

EPS Counters and Gauges

DESCRIPTION

Copyright

© Ericsson AB 2011–2012. All rights reserved. No part of this document may be reproduced in any form without the written permission of the copyright owner.

Disclaimer

The contents of this document are subject to revision without notice due to continued progress in methodology, design and manufacturing. Ericsson shall have no liability for any error or damage of any kind resulting from the use of this document.



Contents

1	Introduction	1
1.1	Target Groups	1
1.2	Overview	1
1.3	Field Description	1
1.4	Distributed Counters and Gauges	2
2	Common Control Plane Counters and Gauges	2
2.1	Charging	3
2.1.1	ClosedCdrFiles	3
2.1.2	RfAcaFailRcvd - DEPRECATED	3
2.1.3	RfAcaSuccRcvd - DEPRECATED	3
2.1.4	RfAcrSent - DEPRECATED	4
2.1.5	RfAcrWrittenToDisk - DEPRECATED	4
2.2	ICR	4
2.2.1	ICR Keepalive Received	5
2.2.2	ICR Keepalive Received by Node in Active no Peer State	5
2.2.3	ICR Keepalive Received by Node in Active with Peer State	5
2.2.4	ICR Keepalive Received by Node in ICR Init State	6
2.2.5	ICR Keepalive Received by Node in Standby State	6
2.2.6	ICR Keepalive Send Failed	7
2.2.7	ICR Keepalive Sent by Node in Active no Peer State	7
2.2.8	ICR Keepalive Sent by Node in Standby State	7
2.2.9	ICR Peer Detected and Local Node Set to Standby	8
2.2.10	ICR Peer Detected by Receiving Keepalive	8
2.2.11	ICR Peer Detection Expiry	9
2.2.12	ICR Peer Loss	9
2.2.13	ICR Switchover Request by CLI	10
2.2.14	ICR Switchovers	10
2.2.15	IcrCreateSessionSyncRcvd	10
2.2.16	IcrCreateSessionSyncSent	11
2.2.17	IcrDeleteSessionSyncRcvd	11
2.2.18	IcrDeleteSessionSyncSent	12
2.3	Protocols	12
2.3.1	DiameterMsgInvalidRcvd	12
2.4	Sessions	12
2.4.1	PdnConnectionTimeout	13
2.4.2	BearersEstablished	13
2.4.3	ConnectionsEstablished	13
2.4.4	UeAttached	14
3	Common User Plane Counters and Gauges	14
3.1	Sessions per UE	14



3.1.1	PdnConnDIBytesSent	14
3.1.2	PdnConnDIPktsDropped	15
3.1.3	PdnConnDIPktsSent	15
3.1.4	PdnConnUIBytesSent	15
3.1.5	PdnConnUIPktsDropped	16
3.1.6	PdnConnUIPktsSent	16
4	PGW Control Plane Counters and Gauges	17
4.1	Charging	17
4.1.1	PgwCdrsEncoded	17
4.1.2	PgwRfAcaFailRcvd	17
4.1.3	PgwRfAcaSuccRcvd	18
4.1.4	PgwRfAcrSent	18
4.1.5	PgwRfAcrWrittenToDisk	18
4.2	Gn / Gp	19
4.2.1	GnGpCreatePdpCtxReqRcvd	19
4.2.2	GnGpCreatePdpCtxRespAccSent	19
4.2.3	GnGpCreatePdpCtxRespRejSent	19
4.2.4	GnGpDeletePdpCtxReqRcvd	20
4.2.5	GnGpDeletePdpCtxReqSent	20
4.2.6	GnGpDeletePdpCtxRespAccRcvd	21
4.2.7	GnGpDeletePdpCtxRespAccSent	21
4.2.8	GnGpDeletePdpCtxRespRejRcvd	21
4.2.9	GnGpDeletePdpCtxRespRejSent	22
4.2.10	GnGpUpdatePdpCtxReqRcvd	22
4.2.11	GnGpUpdatePdpCtxReqSent	22
4.2.12	GnGpUpdatePdpCtxRespAccRcvd	23
4.2.13	GnGpUpdatePdpCtxRespAccSent	23
4.2.14	GnGpUpdatePdpCtxRespRejRcvd	23
4.2.15	GnGpUpdatePdpCtxRespRejSent	24
4.3	Gx	24
4.3.1	GxCcaInitialFailRcvd	24
4.3.2	GxCcaInitialSuccRcvd	25
4.3.3	GxCcaTerminateFailRcvd	25
4.3.4	GxCcaTerminateSuccRcvd	25
4.3.5	GxCcaUpdateFailRcvd	26
4.3.6	GxCcaUpdateSuccRcvd	26
4.3.7	GxCcrInitialSent	27
4.3.8	GxCcrTerminateSent	27
4.3.9	GxCcrUpdateSent	27
4.3.10	GxRaaFailSent	28
4.3.11	GxRaaSuccSent	28
4.3.12	GxRarRcvd	28
4.4	HTTP	29
4.4.1	HttpRedirectRespFail	29
4.4.2	HttpRedirectRespSuccSent	29
4.5	ICMPv6	29
4.5.1	PgwIcmpv6NeighborAdvSent	30
4.5.2	PgwIcmpv6NeighborSolRcvd	30



4.5.3	Pgwlcmpv6RouterAdvSent	30
4.5.4	Pgwlcmpv6RouterSolRcvd	31
4.6	S2a	31
4.6.1	S2aBraPdnConnDeletionAccRcvd	31
4.6.2	S2aBraPdnConnDeletionInvalidRcvd	31
4.6.3	S2aBraPdnConnDeletionRejRcvd	32
4.6.4	S2aBriPdnConnDeletionSent	32
4.6.5	S2aPbaPdnConnCreateAccSent	33
4.6.6	S2aPbaPdnConnCreateRejSent	33
4.6.7	S2aPbaPdnConnDeletionAccSent	33
4.6.8	S2aPbaPdnConnDeletionRejSent	34
4.6.9	S2aPbaPdnConnHoIntraAccSent	34
4.6.10	S2aPbaPdnConnHoIntraRejSent	35
4.6.11	S2aPbaPdnConnHoIntraAccSent	35
4.6.12	S2aPbaPdnConnHoIntraRejSent	35
4.6.13	S2aPbaPdnConnLifeExtAccSent	36
4.6.14	S2aPbaPdnConnLifeExtRejSent	36
4.6.15	S2aPbuPdnConnCreateRcvd	37
4.6.16	S2aPbuPdnConnDeletionRcvd	37
4.6.17	S2aPbuPdnConnHoIntraRcvd	37
4.6.18	S2aPbuPdnConnHoIntraRcvd	38
4.6.19	S2aPbuPdnConnLifeExtRcvd	38
4.6.20	S2aPmipMsgInvalidRcvd	38
4.7	S5 / S8	39
4.7.1	S5S8ChangeNotifReqRcvd	39
4.7.2	S5S8ChangeNotifRespAccSent	39
4.7.3	S5S8ChangeNotifRespRejSent	40
4.7.4	S5S8CreateBearerReqSent	40
4.7.5	S5S8CreateBearerRespAccRcvd	40
4.7.6	S5S8CreateBearerRespRejRcvd	41
4.7.7	S5S8CreateSessionReqRcvd	41
4.7.8	S5S8CreateSessionRespAccSent	41
4.7.9	S5S8CreateSessionRespRejSent	42
4.7.10	S5S8DeleteBearerCmdRcvd	42
4.7.11	S5S8DeleteBearerFailureIndSent	43
4.7.12	S5S8DeleteBearerReqSent	43
4.7.13	S5S8DeleteBearerRespAccRcvd	43
4.7.14	S5S8DeleteBearerRespRejRcvd	44
4.7.15	S5S8DeleteSessionReqRcvd	44
4.7.16	S5S8DeleteSessionRespAccSent	44
4.7.17	S5S8DeleteSessionRespRejSent	45
4.7.18	S5S8HoIntraNon3gppAtt	45
4.7.19	S5S8HoIntraNon3gppSucc	46
4.7.20	S5S8ModifyBearerReqRcvd	46
4.7.21	S5S8ModifyBearerRespAccSent	46
4.7.22	S5S8ModifyBearerRespRejSent	47
4.7.23	S5S8PlmnChangeRcvd	47
4.7.24	S5S8UpdateBearerReqSent	47
4.7.25	S5S8UpdateBearerRespAccRcvd	48
4.7.26	S5S8UpdateBearerRespRejRcvd	48



4.8	S6b	49
4.8.1	S6bAaaFailRcvd	49
4.8.2	S6bAaaInvalidRcvd	49
4.8.3	S6bAaaSuccRcvd	49
4.8.4	S6bAarSent	50
4.8.5	S6bStaFailRcvd	50
4.8.6	S6bStaSuccRcvd	51
4.8.7	S6bStrSent	51
5	PGW User Plane Counters and Gauges	51
5.1	APN	52
5.1.1	SgiApnDIOctetsRcvd	52
5.1.2	SgiApnDIPktsDiscarded	52
5.1.3	SgiApnDIPktsRcvd	53
5.1.4	SgiApnDIV6OctetsRcvd	53
5.1.5	SgiApnDIV6PktsRcvd	53
5.1.6	SgiApnUIOctetsSent	54
5.1.7	SgiApnUIPktsDropped	54
5.1.8	SgiApnUIPktsSent	54
5.1.9	SgiApnUIV6OctetsSent	55
5.1.10	SgiApnUIV6PktsSent	55
5.2	S2a	55
5.2.1	S2aGreDIOctetsSent	56
5.2.2	S2aGreDIPktsDropped	56
5.2.3	S2aGreDIPktsSent	56
5.2.4	S2aGreDIPolicingPktsDropped	57
5.2.5	S2aGreUIOctetsRcvd	57
5.2.6	S2aGreUIPktsDiscarded	57
5.2.7	S2aGreUIPktsRcvd	58
5.2.8	S2aGreUIPolicingPktsDiscarded	58
5.3	S5 / S8 and Gn / Gp	58
5.3.1	S5S8GtpDIOctetsSent	59
5.3.2	S5S8GtpDIPktsDropped	59
5.3.3	S5S8GtpDIPktsSent	59
5.3.4	S5S8GtpDIPolicingPktsDropped	60
5.3.5	S5S8GtpUIBearerPktsDiscarded	60
5.3.6	S5S8GtpUIOctetsRcvd	61
5.3.7	S5S8GtpUIPktsDiscarded	61
5.3.8	S5S8GtpUIPktsRcvd	61
5.3.9	S5S8GtpUIPolicingPktsDiscarded	62
5.4	SGi	62
5.4.1	SgiDIOctetsRcvd	62
5.4.2	SgiDIPktsDiscarded	63
5.4.3	SgiDIPktsRcvd	63
5.4.4	SgiDIV6OctetsRcvd	63
5.4.5	SgiDIV6PktsRcvd	64
5.4.6	SgiUIOctetsSent	64
5.4.7	SgiUIPktsDropped	64
5.4.8	SgiUIPktsSent	65



5.4.9	SgiUIV6OctetsSent	65
5.4.10	SgiUIV6PktsSent	65
6	SGW Control Plane Counters and Gauges	66
6.1	Charging	66
6.1.1	SgwCdrsEncoded	66
6.1.2	SgwRfAcaFailRcvd	66
6.1.3	SgwRfAcaSuccRcvd	67
6.1.4	SgwRfAcrSent	67
6.1.5	SgwRfAcrWrittenToDisk	68
6.2	S11 / S4	68
6.2.1	S11S4ChangeNotifReqRcvd	68
6.2.2	S11S4ChangeNotifRespAccSent	68
6.2.3	S11S4ChangeNotifRespRejSent	69
6.2.4	S11S4CreateBearerReqSent	69
6.2.5	S11S4CreateBearerRespAccRcvd	69
6.2.6	S11S4CreateBearerRespRejRcvd	70
6.2.7	S11S4CreateSessionReqRcvd	70
6.2.8	S11S4CreateSessionRespAccSent	70
6.2.9	S11S4CreateSessionRespRejSent	71
6.2.10	S11S4DeleteBearerCmdRcvd	71
6.2.11	S11S4DeleteBearerFailureIndSent	72
6.2.12	S11S4DeleteBearerReqSent	72
6.2.13	S11S4DeleteBearerRespAccRcvd	72
6.2.14	S11S4DeleteBearerRespRejRcvd	73
6.2.15	S11S4DeleteSessionReqRcvd	73
6.2.16	S11S4DeleteSessionRespAccSent	73
6.2.17	S11S4DeleteSessionRespRejSent	74
6.2.18	S11S4DIDDataNotifFailureIndRcvd	74
6.2.19	S11S4DIDDataNotificationAckRcvd	74
6.2.20	S11S4DIDDataNotificationSent	75
6.2.21	S11S4HolratNon3gppAtt	75
6.2.22	S11S4HolratNon3gppSucc	75
6.2.23	S11S4ModifyBearerReqRcvd	76
6.2.24	S11S4ModifyBearerRespAccSent	76
6.2.25	S11S4ModifyBearerRespRejSent	77
6.2.26	S11S4PlmnChangeRcvd	77
6.2.27	S11S4RelAccessBearersReqRcvd	77
6.2.28	S11S4RelAccessBearersRespAccSent	78
6.2.29	S11S4RelAccessBearersRespRejSent	78
6.2.30	S11S4UpdateBearerReqSent	78
6.2.31	S11S4UpdateBearerRespAccRcvd	79
6.2.32	S11S4UpdateBearerRespRejRcvd	79
6.3	S5 / S8	79
6.3.1	S5S8ChangeNotifReqSent	79
6.3.2	S5S8ChangeNotifRespAccRcvd	80
6.3.3	S5S8ChangeNotifRespRejRcvd	80
6.3.4	S5S8CreateBearerReqRcvd	81
6.3.5	S5S8CreateBearerRespAccSent	81
6.3.6	S5S8CreateBearerRespRejSent	81



6.3.7	S5S8CreateSessionReqSent	82
6.3.8	S5S8CreateSessionRespAccRcvd	82
6.3.9	S5S8CreateSessionRespRejRcvd	83
6.3.10	S5S8DeleteBearerCmdSent	83
6.3.11	S5S8DeleteBearerFailureIndRcvd	83
6.3.12	S5S8DeleteBearerReqRcvd	84
6.3.13	S5S8DeleteBearerRespAccSent	84
6.3.14	S5S8DeleteBearerRespRejSent	84
6.3.15	S5S8DeleteSessionReqSent	85
6.3.16	S5S8DeleteSessionRespAccRcvd	85
6.3.17	S5S8DeleteSessionRespRejRcvd	86
6.3.18	S5S8ModifyBearerReqSent	86
6.3.19	S5S8ModifyBearerRespAccRcvd	86
6.3.20	S5S8ModifyBearerRespRejRcvd	87
6.3.21	S5S8UpdateBearerReqRcvd	87
6.3.22	S5S8UpdateBearerRespAccSent	88
6.3.23	S5S8UpdateBearerRespRejSent	88
6.4	User Equipment	88
6.4.1	SgwUeEcmConnected	89
7	SGW User Plane Counters and Gauges	89
7.1	S1-U	89
7.1.1	S1uDIOctetsSent	90
7.1.2	S1uDIPktsDropped	90
7.1.3	S1uDIPktsSent	90
7.1.4	S1uDIPIpPoliciesDropped	91
7.1.5	S1uDIUIIdlePacketsDropped	91
7.1.6	S1uUIBearerPacketsDiscarded	91
7.1.7	S1uUIOctetsRcvd	92
7.1.8	S1uUIPacketsDiscarded	92
7.1.9	S1uUIPacketsRcvd	92
7.1.10	S1uUIPIpPoliciesDiscarded	93
7.2	S5 / S8	93
7.2.1	S5GtpDIOctetsRcvd	94
7.2.2	S5GtpDIPktsDiscarded	94
7.2.3	S5GtpDIPktsRcvd	94
7.2.4	S5GtpUIOctetsSent	95
7.2.5	S5GtpUIPacketsDropped	95
7.2.6	S5GtpUIPacketsSent	95
7.2.7	S5S8GtpDIOctetsRcvd	96
7.2.8	S5S8GtpDIPktsDiscarded	96
7.2.9	S5S8GtpDIPktsRcvd	96
7.2.10	S5S8GtpUIOctetsSent	97
7.2.11	S5S8GtpUIPacketsDropped	97
7.2.12	S5S8GtpUIPacketsSent	97
7.2.13	S8GtpDIOctetsRcvd	98
7.2.14	S8GtpDIPktsDiscarded	98
7.2.15	S8GtpDIPktsRcvd	98
7.2.16	S8GtpUIOctetsSent	99
7.2.17	S8GtpUIPacketsDropped	99



7.2.18 S8GtpUIPktsSent

99





1 Introduction

This document provides a description of counters and gauges used in the Converged Packet Gateway (CPG).

1.1 Target Groups

This document is intended for personnel performing configuration and operation of the CPG.

1.2 Overview

A counter is a 32-bit or 64-bit, non-negative integer that can only be incremented. The value of the counter increases continuously and when the maximum value is reached, the counter starts over from zero (compare with the trip counter in a car). Reading the value of a counter does not change it.

A gauge is a 32-bit, non-negative integer that represents a dynamic variable that can both increase and decrease (compare with the speed gauge in a car). The gauge has a maximum value and all gauge values exceeding it are represented by the maximum value.

Some counters and gauges are indexed, that is, they exist in more than one instance in the CPG.

The counter and gauge objects may be retrieved through Simple Network Management Protocol (SNMP) or Bulkstats, or displayed through Command Line Interface (CLI).

The counters and gauges can be divided into different groups depending on whether they belong to either the SGW, the PGW, or if they are common to the CPG irrespective of the node role.

The following sections list the counters and gauges used in the CPG in alphabetical order for each respective area.

1.3 Field Description

Each counter and gauge object is described with the following information fields:

Type	Counter32, Counter64, or Gauge32. The number indicates the size in terms of 32 or 64 bits of the object.
Description	A description of the counter or gauge.



Incremented	A description of when the counter or gauge will be incremented.
Decrementd	A description of when the gauge will be decremented. This field is valid for gauges only.
OID	The unique SNMP Object Identifier (OID) of the counter or gauge.
CLI	Specifies which CLI to use to display the current value of the counter or the gauge
Index	Specifies the name of the index, which is used to identify a specific instance of a counter or gauge. This field is valid for indexed measurement types only.
Index Description	A description of the index. This field is valid for indexed measurement types only.
Bulkstats Schema Profile	The bulkstats schema profile for collecting statistics on the counter or the gauge

1.4 Distributed Counters and Gauges

A few counters and gauges are distributed, that is, some of their values are distributed over a number of ASE2s in the CPG. Only the total value is interesting for the operator, not the separate values.

No counters are saved persistently on the ASE2 cards, so if an ASE2 card is restarted, the counters on that card are reset to zero. If an ASE2 card is restarted, the EPS-C counter values might indicate a decreased value. The operator is notified of the ASE2 restart by an alarm.

For more information about alarms, see *EPS Alarm List*

2 Common Control Plane Counters and Gauges

A collection of counters and gauges providing EPS Control Plane statistical information common for both SGW and PGW.



2.1 Charging

A collection of counters providing EPSC statistical information for both SGW and PGW charging.

2.1.1 ClosedCdrFiles

Type	Counter64
Description	Total number of closed CDR files.
Incremented	When a CDR file is closed
OID	1.3.6.1.4.1.2352.2.44.1.1.2.1
CLI	show eps statistics control [all common]
Bulkstats Schema Profile	eps control

2.1.2 RfAcaFailRcvd - DEPRECATED

Type	Counter64
Description	Total number of <code>Accounting-Answer</code> messages received over the Rf interface with result code different from diameter success or if syntax errors in message. Note : This counter has been deprecated.
Incremented	When an <code>Accounting-Answer</code> message is received over the Rf interface with result code different from diameter success or if syntax errors in message.
OID	1.3.6.1.4.1.2352.2.44.1.1.2.4
CLI	show eps statistics control [all common]
Bulkstats Schema Profile	eps control

2.1.3 RfAcaSuccRcvd - DEPRECATED

Type	Counter64
Description	Total number of <code>Accounting-Answer</code> messages received over the Rf interface with result code diameter success. Note : This counter has been deprecated.



Incremented	When an <code>Accounting-Answer</code> message is received over the Rf interface with result code <code>diameter success</code> .
OID	1.3.6.1.4.1.2352.2.44.1.1.2.3
CLI	show eps statistics control [all common]
Bulkstats Schema Profile	eps control

2.1.4 RfAcrSent - DEPRECATED

Type	Counter64
Description	Total number of <code>Accounting-Request</code> messages sent over the Rf interface. Note : This counter has been deprecated.
Incremented	When an <code>Accounting-Request</code> message is sent over the Rf interface.
OID	1.3.6.1.4.1.2352.2.44.1.1.2.2
CLI	show eps statistics control [all common]
Bulkstats Schema Profile	eps control

2.1.5 RfAcrWrittenToDisk - DEPRECATED

Type	Counter64
Description	Total number of <code>Accounting-Request</code> messages written to file on disk. Note : This counter has been deprecated.
Incremented	When an <code>Accounting-Request</code> message is written to file on disk
OID	1.3.6.1.4.1.2352.2.44.1.1.2.5
CLI	show eps statistics control [all common]
Bulkstats Schema Profile	eps control

2.2 ICR

A collection of counters providing EPSC statistical information regarding ICR for both SGW and PGW.



2.2.1 ICR Keepalive Received

Type	Counter32
Description	Total number of keepalive messages that have been received by the ICR node in all states. This counter is displayed as "KeepAlive Received".
Incremented	For each keepalive message that is received by the ICR node.
OID	This counter is not available via SNMP.
CLI	show icr statistics
Bulkstats Schema Profile	This counter is not available via bulkstats.

2.2.2 ICR Keepalive Received by Node in Active no Peer State

Type	Counter32
Description	Total number of keepalive messages that are received by the ICR node while in the Active no Peer state. This counter is displayed as "KeepAlive Received (in ACTIVE NO PEER)".
Incremented	For each keepalive message that is received by the ICR node while in the Active no Peer state.
OID	This counter is not available via SNMP.
CLI	show icr statistics
Bulkstats Schema Profile	This counter is not available via bulkstats.

2.2.3 ICR Keepalive Received by Node in Active with Peer State

Type	Counter32
Description	Total number of keepalive messages that are received by the ICR node while in the Active with Peer state. This counter is displayed as "KeepAlive Received (in ACTIVE WITH PEER)".
Incremented	For each keepalive message that is received by the ICR node while in the Active with Peer state.
OID	This counter is not available via SNMP.



CLI	show icr statistics
Bulkstats Schema Profile	This counter is not available via bulkstats.

2.2.4 ICR Keepalive Received by Node in ICR Init State

Type	Counter32
Description	Total number of keepalive messages that are received by the ICR node while in the ICR Init state. This can happen if the ICR node is reloading while the peer ICR node is up and running and sending keepalive messages. This counter is displayed as "KeepAlive Received (in INIT)".
Incremented	For each keepalive message that is received by the ICR node while in the ICR Init state.
OID	This counter is not available via SNMP.
CLI	show icr statistics
Bulkstats Schema Profile	This counter is not available via bulkstats.

2.2.5 ICR Keepalive Received by Node in Standby State

Type	Counter32
Description	Total number of keepalive messages that are received by the ICR node while in the Standby state. This counter is displayed as "KeepAlive Received (in STANDBY)".
Incremented	For each keepalive message that is received by the ICR node while in the Standby state.
OID	This counter is not available via SNMP.
CLI	show icr statistics
Bulkstats Schema Profile	This counter is not available via bulkstats.



2.2.6 ICR Keepalive Send Failed

Type	Counter32
Description	Total number of keepalive messages that have failed to be sent by the ICR node due to that the send buffer is full. This counter is displayed as "KeepAlive Send Failed".
Incremented	For each keepalive message that fail to be sent by the ICR node due to that the send buffer is full.
OID	This counter is not available via SNMP.
CLI	show icr statistics
Bulkstats Schema Profile	This counter is not available via bulkstats.

2.2.7 ICR Keepalive Sent by Node in Active no Peer State

Type	Counter32
Description	Total number of keepalive messages sent by the ICR node while in the Active no Peer ICR state. This counter is displayed as "KeepAlive Sent (in ACTIVE NO PEER)".
Incremented	For each keepalive message sent by the ICR node while in the Active no Peer ICR state.
OID	This counter is not available via SNMP.
CLI	show icr statistics
Bulkstats Schema Profile	This counter is not available via bulkstats.

2.2.8 ICR Keepalive Sent by Node in Standby State

Type	Counter32
Description	Total number of keepalive messages sent by the ICR node while in the Standby ICR state. This counter is displayed as "KeepAlive Sent (in STANDBY)".
Incremented	For each keepalive message sent by the ICR node while in the Standby ICR state.
OID	This counter is not available via SNMP.



CLI	show icr statistics
Bulkstats Schema Profile	This counter is not available via bulkstats.

2.2.9 ICR Peer Detected and Local Node Set to Standby

Type	Counter32
Description	Total number of times a peer ICR node has been detected before the <code>peer detection</code> timer expires, leading to that the current node sets its ICR state to Standby. Detection of a peer ICR node stops the timer. This counter is displayed as "Peer Detection Stopped (Converged as STANDBY)".
Incremented	For each time a peer ICR node is detected before the <code>peer detection</code> timer expires, and the current node sets its ICR state to Standby.
OID	This counter is not available via SNMP.
CLI	show icr statistics
Bulkstats Schema Profile	This counter is not available via bulkstats.

2.2.10 ICR Peer Detected by Receiving Keepalive

Type	Counter32
Description	Total number of times a peer ICR node, in either Active no Peer or Standby state, has been detected through a keepalive message before the <code>peer detection</code> timer is expired. Detection of a peer ICR node stops the timer. This counter is displayed as "Peer Detection Stopped (KEEPALIVEs received)".
Incremented	For each time a peer ICR node, in either Active no Peer or Standby state, is detected through a keepalive message before the <code>peer detection</code> timer expires.
OID	This counter is not available via SNMP.
CLI	show icr statistics
Bulkstats Schema Profile	This counter is not available via bulkstats.



2.2.11 ICR Peer Detection Expiry

Type	Counter32
Description	Total number of times the <code>peer detection</code> timer has expired on the active node without detection of a peer ICR node. This counter is displayed as "Peer Detection Expiry".
Incremented	For each time the <code>peer detection</code> timer expires.
OID	This counter is not available via SNMP.
CLI	<code>show icr statistics</code>
Bulkstats Schema Profile	This counter is not available via bulkstats.

2.2.12 ICR Peer Loss

Type	Counter32
Description	Total number of times a peer is lost. For the active node this equals the number of times the ICR node switches to Active no Peer due to not receiving a keepalive message before the <code>holdtime</code> has expired. For the standby node this equals the number of times the ICR node switches to Active no Peer due to peer withdrawn. This counter is displayed as "Peer Loss".
Incremented	For each time a peer is lost. For the active node this happens when the ICR node switches to Active no Peer due to not receiving a keepalive message before the <code>holdtime</code> has expired. For the standby node this happens when the ICR node switches to Active no Peer due to peer withdrawn.
OID	This counter is not available via SNMP.
CLI	<code>show icr statistics</code>
Bulkstats Schema Profile	This counter is not available via bulkstats.



2.2.13 ICR Switchover Request by CLI

Type	Counter32
Description	Total number of times the <code>switchover icr</code> CLI command has been issued on the ICR node. This counter is displayed as "ICR Switchover CLI Command Issued".
Incremented	For each <code>switchover icr</code> CLI command that is issued on the ICR node.
OID	This counter is not available via SNMP.
CLI	<code>show icr statistics</code>
Bulkstats Schema Profile	This counter is not available via bulkstats.

2.2.14 ICR Switchovers

Type	Counter32
Description	Total number of switchovers to the peer ICR node, that have occurred. A switchover is only counted when the node switches from active to standby. This counter is displayed as "Switchovers".
Incremented	For each switchover that occurs for the ICR peer node.
OID	This counter is not available via SNMP.
CLI	<code>show icr statistics</code>
Bulkstats Schema Profile	This counter is not available via bulkstats.

2.2.15 IcrCreateSessionSyncRcvd

Type	Counter64
Description	Total number of <code>eps-c create session sync</code> messages received from the active ICR peer. The <code>eps-c create session sync</code> messages are sent to the standby ICR peer when a UE session is created or modified on the active ICR peer.
Incremented	When an <code>eps-c create session sync</code> message is received from the active ICR node on the ICR transport channel.



OID	1.3.6.1.4.1.2352.2.44.1.1.4.1
CLI	show eps statistics control [all common]
Bulkstats Schema Profile	eps control

2.2.16 IcrCreateSessionSyncSent

Type	Counter64
Description	Total number of <code>eps-c create session sync</code> messages sent to the standby ICR peer. The <code>eps-c create session sync</code> messages are sent to the standby ICR peer when a UE session is created or modified on the active ICR peer.
Incremented	When an <code>eps-c create session sync</code> message is sent to the standby ICR node on the ICR transport channel.
OID	1.3.6.1.4.1.2352.2.44.1.1.4.2
CLI	show eps statistics control [all common]
Bulkstats Schema Profile	eps control

2.2.17 IcrDeleteSessionSyncRcvd

Type	Counter64
Description	Total number of <code>eps-c delete session sync</code> messages received from the active ICR peer. The <code>eps-c delete session sync</code> messages are sent to the standby ICR peer when a UE session is deleted on the active ICR peer.
Incremented	When an <code>eps-c delete session sync</code> message is received from the active ICR node on the ICR transport channel.
OID	1.3.6.1.4.1.2352.2.44.1.1.4.3
CLI	show eps statistics control [all common]
Bulkstats Schema Profile	eps control



2.2.18 IcrDeleteSessionSyncSent

Type	Counter64
Description	Total number of <code>eps-c delete session sync</code> messages sent to the standby ICR peer. The <code>eps-c delete session sync</code> messages are sent to the standby ICR peer when a UE session is deleted on the active ICR peer.
Incremented	When an <code>eps-c delete session sync</code> message is sent to the standby ICR node on the ICR transport channel.
OID	1.3.6.1.4.1.2352.2.44.1.1.4.4
CLI	show eps statistics control [all common]
Bulkstats Schema Profile	eps control

2.3 Protocols

A collection of counters providing EPSC statistical information for both SGW and PGW protocols.

2.3.1 DiameterMsgInvalidRcvd

Type	Counter64
Description	Total number of Diameter messages received from a Diameter peer that either cannot be correctly interpreted or the messages do not include all Mandatory AVPs.
Incremented	When a Diameter message is received from a Diameter peer that either cannot be correctly interpreted or the message does not include all Mandatory AVPs.
OID	1.3.6.1.4.1.2352.2.44.1.1.3.1
CLI	show eps statistics control [all common]
Bulkstats Schema Profile	eps control

2.4 Sessions

A collection of counters providing general EPSC statistical information common for both SGW and PGW.



2.4.1 PdnConnectionTimeout

Type	Counter64
Description	Total number of session activation timeouts in this gateway.
Incremented	When no valid Modify Bearer Request is received after Create Session Response within the timeframe of the session activation timeout. The session activation timeout is 60 seconds.
OID	1.3.6.1.4.1.2352.2.44.1.1.1.2
CLI	show eps statistics control [all common]
Bulkstats Schema Profile	eps control

2.4.2 BearersEstablished

Type	Gauge32
Description	Current number of established EPS Bearers and PDP Contexts on the Gateway. Note that a non-3GPP session is treated as an EPS default bearer.
Incremented	When either an EPS Bearer or a PDP Context is created.
Decrementd	When either an EPS Bearer or a PDP Context is deleted.
OID	1.3.6.1.4.1.2352.2.44.1.1.1.3
CLI	show eps statistics control [all common]
Bulkstats Schema Profile	eps control

2.4.3 ConnectionsEstablished

Type	Gauge32
Description	Current number of established Connections in the gateway.
Incremented	When a Connection is established.
Decrementd	When a Connection is deleted.
OID	1.3.6.1.4.1.2352.2.44.1.1.1.1



CLI	show eps statistics control [all common]
Bulkstats Schema Profile	eps control

2.4.4

UeAttached

Type	Gauge32
Description	Current number of User Equipment (UE) attached to the gateway.
Incremented	When a User Equipment (UE) is attached to the gateway.
Decrementd	When a User Equipment (UE) is detached from the gateway.
OID	1.3.6.1.4.1.2352.2.44.1.1.1.4
CLI	show eps statistics control [all common]
Bulkstats Schema Profile	eps control

3 Common User Plane Counters and Gauges

A collection of counters and gauges providing EPS User Plane statistical information common for both SGW and PGW.

3.1 Sessions per UE

A collection of counters providing general EPSU statistical information common for both SGW and PGW.

3.1.1 PdnConnDlBytesSent

Type	Counter64
Description	Number of bytes sent downlink to the UE for this PDN Connection.



Incremented	For each downlink user payload byte in the packets that are sent to the UE, the total user packet length including IP header is counted.
OID	This counter is not available via SNMP.
CLI	show eps ue imsi <i>imsi</i> detail
Bulkstats Schema Profile	This counter is not available via bulkstats.

3.1.2 PdnConnDIPktsDropped

Type	Counter64
Description	Number of dropped packets in downlink direction for this PDN Connection.
Incremented	For each downlink user payload packet that is dropped.
OID	This counter is not available via SNMP.
CLI	show eps ue imsi <i>imsi</i> detail
Bulkstats Schema Profile	This counter is not available via bulkstats.

3.1.3 PdnConnDIPktsSent

Type	Counter64
Description	Number of packets sent downlink to the UE for this PDN Connection.
Incremented	For each downlink user payload packet that is sent to the UE.
OID	This counter is not available via SNMP.
CLI	show eps ue imsi <i>imsi</i> detail
Bulkstats Schema Profile	This counter is not available via bulkstats.

3.1.4 PdnConnUIBytesSent

Type	Counter64
Description	Number of bytes sent uplink by the UE for this PDN Connection.



Incremented	For each uplink user payload byte in the packets that are sent to the PDN, the total user packet length including IP header is counted.
OID	This counter is not available via SNMP.
CLI	show eps ue imsi imsi detail
Bulkstats Schema Profile	This counter is not available via bulkstats.

3.1.5 PdnConnUIPktsDropped

Type	Counter64
Description	Number of dropped packets in uplink direction for this PDN Connection.
Incremented	For each uplink user payload packet that is dropped.
OID	This counter is not available via SNMP.
CLI	show eps ue imsi imsi detail
Bulkstats Schema Profile	This counter is not available via bulkstats.

3.1.6 PdnConnUIPktsSent

Type	Counter64
Description	Number of packets sent uplink by the UE for this PDN Connection.
Incremented	For each uplink user payload packet that is sent to the PDN.
OID	This counter is not available via SNMP.
CLI	show eps ue imsi imsi detail
Bulkstats Schema Profile	This counter is not available via bulkstats.



4 PGW Control Plane Counters and Gauges

A collection of counters and gauges providing EPS Control Plane statistical information for PGW.

4.1 Charging

A collection of counters providing EPSC statistical information for PGW charging.

4.1.1 PgwCdrsEncoded

Type	Counter64
Description	Total number of successfully encoded PGW-CDRs
Incremented	When a PGW-CDR is ASN.1/BER encoded
OID	1.3.6.1.4.1.2352.2.44.1.3.3.1
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.1.2 PgwRfAcaFailRcvd

Type	Counter64
Description	Total number of <code>Accounting-Answer</code> messages received by the PGW over the Rf interface with result code different from diameter success or if syntax errors in message.
Incremented	When an <code>Accounting-Answer</code> message is received by the PGW over the Rf interface with result code different from diameter success or if syntax errors in message.
OID	1.3.6.1.4.1.2352.2.44.1.3.3.2
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control



4.1.3 PgwrfaAcaSuccRcvd

Type	Counter64
Description	Total number of Accounting-Answer messages received by the PGW over the Rf interface with result code diameter success.
Incremented	When an Accounting-Answer message is received by the PGW over the Rf interface with result code diameter success.
OID	1.3.6.1.4.1.2352.2.44.1.3.3.3
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.1.4 PgwrfaAcrSent

Type	Counter64
Description	Total number of Accounting-Request messages sent by the PGW over the Rf interface.
Incremented	When an Accounting-Request message is sent by the PGW over the Rf interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.3.4
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.1.5 PgwrfaAcrWrittenToDisk

Type	Counter64
Description	Total number of Accounting-Request messages written by the PGW to file on disk
Incremented	When an Accounting-Request message is written to file on disk by the PGW.
OID	1.3.6.1.4.1.2352.2.44.1.3.3.5
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control



4.2 Gn / Gp

A collection of counters providing EPSC statistical information for the Gn and Gp interfaces.

4.2.1 GnGpCreatePdpCtxReqRcvd

Type	Counter64
Description	Total number of GTPv1-C "Create PDP Context Request" messages received over the Gn/Gp interface from a Gn-SGSN.
Incremented	When a GTPv1-C "Create PDP Context Request" message is received over the Gn/Gp interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.4.5
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.2.2 GnGpCreatePdpCtxRespAccSent

Type	Counter64
Description	Total number of GTPv1-C "Create PDP Context Response" messages with acceptance cause values sent over the Gn/Gp interface to a Gn-SGSN.
Incremented	When a GTPv1-C "Create PDP Context Response" message with acceptance cause values is sent over the Gn/Gp interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.4.6
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.2.3 GnGpCreatePdpCtxRespRejSent

Type	Counter64
Description	Total number of GTPv1-C "Create PDP Context Response" messages with rejection response sent over the Gn/Gp interface to a Gn-SGSN.



Incremented	When a GTPv1-C "Create PDP Context Response" message with rejection response is sent over the Gn/Gp interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.4.9
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.2.4 GnGpDeletePdpCtxReqRcvd

Type	Counter64
Description	Total number of GTPv1-C "Delete PDP Context Request" messages received over the Gn/Gp interface from a Gn-SGSN.
Incremented	When a GTPv1-C "Delete PDP Context Request" message is received over the Gn/Gp interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.4.1
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.2.5 GnGpDeletePdpCtxReqSent

Type	Counter64
Description	Total number of GTPv1-C "Delete PDP Context Request" messages sent over the Gn/Gp interface to a Gn-SGSN.
Incremented	When a GTPv1-C "Delete PDP Context Request" message is sent over the Gn/Gp interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.4.13
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control



4.2.6 GnGpDeletePdpCtxRespAccRcvd

Type	Counter64
Description	Total number of GTPv1-C "Delete PDP Context Response" messages with acceptance cause values received over the Gn/Gp interface from a Gn-SGSN.
Incremented	When a GTPv1-C "Delete PDP Context Response" message with acceptance cause values is received over the Gn/Gp interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.4.14
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.2.7 GnGpDeletePdpCtxRespAccSent

Type	Counter64
Description	Total number of GTPv1-C "Delete PDP Context Response" messages with acceptance cause values sent over the Gn/Gp interface to a Gn-SGSN.
Incremented	When a GTPv1-C "Delete PDP Context Response" message with acceptance cause values is sent over the Gn/Gp interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.4.2
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.2.8 GnGpDeletePdpCtxRespRejRcvd

Type	Counter64
Description	Total number of GTPv1-C "Delete PDP Context Response" messages with rejection response received over the Gn/Gp interface from a Gn-SGSN.
Incremented	When a GTPv1-C "Delete PDP Context Response" message with rejection response is received over the Gn/Gp interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.4.15



CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.2.9 GnGpDeletePdpCtxRespRejSent

Type	Counter64
Description	Total number of GTPv1-C "Delete PDP Context Response" messages with rejection response sent over the Gn/Gp interface to a Gn-SGSN.
Incremented	When a GTPv1-C "Delete PDP Context Response" message with rejection response is sent over the Gn/Gp interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.4.8
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.2.10 GnGpUpdatePdpCtxReqRcvd

Type	Counter64
Description	Total number of GTPv1-C "Update PDP Context Request" messages received over the Gn/Gp interface from a Gn-SGSN.
Incremented	When a GTPv1-C "Update PDP Context Request" message is received over the Gn/Gp interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.4.3
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.2.11 GnGpUpdatePdpCtxReqSent

Type	Counter64
Description	Total number of GTPv1-C "Update PDP Context Request" messages sent over the Gn/Gp interface to a Gn-SGSN
Incremented	When a GTPv1-C "Update PDP Context Request" message is sent over the Gn/Gp interface.



OID	1.3.6.1.4.1.2352.2.44.1.3.4.10
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.2.12 **GnGpUpdatePdpCtxRespAccRcvd**

Type	Counter64
Description	Total number of GTPv1-C "Update PDP Context Response" messages with acceptance response received over the Gn/Gp interface from a Gn-SGSN
Incremented	When a GTPv1-C "Update PDP Context Response" message with acceptance response is received over the Gn/Gp interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.4.11
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.2.13 **GnGpUpdatePdpCtxRespAccSent**

Type	Counter64
Description	Total number of GTPv1-C "Update PDP Context Response" messages with acceptance cause values sent over the Gn/Gp interface to a Gn-SGSN
Incremented	When a GTPv1-C "Update PDP Context Response" message with acceptance cause values is sent over the Gn/Gp interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.4.4
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.2.14 **GnGpUpdatePdpCtxRespRejRcvd**

Type	Counter64
Description	Total number of GTPv1-C "Update PDP Context Response" messages with rejection response received over the Gn/Gp interface from a Gn-SGSN



Incremented	When a GTPv1-C "Update PDP Context Response" message with rejection response is received over the Gn/Gp interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.4.12
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.2.15 GnGpUpdatePdpCtxRespRejSent

Type	Counter64
Description	Total number of GTPv1-C "Update PDP Context Response" messages with rejection response sent over the Gn/Gp interface to a Gn-SGSN
Incremented	When a GTPv1-C "Update PDP Context Response" message with rejection response is sent over the Gn/Gp interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.4.7
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.3 Gx

A collection of counters providing EPSC statistical information for the Gx interface.

4.3.1 GxCcalInitialFailRcvd

Type	Counter64
Description	Total number of "Credit-Control Answer" initial messages with result code diameter failure received over the Gx interface.
Incremented	When a "Credit-Control Answer" initial message with result code diameter failure is received over the Gx interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.2.3



CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.3.2 GxCcaInitialSuccRcvd

Type	Counter64
Description	Total number of "Credit-Control Answer" initial messages with result code diameter success received over the Gx interface.
Incremented	When a "Credit-Control Answer" initial message with result code diameter success is received over the Gx interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.2.2
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.3.3 GxCcaTerminateFailRcvd

Type	Counter64
Description	Total number of "Credit-Control Answer" terminate messages with result code diameter failure received over the Gx interface.
Incremented	When a "Credit-Control Answer" terminate message with result code diameter failure is received over the Gx interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.2.9
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.3.4 GxCcaTerminateSuccRcvd

Type	Counter64
Description	Total number of "Credit-Control Answer" terminate messages with result code diameter success received over the Gx interface.



Incremented	When a "Credit-Control Answer" terminate message with result code diameter success is received over the Gx interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.2.8
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.3.5 GxCcaUpdateFailRcvd

Type	Counter64
Description	Total number of "Credit-Control Answer" update messages with result code diameter failure received over the Gx interface.
Incremented	When a "Credit-Control Answer" update message with result code diameter failure is received over the Gx interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.2.6
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.3.6 GxCcaUpdateSuccRcvd

Type	Counter64
Description	Total number of "Credit-Control Answer" update messages with result code diameter success received over the Gx interface.
Incremented	When a "Credit-Control Answer" update message with result code diameter success is received over the Gx interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.2.5
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control



4.3.7 GxCcrInitialSent

Type	Counter64
Description	Total number of "Credit-Control Request" initial messages sent over the Gx interface.
Incremented	When a "Credit-Control Request" initial message is sent over the Gx interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.2.1
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.3.8 GxCcrTerminateSent

Type	Counter64
Description	Total number of "Credit-Control Request" terminate messages sent over the Gx interface.
Incremented	When a "Credit-Control Request" terminate message is sent over the Gx interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.2.7
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.3.9 GxCcrUpdateSent

Type	Counter64
Description	Total number of "Credit-Control Request" update messages sent over the Gx interface.
Incremented	When a "Credit-Control Request" update message is sent over the Gx interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.2.4
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

**4.3.10 GxRaaFailSent**

Type	Counter64
Description	Total number of "Re-Auth Answer" messages with result code diameter failure sent over the Gx interface.
Incremented	When a "Re-Auth Answer" message with result code diameter failure is sent over the Gx interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.2.12
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.3.11 GxRaaSuccSent

Type	Counter64
Description	Total number of "Re-Auth Answer" messages with result code diameter success sent over the Gx interface.
Incremented	When a "Re-Auth Answer" message with result code diameter success is sent over the Gx interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.2.11
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.3.12 GxRarRcvd

Type	Counter64
Description	Total number of "Re-Auth Request" messages received over the Gx interface.
Incremented	When a "Re-Auth Request" message is received over the Gx interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.2.10
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control



4.4 HTTP

The HTTP counters count redirect related HTTP messages sent and received by the PGW.

4.4.1 HttpRedirectRespFail

Type	Counter64
Description	Total number of HTTP redirect responses that were supposed to be sent downlink but that failed to be sent.
Incremented	When an uplink HTTP packet is intercepted but the PGW failed to send an HTTP redirect response downlink.
OID	1.3.6.1.4.1.2352.2.44.1.3.10.2
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.4.2 HttpRedirectRespSuccSent

Type	Counter64
Description	Total number of successful HTTP redirect responses sent downlink.
Incremented	When an uplink HTTP packet is intercepted and an HTTP redirect response is sent downlink for redirection processing.
OID	1.3.6.1.4.1.2352.2.44.1.3.10.1
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.5 ICMPv6

A collection of Internet Control Message Protocol version 6 (ICMPv6) counters providing EPSC statistical information for PGW.



4.5.1 Pgwlcmpv6NeighborAdvSent

Type	Counter64
Description	Total number of Neighbor Advertisement messages sent by the PGW.
Incremented	For each Neighbor Advertisement message sent from the PGW.
OID	1.3.6.1.4.1.2352.2.44.1.3.9.1
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.5.2 Pgwlcmpv6NeighborSolRcvd

Type	Counter64
Description	Total number of Neighbor Solicitations messages received by the PGW.
Incremented	For each Neighbor Solicitation message received by the PGW.
OID	1.3.6.1.4.1.2352.2.44.1.3.9.2
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.5.3 Pgwlcmpv6RouterAdvSent

Type	Counter64
Description	Total number of Router Advertisement messages sent by the PGW.
Incremented	For each Router Advertisement message sent from the PGW.
OID	1.3.6.1.4.1.2352.2.44.1.3.9.3
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control



4.5.4 Pgwlcmpv6RouterSolRcvd

Type	Counter64
Description	Total number of Router Solicitations messages received by the PGW.
Incremented	For each Router Solicitation message received by the PGW.
OID	1.3.6.1.4.1.2352.2.44.1.3.9.4
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.6 S2a

A collection of counters providing EPSC statistical information for PGW S2a interface.

4.6.1 S2aBraPdnConnDeletionAccRcvd

Type	Counter64
Description	Total number of received PMIP BRA messages with acceptance response cause values for the LMA Initiated PDN Connection Deletion procedure over the S2a interface.
Incremented	When the PGW receives a PMIP BRA message with acceptance response cause value over the S2a interface for the LMA Initiated PDN Connection Deletion procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.12
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.6.2 S2aBraPdnConnDeletionInvalidRcvd

Type	Counter64
Description	Total number of received PMIP BRA messages with invalid content for the LMA Initiated PDN Connection Deletion procedure over the S2a interface.



Incremented	When the PGW receives a PMIP BRA message with invalid content over the S2a interface for the LMA Initiated PDN Connection Deletion procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.17
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.6.3 S2aBraPdnConnDeletionRejRcvd

Type	Counter64
Description	Total number of received PMIP BRA messages with rejection response cause values for the LMA Initiated PDN Connection Deletion procedure over the S2a interface.
Incremented	When the PGW receives a PMIP BRA message with rejection response cause value over the S2a interface for the LMA Initiated PDN Connection Deletion procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.13
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.6.4 S2aBriPdnConnDeletionSent

Type	Counter64
Description	Total number of sent PMIP BRI messages for the LMA Initiated PDN Connection Deletion procedure over the S2a interface.
Incremented	When the PGW sends a PMIP PRI message over the S2a interface for the LMA Initiated PDN Connection Deletion procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.11
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control



4.6.5 S2aPbaPdnConnCreateAccSent

Type	Counter64
Description	Total number of sent PMIP PBA messages with acceptance response cause values for the PDN Connection Creation procedure over the S2a interface.
Incremented	When the PGW sends a PMIP PBA message with an acceptance response cause value over the S2a interface for the PDN Connection Creation procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.3
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.6.6 S2aPbaPdnConnCreateRejSent

Type	Counter64
Description	Total number of sent PMIP PBA messages with rejection response cause values for the PDN Connection Creation procedure over the S2a interface.
Incremented	When the PGW sends a PMIP PBA message with a rejection response cause value over the S2a interface for the PDN Connection Creation procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.4
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.6.7 S2aPbaPdnConnDeletionAccSent

Type	Counter64
Description	Total number of sent PMIP PBA messages with acceptance response cause values for the PDN Connection Deletion procedure over the S2a interface.



Incremented	When the PGW sends a PMIP PBA message with an acceptance response cause value over the S2a interface for the PDN Connection Deletion procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.9
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.6.8 S2aPbaPdnConnDeletionRejSent

Type	Counter64
Description	Total number of sent PMIP PBA messages with rejection response cause values for the PDN Connection Deletion procedure over the S2a interface.
Incremented	When the PGW sends a PMIP PBA message with a rejection response cause value over the S2a interface for the PDN Connection Deletion procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.10
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.6.9 S2aPbaPdnConnHoIntraAccSent

Type	Counter64
Description	Total number of sent PMIP PBA messages with acceptance response cause values for the non-3GPP PDN Connection Intra Handover procedure over the S2a interface.
Incremented	When the PGW sends a PMIP PBA message with an acceptance response cause value over the S2a interface for the non-3GPP PDN Connection Intra Handover procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.15
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control



4.6.10 S2aPbaPdnConnHoltraRejSent

Type	Counter64
Description	Total number of sent PMIP PBA messages with rejection response cause values for the non-3GPP PDN Connection Intra Handover procedure over the S2a interface.
Incremented	When the PGW sends a PMIP PBA message with a rejection response cause value over the S2a interface for the non-3GPP PDN Connection Intra Handover procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.16
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.6.11 S2aPbaPdnConnHolratAccSent

Type	Counter64
Description	Total number of sent PMIP PBA messages with acceptance response cause values for the non-3GPP PDN Connection IRAT Handover (E-UTRAN to non-3GPP) procedure over the S2a interface.
Incremented	When the PGW sends a PMIP PBA message with an acceptance response cause value over the S2a interface for the non-3GPP PDN Connection IRAT Handover (E-UTRAN to non-3GPP) procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.19
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.6.12 S2aPbaPdnConnHolratRejSent

Type	Counter64
Description	Total number of sent PMIP PBA messages with rejection response cause values for the non-3GPP PDN Connection IRAT Handover (E-UTRAN to non-3GPP) procedure over the S2a interface.



Incremented	When the PGW sends a PMIP PBA message with a rejection response cause value over the S2a interface for the non-3GPP PDN Connection IRAT Handover (E-UTRAN to non-3GPP) procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.20
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.6.13 S2aPbaPdnConnLifeExtAccSent

Type	Counter64
Description	Total number of sent PMIP PBA messages with acceptance response cause values for the PDN Connection Lifetime Extension procedure over the S2a interface.
Incremented	When the PGW sends a PMIP PBA message with an acceptance response cause value over the S2a interface for the PDN Connection Lifetime Extension procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.6
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.6.14 S2aPbaPdnConnLifeExtRejSent

Type	Counter64
Description	Total number of sent PMIP PBA messages with rejection response cause values for the PDN Connection Lifetime Extension procedure over the S2a interface.
Incremented	When the PGW sends a PMIP PBA message with a rejection response cause value over the S2a interface for the PDN Connection Lifetime Extension procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.7
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control



4.6.15 S2aPbuPdnConnCreateRcvd

Type	Counter64
Description	Total number of received PMIP PBU messages for the PDN Connection Creation procedure over the S2a interface.
Incremented	When the PGW receives a PMIP PBU message over the S2a interface for the PDN Connection Creation procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.2
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.6.16 S2aPbuPdnConnDeletionRcvd

Type	Counter64
Description	Total number of received PMIP PBU messages for the PDN Connection Deletion procedure over the S2a interface.
Incremented	When the PGW receives a PMIP PBU message over the S2a interface for the PDN Connection Deletion procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.8
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.6.17 S2aPbuPdnConnHoIntraRcvd

Type	Counter64
Description	Total number of received PMIP PBU messages for the non-3GPP PDN Connection Intra Handover procedure over the S2a interface.
Incremented	When the PGW receives a PMIP PBU message over the S2a interface for the non-3GPP PDN Connection Intra Handover procedure.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.14



CLI show eps statistics control [all | pgw]
Bulkstats Schema Profile eps control

4.6.18 S2aPbuPdnConnHolratRcvd

Type Counter64
Description Total number of received PMIP PBU messages for the non-3GPP PDN Connection IRAT Handover (E-UTRAN to non-3GPP) procedure over the S2a interface.
Incremented When the PGW receives a PMIP PBU message over the S2a interface for the non-3GPP PDN Connection IRAT Handover (E-UTRAN to non-3GPP) procedure.
OID 1.3.6.1.4.1.2352.2.44.1.3.7.18
CLI show eps statistics control [all | pgw]
Bulkstats Schema Profile eps control

4.6.19 S2aPbuPdnConnLifeExtRcvd

Type Counter64
Description Total number of received PMIP PBU messages for the PDN Connection Lifetime Extension procedure over the S2a interface.
Incremented When the PGW receives a PMIP PBU message over the S2a interface for the PDN Connection Lifetime Extension procedure.
OID 1.3.6.1.4.1.2352.2.44.1.3.7.5
CLI show eps statistics control [all | pgw]
Bulkstats Schema Profile eps control

4.6.20 S2aPmipMsgInvalidRcvd

Type Counter64
Description Total number of invalid messages received by the PGW over the S2a interface.



Incremented	When the PGW receives a message over the S2a PMIP interface that the PGW cannot interpret.
OID	1.3.6.1.4.1.2352.2.44.1.3.7.1
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7 S5 / S8

A collection of counters providing EPSC statistical information for PGW S5 and S8 interfaces over GTP.

4.7.1 S5S8ChangeNotifReqRcvd

Type	Counter64
Description	Total number of GTPv2-C "Change Notification Request" messages received by the PGW over the S5/S8 interface.
Incremented	When a GTPv2-C "Change Notification Request" message is received over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.24
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.2 S5S8ChangeNotifRespAccSent

Type	Counter64
Description	Total number of GTPv2-C "Change Notification Response" messages with acceptance response cause values sent by the PGW over the S5/S8 interface.
Incremented	When a GTPv2-C "Change Notification Response" message with an acceptance response cause value is sent over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.25
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control



4.7.3 S5S8ChangeNotifRespRejSent

Type	Counter64
Description	Total number of GTPv2-C "Change Notification Response" messages with rejection response cause values sent by the PGW over the S5/S8 interface.
Incremented	When a GTPv2-C "Change Notification Response" message with a rejection response cause value is sent over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.26
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.4 S5S8CreateBearerReqSent

Type	Counter64
Description	Total number of GTPv2-C "Create Bearer Request" messages sent by the PGW over the S5/S8 PGW GTP-C interface.
Incremented	By the PGW when it sends a GTPv2-C "Create Bearer Request" message over the S5/S8 PGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.10
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.5 S5S8CreateBearerRespAccRcvd

Type	Counter64
Description	Total number of GTPv2-C "Create Bearer Response" messages with acceptance response cause values received by the PGW over the S5/S8 PGW GTP-C interface.
Incremented	By the PGW when it receives a GTPv2-C "Create Bearer Response" message with an acceptance response cause value over the S5/S8 PGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.11



CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.6 S5S8CreateBearerRespRejRcvd

Type	Counter64
Description	Total number of GTPv2-C "Create Bearer Response" messages with rejection response cause values received by the PGW over the S5/S8 PGW GTP-C interface.
Incremented	By the PGW when it sends a GTPv2-C "Create Bearer Response" message with a rejection response cause value over the S5/S8 PGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.12
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.7 S5S8CreateSessionReqRcvd

Type	Counter64
Description	Total number of GTPv2-C "Create Session Request" messages received by the PGW over the S5/S8 interface.
Incremented	When a GTPv2-C "Create Session Request" message is received over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.1
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.8 S5S8CreateSessionRespAccSent

Type	Counter64
Description	Total number of GTPv2-C "Create Session Response" messages with acceptance response cause values sent by the PGW over the S5/S8 interface.



Incremented	When a GTPv2-C "Create Session Response" message with an acceptance response cause value is sent over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.2
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.9 S5S8CreateSessionRespRejSent

Type	Counter64
Description	Total number of GTPv2-C "Create Session Response" messages with rejection response cause values sent by the PGW over the S5/S8 interface.
Incremented	When a GTPv2-C "Create Session Response" message with a rejection response cause value is sent over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.3
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.10 S5S8DeleteBearerCmdRcvd

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Command" messages received by the PGW over the S5/S8 PGW GTP-C interface.
Incremented	By the PGW when it receives a GTPv2-C "Delete Bearer Command" message over the S5/S8 PGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.13
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control



4.7.11 S5S8DeleteBearerFailureIndSent

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Failure Indication" messages sent by the PGW over the S5/S8 PGW GTP-C interface.
Incremented	By the PGW when it sends a GTPv2-C "Delete Bearer Failure Indication" message over the S5/S8 PGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.14
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.12 S5S8DeleteBearerReqSent

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Request" messages sent by the PGW over the S5/S8 PGW GTP-C interface.
Incremented	By the PGW when it sends a GTPv2-C "Delete Bearer Request" message over the S5/S8 PGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.15
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.13 S5S8DeleteBearerRespAccRcvd

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Response" messages with acceptance response cause values received by the PGW over the S5/S8 PGW GTP-C interface.
Incremented	By the PGW when it receives a GTPv2-C "Delete Bearer Response" message with an acceptance response cause value over the S5/S8 PGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.16



CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.14 S5S8DeleteBearerRespRejRcvd

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Response" messages with rejection response cause values received by the PGW over the S5/S8 PGW GTP-C interface.
Incremented	By the PGW when it receives a GTPv2-C "Delete Bearer Response" message with a rejection response cause value over the S5/S8 PGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.17
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.15 S5S8DeleteSessionReqRcvd

Type	Counter64
Description	Total number of GTPv2-C "Delete Session Request" messages received by the PGW over the S5/S8 interface.
Incremented	When a GTPv2-C "Delete Session Request" message is received over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.7
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.16 S5S8DeleteSessionRespAccSent

Type	Counter64
Description	Total number of GTPv2-C "Delete Session Response" messages with acceptance response cause values sent by the PGW over the S5/S8 interface.



Incremented	When a GTPv2-C "Delete Session Response" message with an acceptance response cause value is sent over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.8
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.17 S5S8DeleteSessionRespRejSent

Type	Counter64
Description	Total number of GTPv2-C "Delete Session Response" messages with rejection response cause values sent by the PGW over the S5/S8 interface.
Incremented	When a GTPv2-C "Delete Session Response" message with a rejection response cause value is sent over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.9
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.18 S5S8HolratNon3gppAtt

Type	Counter64
Description	Total number of non-3GPP PDN Connection IRAT handover attempts (from non-3GPP to E-UTRAN) received over the S5/S8 interface.
Incremented	When a GTPv2-C "Create Session Request" message with the Handover Indicator flag set is received over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.22
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

**4.7.19 S5S8HolratNon3gppSucc**

Type	Counter64
Description	Total number of successful non-3GPP PDN Connection IRAT handover procedures (from non-3GPP to E-UTRAN).
Incremented	When a GTPv2-C "Modify Bearer Response" message with an acceptance response cause value is sent over the S5/S8 interface as a result of a successful non-3GPP PDN Connection IRAT handover procedure in the PGW (from non-3GPP to E-UTRAN).
OID	1.3.6.1.4.1.2352.2.44.1.3.5.23
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.20 S5S8ModifyBearerReqRcvd

Type	Counter64
Description	Total number of GTPv2-C "Modify Bearer Request" messages received by the PGW over the S5/S8 interface.
Incremented	When a GTPv2-C "Modify Bearer Request" message is received over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.4
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.21 S5S8ModifyBearerRespAccSent

Type	Counter64
Description	Total number of GTPv2-C "Modify Bearer Response" messages with acceptance response values sent by the PGW over the S5/S8 interface.
Incremented	When a GTPv2-C "Modify Bearer Response" message with an acceptance response value is sent over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.5



CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.22 S5S8ModifyBearerRespRejSent

Type	Counter64
Description	Total number of GTPv2-C "Modify Bearer Response" messages with rejection response cause values sent by the PGW over the S5/S8 interface.
Incremented	When a GTPv2-C "Modify Bearer Response" message with a rejection response cause value is sent over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.6
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.23 S5S8PlmnChangeRcvd

Type	Counter64
Description	Total number of PLMN changes received over the S5/S8 interface.
Incremented	When PGW receives a GTPv2 message that indicates a Serving Network PLMN change.
OID	1.3.6.1.4.1.2352.2.44.1.2.5.21
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.24 S5S8UpdateBearerReqSent

Type	Counter64
Description	Total number of GTPv2-C "Update Bearer Request" messages sent by the PGW over the S5/S8 PGW GTP-C interface.
Incremented	By the PGW when it sends a GTPv2-C "Update Bearer Request" message over the S5/S8 PGW GTP-C interface.



OID	1.3.6.1.4.1.2352.2.44.1.3.5.18
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.25 S5S8UpdateBearerRespAccRcvd

Type	Counter64
Description	Total number of GTPv2-C "Update Bearer Response" messages with acceptance response cause values received by the PGW over the S5/S8 PGW GTP-C interface.
Incremented	By the PGW when it receives s a GTPv2-C "Update Bearer Response" message with an acceptance response cause value over the S5/S8 PGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.19
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.7.26 S5S8UpdateBearerRespRejRcvd

Type	Counter64
Description	Total number of GTPv2-C "Update Bearer Response" messages with rejection response cause values received by the PGW over the S5/S8 PGW GTP-C interface.
Incremented	By the PGW when it sends a GTPv2-C "Update Bearer Response" message with a rejection response cause value over the S5/S8 PGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.5.20
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control



4.8 S6b

A collection of counters providing EPSC statistical information for PGW S6b interface.

4.8.1 S6bAaaFailRcvd

Type	Counter64
Description	Total number of Authentication and Authorization Answer (AAA) messages with rejection response cause values received by the PGW over the S6b interface.
Incremented	When the PGW receives an AAA message with a rejection response cause value over the S6b interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.8.3
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.8.2 S6bAaaInvalidRcvd

Type	Counter64
Description	Total number of AAA messages with invalid content received by the PGW over the S6b interface.
Incremented	When the PGW receives an AAA message with invalid content over the S6b interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.8.4
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.8.3 S6bAaaSuccRcvd

Type	Counter64
Description	Total number of AAA messages with acceptance response cause values received by the PGW over the S6b interface.



Incremented	When the PGW receives an AAA message with an acceptance response cause value over the S6b interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.8.2
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.8.4**S6bAarSent**

Type	Counter64
Description	Total number of Authentication and Authorization Request (AAR) messages sent by the PGW over the S6b interface.
Incremented	When the PGW sends an AAR message over the S6b interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.8.1
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.8.5**S6bStaFailRcvd**

Type	Counter64
Description	Total number of Session Termination Answer (STA) messages with rejection response cause values received by the PGW over the S6b interface.
Incremented	When the PGW receives an STA message with a rejection response cause value over the S6b interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.8.7
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control



4.8.6 S6bStaSuccRcvd

Type	Counter64
Description	Total number of STA messages with acceptance response cause values received by the PGW over the S6b interface.
Incremented	When the PGW receives an STA message with an acceptance response cause value over the S6b interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.8.6
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

4.8.7 S6bStrSent

Type	Counter64
Description	Total number of Session Termination Request (STR) messages sent by the PGW over the S6b interface.
Incremented	When the PGW sends an STR message over the S6b interface.
OID	1.3.6.1.4.1.2352.2.44.1.3.8.5
CLI	show eps statistics control [all pgw]
Bulkstats Schema Profile	eps control

5 PGW User Plane Counters and Gauges

A collection of counters and gauges providing EPS User Plane statistical information for PGW.



5.1 APN

The Access Point Name (APN) counters will count all data packets containing user payload data that are sent and received by the PGW for each APN over the SGi interface.

The packets are not tunneled by the PGW so the total packet length is the same as the IP packet length.

`Discarded packets` are defined as packets received in downlink direction that are discarded due to insufficient resources, like input buffer memory shortage etc., which prevent the packets from being processed further.

`Dropped packets` are defined as packets that were supposed to be transmitted in uplink direction, but could not due to insufficient resources, like output buffer memory shortage, layer 2 congestion, etc.

5.1.1 SgiApnDIOctetsRcvd

Type	Counter64
Description	Total number of octets in downlink user payload packets, including IPv6 user payload packets, received over the SGi interface for each APN.
Incremented	For each octet in the downlink user payload packets received over the SGi interface for the APN.
OID	1.3.6.1.4.1.2352.2.47.1.5.1.1.4
CLI	show eps statistics traffic pgw apn [apn-name]
Bulkstats Schema Profile	eps apn

5.1.2 SgiApnDIPktsDiscarded

Type	Counter64
Description	Total number of discarded downlink user payload packets received over the SGi interface for each APN.
Incremented	For each discarded downlink user payload packet received over the SGi interface for the APN.
OID	1.3.6.1.4.1.2352.2.47.1.5.1.1.5
CLI	show eps statistics traffic pgw apn [apn-name]
Bulkstats Schema Profile	eps apn



5.1.3 SgiApnDIPktsRcvd

Type	Counter64
Description	Total number of downlink user payload packets, including IPv6 user payload packets, received over the SGi interface for each APN.
Incremented	For each downlink user payload packet received over the SGi interface for the APN.
OID	1.3.6.1.4.1.2352.2.47.1.5.1.1.3
CLI	show eps statistics traffic pgw apn [apn-name]
Bulkstats Schema Profile	eps apn

5.1.4 SgiApnDIV6OctetsRcvd

Type	Counter64
Description	Total number of octets in downlink IPv6 user payload packets received over the SGi interface for each APN.
Incremented	For each IPv6 octet in the downlink user payload packets received over the SGi interface for the APN.
OID	1.3.6.1.4.1.2352.2.47.1.5.1.1.10
CLI	show eps statistics traffic pgw apn [apn-name]
Bulkstats Schema Profile	eps apn

5.1.5 SgiApnDIV6PktsRcvd

Type	Counter64
Description	Total number of downlink IPv6 user payload packets received over the SGi interface for each APN.
Incremented	For each downlink IPv6 user payload packet received over the SGi interface for the APN.
OID	1.3.6.1.4.1.2352.2.47.1.5.1.1.9
CLI	show eps statistics traffic pgw apn [apn-name]
Bulkstats Schema Profile	eps apn



5.1.6 SgiApnUIOctetsSent

Type	Counter64
Description	Total number of octets in uplink user payload packets, including IPv6 user payload packets, sent over the SGi interface for each APN.
Incremented	For each octet in the uplink user payload packets sent over the SGi interface for the APN.
OID	1.3.6.1.4.1.2352.2.47.1.5.1.1.7
CLI	show eps statistics traffic pgw apn [apn-name]
Bulkstats Schema Profile	eps apn

5.1.7 SgiApnUIPktsDropped

Type	Counter64
Description	Total number of dropped uplink payload packets that should have been sent over SGi interface for each APN.
Incremented	For each dropped uplink user payload packet that should have been sent over the SGi interface for the APN.
OID	1.3.6.1.4.1.2352.2.47.1.5.1.1.8
CLI	show eps statistics traffic pgw apn [apn-name]
Bulkstats Schema Profile	eps apn

5.1.8 SgiApnUIPktsSent

Type	Counter64
Description	Total number of uplink user payload packets, including IPv6 user payload packets, sent over the SGi interface for each APN.
Incremented	For each uplink user payload packet sent over the SGi interface for the APN.
OID	1.3.6.1.4.1.2352.2.47.1.5.1.1.6
CLI	show eps statistics traffic pgw apn [apn-name]
Bulkstats Schema Profile	eps apn



5.1.9 SgiApnUIV6OctetsSent

Type	Counter64
Description	Total number of octets in uplink IPv6 user payload packets sent over the SGi interface for each APN.
Incremented	For each octet in the uplink IPv6 user payload packets sent over the SGi interface for the APN.
OID	1.3.6.1.4.1.2352.2.47.1.5.1.1.12
CLI	show eps statistics traffic pgw apn [apn-name]
Bulkstats Schema Profile	eps apn

5.1.10 SgiApnUIV6PktsSent

Type	Counter64
Description	Total number of uplink IPv6 user payload packets sent over the SGi interface for each APN.
Incremented	For each uplink IPv6 user payload packet sent over the SGi interface for the APN.
OID	1.3.6.1.4.1.2352.2.47.1.5.1.1.11
CLI	show eps statistics traffic pgw apn [apn-name]
Bulkstats Schema Profile	eps apn

5.2 S2a

The S2a GRE counters count all (PMIP) GRE tunnel packets containing user payload data that are sent and received by the PGW over the (PMIP) GRE-based S2a interface between PGW (LMA) and trusted non-3GPP IP access nodes (MAG).

The byte counters include the total packet length which is defined as

GRE header + user data IP packet.

`Discarded packets` are defined as packets received in uplink direction, that have errors in the tunnel IP header, or in the GRE header, or there are insufficient resources like input buffer memory shortage etc., which prevent the packets from being further processed.

`Dropped packets` are defined as packets that were supposed to be transmitted in downlink direction, but not could be sent due to insufficient resources, like output buffer memory shortage, layer 2 congestion, etc.



5.2.1 S2aGreDIOctetsSent

Type	Counter64
Description	Total number of octets in downlink GRE payload packets, including the octets for the GRE header, sent to access nodes over the S2a interface.
Incremented	For each octet in the downlink GRE payload packets sent to access nodes over the S2a interface.
OID	1.3.6.1.4.1.2352.2.47.1.6.2
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.2.2 S2aGreDIPktsDropped

Type	Counter64
Description	Total number of dropped downlink GRE payload packets that should have been sent to access nodes over the S2a interface.
Incremented	For each dropped downlink GRE payload packet that should have been sent to access nodes over the S2a interface.
OID	1.3.6.1.4.1.2352.2.47.1.6.3
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.2.3 S2aGreDIPktsSent

Type	Counter64
Description	Total number of downlink GRE payload packets sent to access nodes over the S2a interface.
Incremented	For each downlink GRE payload packet sent to access nodes over the S2a interface.
OID	1.3.6.1.4.1.2352.2.47.1.6.1
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic



5.2.4 S2aGreDIPolicingPktsDropped

Type	Counter64
Description	Total number of downlink GRE payload packets that should have been sent to access nodes over the S2a interface but have been dropped due to policing.
Incremented	For each downlink GRE payload packet dropped due to policing.
OID	1.3.6.1.4.1.2352.2.47.1.6.4
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.2.5 S2aGreUIOctetsRcvd

Type	Counter64
Description	Total number of octets in uplink GRE payload packets, including the octets for the GRE header, received from access nodes over the S2a interface.
Incremented	For each octet in the uplink GRE payload packets received from access nodes over the S2a interface.
OID	1.3.6.1.4.1.2352.2.47.1.6.6
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.2.6 S2aGreUIPktsDiscarded

Type	Counter64
Description	Total number of discarded uplink GRE payload packets received from access nodes over the S2a interface.
Incremented	For each discarded uplink GRE payload packet received from access nodes over the S2a interface.
OID	1.3.6.1.4.1.2352.2.47.1.6.7
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic



5.2.7 S2aGreUIPktsRcvd

Type	Counter64
Description	Total number of uplink GRE payload packets received from access nodes over the S2a interface.
Incremented	For each uplink GRE payload packet received from access nodes over the S2a interface.
OID	1.3.6.1.4.1.2352.2.47.1.6.5
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.2.8 S2aGreUIPolicingPktsDiscarded

Type	Counter64
Description	Total number of uplink GRE payload packets received from access nodes over the S2a interface that were discarded due to policing.
Incremented	For each uplink GRE payload packet received from access nodes over the S2a interface that were discarded due to policing.
OID	1.3.6.1.4.1.2352.2.47.1.6.8
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.3 S5 / S8 and Gn / Gp

The S5/S8 and Gn/Gp GTP counters will count all GTP tunnel packets containing user payload data that are sent and received by the PGW over the GTP based S5/S8 and Gn/Gp interfaces between PGW, SGW, and Gn-SGSN.

The byte counters include the total packet length, which is defined as

GTP header + user data IP packet.

Discarded packets are defined as packets received in uplink direction, that have errors in the tunnel IP header, or in the GTP header, or there are insufficient resources, like input buffer memory shortage etc., which prevent the packets from being processed further.



Dropped packets are defined as packets that were supposed to be transmitted in downlink direction, but could not due to insufficient resources, like output buffer memory shortage, layer 2 congestion, etc.

5.3.1 S5S8GtpDIOctetsSent

Type	Counter64
Description	Total number of octets in downlink GTP payload packets, including the octets for the GTP header, sent to SGW and Gn-SGSN over the S5/S8 and Gn/Gp interfaces.
Incremented	For each octet in the downlink GTP payload packets sent either to an SGW or a Gn-SGSN over the S5/S8 and Gn/Gp interfaces.
OID	1.3.6.1.4.1.2352.2.47.1.3.2
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.3.2 S5S8GtpDIPktsDropped

Type	Counter64
Description	Total number of dropped downlink GTP payload packets that should have been sent to SGW and Gn-SGSN over the S5/S8 and Gn/Gp interfaces.
Incremented	For each dropped downlink GTP payload packet that should have been sent to an SGW or a Gn-SGSN over the S5/S8 and Gn/Gp interfaces.
OID	1.3.6.1.4.1.2352.2.47.1.3.3
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.3.3 S5S8GtpDIPktsSent

Type	Counter64
Description	Total number of downlink GTP payload packets sent to SGW and Gn-SGSN over the S5/S8 and Gn/Gp interfaces.



Incremented	For each downlink GTP payload packet sent either to an SGW or a Gn-SGSN over the S5/S8 and Gn/Gp interfaces.
OID	1.3.6.1.4.1.2352.2.47.1.3.1
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.3.4 S5S8GtpDIPolicingPktsDropped

Type	Counter64
Description	Total number of downlink GTP payload packets dropped due to policing that should have been sent to SGW and Gn-SGSN over the S5/S8 and Gn/Gp interfaces.
Incremented	For each downlink GTP payload packet dropped due to policing that should have been sent to SGW and Gn-SGSN over the S5/S8 and Gn/Gp interfaces.
OID	1.3.6.1.4.1.2352.2.47.1.3.4
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.3.5 S5S8GtpUIBearerPktsDiscarded

Type	Counter64
Description	Total number of uplink GTP payload packets received from SGW and Gn-SGSN over the S5/S8 and Gn/Gp interfaces that were discarded due to bearer validation failure.
Incremented	For each uplink GTP payload packet received from SGW and Gn-SGSN over the S5/S8 and Gn/Gp interfaces that were discarded due to bearer validation failure.
OID	1.3.6.1.4.1.2352.2.47.1.3.8
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic



5.3.6 S5S8GtpUIOctetsRcvd

Type	Counter64
Description	Total number of octets in uplink GTP payload packets, including the octets for the GTP header, received from SGW and Gn-SGSN over the S5/S8 and Gn/Gp interfaces.
Incremented	For each octet in the uplink GTP payload packets received from an SGW or a Gn-SGSN over the S5/S8 and Gn/Gp interfaces.
OID	1.3.6.1.4.1.2352.2.47.1.3.6
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.3.7 S5S8GtpUIPktsDiscarded

Type	Counter64
Description	Total number of discarded uplink GTP payload packets received from SGW and Gn-SGSN over the S5/S8 and Gn/Gp interfaces.
Incremented	For each discarded uplink GTP payload packet received from SGW and Gn-SGSN over the S5/S8 and Gn/Gp interfaces.
OID	1.3.6.1.4.1.2352.2.47.1.3.7
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.3.8 S5S8GtpUIPktsRcvd

Type	Counter64
Description	Total number of uplink GTP payload packets received from SGW and Gn-SGSN over the S5/S8 and Gn/Gp interfaces.
Incremented	For each uplink GTP payload packet received from an SGW or a Gn-SGSN over the S5/S8 and Gn/Gp interfaces.
OID	1.3.6.1.4.1.2352.2.47.1.3.5



CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.3.9 S5S8GtpUIPolicingPktsDiscarded

Type	Counter64
Description	Total number of uplink GTP payload packets received from SGW and Gn-SGSN over the S5/S8 and Gn/Gp interfaces that were discarded due to policing.
Incremented	For each uplink GTP payload packet received from SGW and Gn-SGSN over the S5/S8 and Gn/Gp interfaces that were discarded due to policing.
OID	1.3.6.1.4.1.2352.2.47.1.3.9
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.4 SGi

The SGi counters will count all data packets containing user payload data that are sent and received by the PGW over the SGi interface.

The packets are not tunneled by the PGW so the total packet length is the same as the IP packet length.

`Discarded packets` are defined as packets received in downlink direction that are discarded due to insufficient resources, like input buffer memory shortage etc., which prevent the packets from being processed further.

`Dropped packets` are defined as packets that were supposed to be transmitted in uplink direction, but could not due to insufficient resources, like output buffer memory shortage, layer 2 congestion, etc.

5.4.1 SgiDIOctetsRcvd

Type	Counter64
Description	Total number of octets in downlink user payload packets, including IPv6 user payload packets, received over the SGi interface.



	Incremented	For each octet in the downlink user payload packets received over the SGi interface.
	OID	1.3.6.1.4.1.2352.2.47.1.4.2
	CLI	show eps statistics traffic [all pgw]
	Bulkstats Schema Profile	eps traffic
5.4.2	SgiDIPktsDiscarded	
	Type	Counter64
	Description	Total number of discarded downlink user payload packets received over the SGi interface.
	Incremented	For each discarded downlink user payload packet received over the SGi interface.
	OID	1.3.6.1.4.1.2352.2.47.1.4.5
	CLI	show eps statistics traffic [all pgw]
	Bulkstats Schema Profile	eps traffic
5.4.3	SgiDIPktsRcvd	
	Type	Counter64
	Description	Total number of downlink user payload packets, including IPv6 user payload packets, received over the SGi interface.
	Incremented	For each downlink user payload packet received over the SGi interface.
	OID	1.3.6.1.4.1.2352.2.47.1.4.1
	CLI	show eps statistics traffic [all pgw]
	Bulkstats Schema Profile	eps traffic
5.4.4	SgiDIV6OctetsRcvd	
	Type	Counter64
	Description	Total number of octets in downlink IPv6 user payload packets received over the SGi interface.



Incremented	For each IPv6 octet in the downlink user payload packets received over the SGi interface.
OID	1.3.6.1.4.1.2352.2.47.1.4.4
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.4.5 SgiDIV6PktsRcvd

Type	Counter64
Description	Total number of downlink IPv6 user payload packets received over the SGi interface.
Incremented	For each downlink IPv6 user payload packet received over the SGi interface.
OID	1.3.6.1.4.1.2352.2.47.1.4.3
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.4.6 SgiUIOctetsSent

Type	Counter64
Description	Total number of octets in uplink user payload packets, including IPv6 user payload packets, sent over the SGi interface.
Incremented	For each octet in the uplink user payload packet sent over the SGi interface.
OID	1.3.6.1.4.1.2352.2.47.1.4.7
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

5.4.7 SgiUIPktsDropped

Type	Counter64
Description	Total number of dropped uplink user payload packets that should have been sent over the SGi interface.



	Incremented	For each dropped uplink user payload packet that should have been sent over the SGi interface.
	OID	1.3.6.1.4.1.2352.2.47.1.4.10
	CLI	show eps statistics traffic [all pgw]
	Bulkstats Schema Profile	eps traffic
5.4.8	SgiUIPktsSent	
	Type	Counter64
	Description	Total number of uplink user payload packets, including IPv6 user payload packets, sent over the SGi interface.
	Incremented	For each uplink user payload packet sent over the SGi interface.
	OID	1.3.6.1.4.1.2352.2.47.1.4.6
	CLI	show eps statistics traffic [all pgw]
	Bulkstats Schema Profile	eps traffic
5.4.9	SgiUIV6OctetsSent	
	Type	Counter64
	Description	Total number of octets in uplink IPv6 user payload packets sent over the SGi interface.
	Incremented	For each octet in the uplink IPv6 user payload packet sent over the SGi interface.
	OID	1.3.6.1.4.1.2352.2.47.1.4.9
	CLI	show eps statistics traffic [all pgw]
	Bulkstats Schema Profile	eps traffic
5.4.10	SgiUIV6PktsSent	
	Type	Counter64
	Description	Total number of uplink IPv6 user payload packets sent over the SGi interface.



Incremented	For each uplink IPv6 user payload packet sent over the SGi interface.
OID	1.3.6.1.4.1.2352.2.47.1.4.8
CLI	show eps statistics traffic [all pgw]
Bulkstats Schema Profile	eps traffic

6 SGW Control Plane Counters and Gauges

A collection of counters and gauges providing EPS Control Plane statistical information for SGW.

6.1 Charging

A collection of counters providing EPSC statistical information for SGW charging.

6.1.1 SgwCdrsEncoded

Type	Counter64
Description	Total number of successfully encoded SGW-CDRs
Incremented	When an SGW-CDR is ASN.1/BER encoded
OID	1.3.6.1.4.1.2352.2.44.1.2.5.1
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.1.2 SgwRfAcaFailRcvd

Type	Counter64
Description	Total number of <code>Accounting-Answer</code> messages received by the SGW over the Rf interface with result code different from diameter success or if syntax errors in message.



Incremented	When an <code>Accounting-Answer</code> message is received by the SGW over the Rf interface with result code different from diameter success or if syntax errors in message.
OID	1.3.6.1.4.1.2352.2.44.1.2.5.2
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.1.3 SgwRfAcaSuccRcvd

Type	Counter64
Description	Total number of <code>Accounting-Answer</code> messages received by the SGW over the Rf interface with result code diameter success.
Incremented	When an <code>Accounting-Answer</code> message is received by the SGW over the Rf interface with result code diameter success.
OID	1.3.6.1.4.1.2352.2.44.1.2.5.3
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.1.4 SgwRfAcrSent

Type	Counter64
Description	Total number of <code>Accounting-Request</code> messages sent by the SGW over the Rf interface.
Incremented	When an <code>Accounting-Request</code> message is sent by the SGW over the Rf interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.5.4
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control



6.1.5 SgwRfAcrWrittenToDisk

Type	Counter64
Description	Total number of Accounting-Request messages written to file on disk by SGW
Incremented	When an Accounting-Request message is written to file on disk by SGW
OID	1.3.6.1.4.1.2352.2.44.1.2.5.5
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2 S11 / S4

A collection of counters providing EPSC statistical information for the S11 and S4 interfaces.

6.2.1 S11S4ChangeNotifReqRcvd

Type	Counter64
Description	Total number of GTPv2-C "Change Notification Request" messages received over the S11/S4 interface.
Incremented	When a GTPv2-C "Change Notification Request" message is received over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.30
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.2 S11S4ChangeNotifRespAccSent

Type	Counter64
Description	Total number of GTPv2-C "Change Notification Response" messages with acceptance cause values sent over the S11/S4 interface.
Incremented	When a GTPv2-C "Change Notification Response" message with an acceptance response cause value is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.31



CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.3 S11S4ChangeNotifRespRejSent

Type	Counter64
Description	Total number of GTPv2-C "Change Notification Response" messages with rejection response cause values sent over the S11/S4 interface.
Incremented	When a GTPv2-C "Change Notification Response" message with a rejection response cause value is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.32
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.4 S11S4CreateBearerReqSent

Type	Counter64
Description	Total number of GTPv2-C "Create Bearer Request" messages sent over the S11/S4 interface.
Incremented	When a GTPv2-C "Create Bearer Request" message is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.19
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.5 S11S4CreateBearerRespAccRcvd

Type	Counter64
Description	Total number of GTPv2-C "Create Bearer Response" messages with acceptance response cause values received over the S11/S4 interface.
Incremented	When a GTPv2-C "Create Bearer Response" message with an acceptance response cause value is received over the S11/S4 interface.



OID	1.3.6.1.4.1.2352.2.44.1.2.4.20
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.6 S11S4CreateBearerRespRejRcvd

Type	Counter64
Description	Total number of GTPv2-C "Create Bearer Response" messages with rejection response cause values received over the S11/S4 interface.
Incremented	When a GTPv2-C "Create Bearer Response" message with a rejection response cause value is received over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.21
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.7 S11S4CreateSessionReqRcvd

Type	Counter64
Description	Total number of GTPv2-C "Create Session Request" messages received over the S11/S4 interface.
Incremented	When a GTPv2-C "Create Session Request" message is received over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.1
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.8 S11S4CreateSessionRespAccSent

Type	Counter64
Description	Total number of GTPv2-C "Create Session Response" messages with acceptance cause values sent over the S11/S4 interface.



Incremented	When a GTPv2-C "Create Session Response" message with an acceptance response cause value is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.2
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.9 S11S4CreateSessionRespRejSent

Type	Counter64
Description	Total number of GTPv2-C "Create Session Response" messages with rejection response cause values sent over the S11/S4 interface.
Incremented	When a GTPv2-C "Create Session Response" message with a rejection response cause value is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.3
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.10 S11S4DeleteBearerCmdRcvd

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Command" messages received over the S11/S4 interface.
Incremented	When a GTPv2-C "Delete Bearer Command" message is received over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.22
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

**6.2.11 S11S4DeleteBearerFailureIndSent**

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Failure Indication" messages sent over the S11/S4 interface.
Incremented	When a GTPv2-C "Delete Bearer Failure Indication" message is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.23
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.12 S11S4DeleteBearerReqSent

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Request" messages sent over the S11/S4 interface.
Incremented	When a GTPv2-C "Delete Bearer Request" message is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.13
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.13 S11S4DeleteBearerRespAccRcvd

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Response" messages with acceptance response cause values received over the S11/S4 interface.
Incremented	When a GTPv2-C "Delete Bearer Response" message with an acceptance response cause value is received over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.14
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control



6.2.14 S11S4DeleteBearerRespRejRcvd

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Response" messages with rejection response cause values received over the S11/S4 interface.
Incremented	When a GTPv2-C "Delete Bearer Response" message with a rejection response cause value is received over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.15
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.15 S11S4DeleteSessionReqRcvd

Type	Counter64
Description	Total number of GTPv2-C "Delete Session Request" messages received over the S11/S4 interface.
Incremented	When a GTPv2-C "Delete Session Request" message is received over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.7
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.16 S11S4DeleteSessionRespAccSent

Type	Counter64
Description	Total number of GTPv2-C "Delete Session Response" messages with acceptance response cause values sent over the S11/S4 interface.
Incremented	When a GTPv2-C "Delete Session Response" message with an acceptance response cause value is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.8
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

**6.2.17 S11S4DeleteSessionRespRejSent**

Type	Counter64
Description	Total number of GTPv2-C "Delete Session Response" messages with rejection response cause values sent over the S11/S4 interface.
Incremented	When a GTPv2-C "Delete Session Response" message with a rejection response cause value is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.9
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.18 S11S4DIDataNotifFailureIndRcvd

Type	Counter64
Description	Total number of GTPv2-C "Downlink Data Notification Failure Indication" messages received over the S11/S4 interface.
Incremented	When a GTPv2-C "Downlink Data Notification Failure Indication" message is received over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.12
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.19 S11S4DIDataNotificationAckRcvd

Type	Counter64
Description	Total number of GTPv2-C "Downlink Data Notification Acknowledgement" messages received over the S11/S4 interface.
Incremented	When a GTPv2-C "Downlink Data Notification Acknowledgement" message is received over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.11



CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.20 S11S4DIDataNotificationSent

Type	Counter64
Description	Total number of GTPv2-C "Downlink Data Notification" messages sent over the S11/S4 interface.
Incremented	When a GTPv2-C "Downlink Data Notification" message is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.10
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.21 S11S4HolratNon3gppAtt

Type	Counter64
Description	Total number of non-3GPP PDN Connection IRAT handover attempts (from non-3GPP to E-UTRAN) received over the S11/S4 interface.
Incremented	When a GTPv2-C "Create Session Request" message with the Handover Indicator flag set is received over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.28
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.22 S11S4HolratNon3gppSucc

Type	Counter64
Description	Total number of successful non-3GPP PDN Connection IRAT handover procedures (from non-3GPP to E-UTRAN).



Incremented	When a GTPv2-C "Modify Bearer Response" message with an acceptance response cause value is sent over the S11/S4 interface as a result of a successful non-3GPP PDN Connection IRAT handover procedure (from non-3GPP to E-UTRAN).
OID	1.3.6.1.4.1.2352.2.44.1.2.4.29
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.23 S11S4ModifyBearerReqRcvd

Type	Counter64
Description	Total number of GTPv2-C "Modify Bearer Request" messages received over the S11/S4 interface.
Incremented	When a GTPv2-C "Modify Bearer Request" message is received over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.4
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.24 S11S4ModifyBearerRespAccSent

Type	Counter64
Description	Total number of GTPv2-C "Modify Bearer Response" messages with acceptance response cause values sent over the S11/S4 interface.
Incremented	When a GTPv2-C "Modify Bearer Response" message with an acceptance response cause value is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.5
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control



6.2.25 S11S4ModifyBearerRespRejSent

Type	Counter64
Description	Total number of GTPv2-C "Modify Bearer Response" messages with rejection response cause values sent over the S11/S4 interface.
Incremented	When a GTPv2-C "Modify Bearer Response" message with a rejection response cause value is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.6
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.26 S11S4PlmnChangeRcvd

Type	Counter64
Description	Total number of PLMN changes received over the S11/S4 interface.
Incremented	When SGW receives a GTPv2 message that indicates a Serving Network PLMN change.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.27
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.27 S11S4RelAccessBearersReqRcvd

Type	Counter64
Description	Total number of GTPv2-C "Release Access Bearers Request" messages received over the S11/S4 interface.
Incremented	When a GTPv2-C "Release Access Bearers Request" message is received over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.16
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

**6.2.28 S11S4RelAccessBearersRespAccSent**

Type	Counter64
Description	Total number of GTPv2-C "Release Access Bearers Response" messages with acceptance response cause values sent over the S11/S4 interface.
Incremented	When a GTPv2-C "Release Access Bearers Response" message with acceptance response cause value is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.17
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.29 S11S4RelAccessBearersRespRejSent

Type	Counter64
Description	Total number of GTPv2-C "Release Access Bearers Response" messages with rejection response cause values sent over the S11/S4 interface.
Incremented	When a GTPv2-C "Release Access Bearers Response" message with rejection response cause value is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.18
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.30 S11S4UpdateBearerReqSent

Type	Counter64
Description	Total number of GTPv2-C "Update Bearer Request" messages sent over the S11/S4 interface.
Incremented	When a GTPv2-C "Update Bearer Request" message is sent over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.24
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control



6.2.31 S11S4UpdateBearerRespAccRcvd

Type	Counter64
Description	Total number of GTPv2-C "Update Bearer Response" messages with acceptance response cause values received over the S11/S4 interface.
Incremented	When a GTPv2-C "Update Bearer Response" message with an acceptance response cause value is received over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.25
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.2.32 S11S4UpdateBearerRespRejRcvd

Type	Counter64
Description	Total number of GTPv2-C "Update Bearer Response" messages with rejection response cause values received over the S11/S4 interface.
Incremented	When a GTPv2-C "Update Bearer Response" message with a rejection response cause value is received over the S11/S4 interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.4.26
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3 S5 / S8

A collection of counters providing EPSC statistical information for SGW S5 and S8 interfaces over GTP.

6.3.1 S5S8ChangeNotifReqSent

Type	Counter64
Description	Total number of GTPv2-C "Change Notification Request" messages sent by the SGW over the S5/S8 SGW GTP-C interface.



Incremented	By the SGW when it sends a GTPv2-C "Change Notification Request" message over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.21
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.2 S5S8ChangeNotifRespAccRcvd

Type	Counter64
Description	Total number of GTPv2-C "Change Notification Response" messages with acceptance response cause values received by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it receives a GTPv2-C "Change Notification Response" message with an acceptance response cause value over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.22
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.3 S5S8ChangeNotifRespRejRcvd

Type	Counter64
Description	Total number of GTPv2-C "Change Notification Response" messages with rejection response cause values received by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it receives a GTPv2-C "Change Notification Response" message with a rejection response cause value over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.23
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control



6.3.4 S5S8CreateBearerReqRcvd

Type	Counter64
Description	Total number of GTPv2-C "Create Bearer Request" messages received by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it receives a GTPv2-C "Create Bearer Request" message over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.10
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.5 S5S8CreateBearerRespAccSent

Type	Counter64
Description	Total number of GTPv2-C "Create Bearer Response" messages with acceptance response cause values sent by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it sends a GTPv2-C "Create Bearer Response" message with an acceptance response cause value over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.11
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.6 S5S8CreateBearerRespRejSent

Type	Counter64
Description	Total number of GTPv2-C "Create Bearer Response" messages with rejection response cause values sent by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it sends a GTPv2-C "Create Bearer Response" message with a rejection response cause value over the S5/S8 SGW GTP-C interface.



OID	1.3.6.1.4.1.2352.2.44.1.2.3.12
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.7 S5S8CreateSessionReqSent

Type	Counter64
Description	Total number of GTPv2-C "Create Session Request" messages sent by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it sends a GTPv2-C "Create Session Request" message over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.1
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.8 S5S8CreateSessionRespAccRcvd

Type	Counter64
Description	Total number of GTPv2-C "Create Session Response" messages with acceptance response cause values received by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it receives a GTPv2-C "Create Session Response" message with an acceptance response cause value over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.2
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control



6.3.9 S5S8CreateSessionRespRejRcvd

Type	Counter64
Description	Total number of GTPv2-C "Create Session Response" messages with rejection response cause values received by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it receives a GTPv2-C "Create Session Response" message with a rejection response cause value over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.3
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.10 S5S8DeleteBearerCmdSent

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Command" messages sent by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it sends a GTPv2-C "Delete Bearer Command" message over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.13
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.11 S5S8DeleteBearerFailureIndRcvd

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Failure Indication" messages received by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it receives a GTPv2-C "Delete Bearer Failure Indication" message over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.14



CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.12 S5S8DeleteBearerReqRcvd

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Request" messages received by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it receives a GTPv2-C "Delete Bearer Request" message over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.7
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.13 S5S8DeleteBearerRespAccSent

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Response" messages with acceptance response cause values sent by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it sends a GTPv2-C "Delete Bearer Response" message with an acceptance response cause value over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.8
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.14 S5S8DeleteBearerRespRejSent

Type	Counter64
Description	Total number of GTPv2-C "Delete Bearer Response" messages with rejection response cause values sent by the SGW over the S5/S8 SGW GTP-C interface.



Incremented	By the SGW when it sends a GTPv2-C "Delete Bearer Response" message with a rejection response cause value over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.9
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.15 S5S8DeleteSessionReqSent

Type	Counter64
Description	Total number of GTPv2-C "Delete Session Request" messages sent by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it sends a GTPv2-C "Delete Session Request" message over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.4
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.16 S5S8DeleteSessionRespAccRcvd

Type	Counter64
Description	Total number of GTPv2-C "Delete Session Response" messages with acceptance cause values received by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it receives a GTPv2-C "Delete Session Response" message with an acceptance response cause value over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.5
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

**6.3.17 S5S8DeleteSessionRespRejRcvd**

Type	Counter64
Description	Total number of GTPv2-C "Delete Session Response" messages with rejection response cause values received by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it receives a GTPv2-C "Delete Session Response" message with a rejection response cause value over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.6
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.18 S5S8ModifyBearerReqSent

Type	Counter64
Description	Total number of GTPv2-C "Modify Bearer Request" messages sent by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it sends a GTPv2-C "Modify Bearer Request" message over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.18
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.19 S5S8ModifyBearerRespAccRcvd

Type	Counter64
Description	Total number of GTPv2-C "Modify Bearer Response" messages with acceptance response cause values received by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it receives a GTPv2-C "Modify Bearer Response" message with an acceptance response cause value over the S5/S8 SGW GTP-C interface.



OID	1.3.6.1.4.1.2352.2.44.1.2.3.19
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.20 S5S8ModifyBearerRespRejRcvd

Type	Counter64
Description	Total number of GTPv2-C "Modify Bearer Response" messages with rejection response cause values received by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it receives a GTPv2-C "Modify Bearer Response" message with a rejection response cause value over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.20
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.21 S5S8UpdateBearerReqRcvd

Type	Counter64
Description	Total number of GTPv2-C "Update Bearer Request" messages received by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it receives a GTPv2-C "Update Bearer Request" message over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.15
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control



6.3.22 S5S8UpdateBearerRespAccSent

Type	Counter64
Description	Total number of GTPv2-C "Update Bearer Response" messages with acceptance response cause values sent by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it sends a GTPv2-C "Update Bearer Response" message with an acceptance response cause value over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.16
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.3.23 S5S8UpdateBearerRespRejSent

Type	Counter64
Description	Total number of GTPv2-C "Update Bearer Response" messages with rejection response cause values sent by the SGW over the S5/S8 SGW GTP-C interface.
Incremented	By the SGW when it sends a GTPv2-C "Update Bearer Response" message with a rejection response cause value over the S5/S8 SGW GTP-C interface.
OID	1.3.6.1.4.1.2352.2.44.1.2.3.17
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

6.4 User Equipment

A collection of counters providing general EPSC statistical information for SGW.



6.4.1 SgwUeEcmConnected

Type	Gauge32
Description	Current number of User Equipment (UE) in EPS Connection Management state ECM-CONNECTED in the gateway.
Incremented	When a User Equipment is moved to EPS Connection Management state ECM-CONNECTED.
Decrementd	When a User Equipment is moved to EPS Connection Management state ECM-IDLE.
OID	1.3.6.1.4.1.2352.2.44.1.2.1.2
CLI	show eps statistics control [all sgw]
Bulkstats Schema Profile	eps control

7 SGW User Plane Counters and Gauges

A collection of counters and gauges providing EPS User Plane statistical information for SGW.

7.1 S1-U

The S1-U counters will count all GTP tunnel packets containing user payload data that are sent and received between eNodeB and the Serving or Combined Gateway (SGW or Combined-GW) over the GTP based S1-U interface.

The byte counters include the packet length, which is defined as

GTP header + user data IP packet.

`Discarded packets` are defined as packets received in uplink direction, that have errors in the tunnel IP header or in the GTP header, or there are insufficient resources, like input buffer memory shortage etc., which prevent the packets from being processed further.

`Dropped packets` are defined as packets that were supposed to be transmitted in downlink direction, but could not due to insufficient resources, like output buffer memory shortage, layer 2 congestion, etc.



7.1.1 S1uDIOctetsSent

Type	Counter64
Description	Total number of octets in downlink GTP payload packets, including the octets for the GTP header, sent to eNodeBs over the S1-U interface.
Incremented	For each octet in the downlink GTP payload packets sent to eNodeBs over the S1-U interface.
OID	1.3.6.1.4.1.2352.2.47.1.1.2
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.1.2 S1uDIPktsDropped

Type	Counter64
Description	Total number of downlink GTP payload packets dropped that should have been sent to eNodeBs over the S1-U interface.
Incremented	For each dropped downlink GTP payload packet that should have been sent to eNodeBs over the S1-U interface.
OID	1.3.6.1.4.1.2352.2.47.1.1.3
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.1.3 S1uDIPktsSent

Type	Counter64
Description	Total number of downlink GTP payload packets sent to eNodeBs over the S1-U interface.
Incremented	For each downlink GTP payload packet sent to eNodeBs over the S1-U interface.
OID	1.3.6.1.4.1.2352.2.47.1.1.1
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic



7.1.4 S1uDIPolicingPktsDropped

Type	Counter64
Description	Total number of downlink GTP payload packets dropped due to policing that should have been sent to eNodeBs over the S1-U interface.
Incremented	For each downlink GTP payload packet dropped due to policing that should have been sent to eNodeBs over the S1-U interface.
OID	1.3.6.1.4.1.2352.2.47.1.1.4
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.1.5 S1uDIUeldlePktsDropped

Type	Counter64
Description	Total number of downlink GTP payload packets which should have been sent to eNodeBs over the S1-U interface but were dropped due to UE in idle mode, or the buffer has become full, or the UE has not been activated in a timely manner.
Incremented	For each downlink GTP payload packet, which should have been sent to eNodeBs over the S1-U interface but were dropped due to UE in idle mode, or the buffer has become full, or the UE has not been activated in a timely manner.
OID	1.3.6.1.4.1.2352.2.47.1.1.5
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.1.6 S1uUIBearerPktsDiscarded

Type	Counter64
Description	Total number of uplink payload GTP packets received from eNodeBs over the S1-U interface that were discarded due to bearer validation failure.
Incremented	For each uplink GTP payload packet received over the S1-U interface that were discarded due to bearer validation failure.



OID	1.3.6.1.4.1.2352.2.47.1.1.9
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.1.7 S1uUIOctetsRcvd

Type	Counter64
Description	Total number of octets in uplink GTP payload packets, including the octets for the GTP header, received from eNodeBs over the S1-U interface.
Incremented	For each octet in the uplink GTP payload packets received from eNodeBs over the S1-U interface.
OID	1.3.6.1.4.1.2352.2.47.1.1.7
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.1.8 S1uUIPktsDiscarded

Type	Counter64
Description	Total number of discarded uplink payload GTP packets received from eNodeBs over the S1-U interface.
Incremented	For each discarded uplink GTP payload packet received over the S1-U interface.
OID	1.3.6.1.4.1.2352.2.47.1.1.8
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.1.9 S1uUIPktsRcvd

Type	Counter64
Description	Total number of uplink GTP payload packets received from eNodeBs over the S1-U interface.
Incremented	For each uplink GTP payload packet received from eNodeBs over the S1-U interface.



OID	1.3.6.1.4.1.2352.2.47.1.1.6
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.1.10 S1uUIPolicingPktsDiscarded

Type	Counter64
Description	Total number of uplink payload GTP packets received from eNodeBs over the S1-U interface that were discarded due to policing.
Incremented	For each uplink GTP payload packet received over the S1-U interface that were discarded due to policing.
OID	1.3.6.1.4.1.2352.2.47.1.1.10
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.2 S5 / S8

The S5/S8 GTP counters will count all GTP tunnel packets containing user payload data that are sent and received by the SGW over the GTP based S5/S8 interface between SGW and PGW.

The byte counters includes the packet length, which is defined as

GTP header + user data IP packet.

`Discarded packets` are defined as packets received in downlink direction, that have errors in the tunnel IP header or in the GTP header, or there are insufficient resources, like buffer input memory shortage etc., which prevent the packets from being processed further.

`Dropped packets` are defined as packets that were supposed to be transmitted in uplink direction, but could not due to insufficient resources, like output buffer memory shortage, layer 2 congestion, etc.



7.2.1 S5GtpDIOctetsRcvd

Type	Counter64
Description	Total number of octets in downlink GTP payload packets, including the octets for the GTP header, received from the PGW over the S5 interface.
Incremented	For each octet in the downlink GTP payload packets received from a PGW over the S5 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.8
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.2.2 S5GtpDIPktsDiscarded

Type	Counter64
Description	Total number of discarded downlink GTP payload packets received from the PGW over the S5 interface.
Incremented	For each discarded downlink GTP payload packet received from a PGW over the S5 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.9
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.2.3 S5GtpDIPktsRcvd

Type	Counter64
Description	Total number of downlink GTP payload packets received from the PGW over the S5 interface.
Incremented	For each downlink GTP payload packet received from a PGW over the S5 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.7
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic



7.2.4 S5GtpUIOctetsSent

Type	Counter64
Description	Total number of octets in uplink GTP payload packets, including the octets for the GTP header, sent to the PGW over the S5 interface.
Incremented	For each octet in the uplink GTP payload packets sent to a PGW over the S5 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.11
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.2.5 S5GtpUIPktsDropped

Type	Counter64
Description	Total number of dropped uplink GTP payload packets that should have been sent to the PGW over the S5 interface.
Incremented	For each dropped uplink GTP payload packet that should have been sent to a PGW over the S5 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.12
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.2.6 S5GtpUIPktsSent

Type	Counter64
Description	Total number of uplink GTP payload packets sent to the PGW over the S5 interface.
Incremented	For each uplink GTP payload packet sent to a PGW over the S5 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.10
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

**7.2.7 S5S8GtpDIOctetsRcvd**

Type	Counter64
Description	Total number of octets in downlink GTP payload packets, including the octets for the GTP header, received from the PGW over the S5/S8 interface.
Incremented	For each octet in the downlink GTP payload packets received from a PGW over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.2
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.2.8 S5S8GtpDIPktsDiscarded

Type	Counter64
Description	Total number of discarded downlink GTP payload packets received from the PGW over the S5/S8 interface.
Incremented	For each discarded downlink GTP payload packet received from a PGW over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.3
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.2.9 S5S8GtpDIPktsRcvd

Type	Counter64
Description	Total number of downlink GTP payload packets received from the PGW over the S5/S8 interface.
Incremented	For each downlink GTP payload packet received from a PGW over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.1
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic



7.2.10 S5S8GtpUIOctetsSent

Type	Counter64
Description	Total number of octets in uplink GTP payload packets, including the octets for the GTP header, sent to the PGW over the S5/S8 interface.
Incremented	For each octet in the uplink GTP payload packets sent to a PGW over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.5
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.2.11 S5S8GtpUIPktsDropped

Type	Counter64
Description	Total number of dropped uplink GTP payload packets that should have been sent to the PGW over the S5/S8 interface.
Incremented	For each dropped uplink GTP payload packet that should have been sent to a PGW over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.6
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.2.12 S5S8GtpUIPktsSent

Type	Counter64
Description	Total number of uplink GTP payload packets sent to the PGW over the S5/S8 interface.
Incremented	For each uplink GTP payload packet sent to a PGW over the S5/S8 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.4
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

**7.2.13 S8GtpDIOctetsRcvd**

Type	Counter64
Description	Total number of octets in downlink GTP payload packets, including the octets for the GTP header, received from the PGW over the S8 interface.
Incremented	For each octet in the downlink GTP payload packets received from a PGW over the S8 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.14
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.2.14 S8GtpDIPktsDiscarded

Type	Counter64
Description	Total number of discarded downlink GTP payload packets received from the PGW over the S8 interface.
Incremented	For each discarded downlink GTP payload packet received from a PGW over the S8 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.15
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.2.15 S8GtpDIPktsRcvd

Type	Counter64
Description	Total number of downlink GTP payload packets received from the PGW over the S8 interface.
Incremented	For each downlink GTP payload packet received from a PGW over the S8 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.13
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic



7.2.16 S8GtpUIOctetsSent

Type	Counter64
Description	Total number of octets in uplink GTP payload packets, including the octets for the GTP header, sent to the PGW over the S8 interface.
Incremented	For each octet in the uplink GTP payload packets sent to a PGW over the S8 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.17
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.2.17 S8GtpUIPktsDropped

Type	Counter64
Description	Total number of dropped uplink GTP payload packets that should have been sent to the PGW over the S8 interface.
Incremented	For each dropped uplink GTP payload packet that should have been sent to a PGW over the S8 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.18
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic

7.2.18 S8GtpUIPktsSent

Type	Counter64
Description	Total number of uplink GTP payload packets sent to the PGW over the S8 interface.
Incremented	For each uplink GTP payload packet sent to a PGW over the S8 interface.
OID	1.3.6.1.4.1.2352.2.47.1.2.16
CLI	show eps statistics traffic [all sgw]
Bulkstats Schema Profile	eps traffic