

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.

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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*]

To do this:	Enter this command:
View additional session statistics.	**show session [disconnect-reasons | duration | progress | setuptime | subsystem]**
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 Ultra Services Platform-based Ultra Gateway Platform (UGP) virtual network function (VNF).	
View the crypto accelerator in the output of this command will indicate 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	

To do this:	Enter this command:
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*
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 a summary of subscriber information.	**show subscribers summary**
View Subscribers Currently Accessing the System	
View a list of subscribers currently accessing the system.	**show subscribers all**

To do this:	Enter this command:
View a 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-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 }**]]

To do this:	Enter this command:
View a 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-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 }**]]
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]**

To do this:	Enter this command:
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 **Important** 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**
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 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**

To do this:	Enter this command:
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.