SCCP service messages sent
TALI: XMIT TEST TOT	Test service messages sent
TALI: XMIT TOT	Total messages sent

Table B-33 SIP Link Measurement Group

Measurement	Description
SIPLINK: BAD URL TOT	Total unresolved URL
SIPLINK: DNS CACHE NEW TOT	Total new DNS cache entries
SIPLINK: DNS CACHE PURGE TOT	Total purged DNS cache entries

Table B-33 SIP Link Measurement Group (continued)

SIPLINK: DNS CACHE REFRESHED TOT	Total refreshed DNS cache entries
SIPLINK: DNS QUERY TOT	Total DNS queries
SIPLINK: DNS TIMEOUT TOT	Total DNS query timeouts
SIPLINK: ICMP ERR TOT	Total ICMP errors
SIPLINK: RCV FAIL TOT	Total failed received message
SIPLINK: RCV MSG TOT	Total received message
SIPLINK: XMIT FAIL TOT	Total failed transmitted message
SIPLINK: XMIT MSG TOT	Total transmitted message

Table B-34 SIP Path Measurement Group

Measurement	Description
SIP: RCV 100 TOT	Total 100 (TRYING) messages received
SIP: RCV 180 TOT	Total 180 (RINGING) messages received
SIP: RCV 181 TOT	Total 181 (CALL FORWARDED) messages received
SIP: RCV 182 TOT	Total 182 (QUEUED) messages received
SIP: RCV 183 TOT	Total 183 (SESSION PROGRESS) messages received
SIP: RCV 200 TOT	Total 200 (OK) messages received
SIP: RCV 300 TOT	Total 300 (MULTIPLE CHOICES) messages received
SIP: RCV 301 TOT	Total 301 (MOVED PERMANENTLY) messages received
SIP: RCV 302 TOT	Total 302 (MOVED TEMPORARILY) messages received
SIP: RCV 305 TOT	Total 305 (USE PROXY) messages received
SIP: RCV 380 TOT	Total 380 (ALTERNATIVE SERVICE) messages received
SIP: RCV 400 TOT	Total 400 (BAD REQUEST) messages received
SIP: RCV 401 TOT	Total 401 (UNAUTHORIZES) messages received
SIP: RCV 402 TOT	Total 402 (PAYMENT REQUIRED) messages received
SIP: RCV 403 TOT	Total 403 (FORBIDDEN) messages received
SIP: RCV 404 TOT	Total 404 (NOT FOUND) messages received
SIP: RCV 405 TOT	Total 405 (METHOD NOT ALLOWED) messages received
SIP: RCV 406 TOT	Total 406 (NOT ACCEPTABLE) messages received
SIP: RCV 407 TOT	Total 407 (PROXY AUTHENTICATION REQUIRED) messages received
SIP: RCV 408 TOT	Total 408 (REQUEST TIMEOUT) messages received
SIP: RCV 409 TOT	Total 409 (CONFLICT) messages received
SIP: RCV 410 TOT	Total 410 (GONE) messages received
SIP: RCV 411 TOT	Total 411 (LENGTH REQUIRED) messages received

Table B-34 SIP Path Measurement Group (continued)

Measurement	Description
SIP: RCV 413 TOT	Total 413 (REQUEST ENTITY TOO LARGE) messages received
SIP: RCV 414 TOT	Total 414 (REQUEST-URI TOO LONG) messages received
SIP: RCV 415 TOT	Total 415 (UNSUPPORTED MEDIA TYPE) messages received
SIP: RCV 420 TOT	Total 420 (BAD EXTENSION) messages received
SIP: RCV 480 TOT	Total 480 (TEMPORARILY UNAVAILABLE) messages received
SIP: RCV 481 TOT	Total 481 (CALL LEG/TRANSACTION DOES NOT EXIST) messages received
SIP: RCV 482 TOT	Total 482 (LOOP DETECTED) messages received
SIP: RCV 483 TOT	Total 483 (TOO MANY HOPS) messages received
SIP: RCV 484 TOT	Total 484 (ADDRESS INCOMPLETE) messages received
SIP: RCV 485 TOT	Total 485 (AMBIGUOUS) messages received
SIP: RCV 486 TOT	Total 486 (BUSY HERE) messages received
SIP: RCV 487 TOT	Total 487 (REQUEST CANCELED) messages received
SIP: RCV 500 TOT	Total 500 (INTERNAL SERVER ERROR) messages received
SIP: RCV 501 TOT	Total 501 (NOT IMPLEMENTED) messages received
SIP: RCV 502 TOT	Total 502 (BAD GATEWAY) messages received
SIP: RCV 503 TOT	Total 503 (SERVICE UNAVAILABLE) messages received
SIP: RCV 504 TOT	Total 504 (GATEWAY TIMEOUT) messages received
SIP: RCV 505 TOT	Total 505 (SIP VERSION NOT SUPPORTED) messages received
SIP: RCV 600 TOT	Total 600 (BUSY EVERYWHERE) messages received
SIP: RCV 603 TOT	Total 603 (DECLINE) messages received
SIP: RCV 604 TOT	Total 604 (DOES NOT EXIST ANYWHERE) messages received
SIP: RCV 606 TOT	Total 606 (NOT ACCEPTABLE) messages received
SIP: RCV ACK TOT	Total ACK messages received
SIP: RCV BYE TOT	Total BYE messages received
SIP: RCV CAN TOT	Total CANCEL messages received
SIP: RCV INV TOT	Total INVITE messages received
SIP: RCV INVALID MSG TOT	Total invalid messages received
SIP: RCV MSG TOT	Total messages received
SIP: RCV OPT TOT	Total OPTION messages received
SIP: RCV REG TOT	Total REGISTER messages received

Table B-34 SIP Path Measurement Group (continued)

Measurement	Description
SIP: RETX BYE TOT	Total BYE messages retransmitted
SIP: RETX CAN TOT	Total CANCEL messages retransmitted
SIP: RETX INV TOT	Total INVITE messages transmitted
SIP: RETX MSG TOT	Total messages retransmitted
SIP: RETX REG TOT	Total REGISTER messages retransmitted
SIP: RETX RESP TOT	Total RESPONSE messages retransmitted
SIP: SIP2SIP CALLS ATTEMPT	Total number of SIP to SIP calls attempted
SIP: SIP2SIP CALLS COMPL	Total number of SIP to SIP calls completed
SIP: XMIT 100 TOT	Total 100 (TRYING) messages transmitted
SIP: XMIT 180 TOT	Total 180 (RINGING) messages transmitted
SIP: XMIT 181 TOT	Total 181 (CALL FORWARDED) messages transmitted
SIP: XMIT 182 TOT	Total 182 (QUEUED) messages transmitted
SIP: XMIT 183 TOT	Total 183 (SESSION PROGRESS) messages transmitted
SIP: XMIT 200 TOT	Total 200 (OK) messages transmitted
SIP: XMIT 300 TOT	Total 300 (MULTIPLE CHOICES) messages transmitted
SIP: XMIT 301 TOT	Total 301 (MOVED PERMANENTLY) messages transmitted
SIP: XMIT 302 TOT	Total 302 (MOVED TEMPORARILY) messages transmitted
SIP: XMIT 305 TOT	Total 305 (USE PROXY) messages transmitted
SIP: XMIT 380 TOT	Total 380 (ALTERNATIVE SERVICE) messages transmitted
SIP: XMIT 400 TOT	Total 400 (BAD REQUEST) messages transmitted
SIP: XMIT 401 TOT	Total 401 (UNAUTHORIZES) messages transmitted
SIP: XMIT 402 TOT	Total 402 (PAYMENT REQUIRED) messages transmitted
SIP: XMIT 403 TOT	Total 403 (FORBIDDEN) messages transmitted
SIP: XMIT 404 TOT	Total 404 (NOT FOUND) messages transmitted
SIP: XMIT 405 TOT	Total 405 (METHOD NOT ALLOWED) messages transmitted
SIP: XMIT 406 TOT	Total 406 (NOT ACCEPTABLE) messages transmitted
SIP: XMIT 407 TOT	Total 407 (PROXY AUTHENTICATION REQUIRED) messages transmitted
SIP: XMIT 408 TOT	Total 408 (REQUEST TIMEOUT) messages transmitted
SIP: XMIT 409 TOT	Total 409 (CONFLICT) messages transmitted
SIP: XMIT 410 TOT	Total 410 (GONE) messages transmitted
SIP: XMIT 411 TOT	Total 411 (LENGTH REQUIRED) messages transmitted
SIP: XMIT 413 TOT	Total 413 (REQUEST ENTITY TOO LARGE) messages transmitted

Table B-34 SIP Path Measurement Group (continued)

Measurement	Description
SIP: XMIT 414 TOT	Total 414 (REQUEST-URI TOO LONG) messages transmitted
SIP: XMIT 415 TOT	Total 415 (UNSUPPORTED MEDIA TYPE) messages transmitted
SIP: XMIT 420 TOT	Total 420 (BAD EXTENSION) messages transmitted
SIP: XMIT 480 TOT	Total 480 (TEMPORARILY UNAVAILABLE) messages transmitted
SIP: XMIT 481 TOT	Total 481 (CALL LEG/TRANSACTION DOES NOT EXIST) messages transmitted
SIP: XMIT 482 TOT	Total 482 (LOOP DETECTED) messages transmitted
SIP: XMIT 483 TOT	Total 483 (TOO MANY HOPS) messages transmitted
SIP: XMIT 484 TOT	Total 484 (ADDRESS INCOMPLETE) messages transmitted
SIP: XMIT 485 TOT	Total 485 (AMBIGUOUS) messages transmitted
SIP: XMIT 486 TOT	Total 486 (BUSY HERE) messages transmitted
SIP: XMIT 487 TOT	Total 487 (REQUEST CANCELED) messages transmitted
SIP: XMIT 500 TOT	Total 500 (INTERNAL SERVER ERROR) messages transmitted
SIP: XMIT 501 TOT	Total 501 (NOT IMPLEMENTED) messages transmitted
SIP: XMIT 502 TOT	Total 502 (BAD GATEWAY) messages transmitted
SIP: XMIT 503 TOT	Total 503 (SERVICE UNAVAILABLE) messages transmitted
SIP: XMIT 504 TOT	Total 504 (GATEWAY TIMEOUT) messages transmitted
SIP: XMIT 505 TOT	Total 505 (SIP VERSION NOT SUPPORTED) messages transmitted
SIP: XMIT 600 TOT	Total 600 (BUSY EVERYWHERE) messages transmitted
SIP: XMIT 603 TOT	Total 603 (DECLINE) messages transmitted
SIP: XMIT 604 TOT	Total 604 (DOES NOT EXIST ANYWHERE) messages transmitted
SIP: XMIT 606 TOT	Total 606 (NOT ACCEPTABLE) messages transmitted
SIP: XMIT ACK TOT	Total ACK messages transmitted
SIP: XMIT BYE TOT	Total BYE messages transmitted
SIP: XMIT CAN TOT	Total CANCEL messages transmitted
SIP: XMIT INV TOT	Total INVITE messages transmitted
SIP: XMIT MSG TOT	Total messages transmitted
SIP: XMIT OPT TOT	Total OPTION messages transmitted
SIP: XMIT REG TOT	Total REGISTER messages transmitted

Table B-35 Trunk Group (BAM) Measurement Group

Measurement ¹	Description	Derivation for Selected Measurements
BAM:EGR CALL ATT	Outgoing call attempts	Pegged when a 1010 CDB is recorded w/4015 or when 1030 is recorded w/4015
BAM:EGR CALL BLKD	Outgoing attempts blocked	4015 populated, 1030 or 1040 with (Cause Code) Tag {2008, 3008} == {21, 25, 27, 29, 34, 38, 41, 42, 44, 46, 47, 53, 63}
BAM:EGR CONV DURATION	Conversation duration egress	—
BAM:EGR OFL BLKD	Overflow, outgoing attempts blocked	—
BAM:EGR PCT TRK USE	Percent trunk group usage outgoing	Measured as a percentage of time that circuits are occupied based on the total number of circuits belonging to a trunk group over the provisioned interval of measurement. Any circuit on Tag 4015 triggers this measurement from CDB Tag 1010. The starting time point is the earlier of 4100 or 4101; the end time point is in the 1040 CDB, the later of tag 4108 or 4109.
BAM:EGR SETUP DURATION	Setup duration egress	—
BAM:ERG SUCCESSFUL H.323		—
BAM:EGR TANDEM ATT	Tandem routing attempts, outgoing	—
BAM:EGR TANDEM COMPLT	Tandem completions, outgoing	—
BAM:EGR TANDEM DUR	Tandem duration, outgoing	—
BAM:EGR TEARDOWN DURATION	Teardown duration egress	—
BAM:EGR TERM NORM	Successful calls outgoing	Pegged when 1030 or 1040 CDB recorded with 4015 populated and {2008 or 3008} == {16, 17, 18, 19}
BAM:ERG UNSUCCESSFUL H3.323	—	—
BAM:TTL FAILED CONGEST	—	Peg for all 1030 or 1040 where {2008 or 3008} == {42, 44, 47}
BAM:IGR CALL ATT	Call attempts incoming	Pegged when a 1010 CDB is recorded w/4008 or when 1030 is recorded w/4008

Measurement ¹	Description	Derivation for Selected Measurements
BAM:IGR CONV DURATION	Conversation duration ingress	—
BAM:IGR PCT TRK USE	Percent trunk group usage incoming	Measured as a percentage of time that circuits are occupied based on the total number of circuits belonging to a trunk group over the provisioned interval of measurement. Any circuit on Tag 4008 triggers this measurement from CDB Tag 1010. The starting time point is the earlier of 4100 or 4101; the end time point is in the 1040 CDB, the later of tag 4108 or 4109.
BAM:IGR SETUP DURATION	Setup duration ingress	—
BAM:IRG SUCCESSFUL H.323	—	—
BAM:IGR TANDEM ATT	—	—
BAM:IGR TANDEM COMPLT	Tandem completions, outgoing	—
BAM:IGR TANDEM DUR	Tandem duration, incoming	—
BAM:IGR TEARDOWN DURATION	Teardown duration ingress	—
BAM:IGR TERM NORM	Successful calls incoming	Peg for all 1030 or 1040 CDB where 4008 is populated and {2008 or 3008} == {16, 17, 18, 19}
BAM:IRG UNSUCCESSFUL H.323	—	—
BAM:TTL CALL ROUTING I	—	—
BAM:TTL CALL ROUTING II	—	—
BAM:TTL CALL ROUTING III	—	—
BAM:TTL CALLS REJECTED	Calls rejected	—
BAM:TTL CARRIERSELECT PRESUBSCRIBED NIPT	—	—
BAM:TTL CARRIERSELECT PRESUBSCRIBED INPT	—	—
BAM:TTL CARRIERSELECT PRESUBSCRIBED WNI	—	—
BAM:TTL CARRIERSELECT NOTPRESUBSCRIBED	—	—
BAM:TTL ERLANGS	Total traffic in erlangs	—

Measurement ¹	Description	Derivation for Selected Measurements
BAM:TTL CIC DEFINED	Average number of defined CICs during the measurement period.	Number of circuits provisioned in the trunkgroup table
BAM:TTL AVLBL CIC	Average number of available CICs during the measurement period.	= total - maintDuration / intervalLength where total = Total number of circuits maintDuration = total maintenance duration, see BAM:TTL MAINT USE below for details; intervalLength = total number of seconds for the measurement period.
BAM:TTL MAINT USE	Maintenance duration per trunk group	Measured as a percentage of time that circuits are unavailable, based on the total number of circuits belonging to a trunk
BAM:TTL REJECTED DIALNUM	Calls rejected, unknown dialed number	—
BAM:TTL REJECTED OTHER	Calls rejected, other reasons	—
BAM:TTL TERM ABNORM	Calls terminated abnormally	—
BAM:TTL TERM FAILED MGW	Calls terminated, failed MGW or NAS	—
BAM:TTL TERM NORM	Total calls terminated normally	—
BAM:TTL TRAFFIC USAGE PEGS	Total sum of usage pegs per trunk group (not including maintenance pegs)	—

1. For a complete description of BAMS measurements, refer to the Billing and Measurement Server User's Guide for your version of BAMS.

Counter	Description
TCAP:MSG XMIT	Total TCAP messages transmitted
TCAP:QWP XMIT	Total query with permission transmitted
TCAP:RSP XMIT	Total response messages transmitted
TCAP:UNI XMIT	Total unidirectional messages transmitted
TCAP:ABT XMIT	Total abort messages
TCAP:MSG RCV	Total TCAP messages received

Counter	Description
TCAP:QWP RCV	Total query with permission received
TCAP:RSP RCV	Total response messages received
TCAP:UNI RCV	Total unidirectional messages received
TCAP:MSG DROP	Total messages dropped
TCAP:MSG UNREC	Total unrecognized messages
TCAP:ABT RCV	Total abort messages received
TCAP:BEGIN XMIT	Total number of TCAP BEGIN messages transmitted. This measurement is valid only for ETSI and ITU TCAP.
TCAP:BEGIN RCV	Total number of TCAP BEGIN messages received. This measurement is valid only for ETSI and ITU TCAP.
TCAP:END XMIT	Total number of TCAP END messages transmitted. This measurement is valid only for ETSI and ITU TCAP.
TCAP:END RCV	Total number of TCAP END messages received. This measurement is valid only for ETSI and ITU TCAP.
TCAP:CONTINUE XMIT	Total number of TCAP CONTINUE messages transmitted. This measurement is valid only for ETSI and ITU TCAP.
TCAP:CONTINUE RCV	Total number of TCAP CONTINUE messages received. This measurement is valid only for ETSI and ITU TCAP.
TCAP:CONV XMIT	Total number of TCAP CONVERSATION messages transmitted. This measurement is valid only for ETSI and ITU TCAP.
TCAP:CONV RCV	Total number of TCAP CONVERSATION messages received. This measurement is valid only for ETSI and ITU TCAP.

Counter	Description
SCCP:ROUTING FAILURE	Total routing failure
SCCP:UDT XMIT	Total unit data messages transmitted
SCCP:UDTS XMIT	Total unit data service messages transmitted
SCCP:UDT RCV	Total unit data messages received
SCCP:UDTS RCV	Total unit data service messages received
SCCP:TOTAL MSG	Total messages handled

Measurement	Description
RAS:GK DISC ATT TOT	Gatekeeper Discovery Attempts
RAS: GK REG ATT TOT	Registration Request Attempts

Table B-38 RAS Measurement Group (continued)

Measurement	Description
RAS:GK REG SUCC TOT	Registration Request Successes
RAS:GK RCV UNR ATT TOT	GK Initiated Unregistration Attempts
RAS:GK XMIT UNR SUCC TOT	GK Initiated Unregistration Successes
RAS:GK XMIT UNR ATT TOT	TC Initiated Unregistration Attempts
RAS: GK RCV UNR SUCC TOT	TC Initiated Unregistration Successes
RAS:GK RLS ATT TOT	Disengage Attempts
RAS:GK RLS SUCC TOT	Disengage Successes
RAS:GK INFO REPORT TOT	Information Reports

Q.931 Measurement Group

Measurement	Description
Q931:FC INC CALL ATT TOT	H.225 Incoming Fast Connect Call Attempts
Q931:FC INC CALL SUCC TOT	H.225 Incoming Fast Connect Call Successes
Q931:FC OTG CALL ATT TOT	H.225 Incoming Fast Connect Call Successes
Q931:FC OTG CALL SUCC TOT	H.225 Outgoing Fast Connect Call Successes
Q931:V1 INC CALL ATT TOT	H.225 Incoming Version 1 Call Attempts
Q931:V1 INC CALL SUCC TOT	H.225 Incoming Version 1 Call Successes
Q931:V1 OTG CALL ATT TOT	H.225 Outgoing Version 1 Call Attempts
Q931:V1 OTG CALL SUCC TOT	H.225 Outgoing Version 1 Call Successes
Q931:INC NORM REL TOT	H.225 Incoming Call Normal Releases
Q931:INC ABNORM REL TOT	H.225 Incoming Call Abnormal Releases
Q931:OTG NORM REL TOT	H.225 Outgoing Call Normal Releases
Q931:OTG ABNORM REL TOT	H.225 Outgoing Call Abnormal Releases
Q931:H323 INTERWORK SUCC TOT	H323-H323 hairpinned calls
Q931:PGW T38 FAX ATT TOT	T.38 fax call requests
Q931:PGW T38 FAX SUCC TOT	T.38 fax calls successfully reconfigured

Table B-40 H.245 Measurement Group

Measurement	Description
H245:MASTER SLAVE ATT TOT	H.245 Master Slave Determination Attempts
H245:MASTER SLAVE SUCC TOT	H.245 Master Slave Determination Successes
H245:TERM CAP XCHG ATT TOT	H.245 Terminal Capability Exchange Attempts
H245:TERM CAP XCHG SUCC TOT	H.245 Terminal Capability Exchange Successes
H245:OPEN CH ATT TOT	H.245 Open Logical Channel Attempts
H245:OPEN CH SUCC TOT	H.245 Open Logical Channel Successes
H245:CLOSE CH ATT TOT	H.245 Close Logical Channel Attempts

Table B-40 H.245 Measurement Group (continued)

Measurement	Description
H245:CLOSE CH SUCC TOT	H.245 Close Logical Channel Successes
H245:AVG ROUND TRIP DELAY	H.245 Round Trip Delay Determination
H245:EMPTY CAP SET TOT	Total number of empty TCS exchanges
H245:H323 T38 FAX ATT TOT	Total of T.38 fax call requests from remote peer
H245:H323 T38 FAX SUCC TOT	Total of successfully reconfigured T.38 fax call requests from remote peer
H245:ASYMMETRIC TOT	Total of asymmetric conditions encountered
H245:DTMF RELAY TOT	Total calls using DTMF relay

Table B-41 H.323 Measurement Group

Counter	Description
H323:FAIL H323 ORIG	Number of failed calls that originated in an H323 network
H323:FAIL H323 TERM	Number of failed calls that terminated in an H323 network
H323: SUCC H323 ORIG	Number of successful calls that originated in an H323 network.
H323: SUCC H323 TERM	Number of successful calls that terminated in an H323 network

Table B-42 SCTP Association Measurement Group

Counter	Description
SCTP: OOTB	Out of Blue Packets Received (ootb)
SCTP: InvalidChksum	Checksum Error Packets Received (invalidAdler)
SCTP: CtrlTx	Control Chunks Sent (numControlChunksSent)
SCTP: OrdDataTx	Ordered Data Chunks Sent (numDataChunksSentOrdered)
SCTP: UnordDataTx	Unordered Data Chunks Sent (numDataChunksSentUnordered)
SCTP: CtrlRx	Control Chunks Received (numControlChunksRcvd)
SCTP: OrdDataRx	Ordered Data Chunks Received (numDataChunksRcvdOrdered)
SCTP: UnordDataRx	Unordered Data Chunks Received (numDataChunksRcvdUnordered)
SCTP: DataSegTx	SCTP Data Segments Sent (numSctpDataDgramsSent)

Table B-42 SCTP Association Measurement Group

Counter	Description
SCTP: DataSegRx	SCTP Data Segments Received (numSctpDataDgramsRcvd)
SCTP: AssocFailures	Count of Association Failures (assocCommLost)
SCTP: DestFailures	Count of Destination Failures (destAddrFailed)
SCTP: PeerRestarted	Count of Peer Restarts (peerRestarted)

Table B-43 IUA Association Measurement Group

Counter	Description
IUA: ASPUpTx	Number of ASP Up messages sent from MGC to the gateway on this SCTP association, indicating to gateway that it is ready to receive traffic or maintenance messages.
IUA: ASPUpAckRx	Numbers of ASP Up Acknowledgement messages received by the MGC from the gateway on this SCTP association, these messages acknowledge ASP Up messages.
IUA: ASPDnTx	Number of ASP Down Sent messages sent from the MGC to the gateway on this SCTP association, indicating to the gateway that it is NOT ready to receive traffic or maintenance messages.
IUA: ASPDnAckRx	Numbers of ASP Down Acknowledgement messages received by the MGC from the gateway on this SCTP association, these messages acknowledge ASP Down messages.
IUA: ASPActTx	Number of ASP Active messages sent from MGC to the gateway on this SCTP association, indicating to gateway that it is Active and ready to be used.
IUA: ASPActAckRx	Numbers of ASP Active Acknowledgement messages received by the MGC from the gateway on this SCTP association, these messages acknowledge ASP Active messages.
IUA: ASPInactTx	Number of ASP Inactive messages sent from MGC to the gateway on this SCTP association, indicating to gateway that it is no longer an active ASP.
IUA: ASPInactAckRx	Numbers of ASP Inactive Acknowledgement messages received by the MGC from the gateway on this SCTP association, these messages acknowledge ASP Inactive messages.

Table B-43 IUA Association Measurement Group

Counter	Description
IUA: ErrorRx	Numbers of Error messages received by the MGC from the gateway on this SCTP association, these messages indicate various errors. See the platform log for information on individual errors.
IUA: NotifyRx	Numbers of Notify messages received by the MGC from the gateway on this SCTP association, these messages provide autonomous indications of IUA events on the gateway.
IUA: DataRqt	Number of Data messages sent from MGC to the gateway on this SCTP association, which are to be transmitted by the Q.921 layer using the acknowledged information transfer service.
IUA: DataInd	Number of Data messages received by the MGC from the gateway on this SCTP association, which have been received by the Q.921 layer using the acknowledged information transfer service.
IUA: UnitDataRqt	Number of Data messages sent from MGC to the gateway on this SCTP association, which are to be transmitted by the Q.921 layer using the unacknowledged information transfer service.
IUA: UnitDataInd	Number of Data messages received by the MGC from the gateway on this SCTP association, which have been received by the Q.921 layer using the unacknowledged information transfer service.
IUA: EstRqt	Number of requests to establish this SCTP association.
IUA: EstConf	Number of confirms that IUA has established an SCTP association with the gateway.
IUA: EstInd	Number of times the gateway has informed Link Management that the MGC has established an SCTP association.
IUA: RelRqt	Number of requests to release an SCTP association with gateway.
IUA: RelConf	Number of confirms that IUA has released an SCTP association with the gateway.
IUA: RelInd	Number of times the gateway has informed Link Management that the MGC has released an SCTP association.

Table B-44 M3UA SGP Measurement Group

Counter	Description
M3UA: ErrorTx	Number of error messages transmitted
M3UA: ErrorRx	Number of error messages received
M3UA: NotifyTx	Number of notify messages transmitted
M3UA: NotifyRx	Number of notify messages received
M3UA: DunaRx	Number of DUNA messages received
M3UA: DavaRx	Number of DAVA messages received
M3UA: DaudTx	Number of DAUD messages transmitted
M3UA: SconRx	Number of SCON messages received
M3UA: DrstRx	Number of DRST messages received
M3UA: DupuRx	Number of DUPU messages transmitted
M3UA: ASPUpTx	Number of ASP UP messages transmitted
M3UA: ASPDnTx	Number of ASP DOWN messages transmitted
M3UA: ASPUpAckRx	Number of ASP UP acknowledgements received
M3UA: ASPDnAckRx	Number of ASP DOWN acknowledge messages received
M3UA: ASPActTx	Number of ASP ACTIVE messages transmitted
M3UA: ASPInactTx	Number of ASP INACTIVE messages transmitted
M3UA: ASPActAckRx	Number of ASP ACTIVE ACK messages received
M3UA: ASPInactAckRx	Number of ASP INACTIVE ACK messages received
M3UA: DataXferTx	Number of DATA transfer messages transmitted
M3UA: DataXferRx	Number of DATA transfer messages received
M3UA: DataBytesTx	Number of M3UA data bytes transmitted
M3UA: DataBytesRx	Number of M3UA data bytes received
M3UA: InvSctpSig	Number of invalid SCTP signals received by M3UA
M3UA: AssocFail	Number of SCTP association failures
M3UA: AssocTxFail	Number of transmit SCTP failures
M3UA: RxVersionErr	Number of messages received with an invalid version.
M3UA: RxMsgClassErr	Number of received messages with an unexpected or unsupported Message Class.
M3UA: RxMsgTypeErr	Number of messages received with an unexpected or unsupported Message Type
M3UA: RxMsgLenErr	Number of messages received with message length error

Table B-44 M3UA SGP Measurement Group

Counter	Description
M3UA: RxStrmIdErr	Number of messages received with stream ID error - when a message is received on an unexpected SCTP stream (e.g., a Management message was received on a stream other than "0")
M3UA: RxUnexpMsgErr	Number of unexpected messages received - a defined and recognized message is received that is not expected in the current state
M3UA: RxProtErr	Number of messages received with protocol errors - for any protocol anomaly (i.e., reception of a parameter that is syntactically correct but unexpected in the current state).
M3UA: RxParValErr	Number of messages received with parameter value errors
M3UA: RxParmFieldErr	Number of messages received with a parameter having a wrong length field
M3UA: RxUnexpParmErr	Number of messages received that contain one or more invalid parameters
M3UA: RxNtwkAppErr	Number of messages received with an invalid (unconfigured) Network Appearance.
M3UA: RouteCntxErr	Number of messages received with an invalid (unconfigured) Routing Context.
M3UA: RxNoMemErr	Number of messages that were dumped because memory ran out (buffer overflow).

Table B-45 SUA SGP Measurement Group

Counter	Description
SUA: ErrorTx	Number of error messages transmitted
SUA: ErrorRx	Number of error messages received
SUA: NotifyTx	Number of notify messages transmitted
SUA: NotifyRx	Number of notify messages received
SUA: DunaRx	Number of DUNA messages received
SUA: DavaRx	Number of DAVA messages received
SUA: DaudTx	Number of DAUD messages transmitted
SUA: SconRx	Number of SCON messages received
SUA: DrstRx	Number of DRST messages received
SUA: DupuRx	Number of DUPU messages transmitted
SUA: ASPUpTx	Number of ASP UP messages transmitted
SUA: ASPDnTx	Number of ASP DOWN messages transmitted

Table B-45 SUA SGP Measurement Group

Counter	Description
SUA: ASPUpAckRx	Number of ASP UP acknowledgements received
SUA: ASPDnAckRx	Number of ASP DOWN acknowledge messages received
SUA: ASPActTx	Number of ASP ACTIVE messages transmitted
SUA: ASPInactTx	Number of ASP INACTIVE messages transmitted
SUA: ASPActAckRx	Number of ASP ACTIVE ACK messages received
SUA: ASPInactAckRx	Number of ASP INACTIVE ACK messages received
SUA: CldtTx	Connectionless Data Transfers sent
SUA: CldrRx	Connectionless Data Responses received
SUA: DataBytesTx	Number of SUA data bytes transmitted
SUA: DataBytesRx	Number of SUA data bytes received
SUA: InvSctpSig	Number of invalid SCTP signals received by SUA
SUA: AssocFail	Number of SCTP association failures
SUA: AssocTxFail	Number of transmit SCTP failures
SUA: RxVersionErr	Number of messages received with an invalid version.
SUA: RxMsgClassErr	Number of received messages with an unexpected or unsupported Message Class.
SUA: RxMsgTypeErr	Number of messages received with an unexpected or unsupported Message Type
SUA: RxMsgLenErr	Number of messages received with message length error
SUA: RxStrmIdErr	Number of messages received with stream ID error - when a message is received on an unexpected SCTP stream (e.g., a Management message was received on a stream other than "0")
SUA: RxUnexpMsgErr	Number of unexpected messages received - a defined and recognized message is received that is not expected in the current state
SUA: RxProtErr	Number of messages received with protocol errors - for any protocol anomaly (i.e., reception of a parameter that is syntactically correct but unexpected in the current state).
SUA: RxParmValErr	Number of messages received with parameter value errors
SUA: RxParmFieldErr	Number of messages received with a parameter having a wrong length field
SUA: RxUnexpParmErr	Number of messages received that contain one or more invalid parameters

Table B-45 SUA SGP Measurement Group

Counter	Description
SUA: RxNtwkAppErr	Number of messages received with an invalid (unconfigured) Network Appearance.
SUA: RouteCntxErr	Number of messages received with an invalid (unconfigured) Routing Context.
SUA: RxNoMemErr	Number of messages that were dumped because memory ran out (buffer overflow).

