Monitoring the Evolved Packet Data Gateway

This chapter provides information for monitoring the status and performance of the ePDG (evolved Packet Data Gateway) using the **show** commands found in the CLI (Command Line Interface). These command have many related keywords that allow them to provide useful information on all aspects of the system ranging from current software configuration through call activity and status.

The selection of **show** commands listed in this chapter is intended to provided the most useful and in-depth information for monitoring the system. For additional information on these and other **show** commands and keywords, refer to the *eHRPD/LTE Command Line Interface Reference.*

The system also supports the sending of SNMP (Simple Network Management Protocol) traps that indicate status and alarm conditions. See the *SNMP MIB Reference* for a detailed listing of these traps.

Monitoring ePDG Status and Performance

The following table contains the CLI commands used to monitor the status of the ePDG features and functions. Output descriptions for most of the commands are located in the *Statistics and Counters Reference.*

Table 1: ePDG Status and Performance Monitoring Commands

To do this:	Enter this command:
View ePDG Service Information and Statistics	
View ePDG service information and statistics	**show epdg-service { all [counters]	name** *service_name* **[dns-stats]	session	statistics [dns-stats] }**
View ePDG service session information	**show epdg-service session [all	callid** *call_id* **| counters	full [all	callid** *call_id* **| ip-address** *ip-address* **| peer-address** *ip_address* **| username** *name* **]	ip-address** *ip_address* **| peer-address** *ip_address* **| summary [all	callid** *call_id* **| ip-address** *ip_address* **| peer-address** *ip_address* **| username** *name* **]	username** *name* **]**
View additional session statistics	**show session [disconnect-reasons	duration	progress	setuptime	subsystem]**

To do this:	Enter this command:
View ePDG bulk statistics	**show bulkstats variables epdg**
View bulk statistics for the system	**show bulkstats data**
View IPSec and IKEv2 Information	
View IPSec security associations	**show crypto ipsec security-associations [summary	tag** *crypto_map_name* **]**
View IPSec transform sets	**show crypto ipsec transform-set**
View IKEv2 security associations	**show crypto ikev2-ikesa security-associations [peer** *ipv4/ipv6_address* **| summary	tag** *crypto_map_name* **]**
View IKEv2 transform sets	**show crypto ikev2-ikesa transform-set**
View IKEv2 statistics	**show crypto statistics [ikev2]**
View crypto manager statistics	**show crypto managers [crypto-map** *crypto_map_name* **| instance** *instance_number* **| summary]**
View AES New Instructions (NI) Information **Important** The AES-NI Transform Encryption is supported only on the Virtual Network Function (VNF).	
View the crypto accelerator in the output of this command if AES-NI acceleration is available for ePDG	**show card hardware**
View information on AES-NI capabilities, crypto processing threads (shared/dedicated), and statistics on processing of packets per second and IFTASK utilization per thread	**show crypto process**
View information on Cipher and HMAC per algorithm	**show crypto process performance slot** *slot_number*
View Diameter AAA Server Information	
View Diameter AAA server statistics	**show diameter aaa-statistics all**
View Diameter message queue counters	**show diameter message-queue counters { inbound	outbound }**
View Diameter statistics	**show diameter statistics**
View Congestion Control Information	
View congestion control statistics	**show congestion-control statistics ipsecmgr**
View Subscriber Information	
View Subscriber Configuration Information	
View locally configured subscriber profile settings (must be in the context where the subscriber resides)	**show subscribers configuration username** *subscriber_name*

To do this:	Enter this command:
View remotely configured subscriber profile settings	**show subscribers aaa-configuration username** *subscriber_name*
View subscriber information based on IPv6 address	**show subscribers ipv6-address** *ipv6_address*
View subscriber information based on IPv6 address prefix	**show subscribers ipv6-prefix** *prefix*
View subscriber information based on caller ID	**show subscribers callid** *call_id*
View subscriber information based on username	**show subscribers username** *name*
View information for troubleshooting subscriber sessions	**show subscribers debug-info**
View the summary of subscriber information	**show subscribers summary**
View the list of subscribers currently accessing the system	
View the list of subscribers currently accessing the system	**show subscribers all**
View the list of ePDG subscribers currently accessing the system	`show subscribers epdg-only [[all]	[callid call_id]	[card-num card_num]	[configured-idle-timeout { 0..4294967295	< idle_timeout	> idle_timeout	greater-than idle_timeout	less-than idle_timeout }]	[connected-time { 0..4294967295	< connected_time	> connected_time	greater-than connected_time	less-than connected_time }]	[counters]	[data-rate]	[full]	[gtp-version version]	[gtpu-bind-address ip_address]	[gtpu-service service_name]	[idle-time { 0..4294967295	< idle_time	> idle_time	greater-than idle_time	less-than idle_time }]	[ip-address { < ipv4_address	> ipv4_address	IPv4	greater-than ipv4_address	less-than ipv4_address }]		[ipv6-prefix ipv6_address/len_format]	[long-duration-time-left { 0..4294967295	< long_dur_time	> long_dur_time	greater-than long_dur_time	less-than long_dur_time }]	[network-type { gre	ipip	ipsec	ipv4	ipv4-pmipv6	ipv4v6	ipv4v6-pmipv6	ipv6	ipv6-pmipv6	l2tp	mobile-ip	proxy-mobile-ip }]	[qci qci]	[rx-data { 0..18446744073709551615	< rx_bytes	> rx_bytes	greater-than rx_bytes	less-than rx_bytes }]	[session-time-left { 0..4294967295	< sess_time_left	> sess_time_left	greater-than sess_time_left	less-than sess_time_left }]	[smgr-instance smgr_instance]	[summary]	[tft]	[tx-data { 0..18446744073709551615	< tx_bytes	> tx_bytes	greater-than tx_bytes	less-than tx_bytes }]	[username]	[	{ grep grep_options	more }]]`

To do this:	Enter this command:
View the list of ePDG subscribers currently accessing the system per ePDG service	**show subscribers epdg-service** *service_name* [[**all**]	[**callid** *call_id*]	[**card-num** *card_num*]	[**configured-idle-timeout** { **0..4294967295**	**<** *idle_timeout*	**>** *idle_timeout*	**greater-than** *idle_timeout*	**less-than** *idle_timeout* }]	[**connected-time** { **0..4294967295**	**<** *connected_time*	**>** *connected_time*	**greater-than** *connected_time*	**less-than** *connected_time* }]	[**counters**]	[**data-rate**]	[**full**]	[**gtp-version** *version*]	[**gtpu-bind-address** *ip_address*]	[**gtpu-service** *service_name*]	[**idle-time** { **0..4294967295**	**<** *idle_time*	**>** *idle_time*	**greater-than** *idle_time*	**less-than** *idle_time* }]	[**ip-address** { **<** *ipv4_address*	**>** *ipv4_address*	**IPv4**	**greater-than** *ipv4_address*	**less-than** *ipv4_address* }]	[**ipv6-prefix** *ipv6_address/len_format*]	[**long-duration-time-left** { **0..4294967295**	**<** *long_dur_time*	**>** *long_dur_time*	**greater-than** *long_dur_time*	**less-than** *long_dur_time* }]	[**network-type** { **gre**	**ipip**	**ipsec**	**ipv4**	**ipv4-pmipv**6	**ipv4v6**	**ipv4v6-pmipv6**	**ipv6**	**ipv6-pmipv6**	**l2tp**	**mobile-ip**	**proxy-mobile-ip** }]	[**qci** *qci*]	[**rx-data** { **0..18446744073709551615**	**<** *rx_bytes*	**>** *rx_bytes*	**greater-than** *rx_bytes*	**less-than** *rx_bytes* }]	[**session-time-left** { **0..4294967295**	**<** *sess_time_left*	**>** *sess_time_left*	**greater-than** *sess_time_left*	**less-than** *sess_time_left* }]	[**smgr-instance** *smgr_instance*]	[**summary**]	[**tft**]	[**tx-data** { **0..18446744073709551615**	**<** *tx_bytes*	**>** *tx_bytes*	**greater-than** *tx_bytes*	**less-than** *tx_bytes* }]	[**username**]	[**| { grep** *grep_options* **| more }**]]
View the P-CSCF addresses received from the P-GW	**show subscribers full username** *subscriber_name*
View statistics for subscribers using a MAG service on the system	**show subscribers mag-only [all	full	summary]**
View statistics for subscribers using a MAG service per MAG service	**show subscribers mag-service** *service_name*
View Session Subsystem and Task Information	
View Session Subsystem Statistics Refer to the *System Administration Guide* for additional information on the Session subsystem and its various manager tasks.	
View AAA Manager statistics	**show session subsystem facility aaamgr all**
View AAA Proxy statistics	**show session subsystem facility aaaproxy all**

To do this:	Enter this command:
View Session Manager statistics	**show session subsystem facility sessmgr all**
View MAG Manager statistics	**show session subsystem facility magmgr all**
View session progress information for the ePDG service	**show session progress epdg-service** *service_name*
View session duration information for the ePDG service	**show session duration epdg-service** *service_name*
View the task statistics	
View resource allocation and usage information for Session Manager	**show task resources facility sessmgr all**
View resource allocation and usage information for IPSec Manager	**show task resources facility ipsecmgr all**
View Session Resource Status	
View session resource status	**show resources session**
View Session Recovery Status	
View session recovery status	**show session recovery status [verbose]**
View Session Disconnect Reasons	
View session disconnect reasons	**show session disconnect-reasons**
View GTPU Tunnels Information	
View GTPU tunnels information	**show gtpu statistics**
View GTP Session Information Like Control Plane TEIDs	
View GTP session information like control plane TEIDs	**show egtp sessions**
View Subscriber TFT	
View subscriber TFT	**show subscriber tft**
View GTP Messages Information	
View GTP messages information	**show egtpc statistics**
Chassis ICSR Status and monitoring	
View SRP Information	**show srp info**
View SRP checkpoint Statistics	**show srp checkpoint statistics**

Clearing Statistics and Counters

It may be necessary to periodically clear statistics and counters in order to gather new information. The system provides the ability to clear statistics and counters based on their grouping.

Statistics and counters can be cleared using the CLI **clear** command. You can also use specific command options such as **clear epdg-service statistics dns-stats**. Refer to the *eHRPD/LTE Command Line Interface Reference* for detailed information on using this command.