A P P E N D I X   D

Statistics Summary

This appendix defines the statistics that are collected from the following nodes:

- Cisco MGX 8880 PXM45-based
- Cisco MGX 8850 PXM45-based

D.1 Data Transmission Process Overview details how data travels through two cards that are connected across the bus.

The statistics are categorized under a major grouping known by an object type name and organized by the subobject type number. Within the subtype, each statistic contains a statistic type number.

The following sections provide the reporting parameters for the various statistic types:

- D.1 Data Transmission Process Overview
- D.2 Service Line Statistics
- D.3 Port Statistics
- D.4 Card Statistics
- D.5 Path Statistics
- D.6 PNNI Network Statistics
- D.7 Protocol Statistics
- D.8 Physical Line Statistics

The statistics are organized in ascending order by object type then subobject type.

> **Note** The IDs of the statistics that are collected by Cisco MGM do not correspond to the IDs of the statistics that are collected by the switch.

D.1 Data Transmission Process Overview

Statistics are collected at different points during data transmission. Figure 1 shows how data travels through two cards that are connected across the bus.

Figure 1   *Data Flow Through Two Cards Connected Across a Bus*
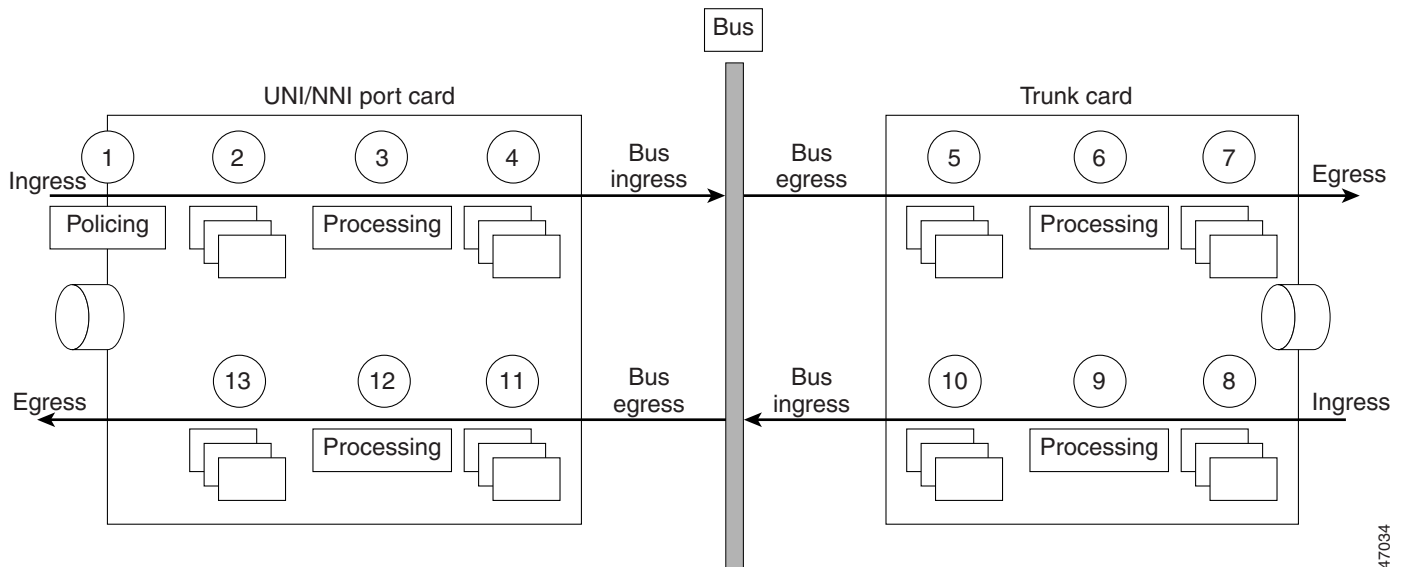
The ingress direction describes traffic that travels toward the bus. The egress direction describes traffic that travels from the bus.

The numbers in Figure 1 correspond to the points at which statistics are collected. Points 1–7 show data on the incoming path with policing. Points 8–13 show data on the return path without policing.

- 1—Data enters the UNI/NNI port card (ingress).
- 2—Data is queued (ingress).
- 3—Data is scheduled for admission onto the bus (ingress).
- 4—Data is queued for going onto the bus (ingress).
- 5—Data is queued for being taken off the bus (egress).
- 6—Data is processed on the trunk card (egress).
- 7—Data is queued for going out the trunk (egress).
- 8—Data enters the card from the trunk (ingress).
- 9—Data is scheduled for admission onto the bus (ingress).
- 10—Data is queued for going onto the bus (ingress).
- 11—Data is queued for being taken off the bus (egress).
- 12—Data is processed on the port card (egress).
- 13—Data is queued for going out the port (egress).

Note   The data flow process might vary depending on the card type. See the corresponding sections in this chapter.

D.1 Connection Statistics

The following connection statistics are applicable:

D.1.1 AXSM Connection

This section provides information about the statistics contained in the AXSM_ATM_conn group. This group contains statistics that are applicable AXSM card on the Cisco MGX 8850 PXM45-based switch.

Table D-1 lists the attributes that are common to all of the AXSM connection statistics.

Table D-1   Attributes Common to all AXSM Connection Statistics

Object	Attribute
Front Cards	MGX-AXSM-16-T3E3, MGX-AXSM-16-155, MGX-AXSM-4-622, MGX-AXSM-1-2488
Back Cards	MGX-SMB-8-T3, MGX-SMB-8-E3, MGX-SMB-4-155, MGX-SMFIR-8-155, MGX-SMFLR-8-155, MGX-MMF-8-155, MGX-SMFLR-2-622, MGX-SMFIR-2-622, MGX-SMFSR-1-2488, MGX-SMFLR-1-2488, MGX-SMFXLR-1-2488
Object Type	0
Subobject Type	12
Default Peak Interval	300 seconds

The AXSM connection statistics are used primarily for gathering billing data.

Table D-2 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Table D-2   AXSM Connection Statistics—Descriptions

Stat ID	AXSM Connection Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Ingress CLP0 Cells From Port	No	Ingress–2, 8	Provides a count of the ingress cells with cell loss priority (CLP) equal to 0 that are received. Range: 0 to $(2^{40}-1)$ cells
1	Ingress CLP1 Cells From Port	No	Ingress–2, 8	Provides a count of the ingress cells with CLP equal to 1 that are received. Range: 0 to $(2^{40}-1)$ cells

Table D-2   AXSM Connection Statistics—Descriptions (continued)

Stat ID	AXSM Connection Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
2	Ingress CLP0 cells discarded	Ingress CLP0+1 cells discarded	Ingress–2, 8	Provides a count of the ingress cells with CLP equal to 0 that are discarded due to policing. Range: 0 to $(2^{40}-1)$ cells
3	Ingress CLP0+1 cells discarded	No	Ingress–2, 8	Provides a count of the total ingress cells with CLP (0+1) that are discarded due to policing. Range: 0 to $(2^{40}-1)$ cells
4	Ingress CLP0+1 non-compliant cells	No	Ingress–2, 8	Provides a count of the total cells that are non-compliant as a result of policing. Depending on the configuration, this count includes cells that are tagged non-compliant or are discarded. Range: 0 to $(2^{40}-1)$ cells
5	Ingress EFCI=1 Cells From Port	No	Ingress–3, 9	Provides a count of the ingress explicit forward congestion indication (EFCI) cells. Range: 0 to $(2^{40}-1)$ cells
6	Ingress EOF=1 Cells From Port	No	Ingress–3, 9	Provides a count of the ingress end of frame (EOF) cells. Range: 0 to $(2^{40}-1)$ cells
7	Egress CLP0 Cells to Port	No	Egress–7, 13	Provides a count of the egress cells with CLP equal to 0. Range: 0 to $(2^{40}-1)$ cells
8	Egress CLP1 Cells to Port	No	Egress–7, 13	Provides a count of the egress cells with CLP equal to 1. Range: 0 to $(2^{40}-1)$ cells
9	Egress EFCI=1 Cells to Port	No	Egress–6, 12	Provides a count of the egress cells with EFCI equal to 1. Range: 0 to $(2^{40}-1)$ cells
10	Egress EOF=1 Cells to Port	No	Egress–6, 12	Provides a count of the egress cells with EOF equal to 1. Range: 0 to $(2^{40}-1)$ cells

D.1.2 AXSM-E Connection

This section provides information about the statistics contained in the AXSME_ATM_conn group. The AXSM-E connection statistics in this group are applicable to the Cisco MGX 8850 PXM45-based switch.

Table D-3 lists the attributes that are common to the AXSM-E connection statistics.

Table D-3   AXSM-E Connection Statistics—Common Attributes

Object	Attribute
Front Cards	AXSM-2-622-E, AXSM-8-155-E, AXSM-16-T3E3-E
Back Cards	SMFLR-1-622, SMFIR-1-622, SMFLR-4-155, SMFIR-4-155, MMF-4-155, SMB-4-155, SMB-8-T3, SMB-8-E3
Object Type	0
Subobject Type	13
Allowable Peak Intervals	60 seconds, 300 seconds
Default Peak Interval	300 seconds

The AXSM-E connection statistics are used primarily for gathering troubleshooting and performance data.

Table D-4 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Note   AXSM-E statistics are only collected at measurement points 1, 2, and 13.

Table D-4   AXSM-E Connection Statistics—Descriptions

Stat ID	AXSM-E Connection Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
1	CLP1 non-compliant cells	Tagged non compliant cells	Ingress–1	Provides a count of the discarded cells with cell loss priority (CLP) bit equal to 1 that are tagged non-compliant. Range: 0 to $(2^{40}-1)$ cells
2	CLP0 non-compliant cells	Tagged non compliant cells	Ingress–1	Provides a count of the discarded cells with CLP equal to 0 that are tagged non-compliant. Range: 0 to $(2^{40}-1)$ cells
3	Tagged non compliant cells	No	Ingress–1	Provides a count of the total number of cells that are tagged non-compliant. These cells are received at the port. Range: 0 to $(2^{40}-1)$ cells

Table D-4   AXSM-E Connection Statistics—Descriptions (continued)

Stat ID	AXSM-E Connection Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
5	CLP0 cells from port	No	Ingress–1	Provides a count of the cells with CLP equal to 0. These cells are received from the port before policing. Range: 0 to $(2^{40}-1)$ cells
6	CLP1 cells from port	No	Ingress–1	Provides a count of the cells with CLP equal to 1. These cells are received from the port before policing. Range: 0 to $(2^{40}-1)$ cells
8	EFCI=1 cells from the port	No	Ingress–2	Provides a count of the cells with the explicit forward congestion indication (EFCI) equal to 1. These cells are received from the port. Range: 0 to $(2^{40}-1)$ cells
12	EFCI=1 cells to the network	No	Ingress–2	Provides a count of the cells with EFCI equal to 1 that are transmitted to the bus after policing. Range: 0 to $(2^{40}-1)$ cells
14	Ingress CLP0 cells discarded in qe	No	Ingress–2	Provides a count of the cells with CLP equal to 0 that are discarded due to an overflow in the queuing engine. Range: 0 to $(2^{40}-1)$ cells
15	Ingress CLP1 cells discarded in qe	No	Ingress–2	Provides a count of the cells with CLP equal to 1 that are discarded due to an overflow in the queuing engine. Range: 0 to $(2^{40}-1)$ cells
19	CLP1 cells to the port	No	After 13	Provides a count of the cells with CLP equal to 1 that are transmitted to the port. Range: 0 to $(2^{40}-1)$ cells
20	CLP0 cells to the port	No	After 13	Provides a count of the cells with CLP equal to 0 that are transmitted to the port. Range: 0 to $(2^{40}-1)$ cells
23	EFCI=1 cells to the port	No	Egress–13	Provides a count of the cells with EFCI equal to 1 that are transmitted to the port. Range: 0 to $(2^{40}-1)$ cells
28	EFC1=1 cells from the network	No	Egress–13	Provides a count of the cells with EFCI equal to 1 that are received from the bus prior to queuing. Range: 0 to $(2^{40}-1)$ cells

Table D-4   AXSM-E Connection Statistics—Descriptions (continued)

Stat ID	AXSM-E Connection Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
30	Egress CLP0 cells discarded in qe	No	Egress–13	Provides a count of the cells with CLP equal to 0 that are discarded due to an overflow in the queuing engine. Range: 0 to (2^{40}–1) cells
31	Egress CLP1 cells discarded in qe	No	Egress–13	Provides a count of the cells with CLP equal to 1 that are discarded due to an overflow in the queuing engine. Range: 0 to (2^{40}–1) cells

D.1.3 VXSM ATM Connection Statistics

This section provides information about the statistics contained in the VXSM_ATM_conn group. The VXSM connection statistics are applicable to the VXSM cards on the Cisco MGX 8880 PXM45-based nodes and the Cisco MGX 8850 PXM45-based nodes.

Table D-5 lists the attributes that are common to all of the VXSM connection statistics.

Table D-5   Attributes Common to all VXSM Connection Statistics

Object	Attribute
Front Card	VXSM
Back Card	VXSM-BC-4-155
Object Type	0
Subobject Type	17
Default Peak Interval	300 seconds

Table D-6 includes the VXSM ATM connection statistics.

Table D-6   VXSM ATM Connection Statistics—Descriptions

Stat ID	VXSM ATM Connection Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Total Ingress Cells from port	—	Ingress	Provides a count of the total ingress cells. Range: 0 to (2^{64}–1)
1	CLP0 cells from port (before policing)	—	Ingress–1	Provides a count of the ingress cells with cell loss priority (CLP) equal to 0 that are received prior to policing. Range: 0 to (2^{64}–1)
2	CLP1 cells from port (before policing)	—	Ingress–1	Provides a count of the ingress cells with cell loss priority (CLP) equal to 1 that are received prior to policing. Range: 0 to (2^{64}–1)

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Table D-6   VXSM ATM Connection Statistics—Descriptions (continued)

Stat ID	VXSM ATM Connection Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
3	EFCI=1 CLP0 cells from the port	—	Ingress	Provides a count of the CLP0 cells with the explicit forward congestion indication (EFCI) equal to 1. These cells are received from the port. Range: 0 to $(2^{64}–1)$
4	EFCI=1 CLP1 cells from the port	—	Ingress	Provides a count of the CLP1 cells with the explicit forward congestion indication (EFCI) equal to 1. These cells are received from the port. Range: 0 to $(2^{64}–1)$
5	Total Egress Cells to network	—	Egress	Provides a count of the total egress cells. Range: 0 to $(2^{64}–1)$
6	CLP0 cells to network (before policing)	—	Egress–1	Provides a count of the egress cells with cell loss priority (CLP) equal to 0 that are received prior to policing. Range: 0 to $(2^{64}–1)$
7	CLP1 cells to network (before policing)	—	Egress–1	Provides a count of the egress cells with cell loss priority (CLP) equal to 1 that are received prior to policing. Range: 0 to $(2^{64}–1)$
8	EFCI=1 CLP0 cells to the network	—	Egress	Provides a count of the CLP0 cells with the explicit forward congestion indication (EFCI) equal to 1. Range: 0 to $(2^{64}–1)$
9	EFCI=1 CLP1 cells to the network	—	Egress	Provides a count of the CLP1 cells with the explicit forward congestion indication (EFCI) equal to 1. Range: 0 to $(2^{64}–1)$

D.2 Service Line Statistics

The following service line statistics are applicable:

D.2.1 CESM, FRSM, SRM, and SRME T3/E3 Service

This section provides information about the statistics contained in the MGX-T3/E3 group. The CESM, FRSM, SRM, and SRME T3/E3 service line statistics are applicable to the Cisco MGX 8230, Cisco MGX 8250, Cisco MGX 8850 PXM1-based nodes.

Table D-7 lists the attributes that are common to all of the CESM, FRSM, SRM, and SRME T3/E3 service line statistics.

Table D-7   Attributes Common to all CESM, FRSM, SRM, and SRME T3/E3 Service Line Statistics

Object	Attribute
Front Cards	AX-CESM-8T1, AX-CESM-8E1, MGX-CESM-T3, MGX-CESM-E3, FRSM-8T1, FRSM-8E1, FRSM-2CT3, FRSM-2T3, FRSM-2E3, FRSM-HS2, FRSM-HS1, SRM-3T3, SRME-3T3
Back Cards	RJ48-8T1, RJ48-8E1, SMB-8E1, BNC-2T3, BNC-2E3, SCSC2-2HSSI
Object Type	1
Subobject Type	6
Default Peak Interval	60 seconds (fixed setting)

The CESM, FRSM, SRM, and SRME T3/E3 service line statistics are used primarily for gathering billing and performance

Table D-8 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Table D-8   CESM, FRSM, SRM, and SRME T3/E3 Service Line Statistics—Descriptions

Stat ID	CESM, FRSM, SRM, and SRME T3/E3 Service Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
2	Out of Frames	No	Ingress–1	Provides a count of the times an out of frame (OOF) is detected. The count includes the number of OOF alarms. Range: 0 to $(2^{32}-1)$
3	Losses of Signal	No	Ingress–1	Provides a count of the times a loss of signal (LOS) is detected. The count includes the number of LOS alarms. Range: 0 to $(2^{32}-1)$
28	B3ZS Line Code Violations	No	Ingress–1	Provides a count of the B3ZS line code violations that are encountered by the interface. These violations occur when more than three zeroes in a row are transmitted. Range: 0 to $(2^{32}-1)$

Table D-8   CESM, FRSM, SRM, and SRME T3/E3 Service Line Statistics—Descriptions (continued)

Stat ID	CESM, FRSM, SRM, and SRME T3/E3 Service Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
29	Line Errored Seconds	No	Ingress–1	Provides a count of the line code violation errored seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$
30	Line Severely Errored Seconds	Line Errored Seconds	Ingress–1	Provides a count of the line code violation severely errored seconds (SES) that occur within the collection interval. Severely errored seconds are classified as errored seconds that are greater than the total line bits per second multiplied by 10^{-6}. Range: 0 to $(2^{32}-1)$
31	P-bit Line Parity Errors	No	Ingress–1	Provides a count of the parity bit (P-bit) code violations that are encountered by the interface. Range: 0 to $(2^{32}-1)$
32	Errored Seconds–Parity	No	Ingress–1	Provides a count of the parity code violation (PCV) errored seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$
33	Severely Errored Seconds–Parity	Errored Seconds–Parity	Ingress–1	Provides a count of the P-bit code SES violations that occur within the collection interval. Range: 0 to $(2^{32}-1)$
34	C-bit Parity Code Violations	No	Ingress–1	Provides a count of the C Bit code violations that are encountered by the interface. Range: 0 to $(2^{32}-1)$
35	Errored Seconds–Path	No	Ingress–1	Provides a count of the PCV errored seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$
36	Severely Errored Seconds–Path	Errored Seconds–Path	Ingress–1	Provides a count of the PCV severely errored seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$
37	Severely Errored Framing Seconds	No	Ingress–1	Provides a count of the severely errored framing seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$
38	Alarm Indication Signal Seconds	No	Ingress–1	Provides a count of the alarm seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$

Table D-8   CESM, FRSM, SRM, and SRME T3/E3 Service Line Statistics—Descriptions (continued)

Stat ID	CESM, FRSM, SRM, and SRME T3/E3 Service Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
39	Unavailable Seconds	No	Ingress–1	Provides a count of the unavailable seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$
144	FEBE Counts	No	Ingress–1	Provides a count of the far end block errors (FEBEs) that are detected. Range: 0 to $(2^{32}-1)$
145	FE Counts	No	Ingress–1	Provides a count of the framing pattern errors that are encountered by a DS3/E3 interface. Range: 0 to $(2^{32}-1)$
150	YEL Transitions	No	Ingress–1	Provides a count of the times yellow alarms are detected. The count includes the number of remote alarm indicator (RAI) alarms. Range: 0 to $(2^{32}-1)$
220	Excessive Zero Counts	No	Ingress–1	Provides a count of the excessive zero bits that are encountered by the interface. Excessive zeros are three or more zeros occurring on the line. Range: 0 to $(2^{32}-1)$
221	PLCP OOF Transition Counts	No	Ingress–1	Provides a count of the times the OOF is detected by the physical layer convergence protocol (PLCP) interface. Range: 0 to $(2^{32}-1)$
222	PLCP Remote Alarm Indication	No	Ingress–1	Provides a count of the remote alarms that are detected by the PLCP interface. Range: 0 to $(2^{32}-1)$
223	PLCP Framing Errors	No	Ingress–1	Provides a count of the framing errors that are detected by the PLCP interface. Range: 0 to $(2^{32}-1)$
224	PLCP FEBE Counts	No	Ingress–1	Provides a count of the FEBEs that are encountered by the PLCP interface. Range: 0 to $(2^{32}-1)$
225	PLCP FEBE Err Secs	No	Ingress–1	Provides a count of the FEBE seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$
226	PLCP FEBE Severely Err Secs	PLCP FEBE Err Secs	Ingress–1	Provides a count of the FEBE severely errored seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$

Table D-8   CESM, FRSM, SRM, and SRME T3/E3 Service Line Statistics—Descriptions (continued)

Stat ID	CESM, FRSM, SRM, and SRME T3/E3 Service Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
227	PLCP HCS Errors	No	Ingress–1	Provides a count of the cell header checksum errors that are encountered by the PLCP interface. Range: 0 to $(2^{32}-1)$
228	PLCP HCS Errored Secs	No	Ingress–1	Provides a count of the cell header checksum errored seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$
229	PLCP HCS Severely Errored Secs	PLCP HCS Err Secs	Ingress–1	Provides a count of the cell header checksum severely errored seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$
230	PLCP BIP-8 Code Violations	No	Ingress–1	Provides a count of the BIP-8 code violations that are encountered by the interface. Range: 0 to $(2^{32}-1)$
231	PLCP BIP8 CV Err Secs	No	Ingress–1	Provides a count of the BIP-8 code violation errored seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$
232	PLCP BIP8 CV Severely Err Secs	PLCP BIP8 CV Err Secs	Ingress–1	Provides a count of the BIP-8 code violation severely errored seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$
233	PLCP Severely Err Framing Secs	No	Ingress–1	Provides a count of the severely errored framing seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$
234	PLCP Unavailable Secs	No	Ingress–1	Provides a count of the unavailable seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$
235	Alarm Indication Signal Severely Seconds	No	Ingress–1	Provides a count of the alarm indication signal (AIS) severely errored seconds that occur within the collection interval. Range: 0 to $(2^{32}-1)$

D.2.2 SRM and SRME SONET Service Line

This section provides information about the statistics contained in the SONET group. The SONET line statistics are applicable to the SRM and SRME cards on the Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 PXM1-based nodes.

Table D-9 lists the attributes that are common to all of the SONET line statistics.

Table D-9   Attributes Common to all SONET Line Statistics

Object	Attribute
Front Card	SRM, SRME
Back Card	SRM-3T3-NOBC
Object Type	1
Subobject Type	10
Default Peak Interval	60 seconds (fixed setting)

The SRM and SRME SONET line statistics are used primarily for gathering billing and performance data.

Table D-10 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Table D-10   SRM and SRME SONET Line Statistics—Descriptions

Stat ID	SRM and SRME SONET Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
236	Sonet Loss of Signal	—	—	Provides a count of the times a loss of signal (LOS) is detected. The count includes the number of LOS alarms. Range: 0 to $(2^{32}{-}1)$
237	Sonet Loss of Frames	—	—	Provides a count of the loss of frames (LOFs) that are encountered by a SONET line. Range: 0 to $(2^{32}{-}1)$
238	Sonet Path alarm Indictn sgnl secs	—	—	Provides a count of the alarm indication signal (AIS) instances on the path. Range: 0 to $(2^{32}{-}1)$
239	Sonet Remote Failure Indication	—	—	Provides a count of the remote failure indications (RFIs) that occur. Range: 0 to $(2^{32}{-}1)$

Table D-10   SRM and SRME SONET Line Statistics—Descriptions (continued)

Stat ID	SRM and SRME SONET Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
240	Sonet Line Alarm indication signal	—	—	Provides a count of the times that an alarm indication signal is detected on the line. Range: 0 to $(2^{32}–1)$
241	Sonet Line Remote Far end Indicatn	—	—	Provides a count of the remote failure indications (RFIs) that are encountered by a SONET line. Range: 0 to $(2^{32}–1)$

D.2.3 AXSM Line

This section provides information about the ATM line statistics contained in the AXSM_ATM_line group. The AXSM ATM line statistics are applicable to the Cisco MGX 8850 PXM45-based switch.

Table D-11 lists the attributes that are common to all of the AXSM line statistics.

Table D-11   Attributes Common to all AXSM Line Statistics

Object	Attribute
Front Card	MGX-AXSM-16-T3E3, MGX-AXSM-16-155, MGX-AXSM-4-622, MGX-AXSM-1-2488
Back Cards	MGX-SMB-8-T3, MGX-SMB-8-E3, MGX-SMB-4-155, MGX-SMFIR-8-155, MGX-SMFLR-8-155, MGX-MMF-8-155, MGX-SMFLR-2-622, MGX-SMFIR-2-622, MGX-SMFSR-1-2488, MGX-SMFLR-1-2488, MGX-SMFXLR-1-2488
Object Type	1
Subobject Type	11
Default Peak Interval	300 seconds

The AXSM line statistics are used primarily for gathering billing data.

Table D-12 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Table D-12   AXSM Line Statistics—Descriptions

Stat ID	AXSM Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Ingress CLP0 Cells From Port	Ingress CLP0+1 Cells	Ingress–2, 8	Provides a count of the ingress cells with cell loss priority (CLP) equal to 0 that are received. Range: 0 to (2^{40}–1) cells
1	Ingress CLP1 Cells From Port	Ingress CLP0+1 Cells	Ingress–2, 8	Provides a count of the ingress cells with CLP equal to 1 that are received. Range: 0 to (2^{40}–1) cells
2	Ingress CLP0+1 Cells From Port	No	Ingress–2, 8	Provides a count of the ingress cells with CLP (0+1) that are received. Range: 0 to (2^{40}–1) cells
3	Ingress UPC CLP0 Discards	Ingress UPC CLP0+1 Discards	Ingress–2, 8	Provides a count of the total cells with CLP equal to 0 that are discarded due to usage parameter control (UPC). Range: 0 to (2^{40}–1) cells
4	Ingress UPC CLP0+1 Discards	No	Ingress–2, 8	Provides a count of the total cells with CLP (0+1) that are discarded due to UPC. Range: 0 to (2^{40}–1) cells
5	Ingress Non-Compliant CLP0+1	No	Ingress–2, 8	Provides a count of the total cells with CLP (0+1) that are non-compliant or discarded due to policing. Range: 0 to (2^{40}–1) cells
6	Ingress Total Valid OAM Cells	No	Ingress–2, 8	Provides a count of the ingress operation, administration, and maintenance (OAM) cells that have a valid cell type and function type. Range: 0 to (2^{40}–1) cells
7	Ingress Total Valid RM Cells	No	Ingress–2, 8	Provides a count of the ingress resource management (RM) cells that have a valid cell type and function type. Range: 0 to (2^{40}–1) cells
8	Ingress Total Errored OAM/RM cells	No	Ingress–2, 8	Provides a count of the total errored OAM and RM cells in the ingress direction. The errored cells include: • OAM cells with an incorrect CRC-10 • Undefined OAM or function type • RM cells with an incorrect CRC-10 Range: 0 to (2^{40}–1) cells

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Table D-12   AXSM Line Statistics—Descriptions (continued)

Stat ID	AXSM Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
9	Ingress non-zero GFC cells	No	Ingress–2, 8	Provides a count of the cells with a non-zero generic flow control (GFC) field. This statistic is applicable only for UNI and ingress directions. Range: 0 to (2^{40}–1) cells
10	Ingress Invalid VPI/VCI Cells	No	Ingress–2, 8	Provides a count of the ingress cells with an unassigned or invalid virtual path identifier (VPI) or virtual channel identifier (VCI). Range: 0 to (2^{40}–1) cells
11	Ingress Last Unknown VPI.VCI (invalid)	No	Ingress–2, 8	Provides the last unknown VPI.VCI value on the line. Range: VPI/VCI value
12	Ingress HEC Errored Cells Discarded	Ingress Total HEC-errored Cells	Ingress–2, 8	Provides a count of the header error control (HEC) errored cells that are discarded on the line. Range: 0 to (2^{40}–1) cells
13	Ingress HEC Errored Cells Corrected	Ingress Total HEC-errored Cells	Ingress–2, 8	Provides a count of the HEC errored cells that are corrected on the line. Range: 0 to (2^{40}–1) cells
14	Ingress Total HEC-errored cells	No	Ingress–2, 8	Provides a count of the total HEC errored cells that are received on the line. Range: 0 to (2^{40}–1) cells
15	Egress CLP0 Cells to Port	Egress CLP0+1 Cells	Egress–7, 13	Provides a count of the egress cells with CLP equal to 0. Range: 0 to (2^{40}–1) cells
16	Egress CLP1 Cells to Port	Egress CLP0+1 Cells	Egress–7, 13	Provides a count of the egress cells with CLP equal to 1. Range: 0 to (2^{40}–1) cells
17	Egress CLP0+1 Cells to Port	No	Egress–7, 13	Provides a count of the egress cells with CLP (0+1). Range: 0 to (2^{40}–1) cells
18	Egress OAM Valid cells	No	Egress–7, 13	Provides a count of the egress valid OAM cells. Range: 0 to (2^{40}–1) cells
19	Egress RM Valid Cells	No	Egress–7, 13	Provides a count of the egress RM valid cells. Range: 0 to (2^{40}–1) cells

Table D-12   AXSM Line Statistics—Descriptions (continued)

Stat ID	AXSM Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
20	Egress OAM/RM Errored Cells	No	Egress–7, 13	Provides a count of the errored OAM and RM cells in the egress direction. The errored cells include: • OAM cells with an incorrect CRC-10 • Undefined OAM type or function type • RM cells with an incorrect CRC-10 Range: 0 to $(2^{40}-1)$ cells
21	Egress Invalid VPI/VCI Cells	No	Egress–7, 13	Provides a count of the egress cells with errored headers. This count includes cells with an unassigned or invalid VPI or VCI. Range: 0 to $(2^{40}-1)$ cells

D.2.4 AXSM-E Line

This section provides information about the ATM statistics contained in the AXSME_ATM_line group. The AXSM-E line statistics in this group are applicable to the Cisco MGX 8850 PXM45-based switch.

Table D-13 lists the attributes that are common to the AXSM-E line statistics.

Table D-13   Attributes Common to all AXSM-E Line Statistics

Object	Attribute
Front Cards	AXSM-2-622-E, AXSM-8-155-E, AXSM-16-T3E3-E
Back Cards	SMFLR-1-622, SMFIR-1-622, SMFLR-4-155, SMFIR-4-155, MMF-4-155, SMB-4-155, SMB-8-T3, SMB-8-E3
Object Type	1
Subobject Type	12
Allowable Peak Intervals	60 seconds, 300 seconds
Default Peak Interval	300 seconds

The AXSM-E line statistics are used primarily for gathering troubleshooting and performance data.

Table D-14 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Note   AXSM-E statistics are only collected at measurement points 1, 2, and 13.

Table D-14   AXSM-E Line Statistics—Descriptions

Stat ID	AXSM-E Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Ingress CLP0 cells received	Cells received	Ingress–1	Provides a count of the ingress cells with cell loss priority (CLP) equal to 0 that are received. Range: 0 to $(2^{40}-1)$ cells
1	Ingress CLP1 cells received	Cells received	Ingress–1	Provides a count of the ingress cells with CLP equal to 1 that are received. Range: 0 to $(2^{40}-1)$ cells
2	Ingress valid OAM cells received	No	Ingress–1	Provides a count of the operation, administration, and maintenance (OAM) that are received at the port. Range: 0 to $(2^{40}-1)$ cells
3	Ingress valid RM cells received	No	Ingress–1	Provides a count of the resource management (RM) cells that are received at the port. Range: 0 to $(2^{40}-1)$ cells
4	UNI only cells received	No	Ingress–1	Provides a count of the cells tagged as UNI. These cells are received at the port. Range: 0 to $(2^{40}-1)$ cells
5	Error OAM cells received	No	Ingress–1	Provides a count of the errored OAM cells that are received. The errored cells include: • OAM cells with an incorrect CRC-10 • Undefined OAM type or function type Range: 0 to $(2^{40}-1)$ cells
6	Ingress cells received with header error	No	Before–1	Provides a count of the total cells with a header error. These cells are received at the port. Range: 0 to $(2^{40}-1)$ cells
7	Egress CLP0 cells received	Cells transmitted	After 13	Provides a count of the cells with CLP equal to 0 that are received at the port in the egress direction. Range: 0 to $(2^{40}-1)$ cells
8	Egress CLP1 cells received	Cells transmitted	After 13	Provides a count of the cells with CLP equal to 1 that are received at the port in the egress direction. Range: 0 to $(2^{40}-1)$ cells
9	Egress valid OAM cells received	Cells transmitted	After 13	Provides a count of the OAM cells that are received at the port in the egress direction. Range: 0 to $(2^{40}-1)$ cells

Table D-14   AXSM-E Line Statistics—Descriptions (continued)

Stat ID	AXSM-E Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
10	Egress valid RM cells received	Cells transmitted	After 13	Provides a count of the RM cells that are received at the port in the egress direction. Range: 0 to $(2^{40}-1)$ cells
11	Egress OAM cells received with errors	No	After 13	Provides a count of the errored OAM cells that are received at the port in the egress direction. The errored cells include: • OAM cells with an incorrect CRC-10 • Undefined OAM type or function type Range: 0 to $(2^{40}-1)$ cells
12	Uncorrectable header errors	No	Before 1	Provides a count of the cells that are discarded due to uncorrectable header errors. Range: 0 to $(2^{40}-1)$ cells
13	Corrected header errors	No	Before 1	Provides a count of the cells with header errors that are corrected. Range: 0 to $(2^{40}-1)$ cells
14	Idle/unassigned cells	No	Before 1	Provides a count of the idles or unassigned cells that are received. Range: 0 to $(2^{40}-1)$ cells
15	Cells received	No	Ingress–1	Provides a count of the total cells that are received at the port. Range: 0 to $(2^{40}-1)$ cells
16	Cells transmitted	No	After 13	Provides a count of the total cells that are transmitted. Range: 0 to $(2^{40}-1)$ cells

D.3 Port Statistics

The following port statistics are supported:

- D.3.1 AXSM Port
- D.3.2 AXSM-E Port
- D.3.3 VXSM Port Statistics

D.3.1 AXSM Port

This section provides information about the statistics contained in the AXSM_ATM_ port group. The statistics in this group are applicable to the Cisco MGX 8850 PXM45-based switch.

Table D-15 lists the attributes that are common to all of the AXSM port statistics.

Table D-15   Attributes Common to all AXSM Port Statistics

Object	Attribute
Front Cards	MGX-AXSM-16-T3E3, MGX-AXSM-16-155, MGX-AXSM-4-622, MGX-AXSM-1-2488
Back Cards	MGX-SMB-8-T3, MGX-SMB-8-E3, MGX-SMB-4-155, MGX-SMFIR-8-155, MGX-SMFLR-8-155, MGX-MMF-8-155, MGX-SMFLR-2-622, MGX-SMFIR-2-622, MGX-SMFSR-1-2488, MGX-SMFLR-1-2488, MGX-SMFXLR-1-2488
Object Type	3
Subobject Type	9
Default Peak Interval	300 seconds

The AXSM port statistics are used primarily for gathering performance data.

Table D-16 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Table D-16   AXSM Port Statistics—Descriptions

Stat ID	AXSM Port Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Ingress CLP0 Cells From Policer	No	Ingress–3, 9	Provides a count of the cells with cell loss priority (CLP) equal to 0 that arrive at the queueing engine. The count includes both discarded and non-discarded cells. Range: 0 to $(2^{40}-1)$ cells
1	Ingress CLP1 Cells From Policer	No	Ingress–3, 9	Provides a count of the cells with CLP equal to 1 that arrive at the queueing engine. The count includes both discarded and non-discarded cells. Range: 0 to $(2^{40}-1)$ cells
2	Ingress CLP0 Cells Discarded (dropped)	Ingress CLP0 Cells From Policer	Ingress–3, 9	Provides a count of ingress cells with CLP equal to 0 that are discarded by the queueing engine. Range: 0 to $(2^{40}-1)$ cells
3	Ingress CLP1 Cells Discarded (dropped)	Ingress CLP0 Cells From Policer	Ingress–3, 9	Provides a count of ingress cells with CLP equal to 1 that are discarded by the queueing engine. Range: 0 to $(2^{40}-1)$ cells
4	Ingress CLP0 Cells to backplane	No	Ingress–3, 9	Provides a count of the cells with CLP equal to 0 that travel from the queueing engine to the bus. Range: 0 to $(2^{40}-1)$ cells

Table D-16   AXSM Port Statistics—Descriptions (continued)

Stat ID	AXSM Port Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
5	Ingress CLP1 Cells to backplane	No	Ingress–3, 9	Provides a count of the cells with CLP equal to 1 that travel from the queueing engine to the bus. Range: 0 to $(2^{40}-1)$ cells
6	Egress CLP0 Cells From backplane	No	Egress–6, 12	Provides a count of the cells with CLP equal to 0 that arrive at the queueing engine. The count includes both discarded and non-discarded cells. Range: 0 to $(2^{40}-1)$ cells
7	Egress CLP1 Cells From backplane	No	Egress–6, 12	Provides a count of the cells with CLP equal to 1 that arrive at the queueing engine. The count includes both discarded and non-discarded cells. Range: 0 to $(2^{40}-1)$ cells
8	Egress CLP0 Cells Discarded (dropped)	Egress CLP0 Cells From backplane	Egress–6, 12	Provides a count of egress cells with CLP equal to 0 that are discarded by the queueing engine. Range: 0 to $(2^{40}-1)$ cells
9	Egress CLP1 Cells Discarded (dropped)	Egress CLP1 Cells From backplane	Egress–6, 12	Provides a count of egress cells with CLP equal to 1 that are discarded by the queueing engine. Range: 0 to $(2^{40}-1)$ cells
10	Egress CLP0 Cells to port	No	Egress–6, 12	Provides a count of the cells with CLP equal to 0 that travel from the queueing engine to the line. Range: 0 to $(2^{40}-1)$ cells
11	Egress CLP1 Cells to port	No	Egress–6, 12	Provides a count of the cells with CLP equal to 1 that travel from the queueing engine to the line. Range: 0 to $(2^{40}-1)$ cells
12	Egress Total OAM Cells	No	Egress–6, 12	Provides a count of the operation, administration, and maintenance (OAM) cells that travel from the queueing engine to the line. Range: 0 to $(2^{40}-1)$ cells

D.3.2 AXSM-E Port

This section provides information about the statistics contained in the AXSME_ATM_port group. The AXSM-E port statistics in this group are applicable to the Cisco MGX 8850 PXM45-based switch.

Table D-17 lists the attributes that are common to the AXSM-E port statistics.

Table D-17   Attributes Common to all AXSM-E PortStatistics

Object	Attribute
Front Cards	AXSM-2-622-E, AXSM-8-155-E, AXSM-16-T3E3-E
Back Cards	SMFLR-1-622, SMFIR-1-622, SMFLR-4-155, SMFIR-4-155, MMF-4-155, SMB-4-155, SMB-8-T3, SMB-8-E3
Object Type	3
Subobject Type	11
Allowable Peak Intervals	60 seconds, 300 seconds
Default Peak Interval	300 seconds

The AXSM-E port statistics are used primarily for gathering troubleshooting and performance data.

Table D-18 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

✎
Note   AXSM-E statistics are only collected at measurement points 1, 2, and 13.

Table D-18   AXSM-E Port Statistics—Descriptions

Stat ID	AXSM-E Port Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	CLP0 cells transmitted	No	After 13	Provides a count of the cells with CLP equal to 0 that are transmitted to the port. Range: 0 to $(2^{40}-1)$ cells
1	CLP1 cells transmitted	No	After 13	Provides a count of the total cells with CLP equal to 1 that are transmitted to the port. Range: 0 to $(2^{40}-1)$ cells
2	OAM cells transmitted	No	After 13	Provides a count of the operation, administration, and maintenance (OAM) cells that are transmitted to the port. Range: 0 to $(2^{40}-1)$ cells
3	RM cells transmitted	No	After 13	Provides a count of the resource management (RM) cells that are transmitted to the port. Range: 0 to $(2^{40}-1)$ cells

Table D-18   AXSM-E Port Statistics—Descriptions (continued)

Stat ID	AXSM-E Port Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
4	CLP0 cells not discarded	No	Egress	Provides a count of the cells with CLP equal to 0 that are received at the port. Range: 0 to $(2^{40}-1)$ cells
5	CLP1 cells not discarded	No	Egress	Provides a count of the cells with CLP equal to 1 that are received at the port. Range: 0 to $(2^{40}-1)$ cells
6	CLP0 cells discarded due to congestion	No	Egress	Provides a count of the cells with CLP equal to 0 that are received at the port then discarded due to congestion. Range: 0 to $(2^{40}-1)$ cells
7	CLP1 cells discarded due to congestion	No	Egress	Provides a count of the cells with CLP equal to 1 that are received at the port then discarded due to congestion. Range: 0 to $(2^{40}-1)$ cells
8	OAM cells received	No	Egress	Provides a count of the OAM cells that are received at the port. Range: 0 to $(2^{40}-1)$ cells
9	RM cells received	No	Egress	Provides a count of the RM cells that are received at the port. Range: 0 to $(2^{40}-1)$ cells
10	EFCI cells transmitted	No	Egress–13	Provides a count of the cells with the explicit forward congestion indication (EFCI) bit set that are transmitted to the port. Range: 0 to $(2^{40}-1)$ cells
11	EFCI cells received	No	Egress	Provides a count of the cells with the EFCI bit set that are received at the port. Range: 0 to $(2^{40}-1)$ cells
12	Cells received by Qbin 0	—	—	Provides a count of the cells that are received on Qbin 0. Range: 0 to $(2^{40}-1)$ cells
13	Cells discarded by Qbin 0	—	—	Provides a count of the cells that are discarded on Qbin 0. Range: 0 to $(2^{40}-1)$ cells
14	Cells transmitted by Qbin 0	—	—	Provides a count of the cells that are transmitted out of Qbin 0. Range: 0 to $(2^{40}-1)$ cells
15	Cells received by Qbin 1	—	—	Provides a count of the cells that are received on Qbin 1. Range: 0 to $(2^{40}-1)$ cells

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Table D-18   AXSM-E Port Statistics—Descriptions (continued)

Stat ID	AXSM-E Port Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
16	Cells discarded by Qbin 1	—	—	Provides a count of the cells that are discarded on Qbin 1. Range: 0 to (2^{40}–1) cells
17	Cells transmitted by Qbin 1	—	—	Provides a count of the cells that are transmitted by Qbin 1. Range: 0 to (2^{40}–1) cells
18	Cells received by Qbin 2	—	—	Provides a count of the cells that are received on Qbin 2. Range: 0 to (2^{40}–1) cells
19	Cells discarded by Qbin 2	—	—	Provides a count of the cells that are discarded on Qbin 2. Range: 0 to (2^{40}–1) cells
20	Cells transmitted by Qbin 2	—	—	Provides a count of the cells that are transmitted by Qbin 2. Range: 0 to (2^{40}–1) cells
21	Cells received by Qbin 3	—	—	Provides a count of the cells that are received on Qbin 3. Range: 0 to (2^{40}–1) cells
22	Cells discarded by Qbin 3	—	—	Provides a count of the cells that are discarded on Qbin 3. Range: 0 to (2^{40}–1) cells
23	Cells transmitted by Qbin 3	—	—	Provides a count of the cells that are transmitted by Qbin 3. Range: 0 to (2^{40}–1) cells
24	Cells received by Qbin 4	—	—	Provides a count of the cells that are received on Qbin 4. Range: 0 to (2^{40}–1) cells
25	Cells discarded by Qbin 4	—	—	Provides a count of the cells that are discarded on Qbin 4. Range: 0 to (2^{40}–1) cells
26	Cells transmitted by Qbin 4	—	—	Provides a count of the cells that are transmitted by Qbin 4. Range: 0 to (2^{40}–1) cells
27	Cells received by Qbin 5	—	—	Provides a count of the cells that are received on Qbin 5. Range: 0 to (2^{40}–1) cells
28	Cells discarded by Qbin 5	—	—	Provides a count of the cells that are discarded on Qbin 5. Range: 0 to (2^{40}–1) cells

Table D-18   AXSM-E Port Statistics—Descriptions (continued)

Stat ID	AXSM-E Port Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
29	Cells transmitted by Qbin 5	—	—	Provides a count of the cells that are transmitted by Qbin 5. Range: 0 to $(2^{40}-1)$ cells
30	Cells received by Qbin 6	—	—	Provides a count of the cells that are received on Qbin 6. Range: 0 to $(2^{40}-1)$ cells
31	Cells discarded by Qbin 6	—	—	Provides a count of the cells that are discarded on Qbin 6. Range: 0 to $(2^{40}-1)$ cells
32	Cells transmitted by Qbin 6	—	—	Provides a count of the cells that are transmitted by Qbin 6. Range: 0 to $(2^{40}-1)$ cells
33	Cells received by Qbin 7	—	—	Provides a count of the cells that are received on Qbin 7. Range: 0 to $(2^{40}-1)$ cells
34	Cells discarded by Qbin 7	—	—	Provides a count of the cells that are discarded on Qbin 7. Range: 0 to $(2^{40}-1)$ cells
35	Cells transmitted by Qbin 7	—	—	Provides a count of the cells that are transmitted by Qbin 7. Range: 0 to $(2^{40}-1)$ cells
36	Cells received by Qbin 8	—	—	Provides a count of the cells that are received on Qbin 8. Range: 0 to $(2^{40}-1)$ cells
37	Cells discarded by Qbin 8	—	—	Provides a count of the cells that are discarded on Qbin 8. Range: 0 to $(2^{40}-1)$ cells
38	Cells transmitted by Qbin 8	—	—	Provides a count of the cells that are transmitted by Qbin 8. Range: 0 to $(2^{40}-1)$ cells
39	Cells received by Qbin 9	—	—	Provides a count of the cells that are received on Qbin 9. Range: 0 to $(2^{40}-1)$ cells
40	Cells discarded by Qbin 9	—	—	Provides a count of the cells that are discarded on Qbin 9. Range: 0 to $(2^{40}-1)$ cells
41	Cells transmitted by Qbin 9	—	—	Provides a count of the cells that are transmitted by Qbin 9. Range: 0 to $(2^{40}-1)$ cells

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Table D-18   *AXSM-E Port Statistics—Descriptions (continued)*

Stat ID	AXSM-E Port Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
42	Cells received by Qbin10	—	—	Provides a count of the cells that are received on Qbin 10. Range: 0 to $(2^{40}-1)$ cells
43	Cells discarded by Qbin10	—	—	Provides a count of the cells that are discarded on Qbin 10. Range: 0 to $(2^{40}-1)$ cells
44	Cells transmitted by Qbin10	—	—	Provides a count of the cells that are transmitted by Qbin 10. Range: 0 to $(2^{40}-1)$ cells
45	Cells received by Qbin11	—	—	Provides a count of the cells that are received on Qbin 11. If Qbin 11 is not assigned a traffic service, the count returns a value of 0. Range: 0 to $(2^{40}-1)$ cells
46	Cells discarded by Qbin11	—	—	Provides a count of the cells that are discarded on Qbin 11. If Qbin 11 is not assigned a traffic service, the count returns a value of 0. Range: 0 to $(2^{40}-1)$ cells
47	Cells transmitted by Qbin11	—	—	Provides a count of the cells that are transmitted by Qbin 11. If Qbin 11 is not assigned a traffic service, the count returns a value of 0. Range: 0 to $(2^{40}-1)$ cells
48	Cells received by Qbin12	—	—	Provides a count of the cells that are received on Qbin 12. If Qbin 12 is not assigned a traffic service, the count returns a value of 0. Range: 0 to $(2^{40}-1)$ cells
49	Cells discarded by Qbin12	—	—	Provides a count of the cells that are discarded on Qbin 12. If Qbin 12 is not assigned a traffic service, the count returns a value of 0. Range: 0 to $(2^{40}-1)$ cells
50	Cells transmitted by Qbin12	—	—	Provides a count of the cells that are transmitted by Qbin 12. If Qbin 12 is not assigned a traffic service, the count returns a value of 0. Range: 0 to $(2^{40}-1)$ cells

Table D-18   AXSM-E Port Statistics—Descriptions (continued)

Stat ID	AXSM-E Port Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
51	Cells received by Qbin13	—	—	Provides a count of the cells that are received on Qbin 13. If Qbin 13 is not assigned a traffic service, the count returns a value of 0. Range: 0 to (2^{40}–1) cells
52	Cells discarded by Qbin13	—	—	Provides a count of the cells that are discarded on Qbin 13. If Qbin 13 is not assigned a traffic service, the count returns a value of 0. Range: 0 to (2^{40}–1) cells
53	Cells transmitted by Qbin13	—	—	Provides a count of the cells that are transmitted by Qbin 13. If Qbin 13 is not assigned a traffic service, the count returns a value of 0. Range: 0 to (2^{40}–1) cells
54	Cells received by Qbin14	—	—	Provides a count of the cells that are received on Qbin 14. If Qbin 14 is not assigned a traffic service, the count returns a value of 0. Range: 0 to (2^{40}–1) cells
55	Cells discarded by Qbin14	—	—	Provides a count of the cells that are discarded on Qbin 14. If Qbin 14 is not assigned a traffic service, the count returns a value of 0. Range: 0 to (2^{40}–1) cells
56	Cells transmitted by Qbin14	—	—	Provides a count of the cells that are transmitted by Qbin 14. If Qbin 14 is not assigned a traffic service, the count returns a value of 0. Range: 0 to (2^{40}–1) cells
57	Cells received by Qbin15	—	—	Provides a count of the cells that are received on Qbin 15. If Qbin 15 is not assigned a traffic service, the count returns a value of 0. Range: 0 to (2^{40}–1) cells

Table D-18   *AXSM-E Port Statistics—Descriptions (continued)*

Stat ID	AXSM-E Port Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
58	Cells discarded by Qbin15	—	—	Provides a count of the cells that are discarded on Qbin 15. If Qbin 15 is not assigned a traffic service, the count returns a value of 0. Range: 0 to (2^{40}–1) cells
59	Cells transmitted by Qbin15	—	—	Provides a count of the cells that are transmitted by Qbin 15. If Qbin 15 is not assigned a traffic service, the count returns a value of 0. Range: 0 to (2^{40}–1)
61	CLP0 cells transmitted (Ingress)	—	Ingress	Provides a count of the cells with CLP equal to 0 that are transmitted from the port. Range: 0 to (2^{40}–1) cells
62	CLP1 cells transmitted (Ingress)	—	Ingress	Provides a count of the total cells with CLP equal to 1 that are transmitted from the port. Range: 0 to (2^{40}–1) cells
63	OAM cells transmitted (Ingress)	No	Ingress	Provides a count of the OAM cells that are transmitted from the port. Range: 0 to (2^{40}–1) cells
64	RM cells transmitted (Ingress)	No	Ingress	Provides a count of the RM cells that are transmitted from the port. Range: 0 to (2^{40}–1) cells
65	CLP0 cells not discarded due to congestion	No	Ingress	Provides a count of the cells with CLP equal to 0 that are received at the port. Range: 0 to (2^{40}–1) cells
66	CLP1 cells not discarded due to congestion	No	Ingress	Provides a count of the cells with CLP equal to 1 that are received at the port. Range: 0 to (2^{40}–1) cells
67	CLP0 cells discarded due to congestion	No	Ingress–1	Provides a count of the cells with CLP equal to 0 that are received at the port then discarded due to congestion. Range: 0 to (2^{40}–1) cells
68	CLP1 cells discarded due to congestion	No	Ingress–1	Provides a count of the cells with CLP equal to 1 that are received at the port then discarded due to congestion. Range: 0 to (2^{40}–1) cells
69	OAM cells received (Ingress)	No	Ingress–1	Provides a count of the OAM cells that are received at the port. Range: 0 to (2^{40}–1) cells

Table D-18   AXSM-E Port Statistics—Descriptions (continued)

Stat ID	AXSM-E Port Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
70	RM cells received (Ingress)	No	Ingress–1	Provides a count of the RM cells that are received at the port. Range: 0 to $(2^{40}–1)$ cells
71	EFCI cells transmitted (Ingress)	No	Egress–13	Provides a count of the cells with the explicit forward congestion indication (EFCI) bit set that are transmitted to the port. Range: 0 to $(2^{40}–1)$ cells
72	EFCI cells received (Ingress)	No	Ingress–1	Provides a count of the cells with the EFCI bit set that are received at the port. Range: 0 to $(2^{40}–1)$ cells

D.3.3 VXSM Port Statistics

This section provides information about the statistics contained in the VXSM ATM Port group. The VXSM port statistics are applicable to the VXSM cards on the Cisco MGX 8880 PXM45-based nodes and the Cisco MGX 8850 PXM45-based nodes.

Table D-19 lists the attributes that are common to all of the VXSM port statistics.

Table D-19   Attributes Common to all VXSM Port Statistics

Object	Attribute
Front Card	VXSM
Back Card	VXSM-BC-4-155
Object Type	3
Subobject Type	15
Default Peak Interval	300 seconds

The VXSM port statistics are used primarily for gathering troubleshooting and performance data.

Table D-20 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Table D-20   VXSM Port Statistics—Descriptions

Stat ID	VXSM Port Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Ingress CLP0 cells transmitted	—	Ingress	Provides a count of the ingress cells with CLP equal to 0 that are transmitted. Range: 0 to $(2^{64}-1)$
1	Ingress CLP1 cells transmitted	—	Ingress	Provides a count of the ingress cells with CLP equal to 1 that are transmitted. Range: 0 to $(2^{64}-1)$
2	Egress CLP0 cells not discarded to congestion	—	Egress	Provides a count of the egress cells with CLP equal to 0 that are not discarded due to congestion. Range: 0 to $(2^{64}-1)$
3	Egress CLP1 cells not discarded to congestion	—	Egress	Provides a count of the egress cells with CLP equal to 1 that are not discarded due to congestion. Range: 0 to $(2^{64}-1)$
4	Egress CLP0 cells discarded due to congestion	—	Egress	Provides a count of the egress cells with CLP equal to 0 that are discarded due to congestion. Range: 0 to $(2^{64}-1)$
5	Egress CLP1 cells discarded due to congestion	—	Egress	Provides a count of the egress cells with CLP equal to 1 that are discarded due to congestion. Range: 0 to $(2^{64}-1)$

D.4 Card Statistics

The following card statistics are supported:

- D.4.1 AXSM Card Statistics

D.4.1 AXSM Card Statistics

This section provides information about the statistics contained in the AXSM_ATM_card group. The AXSM card statistics are applicable to the Cisco MGX 8850 PXM45-based switch.

Table D-21 lists the attributes that are common to the AXSM card statistics.

Table D-21   Attributes Common to all AXSM Card Statistics

Object	Attribute
Front Cards	MGX-AXSM-16-T3E3, MGX-AXSM-16-155, MGX-AXSM-4-622, MGX-AXSM-1-2488
Back Cards	MGX-SMB-8-T3, MGX-SMB-8-E3, MGX-SMB-4-155, MGX-SMFIR-8-155, MGX-SMFLR-8-155, MGX-MMF-8-155, MGX-SMFLR-2-622, MGX-SMFIR-2-622, MGX-SMFSR-1-2488, MGX-SMFLR-1-2488, MGX-SMFXLR-1-2488
Object Type	4
Subobject Type	0
Default Peak Interval	300 seconds

The AXSM card statistics are used primarily for gathering performance data.

Table D-22 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Table D-22   AXSM Card Statistics—Descriptions

Stat ID	AXSM Card Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Cells to backplane - QLSI	No	Ingress–4, 10	Provides a count of the cells that are sent to the bus. Range: 0 to $(2^{40}–1)$ cells
1	Cells from queue (from QE48)	No	Ingress–4, 10	Provides a count of the cells traveling from the queueing engine to the bus. Range: 0 to $(2^{40}–1)$ cells
2	Cells from backplane - QLSI	No	Egress–5, 11	Provides a count of the cells that are received from the bus. Range: 0 to $(2^{40}–1)$ cells
3	CLP0 Cells dropped due to congestion	No	Ingress–3, 9 Egress–6, 12	Provides a count of the cells with cell loss priority (CLP) equal to 0 that are discarded due to congestion or buffer management by the queueing engine. Range: 0 to $(2^{40}–1)$ cells
4	CLP1 Cells dropped due to congestion	No	Ingress–3, 9 Egress–6, 12	Provides a count of the cells with CLP equal to 1 that are dropped due to congestion or buffer management by the queueing engine. Range: 0 to $(2^{40}–1)$ cells

Table D-22   AXSM Card Statistics—Descriptions (continued)

Stat ID	AXSM Card Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
5	Undefined Cells from port	No	Ingress–3, 9 Egress–6, 12	Provides a count of the undefined cells from the queuing engine. An undefined cell can be routed, but it might not be discarded. The queueing engine can not distinguish between payload or operation, administration, and maintenance (OAM) cells. Range: 0 to (2^{40}–1) cells
6	Errored OAM Cells from port	No	Ingress–3, 9 Egress–6, 12	Provides a count of OAM cells that have cyclic redundancy check (CRC) errors. Range: 0 to (2^{40}–1) cells
7	Invalid OAM Cells from port	No	Ingress–3, 9 Egress–6, 12	Provides a count of OAM cells with a bad cell or function type that the queueing engine is unable to decode. Range: 0 to (2^{40}–1) cells
8	Unsupported OAM Cells from port	No	Ingress–3, 9 Egress–6, 12	Provides a count of unsupported OAM cells. These cells are discarded at the queuing engine. Range: 0 to (2^{40}–1) cells
9	Errored RM Cells from port	No	Ingress–3, 9 Egress–6, 12	Provides a count of resource management (RM) cells that have CRC errors. Range: 0 to (2^{40}–1) cells

D.5 Path Statistics

The following path statistics are supported:

- D.5.1 VXSM STS Path Statistics
- D.5.2 VXSM DS3 Path Statistics
- D.5.3 VXSM DS1 N DS3 Path Statistics
- D.5.4 VXSM DS1 VT Path Statistics

D.5.1 VXSM STS Path Statistics

This section provides information about the statistics contained in the VXSM_STS Path group. The VXSM STS path statistics are applicable to the VXSM cards on the Cisco MGX 8880 PXM45-based nodes and the Cisco MGX 8850 PXM45-based nodes.

Table D-23 lists the attributes that are common to all of the VXSM path statistics.

Table D-23   Attributes Common to all VXSM Path Statistics

Object	Attribute
Front Card	VXSM
Back Card	VXSM-BC-4-155
Object Type	6
Subobject Type	2
Default Peak Interval	300 seconds

Table D-24 includes the description of each statistic.

Table D-24   VXSM STS Path Statistics—Descriptions

Stat ID	VXSM Path Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Sonet Path AIS	—	—	Provides a count of the alarm indication signal (AIS) instances on the path. Range: 0 to $(2^{64}-1)$
1	Sonet Path RDI	—	—	Provides a count of the remote defect indications (RDIs)/yellow alarms that occur on the path. Range: 0 to $(2^{64}-1)$
2	Loss of Pointer	—	—	Provides a count of the loss of pointer (LOP) defect states. Range: 0 to $(2^{64}-1)$
3	Trace path	—	—	Provides a count of the trace paths. Range: 0 to $(2^{64}-1)$
4	Code Violations for Path	—	—	Provides a count of the code violations (CVs) for the path. Range: 0 to $(2^{64}-1)$
5	Errored seconds for path	—	—	Provides a count of the errored seconds (ES) for the path. Range: 0 to $(2^{64}-1)$
6	Severely errored seconds for path	—	—	Provides a count of the severely errored seconds (SES) for the path. Range: 0 to $(2^{64}-1)$
7	Unavailable seconds for path	—	—	Provides a count of the unavailable seconds for the path. Range: 0 to $(2^{64}-1)$

D.5.2 VXSM DS3 Path Statistics

This section provides information about the statistics contained in the VXSM_DS3 Path group. The VXSM DS3 path statistics are applicable to the VXSM cards on the Cisco MGX 8880 PXM45-based nodes and the Cisco MGX 8850 PXM45-based nodes.

Table D-25 lists the attributes that are common to all of the VXSM DS3 path statistics.

Table D-25   Attributes Common to all VXSM DS3 Path Statistics

Object	Attribute
Front Card	VXSM
Back Card	VXSM-BC-4-155
Object Type	6
Subobject Type	3
Default Peak Interval	300 seconds

Table D-26 includes the description of each statistic.

Table D-26   VXSM DS3 Path Statistics—Descriptions

Stat ID	VXSM DS3 Path Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	LOF count	—	—	Provides a count of the loss of frames (LOFs) on the DS3 path. Range: 0 to $(2^{64}-1)$
1	Remote AIS Count	—	—	Provides a count of the remote alarm indication signal (AIS) instances on the DS3 path. Range: 0 to $(2^{64}-1)$
2	Remote Defect Count	—	—	Provides a count of the remote defect indications (RDIs)/yellow alarms that occur on the DS3 path. Range: 0 to $(2^{64}-1)$
3	P-bit Code Violations for Path	—	—	Provides a count of the P-bit code violations (CVs) for the DS3 path. Range: 0 to $(2^{64}-1)$
4	C-bit Code Violations for Path	—	—	Provides a count of the C-bit code violations (CVs) for the DS3 path. Range: 0 to $(2^{64}-1)$
144	FEBE Counts	—	—	Provides a count of the FEBEs (far-end block errors) that are encountered by the DS3 path. Range: 0 to $(2^{32}-1)$

Table D-26   VXSM DS3 Path Statistics—Descriptions (continued)

Stat ID	VXSM DS3 Path Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
6	P-bit Errored Seconds for Path	—	—	Provides a count of the errored seconds (ES) for the DS3 path. Range: 0 to $(2^{64}{-}1)$
7	C-bit Errored Seconds for Path	—	—	Provides a count of the errored seconds (ES) for the DS3 path. Range: 0 to $(2^{64}{-}1)$
8	P-bit Severely Errored Seconds for Path	—	—	Provides a count of the severely errored seconds (SES) for the DS3 path. Range: 0 to $(2^{64}{-}1)$
9	C-bit Severely Errored Seconds for Path	—	—	Provides a count of the severely errored seconds (SES) for the DS3 path. Range: 0 to $(2^{64}{-}1)$
10	Severely Errored Framing Seconds for DS3 Path	—	—	Provides a count of the severely errored framing seconds (SEFS) for the DS3 path. Range: 0 to $(2^{64}{-}1)$
11	Unavailable Seconds for DS3 Path	—	—	Provides a count of the unavailable seconds for the DS3 path. Range: 0 to $(2^{64}{-}1)$

D.5.3 VXSM DS1 N DS3 Path Statistics

This section provides information about the statistics contained in the VXSM_DS1 N DS3 Path group. The VXSM DS1 N DS3 path statistics are applicable to the VXSM cards on the Cisco MGX 8880 PXM45-based nodes and the Cisco MGX 8850 PXM45-based nodes.

Table D-27 lists the attributes that are common to all of the VXSM DS1 N DS3 path statistics.

Table D-27   Attributes Common to all VXSM DS1 N DS3 Path Statistics

Object	Attribute
Front Card	VXSM
Back Card	VXSM-BC-4-155
Object Type	6
Subobject Type	4
Default Peak Interval	300 seconds

Table D-28 includes the description of each statistic.

Table D-28   VXSM DS1 N DS3 Path Statistics—Descriptions

Stat ID	VXSM DS1 N DS3 Path Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Errored Seconds for Path	—	—	Provides a count of the errored seconds (ES) for the DS1 path. Range: 0 to $(2^{64}-1)$
1	Severely errored seconds for path	—	—	Provides a count of the severely errored seconds (SES) for the DS1 path. Range: 0 to $(2^{64}-1)$
2	Severely errored framing seconds for path	—	—	Provides a count of the SEFS for the DS1 path. Range: 0 to $(2^{64}-1)$
3	Unavailable seconds for path	—	—	Provides a count of the unavailable seconds for the DS1 path. Range: 0 to $(2^{64}-1)$
4	Code Violations for Path	—	—	Provides a count of the code violations (CVs) for the DS1 path. Range: 0 to $(2^{64}-1)$
5	Errored Seconds for line	—	—	Provides a count of the errored seconds (ES) for the DS1 path. Range: 0 to $(2^{64}-1)$
6	Severely errored seconds for line	—	—	Provides a count of the severely errored seconds (SES) for the DS1 path. Range: 0 to $(2^{64}-1)$
7	Severely errored framing seconds for line	—	—	Provides a count of the SEFS for the DS1 path. Range: 0 to $(2^{64}-1)$
8	Losses of Signal	—	—	Provides a count of the times a loss of signal (LOS) is detected. The count includes the number of LOS alarms. Range: 0 to $(2^{64}-1)$
9	LOF count	—	—	Provides a count of the loss of frames (LOFs) on the DS1 path. Range: 0 to $(2^{64}-1)$
10	Remote AIS Count	—	—	Provides a count of the remote alarm indication signal (AIS) instances on the DS1 path. Range: 0 to $(2^{64}-1)$

Table D-28   VXSM DS1 N DS3 Path Statistics—Descriptions (continued)

Stat ID	VXSM DS1 N DS3 Path Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
11	Errored seconds for DS1 path at far end	—	—	Provides a count of the ES for the DS1 path at the far end. Range: 0 to $(2^{64}-1)$
12	Severely errored seconds for DS1 path at far end	—	—	Provides a count of the SES for the DS1 path at the far end. Range: 0 to $(2^{64}-1)$
13	Severely errored framing seconds for DS1 path at far end	—	—	Provides a count of the SEFS for the DS1 path at the far end. Range: 0 to $(2^{64}-1)$
14	Unavailable seconds for DS1 path at far end	—	—	Provides a count of the unavailable seconds for the DS1 path at the far end. Range: 0 to $(2^{64}-1)$
15	Severely errored seconds for DS1 line at far end	—	—	Provides a count of the SES for the DS1 line at the far end. Range: 0 to $(2^{64}-1)$
16	Code violations for DS1 path at far end	—	—	Provides a count of the code violations for the DS1 path at the far end. Range: 0 to $(2^{64}-1)$
17	Code Violations for line	—	—	Provides a count of the code violations (CVs) for the DS1 line. Range: 0 to $(2^{64}-1)$
18	LOF count	—	—	Provides a count of the loss of frames (LOFs) on the DS1 path. Range: 0 to $(2^{64}-1)$
19	Remote AIS Count	—	—	Provides a count of the remote alarm indication signal (AIS) instances on the DS1 path. Range: 0 to $(2^{64}-1)$
20	Remote Defect Count	—	—	Provides a count of the remote defect indications (RDIs)/yellow alarms that occur on the DS1 path. Range: 0 to $(2^{64}-1)$
21	Bursty Errored Seconds for Path	—	—	Provides a count of the bursty errored seconds (BES) for the DS1 path. Range: 0 to $(2^{64}-1)$

Table D-28   VXSM DS1 N DS3 Path Statistics—Descriptions (continued)

Stat ID	VXSM DS1 N DS3 Path Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
22	Degraded Minutes	—	—	Provides a count of the degraded minutes (60-second periods where the cumulative errors exceed 1E-6 but does not exceed 1E-3) for the DS1 path. Range: 0 to (2^{64}–1)
21	Controlled Slip Seconds for Path	—	—	Provides a count of the controlled slip seconds (CSS) for the DS1 path. A Controlled Slip is the replication or deletion of the payload bits of a DS1 frame. A Controlled Slip may be performed when there is a difference between the timing of a synchronous receiving terminal and the received signal. A Controlled Slip does not cause an Out of Frame defect. Range: 0 to (2^{64}–1)

D.5.4 VXSM DS1 VT Path Statistics

This section provides information about the statistics contained in the VXSM_DS1 VT Path group. The VXSM DS1 VT path statistics are applicable to the VXSM cards on the Cisco MGX 8880 PXM45-based nodes and the Cisco MGX 8850 PXM45-based nodes.

Table D-29 lists the attributes that are common to all of the VXSM DS1 VT path statistics.

Table D-29   Attributes Common to all VXSM DS1 VT Path Statistics

Object	Attribute
Front Card	VXSM
Back Card	VXSM-BC-4-155
Object Type	6
Subobject Type	5
Default Peak Interval	300 seconds

Table D-30 includes the description of each statistic.

Table D-30   VXSM DS1 VT Path Statistics—Descriptions

Stat ID	VXSM DS1 VT Path Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Errored Seconds for Path	—	—	Provides a count of the errored seconds (ES) for the DS1 path. Range: 0 to $(2^{64}–1)$
1	Severely errored seconds for path	—	—	Provides a count of the severely errored seconds (SES) for the DS1 path. Range: 0 to $(2^{64}–1)$
2	Severely errored framing seconds for path	—	—	Provides a count of the SEFS for the DS1 path. Range: 0 to $(2^{64}–1)$
3	Unavailable seconds for path	—	—	Provides a count of the unavailable seconds for the DS1 path. Range: 0 to $(2^{64}–1)$
4	Code Violations for Path	—	—	Provides a count of the code violations (CVs) for the DS1 path. Range: 0 to $(2^{64}–1)$
5	Errored Seconds for line	—	—	Provides a count of the errored seconds (ES) for the DS1 path. Range: 0 to $(2^{64}–1)$
6	Severely errored seconds for line	—	—	Provides a count of the severely errored seconds (SES) for the DS1 path. Range: 0 to $(2^{64}–1)$
7	Severely errored framing seconds for line	—	—	Provides a count of the SEFS for the DS1 path. Range: 0 to $(2^{64}–1)$
8	Losses of Signal	—	—	Provides a count of the times a loss of signal (LOS) is detected. The count includes the number of LOS alarms. Range: 0 to $(2^{64}–1)$
9	LOF count	—	—	Provides a count of the loss of frames (LOFs) on the DS1 path. Range: 0 to $(2^{64}–1)$
10	Remote AIS Count	—	—	Provides a count of the remote alarm indication signal (AIS) instances on the DS1 path. Range: 0 to $(2^{64}–1)$

Table D-30   VXSM DS1 VT Path Statistics—Descriptions (continued)

Stat ID	VXSM DS1 VT Path Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
11	Errored seconds for DS1 path at far end	—	—	Provides a count of the ES for the DS1 path at the far end. Range: 0 to $(2^{64}-1)$
12	Severely errored seconds for DS1 path at far end	—	—	Provides a count of the SES for the DS1 path at the far end. Range: 0 to $(2^{64}-1)$
13	Severely errored framing seconds for DS1 path at far end	—	—	Provides a count of the SEFS for the DS1 path at the far end. Range: 0 to $(2^{64}-1)$
14	Unavailable seconds for DS1 path at far end	—	—	Provides a count of the unavailable seconds for the DS1 path at the far end. Range: 0 to $(2^{64}-1)$
15	Severely errored seconds for DS1 line at far end	—	—	Provides a count of the SES for the DS1 line at the far end. Range: 0 to $(2^{64}-1)$
16	Code violations for DS1 path at far end	—	—	Provides a count of the code violations for the DS1 path at the far end. Range: 0 to $(2^{64}-1)$
17	Code Violations for line	—	—	Provides a count of the code violations (CVs) for the DS1 line. Range: 0 to $(2^{64}-1)$
18	LOF count	—	—	Provides a count of the loss of frames (LOFs) on the DS1 path. Range: 0 to $(2^{64}-1)$
19	Remote AIS Count	—	—	Provides a count of the remote alarm indication signal (AIS) instances on the DS1 path. Range: 0 to $(2^{64}-1)$
20	Remote Defect Count	—	—	Provides a count of the remote defect indications (RDIs)/yellow alarms that occur on the DS1 path. Range: 0 to $(2^{64}-1)$
21	Bursty Errored Seconds for Path	—	—	Provides a count of the bursty errored seconds (BES) for the DS1 path. Range: 0 to $(2^{64}-1)$

Table D-30   VXSM DS1 VT Path Statistics—Descriptions (continued)

Stat ID	VXSM DS1 VT Path Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
22	Degraded Minutes	—	—	Provides a count of the degraded minutes (60-second periods where the cumulative errors exceed 1E-6 but does not exceed 1E-3) for the DS1 path. Range: 0 to $(2^{64}-1)$
21	Controlled Slip Seconds for Path	—	—	Provides a count of the controlled slip seconds (CSS) for the DS1 path. A Controlled Slip is the replication or deletion of the payload bits of a DS1 frame. A Controlled Slip may be performed when there is a difference between the timing of a synchronous receiving terminal and the received signal. A Controlled Slip does not cause an Out of Frame defect. Range: 0 to $(2^{64}-1)$

D.6 PNNI Network Statistics

The following PNNI network statistics are supported:

- D.6.1 PNNI Nodal Statistics
- D.6.2 PNNI Port Statistics

D.6.1 PNNI Nodal Statistics

This section provides information about contained in the PNNI_Nodal_Level group. The PNNI node statistics are applicable to the Cisco MGX 8950, Cisco MGX 8850 PXM45-based, Cisco MGX 8850 PXM1E-based, and Cisco MGX 8830 switches.

Table D-31 lists the attributes that are common to the PNNI node statistics.

Table D-31   Attributes Common to all PNNI Node Statistics

Object	Attribute
Front Cards	PXM45, PXM1E-16T1E1
Back Cards	16 Port T1E1 RJ48, 16 Port E1 MCC
Object Type	7
Subobject Type	0
Collection Interval	15 minutes
Default Peak Interval	Not supported

The PNNI node statistics are used for gathering information about SPVCs and SPVPs.

> ✎
>
> **Note**   To collect PNNI SPVC and SPVP statistics in Cisco MGM, first enable the statistics on the switch by executing the CLI command **cnfpnstat**.

Table D-32 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Table D-32   PNNI Node Statistics—Descriptions

Stat ID	PNNI Node Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Con success at orig node	—	—	Provides a count of the successful connections at the originating node.
1	Con failed at orig node	—	—	Provides a count of the failed connections at the originating node.

D.6.2 PNNI Port Statistics

This section provides information about statistics contained in the PNNI_Port_Level group. The PNNI port statistics are applicable to the Cisco MGX 8950, Cisco MGX 8850 PXM45-based, Cisco MGX 8850 PXM1E-based, and Cisco MGX 8830 switches.

Table D-33 lists the attributes that are common to the PNNI port statistics.

Table D-33   Attributes Common to all PNNI Port Statistics

Object	Attribute
Front Cards	PXM45, PXM1E-16T1E1
Back Cards	16 Port T1E1 RJ48, 16 Port E1 MCC
Object Type	7
Subobject Type	1
Collection Interval	15 minutes
Default Peak Interval	Not supported

The PNNI port statistics are used for gathering information about SPVCs and SPVPs.

> ✎
>
> **Note**   To collect PNNI SPVC and SPVP statistics in Cisco MGM, first enable the statistics on the switch by executing the CLI command **cnfpnstat**.

Table D-34 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Table D-34   PNNI Port Statistics—Descriptions

Stat ID	PNNI Port Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Con success at orig node	—	—	Provides a count of the successful connections at the originating node.
1	Con failed at orig node	—	—	Provides a count of the failed connections at the originating node.
2	Received crankback at orig node	—	—	Provides a count of the crankbacks at the originating node.
3	Initiate Crankback	—	—	Provides a count of the crankbacks that are initiated.
4	Con success at border node	—	—	Provides a count of the successful connections at the border node.
5	Con failed at border node	—	—	Provides a count of the failed connections at the boarder node.
6	Received crankback at border node	—	—	Provides a count of the crankbacks at the boarder node.

D.7 Protocol Statistics

The following protocol statistics are supported:

- D.7.1 VXSM Megaco Statistics
- D.7.2 VXSM Megaco Physical Termination Protocol Statistics
- D.7.3 VXSM Megaco Ephemeral Termination Protocol Statistics
- D.7.4 VXSM LAPD Protocol Statistics

D.7.1 VXSM Megaco Statistics

This section provides information about the statistics contained in the VXSM_PROTO_MEGACO_GATEWAY group. The VXSM megaco statistics are applicable to the VXSM cards on the Cisco MGX 8880 PXM45-based nodes and the Cisco MGX 8850 PXM45-based nodes.

Note   H.248, also known as the Megaco protocol, is the international standard for media gateway control.

Table D-35 lists the attributes that are common to all of the VXSM card statistics.

Table D-35   Attributes Common to all VXSM Card Statistics

Object	Attribute
Front Card	VXSM
Back Card	VXSM-BC-4-155

Table D-35   Attributes Common to all VXSM Card Statistics (continued)

Object	Attribute
Object Type	8
Subobject Type	0
Default Peak Interval	300 seconds

Table D-36 includes the VXSM megaco statistics.

Table D-36   VXSM Megaco Path Statistics—Descriptions

Stat ID	VXSM Megaco Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Total messages received	—	—	Provides a count of the total ingress cells. Range: 0 to $(2^{64}-1)$
1	Total messages transmitted	—	—	Provides a count of the ingress cells with cell loss priority (CLP) equal to 0 that are received prior to policing. Range: 0 to $(2^{64}-1)$
2	signaling-level errors	—	—	Provides a count of the ingress cells with cell loss priority (CLP) equal to 1 that are received prior to policing. Range: 0 to $(2^{64}-1)$
3	timer recovery events	—	—	Provides a count of the CLP0 cells with the explicit forward congestion indication (EFCI) equal to 1. These cells are received from the port. Range: 0 to $(2^{64}-1)$
4	Total failed ADD commands	—	—	Provides a count of the total number of ADD commands that have failed. Range: 0 to $(2^{64}-1)$
5	Total successful ADD commands	—	—	Provides a count of the total number of ADD commands that were successful. Range: 0 to $(2^{64}-1)$
6	Total failed SUBTRACT commands	—	—	Provides a count of the total number of SUBTRACT commands that have failed. Range: 0 to $(2^{64}-1)$
7	Total successful SUBTRACT commands	—	—	Provides a count of the total number of SUBTRACT commands that were successful. Range: 0 to $(2^{64}-1)$
8	Total failed MOVE commands	—	—	Provides a count of the total number of MOVE commands that have failed. Range: 0 to $(2^{64}-1)$

Table D-36   VXSM Megaco Path Statistics—Descriptions (continued)

Stat ID	VXSM Megaco Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
9	Total successful MOVE commands	—	—	Provides a count of the total number of MOVE commands that were successful. Range: 0 to $(2^{64}-1)$
11	Total failed MODIFY commands	—	—	Provides a count of the total number of MODIFY commands that have failed. Range: 0 to $(2^{64}-1)$
12	Total successful MODIFY commands	—	—	Provides a count of the total number of MODIFY commands that were successful. Range: 0 to $(2^{64}-1)$
12	Total failed AUDIT VALUE commands	—	—	Provides a count of the total number of AUDIT VALUE commands that have failed. Range: 0 to $(2^{64}-1)$
13	Total successful AUDIT VALUE commands	—	—	Provides a count of the total number of AUDIT VALUE commands that were successful. Range: 0 to $(2^{64}-1)$
14	Total failed AUDIT CAPABILITY commands	—	—	Provides a count of the total number of AUDIT CAPABILITY commands that have failed. Range: 0 to $(2^{64}-1)$
15	Total successful AUDIT CAPABILITY commands	—	—	Provides a count of the total number of AUDIT CAPABILITY commands that were successful. Range: 0 to $(2^{64}-1)$
16	Total failed NOTIFY commands	—	—	Provides a count of the total number of NOTIFY commands that have failed. Range: 0 to $(2^{64}-1)$
17	Total successful NOTIFY commands	—	—	Provides a count of the total number of NOTIFY commands that were successful. Range: 0 to $(2^{64}-1)$
18	Total failed Service Change commands from the MGC	—	—	Provides a count of the total number of Service Change commands from the MGC that have failed. Range: 0 to $(2^{64}-1)$
19	Total successful Service Change commands from the MGC	—	—	Provides a count of the total number of Service Change commands from the MGC that were successful. Range: 0 to $(2^{64}-1)$

Table D-36   VXSM Megaco Path Statistics—Descriptions (continued)

Stat ID	VXSM Megaco Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
20	Total failed Service Change commands from the MGC to the MG	—	—	Provides a count of the total number of Service Change commands from the MGC to the MG that failed in the MGC. Range: 0 to $(2^{64}-1)$
21	Total successful Service Change commands from the MGC to the MG	—	—	Provides a count of the total number of Service Change commands from the MGC to the MG that were successful in the MGC. Range: 0 to $(2^{64}-1)$
22	Total allocated contexts	—	—	Provides a count of the total number of contexts allocated Range: 0 to $(2^{64}-1)$
23	Total freed contexts	—	—	Provides a count of the total number of contexts that have been freed Range: 0 to $(2^{64}-1)$

D.7.2 VXSM Megaco Physical Termination Protocol Statistics

This section provides information about the statistics contained in the VXSM_PROTO_MEGACO_PHY_TERM group. The VXSM Megaco Physical Termination protocol statistics are applicable to the VXSM cards on the Cisco MGX 8880 PXM45-based nodes and the Cisco MGX 8850 PXM45-based nodes.

Table D-37 lists the attributes that are common to all of the VXSM protocol statistics.

Table D-37   Attributes Common to all VXSM Protocol Statistics

Object	Attribute
Front Card	VXSM
Back Card	VXSM-BC-4-155
Object Type	8
Subobject Type	1
Default Peak Interval	300 seconds

Table D-38 includes the VXSM Megaco Physical Termination protocol statistics.

Table D-38   VXSM Megaco Physical Termination Protocol Statistics—Descriptions

Stat ID	VXSM Megaco Physical Termination Protocol Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Total physical termination ADD commands	—	—	Provides a count of the total number of ADD commands that have been initiated. Range: 0 to $(2^{64}-1)$
1	Total failed physical termination ADD commands	—	—	Provides a count of the total number of ADD commands that have failed. Range: 0 to $(2^{64}-1)$
2	Out of service from MGC	—	Ingress–1	Provides a count of the total number of.out of service messages received from the Media Gateway Controller (MGC). Range: 0 to $(2^{64}-1)$
3	Out of service from OAM	—	Ingress	Provides a count of the total number of.out of service messages triggered by the OAM process. Range: 0 to $(2^{64}-1)$

D.7.3 VXSM Megaco Ephemeral Termination Protocol Statistics

This section provides information about the statistics contained in the VXSM_PROTO_MEGACO_EPHE_TERM group. The VXSM Megaco ephemeral termination protocol statistics are applicable to the VXSM cards on the Cisco MGX 8880 PXM45-based nodes and the Cisco MGX 8850 PXM45-based nodes.

Table D-39 lists the attributes that are common to all of the VXSM card statistics.

Table D-39   Attributes Common to all VXSM Card Statistics

Object	Attribute
Front Card	VXSM
Back Card	VXSM-BC-4-155
Object Type	8
Subobject Type	2
Default Peak Interval	300 seconds

Table D-40 includes the VXSM Megaco ephemeral termination protocol statistics.

Table D-40   VXSM Megaco Ephemeral Termination Protocol Statistics—Descriptions

Stat ID	VXSM Megaco Ephemeral Termination Protocol Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Total ephemeral termination ADD commands	—	—	Provides a count of the total number of ADD commands that have been initiated. Range: 0 to $(2^{64}-1)$
1	Total failed ephemeral termination ADD commands	—	—	Provides a count of the total number of ADD commands that have failed. Range: 0 to $(2^{64}-1)$

D.7.4 VXSM LAPD Protocol Statistics

This section provides information about the statistics contained in the VXSM_PROTO_SCTP_GW group. The VXSM LAPD Protocol statistics are applicable to the VXSM cards on the Cisco MGX 8880 PXM45-based nodes and the Cisco MGX 8850 PXM45-based nodes.

Table D-41 lists the attributes that are common to all of the VXSM card statistics.

Table D-41   Attributes Common to all VXSM Card Statistics

Object	Attribute
Front Card	VXSM
Back Card	VXSM-BC-4-155
Object Type	8
Subobject Type	5
Default Peak Interval	300 seconds

Table D-42 includes the VXSM LAPD Protocol statistics.

Table D-42   VXSM LAPD Protocol Statistics—Descriptions

Stat ID	VXSM LAPD Protocol Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Total information frames received	—	—	Provides a count of the total number of information frames received. Range: 0 to $(2^{64}-1)$
1	Total information frames transmitted	—	—	Provides a count of the total number of information frames transmitted. Range: 0 to $(2^{64}-1)$
2	Total receiver ready frames received	—	—	Provides a count of the total number of receiver ready frames received. Range: 0 to $(2^{64}-1)$

Table D-42   VXSM LAPD Protocol Statistics—Descriptions (continued)

Stat ID	VXSM LAPD Protocol Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
3	Total receiver ready frames transmitted	—	—	Provides a count of the total number of receiver ready frames transmitted. Range: 0 to $(2^{64}-1)$
4	Total receiver not ready frames received	—	—	Provides a count of the total number of receiver not ready frames received. Range: 0 to $(2^{64}-1)$
5	Total receiver not ready frames transmitted	—	—	Provides a count of the total number of receiver not ready frames transmitted. Range: 0 to $(2^{64}-1)$
6	Total Set Asynchronous Balanced mode frames received	—	—	Provides a count of the total number of Set Asynchronous Balanced mode frames received. Range: 0 to $(2^{64}-1)$
7	Total Set Asynchronous Balanced mode frames transmitted	—	—	Provides a count of the total number of Set Asynchronous Balanced mode frames transmitted. Range: 0 to $(2^{64}-1)$
8	Total disconnect frames received	—	—	Provides a count of the total number of disconnect frames received. Range: 0 to $(2^{64}-1)$
9	Total disconnect frames transmitted	—	—	Provides a count of the total number of disconnect frames transmitted. Range: 0 to $(2^{64}-1)$
10	Total unnumbered acknowledge frames received	—	—	Provides a count of the total number of unnumbered acknowledge frames received. Range: 0 to $(2^{64}-1)$
11	Total unnumbered acknowledge frames transmitted	—	—	Provides a count of the total number of unnumbered acknowledge frames transmitted. Range: 0 to $(2^{64}-1)$
12	Total disconnect mode frames received	—	—	Provides a count of the total number of disconnect mode frames received. Range: 0 to $(2^{64}-1)$
13	Total disconnect mode frames transmitted	—	—	Provides a count of the total number of disconnect mode frames transmitted. Range: 0 to $(2^{64}-1)$
14	Total frame reject frames received	—	—	Provides a count of the total number of frame reject frames received. Range: 0 to $(2^{64}-1)$

Table D-42   VXSM LAPD Protocol Statistics—Descriptions (continued)

Stat ID	VXSM LAPD Protocol Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
15	Total frame reject frames transmitted	—	—	Provides a count of the total number of frame reject frames transmitted. Range: 0 to (2^{64}–1)
16	Total exchange ID frames received	—	—	Provides a count of the total number of exchange ID frames received. Range: 0 to (2^{64}–1)
17	Total exchange ID frames transmitted	—	—	Provides a count of the total number of exchange ID frames transmitted. Range: 0 to (2^{64}–1)
18	Total unnumbered information frames received	—	—	Provides a count of the total number of unnumbered information frames received. Range: 0 to (2^{64}–1)
19	Total unnumbered information frames transmitted	—	—	Provides a count of the total number of unnumbered information frames transmitted. Range: 0 to (2^{64}–1)
20	Total reject frames received	—	—	Provides a count of the total number of reject frames received. Range: 0 to (2^{64}–1)
21	Total reject frames transmitted	—	—	Provides a count of the total number of reject frames transmitted. Range: 0 to (2^{64}–1)
22	Total invalid frames received	—	—	Provides a count of the total number of invalid frames received Range: 0 to (2^{64}–1)

D.8 Physical Line Statistics

The following physical line statistics are supported:

- D.8.1 AXSM-E T1/E1 Physical Line
- D.8.2 AXSM-E T3/E3 Physical Line
- D.8.3 AXSM-E SONET Physical Line
- D.8.4 VXSM SONET Physical Line
- D.8.5 VXSM T1E1 Physical Line Statistics

D.8.1 AXSM-E T1/E1 Physical Line

This section provides information about the statistics contained in the AXSME_Phyline_T1E1 group. The AXSM-E T1/E1 physical line statistics in this group are applicable to the Cisco MGX 8850 PXM45-based switch.

Table D-43 lists the attributes that are common to the AXSM-E T1/E1 physical line statistics.

Table D-43   Attributes Common to all AXSM-E T1/E1 Physical Line Statistics

Object	Attribute
Front Card	AXSM-16-T1E1-E
Back Cards	RJ48-8-T1-Y, SMB-8-E1
Object Type	11
Subobject Type	3
Allowable Peak Intervals	60 seconds, 300 seconds
Default Peak Interval	300 seconds

The AXSM-E T1/E1 physical line statistics are used primarily for gathering troubleshooting and performance data.

Table D-44 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Note   AXSM-E statistics are only collected at measurement points 1, 2, and 13.

Table D-44   AXSM-E T1/E1 Physical Line Statistics—Descriptions

Stat ID	AXSM-E T1/E1 Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Errored Seconds	—	—	Provides a count of the line code violation errored seconds. Range: 0 to $(2^{32}-1)$
1	Severely Errored Seconds	—	—	Provides a count of the line code violation severely errored seconds (SES) that are encountered by the interface. Severely errored seconds are classified as errored seconds that are greater than the total line bits per second multiplied by 10^{-6}. Range: 0 to $(2^{32}-1)$
2	Severely Errored Framing Seconds	No	Ingress–1	Provides a count of the severely errored framing seconds that occur within the collection interval on the T1/E1 line. Range: 0 to $(2^{40}-1)$ cells

Table D-44   AXSM-E T1/E1 Physical Line Statistics—Descriptions (continued)

Stat ID	AXSM-E T1/E1 Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
3	Unavailable Seconds	No	Ingress–1	Provides a count of the unavailable seconds on the T1/E1 line. Unavailable seconds are defined as 10 contiguous severely errored seconds. Range: 0 to $(2^{40}{-}1)$ cells
4	Path coding violations	—	—	Provides a count of the path code violations that are encountered by the interface. These violations occur when more than three zeroes in a row are transmitted. Range: 0 to $(2^{32}{-}1)$
5	Line Errored Seconds	—	—	Provides a count of the line code violation errored seconds. Range: 0 to $(2^{32}{-}1)$
6	Line Severely Errored Seconds	—	—	Provides a count of the line code violation SES that are encountered by the interface. Severely errored seconds are classified as errored seconds that are greater than the total line bits per second multiplied by 10^{-6}. Range: 0 to $(2^{32}{-}1)$
7	Path SEF/AIS (PSAS) Encountered	—	—	Provides a count of the severely errored frames or an alarm indication signals (AIS) detected on the T1/E1 line. Range: 0 to $(2^{32}{-}1)$
8	Number of occurrences of Loss of Signal	No	Ingress–1	Provides a count of the times a loss of signal (LOS) is detected on the T1/E1 line. The count includes the number of LOS alarms. Range: 0 to $(2^{40}{-}1)$ cells
9	Number of occurrences of Out of Frame	No	Ingress–1	Provides a count of the times an out of frame (OOF) is detected. The count includes the number of OOF alarms. Range: 0 to $(2^{32}{-}1)$
10	Number of occurrences of RAI	No	Ingress–1	Provides a count of the remote alarm indication (RAI) occurrences on the T1/E1 line. Range: 0 to $(2^{32}{-}1)$
11	Far-end Errored Seconds	No	Ingress–1	Provides a count of the seconds errors are detected at the far end of the T1/E1 line. Range: 0 to $(2^{40}{-}1)$ cells

Table D-44   AXSM-E T1/E1 Physical Line Statistics—Descriptions (continued)

Stat ID	AXSM-E T1/E1 Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
12	Far-end severely Errored Seconds	—	—	Provides a count of the far end SES that occur within the collection interval.
				Severely errored seconds are classified as errored seconds that are greater than the total line bits per second multiplied by 10^{-6}.
				Range: 0 to $(2^{32}-1)$
13	Far-end severely Errored Framing Seconds	No	Ingress–1	Provides a count of the severely errored framing seconds that occur within the collection interval on the T1/E1 line.
				Range: 0 to $(2^{40}-1)$ cells
14	Far-end Unavailable Seconds	No	Ingress–1	Provides a count of the unavailable seconds at the far end of the T1/E1 line.
				Unavailable seconds are defined as 10 contiguous severely errored seconds.
				Range: 0 to $(2^{40}-1)$
15	Far-end line errored seconds	—	—	Provides a count of the line code violation errored seconds at the far end.
				Range: 0 to $(2^{32}-1)$
16	Far-end path coding violations	—	—	Provides a count of the path code violations that are encountered at the far end.
				These violations occur when more than three zeroes in a row are transmitted.
				Range: 0 to $(2^{32}-1)$
17	Line code violations	No	Ingress–1	Provides a count of the line code violations encountered by the T1/E1 line.
				Range: 0 to $(2^{40}-1)$ cells)

D.8.2 AXSM-E T3/E3 Physical Line

This section provides information about the statistics contained in the AXSME_Phyline_T3E3 group. The AXSM-E T3/E3 physical line statistics in this group are applicable to the Cisco MGX 8850 PXM45-based switch.

Table D-45 lists the attributes that are common to the AXSM-E T3/E3 physical line statistics.

Table D-45   Attributes Common to all AXSM-E T3/E3 Physical Line Statistics

Object	Attribute
Front Card	AXSM-16-T3E3-E
Back Cards	SMB-8-T3, SMB-8-E3
Object Type	11

Table D-45   Attributes Common to all AXSM-E T3/E3 Physical Line Statistics (continued)

Object	Attribute
Subobject Type	4
Allowable Peak Intervals	60 seconds, 300 seconds
Default Peak Interval	300 seconds

The AXSM-E T3/E3 physical line statistics are used primarily for gathering troubleshooting and performance data.

Table D-46 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Note   AXSM-E statistics are only collected at measurement points 1, 2, and 13.

Table D-46   AXSM-E T3/E3 Physical Line Statistics—Descriptions

Stat ID	AXSM-E T3/E3 Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Loss of Signal Occurrences	No	Ingress–1	Provides a count of the times a loss of signal (LOS) is detected on the T3 line. The count includes the number of LOS alarms. Range: 0 to (2^{40}–1) cells
1	Loss of Frame Occurrences	No	Ingress–1	Provides a count of the loss of frames (LOFs) that are encountered by the T3 line. Range: 0 to (2^{40}–1) cells
2	Alarm Indication Signal Occurrences	No	Ingress–1	Provides a count of the alarm indication signal (AIS) instances on the T3 line. Range: 0 to (2^{40}–1) cells
3	Yellow Alarm Occurrences	No	Ingress–1	Provides a count of the times yellow alarms are detected on the T3 line. Range: 0 to (2^{40}–1) cells
4	Number of line code violations	No	Ingress–1	Provides a count of the line code violations encountered by the T3 line. Range: 0 to (2^{40}–1) cells
5	Number of p-bit parity code violations	No	Ingress–1	Provides a count of the P-bit parity codes that do not match the locally calculated parity code on the T3 line. Range: 0 to (2^{40}–1) cells
6	Number of c-bit parity code violations	No	Ingress–1	Provides a count of the C-bit parity code violations that do not match the locally calculated parity code on the T3 line. Range: 0 to (2^{40}–1) cells

Table D-46   AXSM-E T3/E3 Physical Line Statistics—Descriptions (continued)

Stat ID	AXSM-E T3/E3 Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
7	Far end blocked errors	No	Ingress–1	Provides a count of the far end block errors that occur within the collection interval on the T3 line. Range: 0 to (2^{40}–1) cells
8	Seconds with at least one LCV + number of LOS	No	Ingress–1	Provides a count of the seconds with at least one line code violation (LCV) and one LOS on the T3 line. Range: 0 to (2^{40}–1) cells
9	Seconds with at least one PCV + number of LOF	No	Ingress–1	Provides a count of the seconds with at least one parity code violation (PCV) and one LOF on the T3 line. Range: 0 to (2^{40}–1) cells
10	Seconds with at least one CCV + number of LOF	No	Ingress–1	Provides a count of seconds with at least one C-bit code violation and one LOF on the T3 line. Range: 0 to (2^{40}–1) cells
11	Seconds with 45/34(T3)LCV + number of LOS	No	Ingress–1	Provides a count of seconds with 45/34 LCVs and LOSs on the T3 line. Range: 0 to (2^{40}–1) cells
12	Seconds with 44(T3)PCV + number of LOF	No	Ingress–1	Provides a count of the seconds with 44 PCVs and LOFs on the T3 line. Range: 0 to (2^{40}–1) cells
13	Seconds with 44(T3)CCV + number of LOF	No	Ingress–1	Provides a count of the seconds with 44 CCVs and LOFs on the T3 line. Range: 0 to (2^{40}–1) cells
14	Seconds with severely errored framing	No	Ingress–1	Provides a count of the severely errored framing seconds that occur within the collection interval on the T3 line. Range: 0 to (2^{40}–1) cells
15	Unavailable seconds	No	Ingress–1	Provides a count of the unavailable seconds on the T3 line. Unavailable seconds are defined as 10 contiguous severely errored seconds. Range: 0 to (2^{40}–1) cells
16	PLCP Loss of Frames	No	Ingress–1	Provides a count of the loss of frames detected by the physical layer convergence protocol (PLCP) interface on the T3 line. Range: 0 to (2^{40}–1) cells
17	PLCP YEL-LOW	No	Ingress–1	Provides a count of the number of times PLCP yellow defects are detected on the T3 line. Range: 0 to (2^{40}–1) cells

Table D-46   AXSM-E T3/E3 Physical Line Statistics—Descriptions (continued)

Stat ID	AXSM-E T3/E3 Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
18	PLCP bip 8-errors	No	Ingress–1	Provides a count of the PLCP BIP-8 errors on the T3 line. Range: 0 to $(2^{40}{-}1)$ cells
19	PLCP far end blocked errors	No	Ingress–1	Provides a count of the far end block errors that are encountered by the PLCP interface on the T3 line. Range: 0 to $(2^{40}{-}1)$ cells
20	Seconds with at least one PLCP bip-8 error	No	Ingress–1	Provides a count of the seconds with at least one PLCP BIP-8 error detected on the T3 line. Range: 0 to $(2^{40}{-}1)$ cells
21	Seconds with 5 PLCP bip-8 errors n	No	Ingress–1	Provides a count of the seconds with at least five PLCP BIP-8 errors that are detected on the T3 line. Range: 0 to $(2^{40}{-}1)$ cells
22	Seconds with T3 PLCP far end blocked errors	No	Ingress–1	Provides a count of the seconds with PLCP far end block errors that are detected on the T3 line. Range: 0 to $(2^{40}{-}1)$ cells
23	Seconds with 5 PLCP FEBE errors + PLCP YEL	No	Ingress–1	Provides a count of the seconds with at least five PLCP far end block errors (FEBE) and yellow defects detected on the T3 line. Range: 0 to $(2^{40}{-}1)$ cells
24	Seconds with T3 severely errored framing	No	Ingress–1	Provides a count of the severely errored framing seconds that occur within the collection interval on the T3 line. Range: 0 to $(2^{40}{-}1)$ cells
25	T3 PLCP unavailable seconds	No	Ingress–1	Provides a count of the unavailable seconds on the T3 line. Unavailable seconds are defined as 10 contiguous severely errored seconds. Range: 0 to $(2^{40}{-}1)$ cells
26	PLCP Framing Errors	No	Ingress–1	Provides a count of the framing errors that are detected by the PLCP interface on the T3 line. Range: 0 to $(2^{40}{-}1)$ cells
27	PLCP Framing Error Seconds	No	Ingress–1	Provides a count of seconds that framing errors are detected by PLCP interface on the T3 line. Range: 0 to $(2^{40}{-}1)$ cells
28	PLCP Severely Errored Framing Seconds	No	Ingress–1	Provides a count of the severely errored seconds based on PLCP framing errors detected on the T3 line. Range: 0 to $(2^{40}{-}1)$ cells

Table D-46   AXSM-E T3/E3 Physical Line Statistics—Descriptions (continued)

Stat ID	AXSM-E T3/E3 Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
29	Occurrences of loss of cell delineation	No	Ingress–1	Provides a count of the loss of cell delineation defect states on the T3 line. Range: 0 to $(2^{40}-1)$ cells
30	T3 far end errored seconds	No	Ingress–1	Provides a count of the seconds errors are detected at the far end of the T3 line. Range: 0 to $(2^{40}-1)$ cells
31	T3 far end severely errored seconds	T3 far end errored seconds	Ingress–1	Provides a count of the severely errored seconds (SES) that occur at the far end of the T3 line. Severely errored seconds are classified as errored seconds that are greater than the total line bits per second multiplied by 10^{-6}. Range: 0 to $(2^{40}-1)$ cells
32	T3 far end unavailable seconds	No	Ingress–1	Provides a count of the unavailable seconds at the far end of the T3 line. Unavailable seconds are defined as 10 contiguous severely errored seconds. Range: 0 to $(2^{40}-1)$ cells
50	loss of signal occurrences	No	Ingress–1	Provides a count of the times a loss of signal (LOS) is detected on the E3 line. The count includes the number of LOS alarms. Range: 0 to $(2^{40}-1)$ cells
51	loss of frame occurrences	No	Ingress–1	Provides a count of the loss of frames (LOFs) that are encountered by the E3 line. Range: 0 to $(2^{40}-1)$ cells
52	alarm indication signal occurrences	No	Ingress–1	Provides a count of the alarm indication signal (AIS) instances on the E3 line. Range: 0 to $(2^{40}-1)$ cells
53	yellow alarms occurrences	No	Ingress–1	Provides a count of the times yellow alarms are detected on the E3 line. Range: 0 to $(2^{40}-1)$ cells
54	loss of cell delineation occurrences	No	Ingress–1	Provides a count of the loss of cell delineation defect states on the E3 line. Range: 0 to $(2^{40}-1)$ cells
55	trail trace byte mismatch	No	Ingress–1	Provides a count of the trail trace byte (TTB) mismatch occurrences on the E3 line. Range: 0 to $(2^{40}-1)$ cells
56	line code violations	No	Ingress–1	Provides a count of the line code violations encountered by the E3 line. Range: 0 to $(2^{40}-1)$ cells

Table D-46   AXSM-E T3/E3 Physical Line Statistics—Descriptions (continued)

Stat ID	AXSM-E T3/E3 Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
57	Seconds with at least one LCV + number of LOS	No	Ingress–1	Provides a count of the seconds with at least one line code violation (LCV) and one loss of signal (LOS) on the E3 line. Range: 0 to $(2^{40}-1)$ cells
58	Seconds with 45/34 (E3) LCV+ number of LOS	No	Ingress–1	Provides a count of seconds with 45/34 LCVs and LOSs on the E3 line. Range: 0 to $(2^{40}-1)$ cells
59	Number of p-bit parity code violations	No	Ingress–1	Provides a count of the P-bit parity codes that do not match the locally calculated parity code on the E3 line. Range: 0 to $(2^{40}-1)$ cells
60	Seconds with at least one PCV + number of LOF	No	Ingress–1	Provides a count of the seconds with at least one parity code violation (PCV) and one loss of frame (LOF) on the E3 line. Range: 0 to $(2^{40}-1)$ cells
61	Seconds with at least one CCV + number of LOF	No	Ingress–1	Provides a count of seconds with at least one C-bit code violation and one LOF on the E3 line. Range: 0 to $(2^{40}-1)$ cells
62	Seconds with severely errored framing	No	Ingress–1	Provides a count of the severely errored framing seconds that occur within the collection interval on the E3 line. Range: 0 to $(2^{40}-1)$ cells
63	Unavailable Seconds	No	Ingress–1	Provides a count of the unavailable seconds on the E3 line. Unavailable seconds are defined as 10 contiguous severely errored seconds. Range: 0 to $(2^{40}-1)$ cells
64	Far end blocked errors	No	Ingress–1	Provides a count of the far end block errors that occur within the collection interval on the E3 line. Range: 0 to $(2^{40}-1)$ cells
65	Far end errored seconds	No	Ingress–1	Provides a count of the seconds errors are detected at the far end of the E3 line. Range: 0 to $(2^{40}-1)$ cells

Table D-46   AXSM-E T3/E3 Physical Line Statistics—Descriptions (continued)

Stat ID	AXSM-E T3/E3 Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
66	Far end severely errored seconds	Far end errored seconds	Ingress–1	Provides a count of the severely errored seconds (SES) that occur at the far end of the E3 line. Severely errored seconds are classified as errored seconds that are greater than the total line bits per second multiplied by 10^{-6}. Range: 0 to $(2^{40}-1)$ cells
67	Far end unavailable seconds	No	Ingress–1	Provides a count of the unavailable seconds at the far end of the E3 line. Unavailable seconds are defined as 10 contiguous severely errored seconds. Range: 0 to $(2^{40}-1)$

D.8.3 AXSM-E SONET Physical Line

This section provides information about the statistics contained in the AXSME_Phyline_SONET group. The AXSM-E SONET physical line statistics in this group are applicable to the Cisco MGX 8850 PXM45-based switch.

Table D-47 lists the attributes that are common to the AXSM-E SONET physical line statistics.

Table D-47   Attributes Common to all AXSM-E SONET Physical Line Statistics

Object	Attribute
Front Cards	AXSM-8-155-E, AXSM-2-622-E
Back Cards	SMB-4-155, SMFLR-4-155, SMFIR-4-155, MMF-4-155, SMFLR-1-622, SMFIR-1-622
Object Type	11
Subobject Type	5
Allowable Peak Intervals	60 seconds, 300 seconds
Default Peak Interval	300 seconds

The AXSM-E SONET physical line statistics are used primarily for gathering troubleshooting and performance data.

Table D-48 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Note   AXSM-E statistics are only collected at measurement points 1, 2, and 13.

Table D-48   *AXSM-E SONET Physical Line Statistics—Descriptions*

Stat ID	AXSM-E SONET Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	LOS defect state occurrences	No	Ingress–1	Provides a count of the times a loss of signal (LOS) is detected on the SONET line. The count includes the number of LOS alarms. Range: 0 to $(2^{40}-1)$ cells
1	LOF defect state occurrences	No	Ingress–1	Provides a count of the loss of frames (LOFs) that are encountered by the SONET line. Range: 0 to $(2^{40}-1)$ cells
2	AIS defect state occurrences	No	Ingress–1	Provides a count of the alarm indication signal (AIS) instances on the SONET line. Range: 0 to $(2^{40}-1)$ cells
3	Yellow Alarm defect state occurrences	No	Ingress–1	Provides a count of the times yellow alarms are detected on the SONET line. Range: 0 to $(2^{40}-1)$ cells
4	Loss of Cell delineation defect occurrences	No	Ingress–1	Provides a count of the loss of cell delineation defect states on the SONET line. Range: 0 to $(2^{40}-1)$ cells
5	Number of instances of Loss of Pointer	No	Ingress–1	Provides a count of the loss of pointer defect states on the SONET line. Range: 0 to $(2^{40}-1)$ cells
6	Number of instances of Path AIS	No	Ingress–1	Provides a count of the AIS instances on the path. Range: 0 to $(2^{40}-1)$ cells
7	Number of instances of Path Yellow	No	Ingress–1	Provides a count of the times yellow alarms are detected on the path. Range: 0 to $(2^{40}-1)$ cells
8	Trace section	No	Ingress–1	Provides a count of the section traces. Range: 0 to $(2^{40}-1)$ cells
9	Trace path	No	Ingress–1	Provides a count of the path traces. Range: 0 to $(2^{40}-1)$ cells
10	Aps_mis	No	Ingress–1	Provides a count of the total automatic protection system (APS) mismatches. Range: 0 to $(2^{40}-1)$ cells
11	Aps_psbf	No	Ingress–1	Provides a count of the protection switching byte failures (PSBFs) that are detected on the SONET line. Range: 0 to $(2^{40}-1)$ cells

Table D-48   AXSM-E SONET Physical Line Statistics—Descriptions (continued)

Stat ID	AXSM-E SONET Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
12	Aps_chan_mis	No	Ingress–1	Provides a count of the APS channel mismatches that are detected on the SONET line. Range: 0 to $(2^{40}-1)$ cells
13	Aps_mode_mis	No	Ingress–1	Provides a count of the APS mode mismatches that are detected on the SONET line. Range: 0 to $(2^{40}-1)$ cells
14	Aps_fe_prot	No	Ingress–1	Provides a count of the switches to fast Ethernet protocol. Range: 0 to $(2^{40}-1)$ cells
15	Code violations for section	No	Ingress–1	Provides a count of the section code violations. Range: 0 to $(2^{40}-1)$ cells
16	Errored seconds for section	No	Ingress–1	Provides a count of the section errored seconds that occur within the collection interval. Range: 0 to $(2^{40}-1)$ cells
17	Severely Errored seconds for section	No	Ingress–1	Provides a count of the section severely errored seconds that occur within the collection interval. Severely errored seconds are classified as errored seconds that are greater than the total line bits per second multiplied by 10^{-6}. Range: 0 to $(2^{40}-1)$ cells
18	Unavailable seconds for section	No	Ingress–1	Provides a count of the section unavailable seconds. Unavailable seconds are defined as 10 contiguous severely errored seconds. Range: 0 to $(2^{40}-1)$ cells
19	Code violations for line	No	Ingress–1	Provides a count of the code violations encountered by the SONET line. Range: 0 to $(2^{40}-1)$ cells
20	Errored seconds for line	No	Ingress–1	Provides a count of the errored seconds that occur within the collection interval on the SONET line. Range: 0 to $(2^{40}-1)$ cells

Table D-48   AXSM-E SONET Physical Line Statistics—Descriptions (continued)

Stat ID	AXSM-E SONET Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
21	Severely errored seconds for line	No	Ingress–1	Provides a count of the severely errored seconds that occur within the collection interval on the SONET line. Severely errored seconds are classified as errored seconds that are greater than the total line bits per second multiplied by 10^{-6}. Range: 0 to (2^{40}–1) cells
22	Unavailable seconds for line	No	Ingress–1	Provides a count of the unavailable seconds on the SONET line. Unavailable seconds are defined as 10 contiguous severely errored seconds. Range: 0 to (2^{40}–1) cells
23	Code violations for line at far end	No	Ingress–1	Provides a count of the code violations at the far end of the line. Range: 0 to (2^{40}–1) cells
24	Errored seconds for line at far end	No	Ingress–1	Provides a count of the errored seconds that occur at the far end of the line. Range: 0 to (2^{40}–1) cells
25	Severely Errored seconds for line at far end	No	Ingress–1	Provides a count of the severely errored seconds at the far end of the line. Severely errored seconds are classified as errored seconds that are greater than the total line bits per second multiplied by 10^{-6}. Range: 0 to (2^{40}–1) cells
26	Unavailable seconds for line at far end	No	Ingress–1	Provides a count of the section unavailable seconds for the line. Unavailable seconds are defined as 10 contiguous severely errored seconds. Range: 0 to (2^{40}–1) cells
27	Code violations for path	No	Ingress–1	Provides a count of the path code violations. Range: 0 to (2^{40}–1) cells
28	Errored seconds for path	No	Ingress–1	Provides a count of the path errored seconds. Range: 0 to (2^{40}–1) cells
29	Severely errored seconds for path	No	Ingress–1	Provides a count of the path severely errored seconds. Severely errored seconds are classified as errored seconds that are greater than the total line bits per second multiplied by 10^{-6}. Range: 0 to (2^{40}–1) cells

Table D-48   AXSM-E SONET Physical Line Statistics—Descriptions (continued)

Stat ID	AXSM-E SONET Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
30	Unavailable seconds for path	No	Ingress–1	Provides a count of the path unavailable seconds for the line. Unavailable seconds are defined as 10 contiguous severely errored seconds. Range: 0 to $(2^{40}-1)$ cells
31	Code violations for path at far end	No	Ingress–1	Provides a count of the path code violations at the far end of the line. Range: 0 to $(2^{40}-1)$ cells
32	Errored seconds for path at far end	No	Ingress–1	Provides a count of the path errored seconds that occur at the far end of the line. Range: 0 to $(2^{40}-1)$ cells
33	Severely errored seconds for path at far end	No	Ingress–1	Provides a count of the path severely errored seconds at the far end of the line. Severely errored seconds are classified as errored seconds that are greater than the total line bits per second multiplied by 10^{-6}. Range: 0 to $(2^{40}-1)$ cells
34	Unavailable seconds for path at far end	No	Ingress–1	Provides a count of the path unavailable seconds for the line. Unavailable seconds are defined as 10 contiguous severely errored seconds. Range: 0 to $(2^{40}-1)$

D.8.4 VXSM SONET Physical Line

This section provides information about the statistics contained in the VXSM_Phyline_SONET group. The VXSM SONET physical line statistics are applicable to the VXSM cards on the Cisco MGX 8880 PXM45-based nodes and the Cisco MGX 8850 PXM45-based nodes.

Table D-49 lists the attributes that are common to all of the VXSM SONET physical line statistics.

Table D-49   Attributes Common to all VXSM SONET Physical Line Statistics

Object	Attribute
Front Card	VXSM
Back Card	VXSM-BC-4-155
Object Type	11
Subobject Type	13
Default Peak Interval	300 seconds

Table D-50 includes the VXSM SONET physical line statistics.

Table D-50   VXSM SONET Physical Line Statistics—Descriptions

Stat ID	VXSM SONET Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	LOS defect state occurrences	—	—	Provides a count of the times a loss of signal (LOS) is detected. Range: 0 to $(2^{64}-1)$
1	LOF defect state occurrences	—	—	Provides a count of the loss of frames (LOFs) that are encountered by a SONET line. Range: 0 to $(2^{64}-1)$
2	AIS defect state occurrences	—	—	Provides a count of the alarm indication signal (AIS) instances on the line. Range: 0 to $(2^{64}-1)$
3	Yellow Alarm defect state occurrences	—	—	Provides a count of the remote defect indications (RDIs)/yellow alarms that occur. Range: 0 to $(2^{64}-1)$
4	Trace Section	—	—	Provides a count of the trace section. Range: 0 to $(2^{64}-1)$
5	Aps_mis	—	—	Provides a count for K1 and K2 changing. Range: 0 to $(2^{64}-1)$
6	Aps_psbf	—	—	Provides a count of the APS protected switch byte failures. Range: 0 to $(2^{64}-1)$
7	Aps_chan_mis	—	—	Provides a count of the APS channel mismatches. Range: 0 to $(2^{64}-1)$
8	Aps_mode_mis	—	—	Provides a count of the APS mode mismatches (different APS mode from the far-end). Range: 0 to $(2^{64}-1)$
9	Aps_fe_prot	—	—	Provides a count of the LOS on the protected far-end. Range: 0 to $(2^{64}-1)$
10	Code violations for section	—	—	Provides a count of the code violations (CVs) for the section. Range: 0 to $(2^{64}-1)$
11	Errored seconds for section	—	—	Provides a count of the errored seconds (ES) for the section. Range: 0 to $(2^{64}-1)$

Table D-50   VXSM SONET Physical Line Statistics—Descriptions (continued)

Stat ID	VXSM SONET Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
12	Severely Errored seconds for section	—	—	Provides a count of the severely errored seconds (SES) for the section. Range: 0 to $(2^{64}-1)$
13	Unavailable seconds for section	—	—	Provides a count of the unavailable seconds for the section. Range: 0 to $(2^{64}-1)$
14	Code violations for line	—	—	Provides a count of the code violations (CVs) for the line. Range: 0 to $(2^{64}-1)$
15	Errored seconds for line	—	—	Provides a count of the errored seconds (ES) for the line. Range: 0 to $(2^{64}-1)$
16	Severely errored seconds for line	—	—	Provides a count of the severely errored seconds (SES) for the line. Range: 0 to $(2^{64}-1)$
17	Unavailable seconds for line	—	—	Provides a count of the unavailable seconds for the line. Range: 0 to $(2^{64}-1)$

D.8.5 VXSM T1E1 Physical Line Statistics

This section provides information about the statistics contained in the VXSM T1E1 physical line statistics. The VXSM T1/E1 statistics are applicable to the VXSM cards on the Cisco MGX 8880 PXM45-based nodes and the Cisco MGX 8850 PXM45-based nodes.

Table D-51 lists the attributes that are common to the VXSM T1/E1 statistics.

Table D-51   Attributes Common to all VXSM T1/E1 Statistics

Object	Attribute
Front Cards	VXSM-48T1E1
Back Cards	48 Port T1E1 RJ48, 48 Port E1 MCC
Object Type	11
Subobject Type	14
Default Peak Interval	300 seconds

The VXSM T1/E1 statistics are used primarily for gathering performance data.

Table D-52 includes the description of each statistic and the point during the data flow at which the statistic gathers the appropriate information. Each measurement point refers to the corresponding point in Figure 1.

Table D-52   VXSM T1/E1 Physical Line Statistics—Descriptions

Stat ID	VXSM T1/E1 Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
0	Errored Seconds	—	—	Provides a count of the line code violation errored seconds. Range: 0 to $(2^{32}-1)$
1	Severely Errored Seconds	—	—	Provides a count of the near end severely errored seconds (SES) that occur within the collection interval. Severely errored seconds are classified as errored seconds that are greater than the total line bits per second multiplied by 10^{-6}. Range: 0 to $(2^{32}-1)$
2	Severely Errored Framing Seconds	No	Ingress–1	Provides a count of the severely errored framing seconds that occur within the collection interval on the T1/E1 line. Range: 0 to $(2^{40}-1)$ cells
3	Unavailable Seconds	No	Ingress–1	Provides a count of the unavailable seconds on the T1/E1 line. Unavailable seconds are defined as 10 contiguous severely errored seconds. Range: 0 to $(2^{40}-1)$ cells
4	Path coding violations	—	—	Provides a count of the path code violations that are encountered by the interface. These violations occur when more than three zeroes in a row are transmitted. Range: 0 to $(2^{32}-1)$
5	No. of occurrences of Out of Frame	No	Ingress–1	Provides a count of the times an out of frame (OOF) is detected. The count includes the number of OOF alarms. Range: 0 to $(2^{32}-1)$
6	No. of occurrences of RAI	No	Ingress–1	Provides a count of the remote alarm indication (RAI) occurrences on the T1/E1 line. Range: 0 to $(2^{32}-1)$
7	Far-end Errored Seconds	No	Ingress–1	Provides a count of the seconds errors are detected at the far end of the T1/E1 line. Range: 0 to $(2^{40}-1)$ cells

Table D-52   VXSM T1/E1 Physical Line Statistics—Descriptions (continued)

Stat ID	VXSM T1/E1 Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
8	Far-end severely Errored Seconds	—	—	Provides a count of the far end SES that occur within the collection interval. Severely errored seconds are classified as errored seconds that are greater than the total line bits per second multiplied by 10^{-6}. Range: 0 to $(2^{32}–1)$
9	Far-end severely Errored Framing Secs	No	Ingress–1	Provides a count of the severely errored framing seconds that occur within the collection interval on the T1/E1 line. Range: 0 to $(2^{40}–1)$ cells
10	Far-end Unavailable Seconds	No	Ingress–1	Provides a count of the unavailable seconds at the far end of the T1/E1 line. Unavailable seconds are defined as 10 contiguous severely errored seconds. Range: 0 to $(2^{40}–1)$
11	Far-end line errored Seconds	—	—	Provides a count of the line code violation errored seconds at the far end. Range: 0 to $(2^{32}–1)$
12	Far-end path coding violations	—	—	Provides a count of the path code violations that are encountered at the far end. These violations occur when more than three zeroes in a row are transmitted. Range: 0 to $(2^{32}–1)$
13	LOF count	—	—	Provides a count of the loss of frames (LOFs). Range: 0 to $(2^{64}–1)$
14	Remote AIS Count	—	—	Provides a count of the remote alarm indication signal (AIS) instances on the DS1 path. Range: 0 to $(2^{64}–1)$

Table D-52   *VXSM T1/E1 Physical Line Statistics—Descriptions (continued)*

Stat ID	VXSM T1/E1 Physical Line Statistics	Subset of Other Statistics	Ingress/Egress Measurement Point	Description
15	Bursty Errored Seconds	—	—	Provides a count of the bursty errored seconds (BES). Range: 0 to (2^{64}–1)
16	Controlled Slip Seconds	—	—	Provides a count of the controlled slip seconds (CSS). A Controlled Slip is the replication or deletion of the payload bits of a DS1 frame. A Controlled Slip may be performed when there is a difference between the timing of a synchronous receiving terminal and the received signal. A Controlled Slip does not cause an Out of Frame defect. Range: 0 to (2^{64}–1)