Exec Mode show Commands (Q-S)

The Exec Mode is the initial entry point into the command line interface system. Exec mode **show** commands are useful in troubleshooting and basic system monitoring.

Command Modes

This chapter includes the commands **qci-qos-mapping** through **show system uptime**.

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Important The commands or keywords/variables that are available are dependent on platform type, product version, and installed license(s).

show qci-qos-mapping

Displays QoS Class Identifier-Quality of Service (QCI-QoS) mapping tables configured on this system.

Product

ePDG

HSGW

P-GW

SAEGW

S-GW

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show qci-qos-mapping table { all | name *table_name* **} [| { *grep_options* | more }]**

all

Displays information for all QCI-QoS mapping tables configured on this system.

name *table_name*

Displays information for an existing QCI-QoS mapping table specified as an alphanumeric string of 1 through 63 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines Use this command to display the contents of a specific QCI-QoS mapping table or all mapping tables configured on this system.

Example

The following command displays the contents of a QCI-QoS mapping table named *table1*:

```
show qci-qos-mapping table name table1
```

show qos ip-dscp-iphb-mapping

Displays mapping QoS information in a packet to internal-qos marking.

Product
ePDG
HSGW
P-GW
SAEGW
S-GW

Privilege Inspector

Command Modes Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show qos ip-dscp-iphb-mapping
```

Usage Guidelines Use this command to display mapping QoS information in a packet to internal-qos marking.

show qos l2-mapping-table

Displays named table for the internal to L2 mapping values, like 802.1p and MPLS.

Product
ePDG
HSGW
P-GW
SAEGW

S-GW

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

`show qos l2-mapping-table { name` *`table_name`* **`| system-default }`**

name *table_name*

Displays information for an existing QoS L2 mapping table.

table_name is an existing table specified as an alphanumeric string of 1 through 80 characters.

system-default

Displays information for the default system internal mapping to L2 values.

Usage Guidelines

Use this command to display named table for the internal to L2 mapping values, like 802.1p and MPLS.

Example

The following command displays the contents of a QOS L2 mapping table named *l2table*:

`show qos l2-mapping-table name l2table`

show qos npu inter-subscriber traffic

This command is only supported on PACs running on ST16 platforms. It has been deprecated for use on ASR 5x00 platforms.

show qos npu stats

Displays Network Processing Unit (NPU) QoS statistics per priority queue for a particular processing card:

Product

GGSN

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

`show qos npu stats inter-subscriber traffic slot` *`slot_num`*

slot *slot_num*

Displays statistics for the processing card identified by its slot number as an integer from 1 through 8 and 10 through 16 on the ASR 5000, or 1 through 4 and 7 through 10 on the ASR 5500.

Usage Guidelines

This command displays packet and byte counts per NPU QoS priority queue on a per-processing card basis.

For additional information on the NPU QoS functionality, refer to the *System Administration Guide*.

Important This functionality is not supported for use with the PDSN at this time.

Example

The following command displays NPU QoS priority queue statistics for a processing card installed in chassis slot number 2:

```
show qos npu stats inter-subscriber traffic slot 2
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show radius

Displays and statistic information for RADIUS accounting and/or authentication.

Product

PDSN

HA

GGSN

ASN-GW

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show radius { accounting servers | authentication servers } [ detail ] [
 admin-status { enabled | disabled } ] [ | { grep grep_options | more } ]
[ radius group group_name [ detail ] [ | { grep grep_options | more } ] ]
```

accounting servers

Lists information for configured accounting servers and their current state.

authentication servers

Lists information for configured authentication servers and their current state.

[detail]

Displays historical state information for configured servers of the specified type.

admin-status { enabled | disabled }

Displays information for accounting and/or authentication servers with an administrative status of "enabled" or "disabled".

radius group *group_name*

Displays the authentication/authorization RADIUS server group information for an existing server group specified as an alphanumeric string of 1 through 63 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Display the RADIUS server information as part of periodic monitoring of the health of the system.

Example

The following displays the information on configured accounting servers:

```
show radius accounting server
```

The following command displays detailed information for RADIUS accounting servers:

```
show radius accounting servers detail
```

The following command displays detailed information for RADIUS server group *star1* used for authentication:

```
show radius authentication servers radius group star1 detail
```

The following command displays detailed information for RADIUS server group *star1* used for accounting:

```
show radius accounting servers radius group star1 detail
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show radius charging servers

This command displays the RADIUS authentication and accounting servers or server group that are configured for use by charging services.

Product

PDSN

HA

GGSN

ASN-GW

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show radius charging servers [radius group *group_name* **] [| { grep** *grep_options* **| more }]**

radius group *group_name* all

Displays all RADIUS counter information for an existing server group configured for use by charging services. *group_name* is specified as an alphanumeric string of 1 through 63 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display information about RADIUS servers or server group configured for use by Charging Services.

Example

The following command displays RADIUS servers configured for Charging Services:

```
show radius charging servers
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show radius client

Displays information about the RADIUS client configured on the system.

Product

PDSN

HA

GGSN

ASN-GW

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

`show radius client status [ | { grep grep_options | more } ]`

status

Displays a status summary for the RADIUS client.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Configuring the RADIUS protocol on the system enables RADIUS client functionality. This command is displays information pertaining to the status of the client.

Example

The following command displays detailed information pertaining to the system's RADIUS client:

`show radius client status`

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show radius counters

Displays RADIUS server and statistic information for accounting and/or authentication.

Product

PDSN

HA

GGSN

ASN-GW

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show radius counters { all | dynamic-auth | radius group *group_name* **[all | server** *ip_address* **[port** *number* **] | summary [all-contexts [verbose]] } [| { grep** *grep_options* **| more }]**

counters { all | server *ip_address* [port *number*] }

all: Displays statistics for all servers.

server *ip_address*: Displays statistics for the server specified by its IPv4 address.

port *number*: Displays statistics for a port on the server specified as an integer from 0 through 65535.

radius group *group_name* all

Displays all RADIUS counter information for an existing server group specified as an alphanumeric string of 1 through 63 characters.

all: Displays statistics for all servers.

dynamic-auth

Displays Dynamic Authorization counters for configured RADIUS servers.

summary [all-contexts [verbose]]

Displays a summary of RADIUS statistics for all the RADIUS servers configured in a specific context.

all-contexts: Displays a summary of RADIUS statistics for all RADIUS servers configured in all context. If **verbose** is also specified, the information is displayed in more detail.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Display the RADIUS server information as part of periodic monitoring of the health of the system.

Example

The following command displays detailed information pertaining to the RADIUS server group *star1* with in current context:

```
show radius counters radius group star1 all
```

The following displays the statistics for the server with IP address *209.165.200.229*, then just port *7777*, followed by **all** services.

```
show radius counters server 209.165.200.229
show radius counters server 209.165.200.229 port 7777
show radius counters all
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show rct stats

Displays statistics associated with Recovery Control Task (RCT) events, including migrations, switchovers and shutdowns. RCT statistics are associated with card-to-card session recovery activities.

Product

All products supporting the Session Recovery feature

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

```
show rct stats [verbose] [ | { grep grep_options | more } ]
```

[verbose]

Displays full details about RCT events, current status, time stamps and other associated information. This mode is only available if a session recovery event has occurred on the system. The default mode is to display a brief summary of RCT events.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display RCT statistics in Summary or Detailed (verbose) mode. The Detailed output includes the following information:

- Recovery action taken – Migration, Shutdown, Switchover
- Type of event – Planned or Unplanned
- From card to card – slot numbers
- Start time – YYYY-MMM-DD+hh:mm:sss.sss
- Duration – seconds
- Card failure device (such as CPU*n*)
- Card failure reason
- Card is in usable state or not failed
- Recovery action status – Success or failure reason
- If recovery action failed, failure time stamp
- If recovery action failed, failure task facility name
- If recovery action failed, failure instance number

Example

The following command displays detailed statistics for RCT events:

show rct stats verbose

Important Output descriptions for **show** commands are available in the *Statistics and Counters Reference*. For additional information, see the *System Administration Guide*.

show resources

Displays the resource information by CPU or session.

Product All

Privilege Security Administrator, Administrator, Operator, Inspector

Command Modes Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description **`show resources { cpu | npu | session } [ | { grep`** *`grep_options`* **`| more } ]`**

cpu | npu | session

cpu: Displays resource information by CPU.

npu: Displays resource information by network processing unit (NPU).

session: Displays resource information by session.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

View resource utilization as part of troubleshooting systems which appear sluggish or are having excessive connection timeouts or other connection issues.

Example

The following display the resource information by CPU and session, respectively.

```
show resources cpu
show resources session
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show rlf-context-statistics

Displays the statistics for all active RLF contexts.

Product

GGSN

P-GW

SaMOG

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show rlf-context-statistics { diamproxy [*facility_num* **| [endpoint** *endpoint_name* **[peer-realm** *realm_name* **[peer-host** *host_name* **]]] | sessmgr [gtpc-context-name** *gtpccontext_name* **| instance** *facility_num* **] } [| summary | verbose] [| { grep** *grep_options* **| more }]**

facility_num

Displays the context information for the specified facility. *num* must be an integer from 1 through 16.

endpoint *endpoint_name*

Displays the context information only for the endpoint specified as a string of size ranging from 1 through 63 characters.

realm *realm_name*

Displays the context information only for the realm specified as a string of size ranging from 1 through 127 characters.

peer-host *host_name*

Displays the context information only for the host specified as a string of size ranging from 1 through 63 characters.

gtpc-context-name*gtpccontext_name*

Displays RLF statistics of GTPC services PGW and GGSN

instance *facility_num*

Displays the facility information for specific instance.

summary

Displays summary information.

verbose

Specifies to display detailed (all available) information. If not specified, concise information is displayed.

Displays the instance level stats. When multiple diamproxies are active, an RLF context's instance is created on each diamproxy or session manager for each peer.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display RLF statistics for all active RLF contexts.

An RLF context is created only when –

- A peer is bound to a RLF template.
- The peer is in "OPEN" state.

Failure of any of these conditions will cause the RLF context to be deleted.

Example

The following command displays RLF statistics for all active RLF contexts:

```
show rlf-context-statistics diamproxy
show rlf-context-statistics sessmgr instance 1 gtpc-context-name ingress

show rlf-context-statistics sessmgr gtpc-context-name ingress
```

show rlf-memcache-statistics

Displays the memory used by RLF for processing the messages.

Product

GGSN

P-GW

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

`show rlf-memcache-statistics { diamproxy` *`facility_num`***`| sessmgr [ instance`** *`facility information for specific instance`* **`] } [ | { grep`** *`grep_options`* **`| more } ]`**

facility_num

Displays the information for the specified facility. *num* must be an integer from 1 through 16.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display the memory used by RLF for processing the messages. The output will be displayed only if the memcache is used.

Example

The following commands displays memory cache statistics for DIAMPROXY and session manager facility:

```
show rlf-memcache-statistics diamproxy
show rlf-memcache-statistics sessmgr instance 1
```

show rlf-template

Displays the statistics for all active RLF templates.

Product

GGSN

P-GW

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show rlf-template { all | name *template_name* **} [| { grep** *grep_options* **| more }]**

all

Displays the statistics information for all the configured RLF templates.

name *template_name*

Displays the statistics information for the specified RLF template. *template_name* must be an integer from 1 through 127 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display statistics for all or specified RLF template(s).

Example

The following command displays statistics for all RLF templates:

```
show rlf-template all
```

show rohc counters

Displays Robust Header Compression (ROHC) counters for all active calls.

Product

PDSN

HSGW

ASN-GW

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show rohc counters [all | callid *call_id* **| imsi** *imsi_num* **| ip-address** *ip_addr* **| msid** *msid_num* **| username** *user_name* **] [| { grep** *grep_options* **| more }]**

all

Displays all information.

callid *call_id*

Displays the information only for the call ID specified as a 4-byte hexadecimal number.

imsi *imsi_num*

Displays information for the specified IMSI (International Mobile Subscriber Identity). The IMSI is an up to 15-digit field which identifies the subscriber's home country and carrier: 3 digits of Mobile Country Code (MCC), 2 or 3 digits of Mobile Network Code (MNC), followed by the Mobile Subscriber Identification Number MSIN. Example: 123-45-678910234. May also be entered as 12345678910234.

ip-address *ip_addr*

Displays information only for the mobile subscriber IP address specified in IPv4 dotted-decimal or IPv6 colon-separated-hexadecimal notation.

msid *msid_num*

Displays information only for a mobile subscriber ID from 7 to 16 digits for an IMSI, MIN, or RMI.

username *user_name*

Displays radio-packet (R-P) interface information only for a specified username.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display ROHC counters for all active calls.

Example

The following command displays ROHC counters for all active calls:

```
show rohc counters all
```

show rohc statistics

Displays statistics and counters for Robust Header Compression (ROHC) IP header compression.

Product

PDSN

HSGW

ASN-GW

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show rohc statistics [pdsn-service *pdsnsvc_name* **] [asngw-service** *asngwsvc name* **] [hsgw-service** *hsgwsvc_name* **] [| { grep** *grep_options* **| more }]**

Important Keywords available for this command are license-driven. For example, if a PDSN license is loaded, the **pdsn-service** option is visible.

pdsn-service *pdsnsvc_name*

Displays ROHC statistics and counters for the an existing PDSN service specified as an alphanumeric string of 1 through 63 characters.

asngw-service *asngwsvc_name*

Displays ROHC statistics and counters for an existing ASN-GW service specified as an alphanumeric string of 1 through 63 characters.

hsgw-service *hsgwsvc_name*

Displays ROHC statistics and counters for an existing HSGW service specified as an alphanumeric string of 1 through 63 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display ROHC statistics for all services or for a specific ASN-GW, PDSN, or HSGW.

Example

The following command displays ROHC statistics for the PDSN service named pdsn1:

```
show rohc statistics pdsn-service pdsn1
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show route-map

Displays entries for all route maps or a specific route map.

Product

All

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show route-map [name *route-map name* **] [| { grep** *grep_options* **| more }]**

name *route-map name*

Displays information for a route-map specified as an alphanumeric string of 1 through 79 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to see the rules configured in all route-maps for the current context.

Example

The following command displays the route-map information for prefix list *Prefix100*:

```
show route-map Prefix100
```

Refer to the **match** and **set** command descriptions in the *Route-map Configuration Mode Commands* chapter for descriptions of the various entries listed.

show rp

Displays radio-packet (R-P) interface statistics using the filtering options specified.

Product

PDSN

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show rp [counters | full | summary] { all | callid *call_id* **| msid** *ms_id* **| peer-address** *peer_ip_address* **| username** *user_name* **} [| { grep** *grep_options* **| more }]**

counters | full | summary

Provides an optional modifier to the output for the desired level and type of information.

counters: Displays R-P protocol statistics.

full: Displays all available information.

summary: Displays only a summary of available information.

These options are not available in conjunction with the keywords **statistics** or **service-option statistics**.

all | callid *call_id* | msid *ms_id* | peer-address *peer_ip_address* | username *user_name*

all: Displays all R-P information.

callid *call_id*: Displays only the information for the call ID specified as a 4-digit hexadecimal number.

msid *ms_id*: Displays information only for a mobile subscriber ID specified by 7 to 16 digits for an IMSI, MIN, or RMI.

peer-address *peer_ip_address*: Displays R-P information for the peer IP address of the PCF specified in IPv4 dotted-decimal notation.

username *user_name*: Displays R-P information for the specified username.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

View the R-P interface statistics for the current context.

Example

The following displays the summary for all connections.

```
show rp summary all
```

The following outputs the R-P interface detailed information for the user *isp1user1*.

```
show rp full username isp1user1
```

The following command displays the standard information for the call with ID *FF0E11CD*.

```
show rp callid ff0e11cd
```

The following displays the statistics summary for the R-P facility.

```
show rp
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show rp service-option

Displays the radio-packet (R-P) service option statistics using the filtering options specified.

Product

PDSN

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show rp service-option statistics [number *svc_option_num* **| pdsn-service** *pdsn_name* **] [| { grep** *grep_options* **| more }]**

number *svc_option_num* | pdsn-service *pdsn_name*

Default: display statistics for all service option numbers and associated packet data services.

number *svc_option_num*: Displays statistics for the specified service option number.

pdsn-service *pdsn_name*: Displays statistics for the specified packet data service.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

View the R-P service option statistics for the current context.

Example

The following displays the statistics for all service options.

show rp service-option statistics

The following displays the statistics for service option 5.

show rp service-option statistics number 5

The following command displays the statistics for all service options in collected for the packet data service *sampleService*.

show rp service-option statistics pdsn-service sampleService

show rp statistics

Displays the radio-packet (R-P) protocol statistics using the filtering options specified.

Product

PDSN

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show rp statistics [hsgw-service *hsgw-name* **| pcf-summary [wf1] | pdsn-service** *pdsn_name* **| peer-address {** *peer_address* **| all }] [include-bcmcs] [verbose] [| { grep** *grep_options* **| more }]**

hsgw-service *hsgw_name*

Specifies an eHRPD Serving Gate Way service followed by the name of an HSGW service specified as an alphanumeric string of 1 through 63 characters.

pcf-summary [wf1]

Displays a session summary of Packet Control Function (PCF) statistics.

The **wf1** option displays PCF statistics in wide-format number 1.

pdsn-service *pdsn_name*

Displays the statistics information for the pdsn-service specified as an alphanumeric string of 1 through 63 characters.

peer-address { *peer_address* | | all }

- *peer_address*: Displays statistics only for the peer specified by its IP address in IPv4 dotted-decimal notation.
- **all**: Displays statistics for all peers.

verbose

Displays more detailed statistics.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

View the R-P statistics for the current context.

Example

The following displays all collected R-P statistics.

```
show rp statistics
```

The following displays the R-P statistics associated with the peer address *209.165.200.229*.

```
show rp statistics peer-address 209.165.200.229
```

The following command displays the R-P statistics for the packet data service *PCFnet*.

```
show rp statistics pdsn-service PCFnet
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show rsvp counters

Displays Resource Reservation Protocol (RSVP) counters using the filtering options specified.

Product

PDSN

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show rsvp counters [all | callid *call_id* **| msid** *ms_id* **| username** *user_name* **]**

all | callid *call_id* | msid *ms_id* | username *user_name*

all: Displays all RSVP information.

callid *call_id*: Displays information only for the call ID specified as a 4-digit hexadecimal number.

msid *ms_id*: Displays information for a mobile subscriber ID specified a string of 7 to 16 digits for an IMSI, MIN, or RMI.

username *user_name*: Displays RSVP information only for the specified username.

Usage Guidelines

View the RSVP counters for the current context.

Example

The following displays all collected RSVP counters.

```
show rsvp counters all
```

show rsvp statistics

Displays Resource Reservation Protocol (RSVP) statistics using the filtering options specified.

Product

PDSN

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show rsvp counters [pdsn-service *service* **| sessmgr instance** *instance* **]**

pdsn-service *service* | sessmgr instance *instance*

pdsn-service *service*: Displays statistics for the service specified as an alphanumeric string of 1 through 63 characters.

sessmgr instance *instance*: Displays statistics for the specified session manager instance.

Usage Guidelines

View the RSVP statistics for the current context.

Example

The following displays collected RSVP statistics for a *sampleService*.

show rsvp statistics pdsn-service sampleService

show requirement pac daughtercard

Displays the system-level status indicating whether or not the encryption daughter card (EDC) is required on PACs within chassis.

Product

PDSN

GGSN

ASN-GW

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show requirement pac daughtercard

Usage Guidelines This command displays whether or not the EDC is required on PACs within the chassis.

Important This command is not supported on all platforms

Example

show requirement pac daughtercard

When the EDC requirement is enabled, the output of this command matches this example:

```
[local]chicago# show requirement pac daughtercard
The encryption daughtercard is required for all PACs
[local]chicago#
```

When the EDC requirement is disabled, the output of this command matches this example:

```
[local]chicago# show requirement pac daughtercard
The encryption daughtercard is not required for all PACs
[local]chicago#
```

show s102-service

Displays the configuration information for the S102 service(s).

Product MME

Privilege Inspector

Command Modes Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description **show s102-service { all | name** *s102_service_name* **| statistics { all | name** *s102_service_name* **} }**

all

Displays information for all S102 service configurations.

name *s102_service_name*

Displays configured information for the specified S102 service configuration.

s102_service_name Enter a string of 1 through 63 alphanumeric characters to identify the uniquely named S102 service.

statistics { all | name *s102_service_name* }

Generates statistical output indicating the status and activity of the interface for either all S102 services configured on the MME or for the specific named S102 service.

s102_service_name Enter a string of 1 through 63 alphanumeric characters to identify the uniquely named S102 service.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines Use this command to verify the parameters set for one or all S102 service configurations.

Example

The following commands displays the configuration for the S102 service named *s102test*:

```
show s102-service name s102test
```

show s4-sgsn statistics

Displays statistics related to S4 functionality on the SGSN.

Product SGSN

Privilege Inspector

Command Modes Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description **show s4-sgsn statistics [all | smgr-instance** *<instance_number>* **]**

all

Show all S4-SGSN statistics from all session managers.

smgr-instance

Show the statistics for a session manager instance of the SGSN service. <*instance_number*> must be specified as an integer between 1 and 65535.

Important If no option is specified, then S4-SGSN statistics from all session managers will be added up and the cumulative totals will be shown.

Usage Guidelines Use this command to display information for S4-SGSN related services.

Example

The following commands display and clear S4-SGSN-related statistics for all services on the system:

```
show s4-sgsn statistics all
clear s4-sgsn statistics all
```

show s8hr config

Refer to the *Lawful Intercept Configuration Guide* for a full description of this command.

show saegw-service

Displays configuration information and node-level statistics for System Architecture Evolution Gateway (SAEGW) services on this system.

Product

SAEGW

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

`show saegw-service { all | name` *`service_name`* **`| statistics { all | name`** *`service_name`* **`} [ function { pgw [ interface { GnGp | S2a | S5S8 } ] | sgw } ] [ verbose ] } [ | { grep`** *`grep_options`* **`| more } ]`**

all

Displays configuration information for all SAEGW services configured on this system.

name *service_name*

Displays configuration information for an existing SAEGW service specified as an alphanumeric string of 1 through 63 characters.

statistics { all | name *service_name* } [function { pgw [interface { GnGp | S2a | S5S8 }] | sgw }] [verbose] }

Displays node-level statistics for SAEGW.

all: Displays consolidated node-level statistics for all SAEGW services on the system.

name *service_name*: Displays node-level statistics for an existing SAEGW service specified as an alphanumeric string of 1 through 63 characters.

function: Displays node-level statistics of one of the following functions:

- **pgw**: Displays node-level statistics of P-GW function within SAEGW.

- **sgw**: Displays node-level statistics of S-GW function within SAEGW.

interface: Displays node-level statistics of P-GW function with respect to one of the following interfaces:

- **GnGp**: Displays node-level statistics of P-GW function with respect to GnGp interface.
- **S2a**: Displays node-level statistics of P-GW function with respect to S2a interface.
- **S5S8**: Displays node-level statistics of P-GW function with respect to S5S8 interface.

If **verbose** is also specified, the information is displayed in more detail.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of **grep** and **more**, refer to the *Regulating a Command's Output* section in the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to view configuration information and node-level statistics for SAEGW services on this system.

Example

The following command displays configuration information for the SAEGW service named *saegw1*:

```
show saegw-service name saegw1
```

show samog-service

Displays configuration and/or statistical information for SaMOG services on this system.

Product

SaMOG

Privilege

Security Administrator, Administrator, Operator, Inspector

Syntax Description

```
show samog-service {  all |  name name  | statistics [ name name ] }  [ | {
 grep grep_options | more } ]
```

all

Displays all SaMOG services.

name *name*

Displays information for specific SaMOG service name.

name is a string of size *1* to *63*.

statistics

Displays Node level Statistics for SaMOG.

verbose

Specifies Detailed statistics.

| { grep *grep_options* | more }

Pipes (sends) the output of this command to the specified command. You must specify a command to which the output of this command will be sent.

For details on the usage of **grep** and **more**, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines Use this command to display configuration and/or statistical information for SaMOG services on this system.

Example

```
show samog-service all
```

show sbc-service

Displays information about SBc interface services configured on this system.

Product MME

Privilege Inspector

Command Modes Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description **show sbc-service { all | cbc-associations { all | sbc-service-name** *sbc_svc_name* **[path-info | summary] } | sbc-service-name** *sbc_svc_name* **} [| { grep** *grep_options* **| more }]**

all

Displays information about all SBc interface services configured on this system.

cbc-associations { all | sbc-service-name *sbc_svc_name*

Displays information about the SBc interface associations with the Cell Broadcast Centers (CBC).

all shows information about all CBC associations.

sbc-service-name *sbc_svc_name* shows information only for CBC associations for the SBc service name specified as an alphanumeric string of 1 through 63 characters.

sbc-service-name *sbc_svc_name*

Displays information only for the SBc service specified as an alphanumeric string of 1 through 63 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display information about SBc services configured on this system.

Refer to the **show sbc statistics** Exec Mode command to display statistics for SBc interface.

Example

The following command displays information about the CBC associations for the SBc service named *sbc1*

```
show sbc-service cbc-assocations sbc-service-name sbc1
```

show sbc statistics

Displays statistics about SBc interface services configured on this system.

Product

MME

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show sbc statistics { all | peer-id *peer_id* **| sbc-service-name** *sbc_svc_name* **} [verbose | { | grep** *grep_options* **| more }]**

all

Displays statistics for all SBc services configured on this system.

peer-id *peer_id*

Displays statistics for a Cell Broadcast Center (CBC) peer association specified as an integer value from 0 through 4294967295.

Use the **show sbc-service cbc-associations all** command to display the available CBC association peer IDs.

sbc-service-name *sbc_svc_name*

Displays statistics for an SBc service specified as an alphanumeric string of 1 through 63 characters.

verbose

Displays expanded statistics.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display statistics about SBc services configured on this system.

Example

The following command displays verbose (expanded) statistics for an SBc service named *sbc1*

```
show sbc statistics sbc-service-name sbc1 verbose
```

show sccp-network

Displays SS7 Signaling Connection Control Part (SCCP) network configuration and status information.

Product

SGSN

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show sccp-network { ntwk_index | all } [ status [ all | dpc ] ]
```

ntwk_index

Displays configuration and status information for the SSCP network configuration with the network index specified as an integer from 1 through 12.

all

Displays all available configuration and status information for all SSCP networks.

status all

Displays all status information for specified SCCP networks.

status dpc

Displays status information for the device in the SCCP network identified by the destination point-code (DPC).

Usage Guidelines

Use this command to display global SCCP statistics or to display SCCP statistics for a specified service or network.

Example

The following command displays global SCCP statistics:

```
show sccp-network all
```

The following command displays information for an SCCP network configuration with the network index of *1*:

```
show sccp-network 1
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show sccp statistics

Displays SS7 Signaling Connection Control Part (SCCP) statistics for services that use the SCCP protocol.

Product

SGSN

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show sccp statistics [iups-service *iups_srvc_name* **| map-service** *map_srvc_name* **| sccp-network** *ntwk_index* **[dpc** *dpc* **[ssn** *ssn* **] | global-title-translation { address-map instance** *add_map_inst* **| association instance** *assoc_inst* **} [sessmgr instance** *sessmgr_inst* **]] [| { grep** *grep_options* **| more }]**

iups-service *iups_srvc_name*

Displays SCCP protocol statistics for an existing IuPS service in the current context specified as an alphanumeric string of 1 through 63 characters.

map-service *map_srvc_name*

Displays SCCP protocol statistics for the an existing Mobile Application Part (MAP) service in the current context specified as an alphanumeric string of 1 through 63 characters.

sccp-network *ntwk_index*

Displays SCCP protocol statistics for the SSCP network configuration with a network index specified as an integer from 1 through 12.

The following filters can be added to fine tune the display of SCCP network statistics:

- **dpc** *dpc*: Enter a standard pointcode address to limit the display of SCCP network statistics to those for the identified DPC.

- **ssn** *ssn*: Enter an integer from 1 to 255 to limit the display of SCCP network statistics to those for the identified subsystem number.
- **global-title-translation address-map instance** *add_map_inst*: Enter an integer from 1 to 4096 to limit the display of SCCP network statistics to those for the identified GTT address-map.
- **global-title-translation association instance** *assoc_inst*: Enter an integer from 1 to 16 to limit the display of SCCP network statistics to those for the identified GTT association.
- **sessmgr instance** *sessmgr_inst*: Enter an integer from 1 to 384 to limit the display of SCCP network statistics to those for the identified session manager.

Usage Guidelines

Use this command to display global SCCP statistics or to display SCCP statistics for a specified service or SCCP network.

Example

The following command displays global SCCP statistics:

```
show sccp statistics
```

The following command displays SCCP statistics for the IuPS service named *iups-serv1*:

```
show sccp statistics iups-service iups-serv1
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show scef-service statistics

Displays SCEF Service configuration and status information.

Product

MME

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show scef-service statistics { all | name service_name | summary }
```

all

Displays all available configuration and status information for all SCEF Services.

name *service_name*

Displays all status information for a specified SCEF service name.

summary

Displays the summary of the available SCEF service statistics.

Usage Guidelines

Use this command to display SCEF service information and its statistics.

Example

The following command displays all SCEF service statistics:

```
show scef-service statistics all
```

The following command displays information for an SCEF service configuration with the service name *Test*:

```
show scef-service statistics name Test
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show sctp-param-template

Displays configuration information for Stream Control Transmission Protocol (SCTP) parameter templates configured on this system.

Product

MME

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show sctp-param-template { all | name template_name } [ | { grep grep_options | more } ]
```

all

Displays configuration information for all SCTP parameter templates configured on this system.

name *template_name*

Displays configuration information for an existing SCTP parameter template specified as an alphanumeric string of 1 through 63 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines Use this command to view configuration information for SCTP parameter templates on this system.

Example

The following command displays configured parameters for an SCTP parameter template named *sctp_pt3*:

```
show sctp-param-template name sctp_pt3
```

show security

Displays information related to the security settings of the system, such as whether this StarOS version is a Trusted build. This command also displays information about the Talos Intelligence Server.

Product All

Privilege Security Administrator

Command Modes Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description **show security category url** *url* **| configuration | server talos-intelligence** *server_name* **[verbose]**

category url *url*

Displays Talos Intelligence categorization information for the specified URL. *url* must be an alphanumeric string from 1 through 512 characters.

configuration

Displays information for StarOS trusted builds. This keyword only provides information if the StarOS build is a trusted build. Refer to the *System Administration Guide* for more details about trusted builds.

server talos-intelligence *server_name* [verbose]

Displays Talos Intelligence server information. *server_name* must be specified as a case-sensitive alphanumeric string from 1 through 31 characters.

verbose

Displays operational status of each database instance.

Usage Guidelines Use this command to display security information, such as whether or not the platform is running a Trusted build.

Important This command can only be executed by a Security Administrator.

Example

The following command displays security-related configuration information for trusted builds:

```
show security configuration
```

show service all

Displays configuration information for all services currently configured on this system.

Product All

Privilege Security Administrator, Administrator, Operator, Inspector

Command Modes Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show service all
```

Usage Guidelines Use this command to view configuration information for all services configured on this system.

Example

The following command displays information about all services configured on this system:

```
show service all
```

show session counters historical

Displays historical information for session-related counters based on data collected in bulk statistics.

Product All

Privilege Security Administrator, Administrator, Operator, Inspector

Command Modes Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show session counters historical { all | arrived | callops | connected | disconnected | failed | handoff | rejected | renewal } [all-intervals | recent-intervals] [cumulative | incremental] [graph | table] [2g | 3g | 3g-ha | 4g | all | ehrpd | wifi] [| { grep *grep_options* **| more }]**

all

Displays data for all counters either as a single, wide table or multiple graphs.

arrived

Displays only data for "total calls arrived" counters. This is based on the "sess-ttlarrived" statistic in the system schema.

callops

Displays data for all call operations. This is a calculated value based on the following formula:

(arrived + rejected + disconnected + failed + handoffs + renewals)

connected

Displays only data for "total calls connected" counters. This is based on the "sess-ttlconnected" statistic in the system schema.

disconnected

Displays only data for "total calls disconnected" counters. This is based on the "sess-ttldisconn" statistic in the system schema.

failed

Displays only data for "total calls failed" counters. This is based on the "sess-ttlfailed" statistic in the system schema.

handoff

Displays only data for "total handoffs" counters. This is based on the "sess-ttlhandoff" statistic in the system schema.

rejected

Displays only data for "total calls rejected" counters. This is based on the "sess-ttlrejected" statistic in the system schema.

renewal

Displays only data for "total renewal" counters. This is based on the "sess-ttlrenewal" statistic in the system schema.

| { grep *grep_options* | more }

Pipes (sends) the output of this command to the specified command. You must specify a command to which the output of this command will be sent.

For details on the usage of **grep** and **more**, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Output Options

The following output options are available for this command:

- **all-intervals**: Displays all available historical information from all samples. This this filter is used by default.
- **cumulative**: Displays total data for all samples up to and including the last one. In this view, values increase over time.
- **graph**: Displays data in graphical form.
- **incremental**: Displays data changes for each specific sample. The data for each sample is the amount of change since the previous sample. This filter is used by default.
- **recent-intervals**: Displays historical information for only recent samples.
- **table**: Displays data in tabular form. This is the default view.

Access Technology Categories

The following options display session counters as categorized by access technology type:

- **all**: Displays session counters for all access technology categories.
- **2g**: Displays session counters for calls using 2G GERAN access technology.
- **3g**: Displays session counters for calls using 3G UTRAN access technology.
- **3g-ha**: Displays session counters for 3G-HA (High Availability) sessions.
- **4g**: Displays session counters for calls using 4G EUTRAN access technology.
- **ehrpd**: Displays session counters for eHRPD (evolved High Rate Packet Data) calls.
- **wifi**: Displays session counters for WiFI calls.

Usage Guidelines

This command provides the ability to track key session-related statistic information over time. This information can be used as part of system performance monitoring and capacity planning.

Important The information provided in the output of this command requires that bulk statistics functionary be enabled on the system. Refer to the *System Administration Guide* for more information on configuring and enabling bulk statistics support.

The output of this command displays historical data collected at various sample intervals. The interval length is 15 minutes and is not user-configurable. Up to 192 samples (two days' worth of data) are maintained.

Important Data collection is "best-effort" over these intervals. Data is preserved on the SMC or MIO card switchovers. As with all counters, certain session failures can cause inaccuracies with counters, including counters which appear to go backwards.

Each sample is identified by a timestamp that displays the approximate time the data was gathered. the timestamp is in the format YYYY:MM:DD:hh:mm:ss.

Data acquired during the sample may be marked with an "S" appended to the end of the timestamp or to the counter value. The "S" indicates that the data is suspect (potentially bad). Occurrences of this result from events like changes to the real time clock, which can cause an interval to be an atypical length. Instances of suspect data should be rare. Additionally, there may be occasions in which a sample may be marked as "invalid". "invalid" identifies bad data, a situation that could result when the polling has not run long enough, or because of an unexpected error retrieving data.

Since baseline values must be obtained prior to collecting interval samples, the first interval of data will not be available until up to twice the interval period.

Example

The following command displays cumulative total calls arrived information for the most recent intervals and displays the output in graphical format:

```
show session counters historical arrived recent-intervals cummulative graph
```

The following command displays historical data for all counters for all intervals and displays the output in tabular format:

```
show session counters historical all
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show session counters pcf-summary

Displays the Packet Control Function (PCF) summary which include the number of calls, call types, and Tx/Rx packets/octets statistics.

Product PDSN

Privilege Security Administrator, Administrator, Operator, Inspector

Command Modes Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show session counters pcf-summary [call-types | data | wf1 [pcf *pcf_address* **| [| { grep** *grep_options* **| more }]]]**

call-types

Displays the number of calls and the types of calls.

data

Displays the number of successful calls and Tx/Rx packets/octets statistics.

pcf *pcf_address*

Displays the given PCF summary for a particular address.

wf1

Displays the PCF summary in a single very wide line.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display a summary of all PCFs.

Example

```
show session counters pcf-summary
```

show session disconnect-reasons

Displays a list of the reasons for call disconnects and the number of calls disconnected for each reason.

Product

All

Privilege

Security Administrator, Administrator, Inspector, Operator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show session disconnect-reasons [buckets | gprs-only | pgw-only | sgsn-only | sgw-only | verbose] [| { grep *grep_options* **| more }]]**

buckets

Displays additional disconnect reasons in pre-configured bucket-intervals.

gprs-only

Only supported on the SGSN.

This keyword limits the display to session disconnect reasons for the SGSN's 2G MM and PDP context disconnects.

pgw-only

Supported on the GGSN, P-GW, and SAEGW only.

Displays cumulative session disconnect reason statistics specific to P-GW/GGSN calls. The following call types fall under this category:

- P-GW Call
- GGSN Call (both standalone GGSN service as well as GGSN service associated with P-GW service)
- SAEGW Call (P-GW-Anchored)
- SAEGW Call (GGSN-Anchored)
- SAEGW Call (Co-located)

sgw-only

Supported on the SAEGW and S-GW only.

Displays cumulative session disconnect reason statistics specific to S-GW calls. S-GW calls include:

- S-GW calls
- SAEGW calls that are S-GW anchored only

sgsn-only

Only supported on the SGSN.

Displays session disconnect reasons for the SGSN's 3G MM and PDP context disconnects.

verbose

List all disconnect reasons even if the values are zero (0).

Important The **verbose** option is not supported for the **buckets** keyword.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines Use this command to display a list of the reasons why calls were disconnected.

Example

To view session disconnect statistics, enter the following command:

```
show session disconnect-reasons
```

To view a list of the disconnect reasons with verbose output, enter the following command:

```
show session disconnect-reasons verbose
```

show session duration

Displays session duration information for the current context filtered by the options specified.

Product All

Privilege Security Administrator, Administrator, Inspector, Operator

Command Modes Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description **show session duration [** *session_filter* **] [| { grep** *grep_options* **| more }]**

session_filter

Specifies the name of the entity whose session duration information is to be filtered and displayed. This options are:

- **apn** *apn_name*: Displays session information for an existing Access Point Name (APN) specified as an alphanumeric string of 1 through 62 characters that is case sensitive.
- **asn-peer-address** *ip_address*: Displays session information for the ASN GW peer whose IP address is specified in IPv4 dotted-decimal notation.
- **asngw-service** *service_name*: Displays session information for the specified ASN-GW service.
- **asnpc-peer-address** *ip_address*: Displays session information for the Access Service Network Paging Controller (ASN PC) peer whose IP address is specified in IPv4 dotted-decimal notation.
- **asnpc-service** *service_name*: Displays session information for the specified ASN PC service.
- **dhcp-server** *dhcp_address*: Displays session information for the Dynamic Host Configuration Protocol (DHCP) server specified by its IP address in IPv4 dotted-decimal notation.
- **epdg-service** *service_name*: Displays session information for ePDG service specified as an alphanumeric string of 1 through 63 characters that is case sensitive.

- **fa** *fa_address*: Displays session information for the foreign agent (FA) whose IP address is specified in IPv4 dotted-decimal notation.
- **fa-service** *fa_name*: Displays session information for the named foreign agent service.
- **fng-service** *fng_name*: Displays session information for the named Femto Network Gateway service.
- **ggsn-service** *ggsn_name*: Displays session information for an existing GGSN service specified as an alphanumeric string of 1 through 63 characters that is case sensitive.
- **gprs-only**: Limits the display to the session information for the SGSN's 2G MM and PDP contexts.
- **ha** *ha_address*: Displays session information for the home agent specified by its IP address in IPv4 dotted-decimal notation.
- **ha-service** *ha_name*: Displays session information for the named home agent (HA) service.
- **hnbgw-only**: Displays session information for the HNB-GW service related sessions instances (such as HNB, IuPS, IuCS).

Important In Release 20 and later, HNBGW is not supported. This keyword must not be used for HNBGW in Release 20 and later. For more information, contact your Cisco account representative.

- **hsgw-service** *service_name*: Displays session information for an existing HSGW service specified as an alphanumeric string of 1 through 63 characters.
- **lma-service** *service_name*: Displays session information for an existing Local Mobility Anchor (LMA) service specified as an alphanumeric string of 1 through 63 characters.
- **mag-service** *service_name*: Displays session information for an existing Mobile Access Gateway (MAG) service specified as an alphanumeric string of 1 through 63 characters.
- **mme-service** *service_name*: Displays session information for an existing Mobility Management Entity (MME) service specified as an alphanumeric string of 1 through 63 characters.
- **pcc-service** *service_name*: Displays session information for an existing Policyand Charging Control service specified as an alphanumeric string of 1 through 63 characters.
- **pcf** *pcf_address*: Displays session information for the packet control function specified by its IP address in IPv4 dotted-decimal notation.
- **pdif-service** *service_name*: Displays session information for the named Packet Data Interworking Function service.
- **qci { all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | non-std } ***: Displays the length of time a dedicated bearer is established on the network for a given QCI. More than one QCI value can be specified.
- **pdsn-service** *pdsn_name*: Displays session information for the named packet data service.

Important If no PCF address or PDSN service is specified, the session information for all sessions is displayed.

- **pdsnclosedrp-service** *service_name*: Displays all L2TP tunnels in the specified Closed R-P service.

- **qci** *std_value* **[all] [non-std]** Displays session duration information for a specified or all QoS Class Index (QCI) values. The standard QCI value is an integer from1 through 9.
- **sgsn-address** *sgsn-address*: Displays session information for the SGSN specified by its IP address in IPv4 dotted-decimal notation.
- **sgsn-only**: Limits the display to the session information for the SGSN's 3G MM and PDP contexts.
- **sgw-service** *service_name*: Displays session information for an existing S-GW service specified as an alphanumeric string of 1 through 63 characters.
- **wsg-service** *service_name*: Displays session information for an existing Security Gateway (wsg-service) service specified as an alphanumeric string of 1 through 63 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

View the session information to troubleshoot subscriber problems and for general monitoring for orphaned sessions.

Example

The following commands display the duration for the session connected to the packet control function with address *10.2.3.4*, packet data service *sampleService*, and for all sessions, respectively.

```
show session duration pcf 10.2.3.4
show session duration pdsn-service sampleService
show session duration
```

show session progress

Displays session progress information for the current context filtered by the options specified.

Product

All

Privilege

Security Administrator, Administrator, Inspector, Operator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show session progress [apn *apn_name* **| asn-peer-address** *ip_address* **| asngw-service** *service_name* **| asnpc-service** *service_name* **| asnpc-peer-address** *ip_address* **| dhcp-server** *dhcp_address* **| epdg-service** *service_name* **| fa** *fa_address* **| fa-service** *fa_name* **| ggsn-service** *ggsn_name* **| ha** *ha_adress* **| ha-service** *ha_name*

| hsgw-servie *service_name* **| lma-service** *service_name* **| mag-service** *service_name* **| mipv6-service** *service_name* **| mme-address** *mme_address* **| pcc-address** *service_name*| **pcf {** *pcf_address* **pdif-service** *service_name* **| pdsn-service** *pdsn_name service_name* **| pgw-address** *ip_address* **| saegw-service** *service_name* **| samog-service** *service_name* **| sgsn-address** *sgsn_address* **| sgw-service** *service_name* **| wsg-service** *service_name* **] [| { grep** *grep_options* **| more }]**

apn *apn_name*

Displays session information for an existing Access Point Name (APN) specified as an alphanumeric string of 1 through 62 characters that is case sensitive.

asn-peer-address *ip_address*

Displays session information for the Access Service Network-Gateway (ASN-GW) peer specified by its IP address in IPv4 dotted-decimal notation.

asngw-service *service_name*

Displays session information for an existing ASN-GW service specified as an alphanumeric string of 1 through 63 characters that is case sensitive.

asnpc-service *service_name*

Displays session information for an existing Access Service Network Paging Controller (ASN PC) service specified as an alphanumeric string of 1 through 63 characters that is case sensitive.

asnpc-peer-address *ip_address*

Displays session information for the ASN PC peer specified by its IP address in iIPv4 dotted-decimal notation.

dhcp-server *dhcp_address*

Displays session information for a Dynamic Host Configuration Protocol (DHCP) server specified by its IP address in IPv4 dotted-decimal notation

epdg-service *service_name*

Displays session information for an existing Evolved Packet Data Gateway (ePDG) service specified as an alphanumeric string of 1 through 63 characters that is case sensitive.

fa *fa_address*

Displays session information for the foreign agent (FA) whose IP address is specified in IPv4 dotted-decimal notation.

fa-service *fa_name*

Displays session information for an existing FA service specified as an alphanumeric string of 1 through 63 characters that is case sensitive.

ggsn-service *ggsn_name*

Displays session information for an existing Gateway GPRS Support Node (GGSN) service specified as an alphanumeric string of 1 through 63 characters that is case sensitive.

ha *ha_address* | ha-service

Displays session information for the home agent specified by its IP address in IPv4 dotted-decimal notation.

ha-service *ha_name*

Displays session information for an existing Home Agent (HA) service specified as an alphanumeric string of 1 through 63 characters that is case sensitive.

hsgw-servie *service_name*

Displays session information for an existing HRPD Serving Gateway (HSGW) service specified as an alphanumeric string of 1 through 63 characters that is case sensitive.

lma-service *service_name*

Displays session information for an existing Local Mobility Anchor (LMA) service specified as an alphanumeric string of 1 through 63 characters.

mag-service *service_name*

Displays session information for an existing Mobile Access Gateway (MAG) service specified as an alphanumeric string of 1 through 63 characters.

mipv6ha-service-service *service_name*

Displays session information for an existing Mobile Internet Protocol version 6 (MIPv6) Home Agent (HA) service specified as an alphanumeric string of 1 through 63 characters.

mme-address *mme_address*

Displays session progress information for the Mobility Management Entity (MME) specified by its IP address in IPv4 dotted-decimal or IPv6 colon-separated-hexadecimal notation.

pcc-service *service_name*

Displays session information for an existing Policy Charging Control (PCC) service specified as an alphanumeric string of 1 through 63 characters.

pcf *pcf_address*

Displays session information for the Packet Control Function (PCF) specified by its IP address in IPv4 dotted-decimal notation.

pdif-service *service_name*

Displays session information for an existing Packet Data Interworking Function (PDIF) service specified as an alphanumeric string of 1 through 63 characters.

pdsn-service *service_name*

Displays session information for an existing Packet Data Serving Node (PDSN) service specified as an alphanumeric string of 1 through 63 characters.

pgw-address *ip_address*

Displays session progress information for the PDN-Gateway (P-GW) specified by its IP address in IPv4 dotted-decimal or IPv6 colon-separated-hexadecimal notation.

saegw-service *service_name*

Displays session information for an existing System Architecture Evolution-Gateway (SAE-GW) service specified as an alphanumeric string of 1 through 63 characters.

samog-service *service_name*

Displays session progress information for an existing S2a Mobility over GTP (SaMOG) service specified as an alphanumeric string of 1 through 63 characters.

sgsn-address *sgsn_address*

Displays session information for the Serving GPRS Support Node (SGSN) specified by its IP address in IPv4 dotted-decimal notation.

sgw-service *service_name*

Displays session progress information for an existing Serving Gateway (S-GW) service specified as an alphanumeric string of 1 through 63 characters.

wsg-service *service_name*

Displays session progress information for an existing Wireless Security Gateway (WSG) service specified as an alphanumeric string of 1 through 63 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

View the session information to troubleshooting subscriber problems and for general monitoring for orphaned sessions.

Example

The following commands display the status information for the session connected to the packet control function with address *10.2.3.4*, packet data service *sampleService*, and for all sessions, respectively.

```
show session progress pcf 10.2.3.4
show session progress pdsn-service sampleService
show session progress
```

Important Output descriptions for this command are available in the *show session* chapter of the *Statistics and Counters Reference*.

show session recovery status

Displays session recovery status information for the current context filtered by the options specified.

Product

All

Privilege

Security Administrator, Administrator, Inspector, Operator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

`show session recovery status [ verbose ] [ | { grep` *`grep_options`* **`| more } ]`**

recovery status

Displays the current status of the system's ability to recover from a hardware or software fault that requires the recovery of home agent-based Mobile IP session(s).

verbose

Includes per-CPU Session Recovery status.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

View the session information for troubleshooting subscriber problems and for general monitoring for orphaned sessions.

Example

To display the session recovery status information, enter the following command:

```
show session recovery status
```

Adding the optional verbose keyword to this command provides more details.

show session recovery status verbose

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show session setuptime

Displays session setup time information for all sessions or sessions associated with the specified Access Gateway (AGW).

Product

ePDG

PDSN

HNB-GW

SGSN

Privilege

Operator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show session setuptime [epdg-only [verbose] | hnbgw-only | pcf *pcf_address* **| gprs-only | sgsn-address** *sgsn_address* **| sgsn-only] [| { grep** *grep_options* **| more }]**

[epdg-only [verbose] hnbgw-only | mme-only | pcf pcf_address | gprs-only | sgsn-address *sgsn_address* | sgsn-only]

Displays the call setup times aggregated into basic ranges of time.

- **epdg-only**: Display ePDG Session Statistics. **verbose**: Displays session setup times in verbose mode.
- **hnbgw-only**: Filters and displays the call setup information for HNB-GW calls only.

Important In Release 20 and later, HNBGW is not supported. This keyword must not be used for HNBGW in Release 20 and later. For more information, contact your Cisco account representative.

- **pcf** *pcf_address*: displays call setup data for the packet control function whose IP address is specified as *pcf_address*. *pcf_address* must be specified using IPv4 dotted-decimal notation. The call setup times for all PCFs is displayed when no specified PCF is specified.
- **gprs-only**: Displays 2G call setup data for the for the SGSN for the MM and PDP contexts.

- **sgsn-address** *sgsn_address***:** Displays call setup times for the specified SGSN. *sgsn_address* is the IP address of the SGSN and must be expressed in IPv4 dotted-decimal notation. This keyword is used by the GGSN.
- **sgsn-only**: Displays 3G call setup data for the for the SGSN for the MM and PDP contexts.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

View the session information to troubleshooting subscriber problems and for general monitoring for orphaned sessions.

When no keywords are specified, the information shown is cumulative for all sessions that have been facilitated by the system.

Example

The following command shows setup time statistics for all sessions from the PCF at IP address *209.165.200.224*:

```
show session setuptime pcf 209.165.200.224
```

show session subsystem

Displays session information for system subsystems. If no keywords are specified, information for all subsystems is displayed.

Product

All

Privilege

Security Administrator, Administrator, Inspector, Operator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show session subsystem [ full | facility facility [ all | instance id ] ]
[ verbose ] [ | { grep grep_options | more }]
```

[full | facility *facility* [all | instance *id*]]

- **full**: Indicates that a full statistics summary of all subsystems is to be displayed.
- **facility** *facility*: Specifies the facility for which subsystem statistics is to be displayed where *facility* is specified as one of:
  - **a11mgr**: A11 Manager

- **aaamgr**: Accounting and Authentication Manager
- **aaaproxy**: AAA Proxy Manager
- **alcapmgr**: ALCAP Manager
- **asngwmgr**: ASN Gateway Manager
- **asnpcmgr**: ASN Paging/Location-Registry Manager
- **dgmbmgr**: Diameter Gmb Application Manager
- **diamproxy**: Diameter Proxy Application Manager [Release 12.0 and earlier versions only]
- **egtpegmgr**: EGTP Egress Demux Manager
- **egtpinmgr**: EGTP Ingress Demux Manager
- **famgr**: Foreign Agent Manager
- **gtpcmgr**: GTP-C Manager
- **gtpumgr**: GTP-U Demux Manager
- **hamgr**: Home Agent Manager
- **henbgwdemux**: Home eNodeB Gateway demux manager

Important In Release 20, 21.0 and 21.1, HeNBGW is not supported. This keyword must not be used for HeNBGW in these releases. For more information, contact your Cisco account representative.

- **henbgwmgr**: Home eNodeB Gateway Manager

Important In Release 20, 21.0 and 21.1, HeNBGW is not supported. This keyword must not be used for HeNBGW in these releases. For more information, contact your Cisco account representative.

- **hnbmgr**: HNBGW HNB Manager

Important In Release 20 and later, HNBGW is not supported. This keyword must not be used for HNBGW in Release 20 and later. For more information, contact your Cisco account representative.

- **imsimgr**: SGSN IMSI Manager
- **ipsgmgr**: IP Services Gateway Manager
- **l2tpdemux**: L2TP Demux Manager
- **l2tpmgr**: L2TP Manager

- **linkmgr**: SGSN/SS7 Master Manager
- **magmgr**: Mobile Access Gateway Manager
- **megadiammgr**: MegaDiameter Manager
- **mmedemux**: MME Demux Manager
- **mmemgr**: MME Manager
- **mmgr**: SGSN/SS7 Master Manager
- **pdgmgr**: PDG Manager
- **phsgwmgr**: PHS Gateway Manager
- **phspcmgr**: PHS Paging Controller Manager
- **sessmgr**: Session Manager
- **sgtpcmgr**: SGSN GTP-C Manager

- **all | instance** *id*: the keyword **all** indicates all instances of the specified facility are to be displayed whereas the keyword **instance** specifies a specific instance for which information is to be displayed where *id* must be specified as an integer from 0 through 4294967295. If all or instance is not specified summary statistics are displayed.

verbose

Displays everything the **show session subsystem** command displays with the exception that the Setup Time statistics are reported in 100 millisecond increments from 100 ms up to 9600 ms.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

View the session information to troubleshooting subscriber problems and for general monitoring for orphaned sessions.

If this command is entered with no keywords, the information displayed is cumulative for all sessions facilitated by the system.

Example

The following commands display the statistics information summarized for all sessions, then for the *famgr* facility (all sessions), and finally only for the session ID *127589* for the *hamgr* subsystem.

```
show session subsystem full
show session subsystem facility famgr all
show session subsystem facility hamgr instance 127589
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show session trace

Displays status and statistics for the session trace application.

Product

GGSN

MME

P-GW

SAEGW

S-GW

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

`show session trace { statistics | subscriber network-element { ggsn | mme | pgw | sgw } trace-ref` *`value`* **`| tce-address`** *`ip_address`* **`tce-index`** *`num`* **`| tce-summary | trace-summary } [ | { grep`** *`grep_options`* **`| more } ]`**

statistics

Displays summary statistics for the session trace subsystem.

subscriber network-element { ggsn | mme | pgw | sgw } trace-ref *value*

Displays status and statistics for a specified session trace using the network element type; GGSN, MME, P-GW, and S-GW, and a valid trace reference of 12 characters.

tce-address *ip_address* tce-index *num*

Displays status and statistics for an existing Trace Collection Entity (TCE) connection specified by its IP address in IPv4 dotted-decimal or IPv6 colon-separated-hexadecimal notation.

tce-index *num*: Specifies a TCE index of the trace collection entity as an integer from 0 through 7.

tce-summary

Displays a summary of all active TCE connections.

trace-summary

Displays a summary of all active session traces.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display status and statistics for the session trace application.

Example

The following command displays status and statistics for a subscriber session trace on a P-GW with a trace reference of *32223398765*:

```
show session trace subscriber network-element pgw trace-ref 32223398765
```

The following command displays status and statistics for a subscriber session trace on an MME with a trace reference of *32221234567*:

```
show session trace subscriber network-element mme trace-ref 32223398765
```

The following command displays status and statistics for a subscriber session trace on an GGSN with a trace reference of *1203398765*:

```
show session trace subscriber network-element ggsn trace-ref 1203398765
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show session-event-record

Displays session event module statistics and file space usage information.

Product

S-GW

SAEGW

Privilege

Operator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show session-event-record { file-space-usage | statistics }
```

file-space-usage

Displays session event module file storage limits and capacities.

statistics

Displays session event module statistics regarding the handling and transfer of event records to an external collection server.

Usage Guidelines

View the session event information to troubleshoot handling and transfer problems and for general monitoring for file storage use.

Example

The following command displays the file storage limit and use for all event modules on the system:

```
show session-event-record file-space-usage
```

show sf

Displays switch fabric task (SFT) information associated with packet processing cards.

Product

All

Privilege

Inspector

Syntax Description

```
show sf stats sft [ historical ]
```

historical

Displays historical information regarding SFT performance.

Usage Guidelines

Use this command to display information and statistics about the switch fabric task.

Example

The following command displays statistics for the SFT:

```
show sf stats sft
```

show sgs-service

Displays information and statistics about Visitor Location Register (VLR) SGs interface services configured on this system.

Product

MME

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show sgs-service { all | name *name* **| offload-status [service-name** *sgs_svc_name* **] | statistics { all | name** *name* **} | vlr-status [service-name** *sgs_svc_name* **] [vlr-name** *name* **] [full [wf1]] [| { grep** *grep_options* **| more }]**

all

Displays information about all SGs interface services configured on this system.

name *name*

Displays information about an existing SGs service specified as an alphanumeric string of 1 through 63 characters.

offload-status *sgs_svc_name*

Displays statistics for all VLRs flagged for offload for an existing SGs service specified as an alphanumeric string of 1 through 63 characters.

statistics { all | name *name* }

Displays statistics for SGs services configured on this system.

all: Displays statistics for all SGs services configured on this system.

name *name*: Displays statistics for an existing SGs service specified as an alphanumeric string of 1 through 63 characters.

vlr-status [service-name *name*] [vlr-name *name*] [full [wf1]]

Displays status information about VLRs configured in SGs services on this system.

service-name *sgs_svc_name*: Displays names and states of VLRs configured in an existing SGs service specified as an alphanumeric string of 1 through 63 characters.

vlr-name *name*: Displays the name and state of an existing VLR configured in SGs services on this system and specified as an alphanumeric string of 1 through 63 characters.

full: Displays additional information about VLRs configured in SGs services on this system. Additional information includes ports, addresses and peer IDs.

wf1: Displays the output in a tabular format.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display information and statistics about SGs services configured on this system.

Example

The following command displays statistics for an SGs service named *sgs3*:

show sgs-service name sgs3

The following command displays VLR status information for a configured VLR named *vlr-main*:

show sgs-service vlr-status vlr-name vlr-main

show s4-sgsn statistics

Displays statistics related to S4 functionality on the SGSN.

Product

SGSN

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show s4-sgsn statistics [all | smgr-instance *<instance_number>* **]**

all

Show all S4-SGSN statistics from all session managers.

smgr-instance

Show the statistics for a session manager instance of the SGSN service. <*instance_number*> must be specified as an integer between 1 and 65535.

Important If no option is specified, then S4-SGSN statistics from all session managers will be added up and the cumulative totals will be shown.

Usage Guidelines

Use this command to display information for S4-SGSN related services.

Example

The following commands display and clear S4-SGSN-related statistics for all services on the system:

```
show s4-sgsn statistics all
clear s4-sgsn statistics all
```

show sgsn fsm-statistics

The output of this command provides information on 3G SGSN (both Gn and S4) application FSM statistics.

Product

SGSN

Privilege

Inspector, Operator, Administrator, Security Administrator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

`show sgsn fsm statistics { umts-sm | umts-pmm  | all }`

umts-sm

Displays 3G Session Management Access Side FSM statistics.

umts-pmm

Displays 3G Mobility Management PMM FSM statistics.

all

Displays all SGSN application FSM statistics.

Usage Guidelines

Use this command to track 3G SGSN (both Gn and S4) application FSM statistics. The SGSN application FSM statistics will help collect the FSM usage information to quantify which events / state collisions happen most often in the field.

Example

Enter this command to display all SGSN FSM statistics**show sgsn fsm statistics all**

show sgsn sessmgr

Displays session manager (SessMGR) statistics specific to the SGSN service.

Product

SGSN

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

`show sgsn sessmgr { all | instance` *`smgr_inst`* **`}`**

all

Displays all SessMGR statistics specific to the system's SGSN services.

instance *smgr_inst*

Displays the statistics for a session manager instance of the SGSN service specified as an integer between 1 and 10000000.

Usage Guidelines

Use this command to display information for SGSN services.

Example

The following command displays SGSN SessMGR statistics for all SGSN services on the system:

```
show sgsn sessmgr all
```

show sgsn-fast-path

Displays information related to SGSN fast-path.

Note This command is not supported by SGSN from software release 16.2 onwards as the NPU FastPath feature is not supported by SGSN from the 16.2 release.

Product

SGSN

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show sgsn-fast-path statistics [ all | smgr-instance smgr_inst ] [ | { grep
 grep_options | more } ]
```

all

Displays fast-path statistics for all session managers.

smgr-instance *smgr_inst*

For releases prior to 14.0, this keyword displays the fast-path statistics for a session manager instance specified as an integer between 1 and 65535.

For releases 14.0 and higher, this keyword displays the fast-path statistics for a session manager instance specified as an integer between 1 and 384.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines Use this command to display statistics for SGSN fast-path configurations.

Example

The following command displays fast-path statistics for all SGSN session managers:

```
show sgsn sessmgr all
```

show sgsn-map-app

Displays collected statistics for the SGSN Mobile Application Part (MAP).

Product SGSN

Privilege Inspector

Command Modes Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description **show sgsn-map-app statistics [| { grep** *grep_options* **| more }]**

all

Displays collected statistics for the SGSN MAP application.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines Use this command to display statistics for the SGSN MAP application.

Example

The following command displays SGSN MAP statistics:

```
show sgsn-map-app statistics
```

show sgsn-mode

Displays the SGSN global configuration.

Product SGSN

Privilege Inspector

Command Modes Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description **show sgsn-mode[| { grep** *grep_options* **| more }]**

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines Use this command to display the configuration created with the commands in the SGSN Global Configuration mode.

Example

The following command displays the SGSN global configuration:

```
show sgsn-mode
```

show sgsn-operator-policy

This command has been deprecated. Refer to the **show operator-policy** command.

show sgsn-pool

Displays collected pooling statistics for either GPRS services or SGSN services.

Product SGSN

Privilege Inspector

Command Modes Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description **show sgsn-pool statistics { gprs-service** *srvc_name* **| sgsn-service** *srvc_name*} **{ nri-value** *nri_value* **| peer-non-broadcast-lac** *lac* **rac** *rac* **| target-load-in-progress [smgr-instance** *smgr_instance* **| target-nri** *target_nri*

] | target-offloaded-to-peer [target-nri *target_nri* **] } [| { grep** *grep_options* **| more }]**

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display the collected statistics for pooling in either GPRS or SGSN services. The outputs can be filtered to focus the statistics displayed.

Example

The following command displays the:

```
show sgsn-pool statistics sgsn-service sgsn1 nri-value 3
```

show sgsn-service

Displays information about the configured SGSN services in the current context.

Product

SGSN

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show sgsn-servie { all | name *srvc_name* **}**

all

Displays information for all SGSN services in the current context.

name *srvc_name*

Displays information for an existing SGSN service specified as an alphanumeric string of 1 through 63 characters.

Usage Guidelines

Use this command to display information for SGSN services.

Example

The following command displays information for all SGSN services in the current context:

```
show sgsn-service all
```

The following command displays information for an SGSN service in the current context that is named *sgsn1*:

```
show sgsn-service name sgsn1
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show sgtp-service

Displays information about the configured GPRS Tunnelling Protocol (SGTP) services in the current context, including GTP-C and GTP-U operational configuration.

Product

SGSN

PDG/TTG

MME

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show sgtp-service all [gtpu-table] |{ ggsn-table [smgr-instance*smgr_instance* **] | mbms-bearers | name** *srvc_name* **[gtpu-table] | }sgsn-table**

all [gtpu-table]

Displays configuration information for all of the SGTP services defined for the current context.

gtpu-table: Limits the output to GTPU information for all SGTP services.

ggsn-table [smgr-instance *srvc_name*]

Displays GGSN information configured for the SGTP service(s) in the current context.

smgr-instance *srvc_name* enter an integer from 1 through 384 to limit the GGSN output to information for a specific session manager.

mbms-bearers

This keyword is specific to the SGSN and is not yet supported.

name *srvc_name* [gtpu-table]

Displays information for the specified SGTP service in the current context. *srvc_name* must be an alphanumeric string of 1 through 63 characters that identifies a configured SGTP service.

gtpu-table: Limits the output to GTPU information for a specific SGTP service.

sgsn-table

Displays SGSN information configured for the SGTP service(s) in the current context.

Usage Guidelines

Use this command to control the display of SGTP services information.

Example

The following command displays information for all SGTP services in the current context:

```
show sgtp-service all
```

The following command displays the GGSN information in SGTP services in the current context:

```
show sgtp-service ggsn-table
```

The following command displays the SGSN information in SGTP services in the current context:

```
show sgtp-service sgsn-table
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show sgtpc statistics

Displays all statistics, for SGSN GPRS Tunnelling Protocol (SGTP) interface parameters, collected since the last restart or last use of a **clear** command.

Product

SGSN

PDG/TTG

MME

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show sgtpc statistics [all | gsn-address *ipv4_address* **| sgtp-service** *sgtp_srvc_name* **] [verbose][| { grep** *grep_options* **| more }]**

all

Displays configuration information for all of the SGTP services defined for the current context.

gsn-address *ipv4_address*

Displays statistics for an SGSN specified by its IP address in IPv4 dotted-decimal notation. This must be an existing and active interface.

sgtp-service *sgtp_srvc_name*

Displays statistics for an existing SGTP service specified as an alphanumeric string from 1 through 63 characters.

verbose

Causes the system to displays more detailed level of statistics.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display information for SGSN services.

Example

The following command displays statistics for the SGTP service named *sgtp1*:

```
show sgtpc statistics sgtp-service sgtp1
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show sgtpu statistics

Displays all transmission and reception statistics for pre-defined and active GTP-U interfaces collected since the last restart or last use of a **clear** command.

Product

SGSN

PDG/TTG

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show sgtpu statistics [ ggsn-address ipv4_address | gprs-service gprs_srvc_name
 nsei nse_id | iups-bind-address ipv4_address | iups-service iups_srvc_name|
```

recovered-values | rnc-address *ipv4_address* **| sgtp-service** *sgtp_srvc_name* **][| { grep** *grep_options* **| more }]**

ggsn-address ***ipv4_address***

Displays statistics for the GGSN specified by its IP address in IPv4 dotted-decimal notation.

gprs-service ***gprs_srvc_name*** **nsei** ***nse_id***

Displays NSEI-based GTPU statistics associated with an existing GPRS service specified as an alphanumeric string of 1 through 63 characters.

nsei *nse_id*: Specifies a GPRS NSEI as an integer from 0 through 65535.

iups-bind-address ***ipv4_address***

Displays SGSN GPRS Tunnelling Protocol (SGTP) statistics for an Iu GTPU interface specified by its IP address in IPv4 dotted-decimal notation.

iups-service ***iups_srvc_name***

Displays statistics for an existing IuPS service specified as an alphanumeric string of 1 through 63 characters.

recovered-values

Only displays recovered values for key KPI counters that were backed-up.

rnc-address ***ipv4_address***

Displays statistics for a Radio Network Controller (RNC) identified by its IP address in IPv4 dotted-decimal notation.

sgtp-service ***sgtp_srvc_name***

Displays statistics for an existing SGTP service specified as an alphanumeric string of 1 through 63 characters.

| { grep ***grep_options*** **| more }**

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display statistics for the SGTPU interface.

Example

The following command displays GPTP-U statistics for the traffic between an SGSN and a connected RNC:

```
show sgtpu statistics rnc-address 209.165.200.224
```

show sgw-service

Displays configuration settings and/or service statistics for Serving Gateway (S-GW) services on this system.

Product

S-GW

SAEGW

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show sgw-service { all | name *service_name* **| statistics { all | name** *service_name* **[rac** *rac* **| tac** *tac* **| apn** *apn_name* **] } } [| { grep** *grep_options* **| more }]**

all

Displays configuration information for all S-GW services configured on this system.

name *service_name*

Displays configuration information for an existing S-GW service c specified as an alphanumeric string of 1 through 63 characters.

statistics { all | name *service_name* }

all: Displays statistics for all S-GW services on this system or for a specified service.

name *service_name*: Displays statistics for an existing S-GW service specified as an alphanumeric string of 1 through 63 characters.

rac *rac*

Specifies the Routing Area Code per 3GPP standards in TS 29.274. This will provide statistics for the SGW service associated with this **rac**.

This entry must be an integer from 0 to 65535.

There is no default setting.

tac *tac*

Specifies the Tracking Area Code per 3GPP standards in TS 29.274. This will provide statistics for the SGW service that is associated with this **tac**.

This entry must be an integer from 0 to 65535.

There is no default setting.

apn *apn_name*

Specifies a configured APN name that is associated with the specified SGW service.

This entry must be an alphanumeric string of 1 to 62 characters. This will provide statistics for the SGW service associated with this **apn**.

There is no default setting.

| { grep *grep_options* | more }

Indicates the output of the command is to be piped (sent) to the command specified.

A command to send output to must be specified.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section in the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to view configuration settings and/or service statistics for S-GW services on this system.

Example

The following command displays service statistics for the S-GW service named *sgw1*:

```
show sgw-service statistics name sgw1
```

show sls-service

Displays information and statistics about SLs interface services configured on this system.

Product

MME

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show sls-service { all | name *svc_name* **| peers [all | esmlc-id** *esmlc-id* **] | statistics [name** *svc_name [sls | sctp]* **] [sls | sctp] [esmlc-id** *esmlc-id* **] } [| { grep** *grep_options* **| more }]**

all

Displays information about all SLs interface services configured on this system.

name *svc_name*

Displays information about an existing SLs service specified as an alphanumeric string of 1 through 63 characters.

peers [all | esmlc-id *esmlc-id*]

Displays configuration information of the E-SMLC peers that are connected to the SLs service.

all: Displays statistics for all E-SMLC peers.

esmlc-id *esmlc-id*: Displays statistics for an existing E-SMLC peer specified as an integer value from 0 through 255.

statistics [name *svc_name* [sls | sctp]] [sls | sctp] [esmlc-id *esmlc-id*]

Displays all statistics for SLs services configured on this system.

name *name*: Displays all statistics for an existing SLs service specified as an alphanumeric string of 1 through 63 characters.

sls: Filters output to show only SLs interface related statistics.

sctp: Filters output to show only SCTP related statistics.

esmlc-id *esmlc-id*: Displays all statistics for an existing E-SMLC peer specified as an integer value from 0 through 255.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display information and statistics about SLs services configured on this system.

Example

The following command displays all statistics for an SLs service named *sls1*

```
show sls-service name sls1
```

show sms statistics

Displays traffic statistics for the Short Message Service (SMS).

Product

SGSN

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show sms statistics [ gprs-only | name map_srvc | recovered-values |
sgsn-only ] [ verbose ] [ | { grep grep_options | more } ]
```

gprs-only

Displays only GPRS access type SMS statistics.

name *map_srvc*

Displays statistics for an existing MAP service specified as an alphanumeric string of 1 through 63 characters.

recovered-values

Only displays recovered values for key KPI counters that were backed-up.

sgsn-only

Displays only UMTS access type SMS statistics.

verbose

Causes the system to displays more detailed level of statistics.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display traffic statistics for the SMS services.

Example

Use the following command to display SMS statistics for 3G traffic:

```
show sms statistics sgsn-only
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show sndcp statistics

Displays statistics for the packet traffic going through the Subnetwork Dependent Convergence Protocol (SNDCP) layer.

Product

SGSN

Privilege

Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show sndcp statistics [gprs-service *srvc_name* **] [verbose] [| { grep** *grep_options* **| more }]**

gprs-service *srvc_name*

Displays statistics for an existing GPRS service specified as an alphanumeric string of 1 through 63 characters.

verbose

Displays a more detailed level of statistics.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display SNDCP traffic statistics. Include the **gprs-service** keyword to filter the output to statistics for only one GPRS service.

Example

Use the following command to display all SNDCP layer traffic statistics:

```
show sndcp statistics verbose
```

Use the following command to display SNDCP layer traffic statistics for the *test1* GPRS service:

```
show sndcp statistics gprs-service test1
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show snmp

Displays information on the Simple Network Management Protocol (SNMP) servers and interfaces.

Product

All

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show snmp { accesses | communities | notifies | server | transports | trap { history [url | varbind | verbose] | statistics [verbose | wide] } [| { grep *grep_options* **| more }]**

accesses

Displays SNMP server usage statistics.

communities

Displays SNMP community strings.

notifies

Displays SNMP event trap and notification statistics.

server

Displays SNMP server configuration information.

transports

Displays trap destination configuration information.

trap { history [url | varbind | verbose] | statistics [verbose | wide] }

history: Displays SNMP event trap history. **trap history** Displays up to 5,000 time-stamped trap records stored in a buffer. The buffer may be cleared by entering the **clear snmp history** command.

statistics: Displays SNMP event trap and notification statistics.

url *pathname*: Redirects output to a file.

varbind: Displays varbind-based output which is easier to parse, but harder for an operator to read.

verbose: Displays rows for every defined trap, even if never generated.

wide: Displays trap statistical data in excess of 80 columns.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Display SNMP information as part of system verification and troubleshooting.

Example

The following commands display the usage statistics, community string information, event trap and notification data, server information, and trap destination configuration, respectively.

```
show snmp communities
show snmp transport
```

```
show snmp server
show snmp accesses
show snmp notifies
show snmp trap history
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show software authenticity

Displays information regarding the authenticity of the software.

Product

All

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

`show software authenticity { file` *`url`* **`[ validate ] | keys | running } [ | { grep`** *`grep_options`* **`| more } ]`**

file *url* [validate]

Displays authenticity information for a specified file.

url specifies the pathname for the file for which authentication information will be displayed as one of the following:

For the ASR 5500:

`[file:]{/flash | /usb1 | /hd-raid | /sftp}[/directory]/` *`filename`*

`tftp://`*`host`***`[:`***`port`***`][/`***`directory`***`]/`***`filename`**

`ftp://[`*`username`***`[:`***`password`***`]@]`***`host`***`[:`***`port`***`][/`***`directory`***`]/`***`filename`**

`sftp://[`*`username`***`[:`***`password`***`]@]`***`host`***`[:`***`port`***`][/`***`directory`***`]/`***`filename`**

`http://[`*`username`***`[:`***`password`***`]@]`***`host`***`[:`***`port`***`][/`***`directory`***`]/`***`filename`**

directory is the directory name.

filename is the actual file of interest.

username is the user to be authenticated.

password is the password to use for authentication.

host is the IP address or host name of the server.

port# is the logical port number that the communication protocol is to use.

file *url* [validate]

Displays authenticity information for starfile images on flash or over the network. The **validate** option performs digital signature validation of the image.

keys

Displays public StarOS key information for each of the key storage regions (Primary, Backup), as well as Rollover key information.

running

Displays information about the chain of trust for all running software images: StarOS, CFE (bootstrap), BIOS/UEFI (Unified Extensible Firmware Interface) and the microloader.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Displays information regarding the authenticity of the software.

Example

The following commands display authenticity information for currently running BIOS, CFE and StarOS:

```
show software authenticity running
```

show srp

Displays the Service Redundancy Protocol (SRP) information.

Product

All products that support Interchassis Session Recovery (ICSR)

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show srp { audit-statistics [ all | instance number ] [ message-level |
session-level ] | call-loss statistics | checkpoint { info | statistics
[ active | debug-info | standby ] [ verbose ] } | details |info | monitor
 [ all | authentication-probe | bfd | bgp | diameter | volume ] |
statistics } | [ grep grep_options | more ]
```

audit-statistics [all | instance *number*] [message-level | session-level]

Displays statistics of external audit.

all: Displays information for all Session Managers.

instance *number*: Displays information for an instance number of Session Manager.specified as an integer from 1 through 4294967295.

message-level: Displays message-level statistics.

session-level: Displays session-level statistics.

call-loss statistics

Displays history of lost calls during switchover.

checkpoint { info | statistics [active | standby] [verbose]

The **info** keyword displays a list of micro-checkpoints by CMD ID, name along with associated status information.

The **statistics** keyword displays check pointing statistics on session redundancy data (session managers, current call recovery records, etc.).

active: Displays information for the active chassis.

standby: Displays information for the standby chassis.

verbose: Displays cumulative information for all session managers in tabular output.

details

Displays detailed information and statistics required by TAC personnel for ICSR/SRP troubleshooting.

info

Displays Service Redundancy Protocol information (context, chassis state, peer, connection state, etc.).

monitor [all | authentication-probe | bfd | bgp | diameter | volume]

Displays SRP monitor information.

all: Displays monitor information for all types (authentication-probe, bgp, and diameter).

authentication-probe: Displays authentication probe monitor information.

bfd: Displays BFD monitor information.

bgp: Displays BGP monitor information.

diameter: Displays Diameter monitor information.

volume: Displays the volume status for multi-attach cinder volumes.

statistics

Displays SRP statistics (hello messages sent, configuration validation, resource messages, switchovers, etc.).

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

The output of this command may be considered as part of a periodic system auditing program by verifying the Service Redundancy Protocol performance. For more information, refer to the *Interchassis Session Recovery* appendix of the *System Administration Guide* and the *Service Redundancy Protocol Configuration Mode* chapter of this guide.

Example

The following commands display Service Redundancy Protocol information:

```
show srp audit-statistics
show srp call-loss statistics
show srp checkpoint statistics
show srp info
show srp monitor
show srp statistics
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show ss7-routing-domain

This command displays the configuration information for the defined Signalling System #7 (SS7) routing domains. Since SS7 routing domains encompass a large number of operational parameters, this command enables you to narrow your displays to specific protocol parameters on a specific link.

Product

SGSN

Privilege

Security Administrator, Administrator, Inspector, Operator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show ss7-routing-domain { all | ss7rd_id { m3ua | mtp2 | mtp3 | qsaal |
routes [ adjacent ] | sctp asp { all | instance asp_id } | sscf } }
show ss7-routing-domain ss7rd_id m3ua { statistics { gen | peer-server {
all | id peer-server_id peer-server-process { all | instance psp_instance } }
 } | status { address-translation-table | destination-point-code { all |
 ss7_dpc } | gen | peer-server peer-server_id [ peer-server-process instance
 psp_id | verbose ] }
```

show ss7-routing-domain 1 sscf { statistics linkset { all | id *linkset_id* **link { all | id** *link_id* **} } | status linkset { all | id** *linkset_id* **link { all | id** *link_id* **[verbose] } } }**

ss7-routing-domain { all | *ss7rd_id* }

all: Displays information for all SS7 routing domains.

ss7rd_id: Displays information for the SS7 routing domain ID specified as an integer from 1 through 12.

m3ua

Displays statistics and status information for the SS7 MTP3 User Adaptation Layer (M3UA) in the specified SS7 routing domain.

mtp2

Displays statistics and status information for the SS7 Message Transfer Part-2 (MTP2) in the specified SS7 routing domain.

mtp3

Displays statistics and status information for the SS7 Message Transfer Part-3 (MTP3) in the specified SS7 routing domain.

qsaal

Displays statistics and status information for the Service Specific Connection-Oriented Protocol (SSCOP) sub-layer of the Quasi Signaling Application Adaptation Layer (QSAAL) in the specified SS7 routing domain.

routes [adjacent]

Displays the destination point code (DPC) routing table.

adjacent: If this keyword is used with the **routes** keyword, access is provided to the statistics and status information for configured adjacent point codes.

sctp asp { all | instance *asp_id* }

Provides access to the status or statistics for the Stream Control Transmission Protocol (SCTP) application server processes (ASP) in the specified SS7 routing domain for all or a specified SCTP ASP instance.

- **all**: Displays the information for all SCTP application server process instances for a specific SS7 routing domain.
- **instance** *asp_id*: Displays the information for an SCTP application server process instance specified as an integer from 1 through 4.

sscf

Displays statistics and status information for the Service Specific Coordination Function (SSCF [q.2140]) in the specified SS7 routing domain.

peer-server [all | id *peer-server_id*]

Filters the information for the specific protocol in the SS7 routing domain for all or a specific peer server ID.

- **all**: Displays the information for all peer servers for a specific protocol.
- **id** *peer-server_id*: Indicates the specific linkset identifier as an integer from 1 through 49.

peer-server-process [all | instance *instance_id*]

Filters the information for the specific protocol in the SS7 routing domain for all or a specific instance of peer-server process.

- **all**: Displays the information for all peer server process instances for a specific protocol.
- **instance** *instance_id*: Specifies a peer server process instance as an integer from 1 through 4.

destination-point-code [all | *dest_point_code*]

Filters the information for the specific protocol in the SS7 routing domain for all or a specific DPC.

- **all**: Displays the information for all DPCs in the SS7 routing domain.
- *dest_point_code*: Specifies a DPC in the SS7 routing domain.

gen

Displays general information for the specific protocol in the specified SS7 routing domain.

verbose

Enables the display of maximum information for a protocol.

linkset [all | id *linkset_id*]

Filters the information for the specific protocol in SS7 routing domain for all or a specific link set.

- **all**: Displays the information for all linkset for a specific protocol.
- **id** *linkset_id*: Specifies a linkset identifier as an integer from 1 through 49.

link [all | id *link_id*]

Filters the information for a specified protocol in the SS7 routing domain for all or a specific link set.

- **all**: Displays the information for all links for a specific protocol.
- **id** *link_id*: Specifies a linkset identifier as be an integer from 1 through 16.

Usage Guidelines

Use this command to display the SS7 routing domain and different layer protocol information for SGSN service.

Example

Displays the information/statistics for all SCTP application server processes of peer server ID 17 and peer server process instance 1 in SS7 routing domain 12:

```
show ss7-routing-domain 12 sctp asp all status peer-server id 17
peer-server-process instance 1
```

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show ssh

Displays the secure shell (SSH) host or client authentication public key information.

Product

All

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show ssh { client | key } [ type { v1-rsa | v2-rsa | v2-dsa } ]
```

type { v1-rsa | v2-dsa | v2-rsa }

Specifies the type of SSH key information to display. If type is not specified, information for all types is displayed.

v1-rsa: SSH v1 RSA host key only (obsolete)

v2-dsa: SSH v2 DSA host key only

v2-rsa: SSH v2 RSA host or client key only

Usage Guidelines

Displays the secure shell host or client key information to verify installed keys.

Example

The following command displays information for all SSH v1 and SSH v2 host keys:

```
show ssh key
```

The following command shows information for SSH client v2 RSA host keys:

```
show ssh client key type v2-rsa
```

show ssl cipher-suite

Displays information related to Secure Sockets Layer (SSL) cipher suites since the last restart or **clear** command. A cipher suite contains the cryptographic algorithms supported by the client.

Product

SCM (P-CSCF, A-BG)

SecGW

Privilege

Security Administrator, Administrator, Inspector, Operator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

`show ssl cipher-suite [ name` *`name`* **`] [ | { grep`** *`grep_options`* **`| more } ]`**

name *name*

Displays information related to the SSL cipher suite specified as an alphanumeric string of 1 through 127 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display information related to SSL cipher suites.

Example

The following command displays information for the SSL cipher suite *ssl_cipher_suite_1*:

`show ssl cipher-suite name ssl_cipher_suite_1`

show ssl connection

Displays information pertaining to Secure Sockets Layer (SSL) connections on the Proxy Call Session Control Function (P-CSCF).

Product

SCM (P-CSCF, A-BG)

SecGW

Privilege

Security Administrator, Administrator, Inspector, Operator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

`show ssl connection [ list | summary [ service-name` *`name`* **`] ] [ name`** *`name`* **`] [ | { grep`** *`grep_options`* **`| more } ]`**

list

Lists the SSL connections on the P-CSCF.

summary

Displays state and statistical information for the SSL connections on the P-CSCF.

service-name *name*

Lists the SSL connections on the P-CSCF for the specified P-CSCF service, or displays state and statistical information for the SSL connections on the P-CSCF for the specified P-CSCF service.

name must be an alphanumeric string of 1 through 63 characters.

name *name*

Displays state and statistical information for the SSL connection specified as an alphanumeric string of 1 through 127 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command in Exec Mode to display information and statistics pertaining to SSL connections.

If the **summary** keyword is not used, detailed information is displayed.

Example

The following command displays SSL connection information for the P-CSCF service *pcscf_tls_1*:

`show ssl connection list service-name pcscf_tls_1`

show ssl map

Displays information related to configured Secure Sockets Layer (SSL) maps/templates since the last restart or **clear** command.

Product

SCM (P-CSCF, A-BG)

SecGW

Privilege

Security Administrator, Administrator, Inspector, Operator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show ssl map [map-type ssl-subscriber-template] [name *name* **] [| { grep** *grep_options* **| more }]**

map-type ssl-subscriber-template

Displays information related to configured SSL maps/templates for the SSL map/template type ssl-subscriber-template.

name *name*

Displays information related to configured SSL maps/templates for the map/template name specified as n alphanumeric string of 1 through 127 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display information related to configured SSL maps/templates.

Example

The following command displays information related to configured SSL maps/templates for the SSL map/template *ssl_template_1*:

```
show ssl map name ssl_template_1
```

show ssl statistics

Displays statistics for Secure Sockets Layer (SSL) since the last restart or **clear** command.

Product

SCM (P-CSCF, A-BG)

SecGW

Privilege

Security Administrator, Administrator, Inspector, Operator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show ssl statistics [service-name *name* **] [| { grep** *grep_options* **| more }]**

service-name *name*

Displays SSL statistics for the Proxy Call Session Control Function (P-CSCF) service. specified as an alphanumeric string of 1 through 127 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display SSL statistics.

Example

The following command displays SSL statistics for all P-CSCF services:

```
show ssl statistics
```

show subscribers

Displays information for subscriber sessions that are defined by specified keywords. Command keywords are base commands that display distinctive types of data. Filter keywords are a superset of command keywords that modify or filter the output of the base commands.

Important Not all filter keywords are available for all command keywords. CLI Help displays available filter keywords based on: the platform type (ASR 5000 or ASR 5500), the products that are licensed to run on the platform, and the preceding command keyword and subsequent filter keywords.

Product

All

Privilege

Security Administrator, Administrator, Inspector, Operator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show subscribers [*command_keyword* **] [** *filter_keywords* **] [| { grep** *grep_options* **| more }]**

command_keyword

The following keywords are base commands that each have a distinct display output. Only one command keyword can be entered on the command line.

aaa-configuration

Displays Authentication Authorization and Accounting (AAA) configuration information for subscriber sessions defined by the specified filter keywords. The following filter keywords are valid with this command:

```
active, active-charging -service, all, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, dormant, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service,  hnbgw-only, hsgw-service, idle-time, ims-auth-service,
 imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-address, l3-tunnel-remote-address, lac, lac-service, lma-service, lns,
lns-service, long-duration-time-left, mag-service, mip-udp-tunnel-only, mipv6ha-service,
mme-address, mme-service, msid, nemo-only network-requested, network-type, pcf, pdg-service,
 pdif-service, pdsn-service, pgw-address, plmn-type, profile-id, profile-name, qci, rx-data,
 s1u-state, s5-proto, session-time-left, sgsn-address, sgsn-service, sgw-address, sgw-service,
 tx-data, username, verbose, grep, more
```

access-flows { accounting | dynamic | pre-provisioned | static }

Shows the ip-flows for the subscribers defined by the specified filter keywords.

- **accounting**: displays the accounting type of access flows for a subscriber.
- **dynamic**: displays the dynamic type of access flows for a subscriber.
- **pre-provisioned**: displays the pre-provisioned type of access flows for a WiMAX subscriber.
- **static**: displays the static type of access flows for a subscriber.

The following filter keywords are valid with this command:

```
active, active-charging-service, all, apn, asn-peer-address, asngw-service, asnpc-service,
 callid, card-num, ccoa-only, configured-idle-timeout, connected-time, dhcp-server, dormant,
 epdg-address, epdg-service, fa, fa-service, flow-type, ggsn-service, gprs-service,
gsm-traffic-class, ha, ha-ipsec-only, ha-service, henbgw-access-service, hnbgw-only,
hsgw-service, idle-time, imsi, ip-address, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-address, l3-tunnel-remote-address, lac, lac-service, lma-service, lns,
lns-service, long-duration-time-left, mag-service, mip-udp-tunnel-only, mme-address,
mme-service, msid, msisdn, network-requested, network-type, pcf, pdg-service, pdif-service,
 pdsn-service, pdsnclosedrp-service, pgw-address, plmn-type, rulebase, rx-data,
session-time-left, sgsn-address, sgsn-service, sgw-address, sgw-service, tpo, tx-data,
username, verbose, grep, more
```

access-type { lxcdma | ehrpd | lte | undetemrined | wcdma | wifi | wired }

Displays active subscribers using a specific type of UE.

- **1xcdma**: 1XCDMA – Wireless CDMA 1x high speed internet service
- **ehrpd**: eHRPD – Enhanced High Rate Packet Data
- **evdo**: EvDO – EVolution-Data Optimized
- **lte**: LTE – Long Term Evolution

- **undetermined**
- **wcdma**: WCDMA – Wideband Code Division Multiple Access
- **wifi**: WiFi – Wireless local area network
- **wired**

The following filter keywords are valid with this command:

```
access-type, bearer-establishment, bng-service, callid, card-num, configured-idle-timeout,
 domain, ebi, enodeb-address, fa, firewall, fw-and-nat, gtp-version, gtpu-bind-address,
gtpu-service, ha, hnbgw-service, idle-time, ims-auth-service, imsi, ip-address,
ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, long-duration-time-left, mipv6ha-service, msid, nat, network-type,
profile-id, profile-name, qci, rx-data, s1u-state, security-type, session-time-left,
sgw-address, smgr-instance, tx-data, ue-type, username, grep, more
```

active

Displays active subscribers. When no Filter Keywords are specified, the output is a summary of all active subscribers. When Filter Keywords are specified, the percentage is displayed as graphs in which one is displayed using a high sampling rate, a 10-second interval between samples, and a low sampling rate, a 15-minute interval between samples.

The following filter keywords are valid with this command:

```
apn, asn-peer-address, asngw-service, asnpc-service, bearer-establishment, bng-service,
callid, card-num, ccoa-only, configured-idle-timeout, connected-time, dhcp-server, ebi,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, hsgw-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr,
 lac, lac-service, lma-service, lns, lns-service, long-duration-time-left, mag-service,
mme-address, mme-service, msid, msisdn, nat, nemo-only, network-requested, pcf, pdg-service,
 pdif-service, pdsn-service, pdsnclosedrp-service, pgw-address, plmn-type, profile-id,
profile-name, qci, rx-data, s1u-state, session-time-left, sgsn-address, sgsn-service,
smgr-instance, sgw-address, sgw-service, tpo, tx-data, username, grep, more
```

active-charging-service *acs_service*

Displays information for subscribers being processed by the active charging service specified as an alphanumeric string of 1 through 15 characters.

The following filter keywords are valid with this command:

```
active-charging-service, bandwidth-policy, bearer-establishment, bng-service, callid,
card-num, cbb-policy, configured-idle-timeout, connected-time, ebi, enodeb-address,
epdg-address, epdg-service,  fa, firewall, fw-and-nat, gtp-version, gtpu-bind-address,
gtpu-service, ha, idle-time, ims-auth-service, imsi, ip-address, ip-pool, ipv6-address,
ipv6-prefix, l3-tunnel-local-address, l3-tunnel-remote-address, long-duration-time-left,
mag-service, mipv6ha-service, msid, nat, network-type, profile-id, profile-name, qci,
rulebase, rx-data, s1u-state, s5-proto, session-time-left, sgw-address, smgr-instance,
tx-data, username, grep, more
```

activity

Displays subscriber link activity percentage. When no Filter Keywords are specified, the output is a summary of all subscriber activity. When Filter Keywords are specified, the link activity percentage is displayed as graphs in which one is displayed using a high sampling rate, a 10-second interval between samples, and a low sampling rate, a 15-minute interval between samples.

The following filter keywords are valid with this command:

```
active, all, apn, asn-peer-address, asngw-service, asnpc-service, bearer-establishment,
bng-service, callid, card-num, ccoa-only, configured-idle-timeout, connected-time,
dhcp-server, dormant, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
firewall, fw-and-nat, ggsn-service, gprs-service, gsm-traffic-class, gtp-version, gtp-version,
 gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, henbgw-access-service,
hsgw-service, idle-time, imei, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool,
 ipv6-address, ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service,
 lma-service, lns, lns-service, long-duration-time-left, mag-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, pcf, pdg-service, pdif-service,
 pdsn-service, pdsnclosedrp-service, pgw-address, plmn-type, profile-id, profile-name, qci,
 rx-data, session-time-left, sgsn-address, sgsn-service, sgw-address, sgw-service,
smgr-instance, tpo, tx-data, username, grep, more
```

all *ip_address*

Displays all current subscribers who have either active or dormant sessions.

apn *apn_string*

Displays subscribers currently facilitated by the Access Point name (APN) configured on the SGSN or GGSN.

The following filter keywords are valid with this command:

```
active-charging-service, apn, bandwidth-policy, bearer-establishment, bng-service, callid,
 card-num, cbb-policy, ccoa-only, configured-idle-timeout, connected-time, dhcp-server,
dormant, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service, firewall,
fw-and-nat, ggsn-service, gprs-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
 gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-address,
l3-tunnel-remote-address, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mip-udp-tunnel-only, mipv6ha-service, msid, nat, nemo-only
network-requested, network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name,
qci, rulename <rule_name>, rx-data, s1u-state, s5-proto, session-time-left, sgsn-address,
sgsn-service, sgw-address, smgr-instance, without-dynamic-rule, without-override-control,
tx-data, username, verbose, grep, more
```

asn-peer-address *ip_address*

Displays information for subscribers on an ASN-GW trusted peer.

ip_address is the IP address of the ASN-GW peer server expressed in IPv4 dotted-decimal notation.

The following filter keywords are valid with this command:

```
asn-peer-address, asngw-service, bearer-establishment, bng-service, callid, card-num,
configured-idle-timeout, connected-time, ebi, enodeb-address, fa, fa-service, firewall,
full, fw-and-nat, gtp-version, gtpu-bind-address, gtpu-service, ha, idle-time,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-address, l3-tunnel-remote-address, long-duration-time-left, mipv6ha-service,
 msid, nat, network-type, profile-id, profile-name, qci, rx-data, s1u-state, s5-proto,
session-time-left, sgw-address, smgr-instance, tx-data, username, grep, more
```

asngw-only *service_name*

Displays ASN-GW specific context information for the session.

The following filter keywords are valid with this command:

```
aaa-configuration, access-flows, active, activity, all, asn-peer-address, asngw-service,
bearer-establishment, bng-service, callid, card-num, configured-idle-timeout, connected-time,
 counters, data-rate, dormant, ebi, enodeb-address, fa, fa-service, firewall, full,
```

```
fw-and-nat, gtp-version, gtpu-bind-address, gtpu-service, ha, idle-time, ims-auth-service,
 imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-address, l3-tunnel-remote-address, long-duration-time-left, mipv6ha-service,
 msid, nat, network-type, policy, profile-id, profile-name, qci, rx-data, s1u-state, s5-proto,
 session-time-left, sgw-address, smgr-instance, subscription, summary, tft, tx-data, username,
 wf1, grep, more
```

asngw-service *service_name*

Displays counters for subscribers accessing the ASN-GW service.

service_name must be an existing service and be from 1 to 63 alphanumeric characters.

The following filter keywords are valid with this command:

```
asn-peer-address, asngw-service, bearer-establishment, bng-service, callid, card-num,
configured-idle-timeout, connected-time, ebi, enodeb-address, fa, fa-service, firewall,
full, fw-and-nat, gtp-version, gtpu-bind-address, gtpu-service, ha, idle-time,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-address, l3-tunnel-remote-address, long-duration-time-left, mipv6ha-service,
 msid, nat, network-type, profile-id, profile-name, qci, rx-data, s1u-state, s5-proto,
session-time-left, sgw-address, smgr-instance, tx-data, username, grep, more
```

asnpc-service *service_name*

Displays counters for subscribers accessing the ASN Paging Controller and Location Registry service.

service_name must be an existing Access Service Network Paging Controller (ASN PC) service and be from 1 to 63 alphanumeric characters.

The following filter keywords are valid with this command:

```
all, counters all, full, summary, grep, more
```

bandwidth-policy *policy_name*

Show information for subscribers associated with the specified Active Charging bandwidth policy. Must be followed by the name of an existing bandwidth policy specified as an alphanumeric string of 1 trough 63 characters.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, bandwidth-policy, bearer-establishment, bng-service,
 callid, card-num, cbb-policy, configured-idle-timeout, connected-time, domain, ebi,
enodeb-address, epdg-address, epdg-service, fa, firewall, fw-and-nat, gtp-version,
gtpu-bind-address, gtpu-service, ha, hnbgw-service, hsgw-service, idle-time, ims-auth-service,
 imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
 l3-tunnel-remote-addr, lma-service, long-duration-time-left, mag-service, mipv6ha-service,
 msid, nat, network-type, profile-id, profile-name, qci, rulebase, rx-data, s1u-state,
security-type, session-time-left, sgw-address, smgr-instance, tx-data, ue-type, username,
grep, more
```

bearer-establishment { direct-tunnel | normal | pending }

Selects Bearer Establishment type defined by the specified filter keywords.

- **direct-tunnel**: Select subscribers having direct tunnel established with the Radio Network Controller (RNC).
- **normal**: Select subscribers having bearer established with SGSN.
- **pending**: Select subscribers for whom bearer is not fully established.

The following filter keywords are valid with this command:

```
apn, asn-peer-address, asngw-service, asnpc-service, bearer-establishment, bng-service,
callid, card-num, ccoa-only, configured-idle-timeout, connected-time, css-delivery-sequence,
 css-service, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gprs-service, gsm-traffic-class, gtp-version,
gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, henbgw-access-service,
hsgw-service, idle-time, imei, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool,
 ipv6-address, ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service,
 lma-service, lns, lns-service, long-duration-time-left, mag-service, mip-udp-tunnel-only,
 mipv6ha-service, mme-address, mme-service, msid, msisdn, nat, nemo-only, network-requested,
 network-type, pcf, pdg-service, pdif-service, pdsn-service, pdsnclosedrp-service,
pgw-address, plmn-type, rx-data, s1u-state, s5-proto, session-time-left, sgsn-address,
sgsn-service, sgw-address, sgw-service, smgr-instance, tx-data, username, grep, more
```

bng-service *srvc_name*

Displays current configuration the specified Broadband Network Gateway (BNG) service. The following filter keywords are valid with this command:

```
active, all, apn, asn-peer-address, asngw-service, asnpc-service, bearer-establishment,
bng-service, callid, card-num, ccoa-only, configured-idle-timeout, connected-time,
dhcp-server, dormant, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
firewall, fw-and-nat, ggsn-service, gprs-service, gsm-traffic-class, gtp-version, gtp-version,
 gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, henbgw-access-service,
hsgw-service, idle-time, imei, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool,
 ipv6-address, ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service,
 lma-service, lns, lns-service, long-duration-time-left, mag-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, pcf, pdg-service, pdif-service,
 pdsn-service, pdsnclosedrp-service, pgw-address, plmn-type, profile-id, profile-name, qci,
 rx-data, session-time-left, sgsn-address, sgsn-service, sgw-address, sgw-service,
smgr-instance, tpo, tx-data, username, grep, more
```

callid *id*

Displays subscriber information for the call ID specified as an 8-byte hexadecimal number.

The following filter keywords are valid with this command:

```
adc, apn, asn-peer-address, asngw-service, asnpc-service, bearer-establishment, bng-service,
 callid, card-num, ccoa-only, configured-idle-timeout, connected-time, css-delivery-sequence,
 css-service, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gprs-service, gsm-traffic-class, gtp-version,
gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, henbgw-access-service,
hsgw-service, idle-time, imei, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool,
 ipv6-address, ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service,
 lma-service, lns, lns-service, long-duration-time-left, mag-service, mip-udp-tunnel-only,
 mipv6ha-service, mme-address, mme-service, msid, msisdn, nat, nemo-only, network-requested,
 network-type, pcf, pdg-service, pdif-service, pdsn-service, pdsnclosedrp-service,
pgw-address, plmn-type, rx-data, s1u-state, s5-proto, session-time-left, sgsn-address,
sgsn-service, sgw-address, sgw-service, smgr-instance, tx-data, username, grep, more
```

card-num *card_num*

The slot number of the processing card by which the subscriber session is processed. The slot number is an integer from 1 through 7 and 10 through 16 on the ASR 5000, or 1 through 4 and 7 through 10 on the ASR 5500.

The following filter keywords are valid with this command:

```
apn, asn-peer-address, asngw-service, asnpc-service, bearer-establishment, bng-service,
callid, card-num, ccoa-only, configured-idle-timeout, connected-time, cpu-num,
css-delivery-sequence, css-service, dhcp-server, ebi, enodeb-address, epdg-address,
```

```
epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, hsgw-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-service, mip-udp-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, pcf, pdg-service,
 pdif-service, pdsn-service, pdsnclosedrp-service, pgw-address, plmn-type, rx-data, s1u-state,
 s5-proto, session-time-left, sgsn-address, sgsn-service, sgw-address, sgw-service,
smgr-instance, tx-data, username, grep, more
```

cbb-policy *policy_name*

Show information for subscribers associated with the specified Active Charging Content Based Billing (CBB) policy. Must be followed by the name of an existing Active Charging CBB policy specified as an alphanumeric string of 1 trough 63 characters.

The following filter keywords are valid with this command:

```
active, active-charging -service, all, apn, bandwidth-policy, bearer-establishment,
bng-service, callid, card-num, cbb-policy, ccoa-only, configured-idle-timeout, connected-time,
 dhcp-server, dormant, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
firewall, fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
gtpu-service, ha, ha-ipsec-only, ha-service, hnbgw-only, hsgw-service, idle-time,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-address, l3-tunnel-remote-address, lac, lac-service, lma-service, lns,
lns-service, long-duration-time-left, mag-service, mip-udp-tunnel-only, mipv6ha-service,
msid, nemo-only network-requested, network-type, pcf, pdsn-service, plmn-type, profile-id,
 profile-name, qci, rx-data, s1u-state, s5-proto, session-time-left, sgsn-address,
sgsn-service, tx-data, username, verbose, grep, more
```

ccoa-only

Displays current configuration for all MIP-HA subscribers that registered with a collocated COA only. The following filter keywords are valid with this command:

```
access-type, active-charging-service, bandwidth-policy, bearer-establishment, bng-service,
 callid, card-num, cbb-policy, configured-idle-timeout, connected-time, domain, ebi,
enodeb-address, epdg-address, epdg-service, fa, firewall, fw-and-nat, gtp-version,
gtpu-bind-address, gtpu-service, ha, hnbgw-service, idle-time, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, long-duration-time-left, mipv6ha-service, msid, nat, network-type,
pcc-service, profile-id, profile-name, qci, rulebase, rx-data, s1u-state, s5-proto,
security-type, session-time-left, sgsn-address, sgsn-service, sgw-address, smgr-instance,
tpo, tx-data, username, grep, more
```

configuration { all | username *name* }

Displays current configuration for all subscribers or a specified subscriber.

configured-idle-timeout [< | > | greater-than | less-than] *value*

Shows the idle timeout that is configured for the specified subscriber. A value of 0 (zero) indicates that the subscribers idle timeout is disabled.

- <: Filters output so that only information less than the specified value is displayed.
- >: Filters output so that only information greater than the specified value is displayed.
- **greater-than**: Filters output so that only information greater than the specified value is displayed.

- **less-than**: Filters output so that only information less than the specified value is displayed.
- *value*: Used in conjunction with <, >, greater-than, less-than, If no other filtering options are specified only output matching *value* is displayed. If *value* is not specified all data is displayed. *value* must be an integer from 0 through 4294967295.

congestion_mgmt { not-required | required }

Shows the current subscribers for which congestion management is **not-required** or **required**. The following filter keywords are valid with this command:

```
active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy,
configured-idle-timeout, congestion_mgmt, connected-time, ebi, enodeb-address, epdg-address,
  epdg-service, fa, fa-service, firewall, fw-and-nat, gtp-version, gtpu-bind-address,
gtpu-service, ha, ha-ipsec-only, ha-service, hnbgw-service, henbgw-access-service,
hsgw-service, idle-time, ims-auth-service, imsi, interface-type, ip-address, ip-alloc-method,
 ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, lac-service,
 lma-service, lns, lns-service, long-duration-time-left, mag-service, mipv6ha-service,
mme-address, mme-service, msid, nat, network-type, pcp, pgw-address, plmn-type, profile-id,
 profile-name, qci, rulebase, rx-data, s1u-state, s5-proto, saegw-service, session-time-left,
 sgw-address, sgw-service, smgr-instance, tpo, tx-data, username, wsg-service
```

connected-time [< | > | greater-than | less-than] *value*

Shows how long the subscriber has been connected.

- <: Filters output so that only information less than the specified value is displayed.
- >: Filters output so that only information greater than the specified value is displayed.
- **greater-than**: Filters output so that only information greater than the specified value is displayed.
- **less-than**: Filters output so that only information less than the specified value is displayed.
- *value*: Used in conjunction with <, >, greater-than, less-than, If no other filtering options are specified only output matching *value* is displayed. If *value* is not specified all data is displayed. *value* must be an integer from 0 through 4294967295.

Note If you use **show subscribers summary apn** *apn-name* **connected-time** > *value1* **connected-time** < *value2* command with keyword **connected-time** multiple times, only the last keyword **connected-time** *value2* is considered.

To get a specific range for show subscribers use the **show subscribers summary apn** *apn-name* **connected-time** > *value1* < *value2*.

counters

Shows the counters associated with the subscriber. The following filter keywords are valid with this command:

```
access-type, active, active-charging-service, all, apn, asn-peer-address, asngw-service,
asnpc-service, bandwidth-policy, bearer-establishment, bng-service, callid, card-num,
cbb-policy, ccoa-only, configured-idle-timeout, connected-time, dhcp-server, dns-proxy,
domain, dormant, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service, firewall,
 fw-and-nat, ggsn-service, gprs-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
 gtpu-service, ha, ha-ipsec-only, ha-service, henbgw-access-service, hnbgw-service,
```

```
hsgw-service, idle-time, imei, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool,
 ipv6-address, ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service,
 lma-service, lns, lns-service, long-duration-time-left, mag-service, mipv6ha-service,
mme-address, mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type,
pcc-service, pcf, pdg-service, pdif-service, pdsn-service, pdsnclosedrp-service, pgw-address,
 plmn-type, profile-id, profile-name, qci, rulebase, rx-data, s1u-state, s5-proto,
security-type, session-time-left, sgsn-address, sgsn-service, sgw-address, sgw-service,
smgr-instance, tpo, tx-data, ue-type, username, grep, more
```

css-delivery-sequence

Important This is a restricted keyword. In StarOS 9.0 and later, this keyword is obsoleted.

css-service *csssvc_name*

Important This is a restricted keyword. In StarOS 9.0 and later releases, this keyword is obsolete.

data-rate

Displays subscriber throughput data. **This keyword is best used for individual subscriber output.**

The following filter keywords are valid with this command:

```
access-type, active, active-charging-service, all, apn, asn-peer-address, asngw-service,
asnpc-service, bandwidth-policy, bearer-establishment, bng-service, callid, card-num,
cbb-policy, ccoa-only, configured-idle-timeout, connected-time, dhcp-server, domain, dormant,
 ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat,
ggsn-service, gprs-service, graph, gsm-traffic-class, gtp-version, gtpu-bind-address,
gtpu-service, ha, ha-ipsec-only, ha-service, henbgw-access-service, high, hnbgw-service,
hsgw-only, hsgw-service, idle-time, imei, ims-auth-service, imsi, ip-address, ip-alloc-method,
 ip-pool, pv6-address, ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, lac,
lac-service, lma-service, lns, lns-service, long-duration-time-left, low, mag-service,
mipv6ha-service, mme-address, mme-service, msid, msisdn, network-requested, network-type,
pcc-service, pcf, pdg-service, pdif-service, pdsn-service, pdsnclosedrp-service, pgw-address,
 plmn-type, profile-id, profile-name, qci, rulebase, rx-data, s1u-state, s5-proto,
security-type, session-time-left, sgsn-address, sgsn-service, sgw-address, sgw-service,
smgr-instance, summary, tpo, tx-data, ue-type, username, verbose, grep, more
```

debug-info { callid *id* | msid *id* | username *name* }

Displays internal call troubleshooting information for subscriber sessions defined by the specified keywords.

- **callid** *id*: Displays subscriber information for the call specified by *id*. The call ID must be specified as an 8-digit hexadecimal number.
- **msid** *id*: Displays information for the mobile user identified by *id*. *id* must be from 7 to 16 digits specified as an IMSI, MIN, or RMI. Wildcard characters $ and * are allowed. The * wildcard matches multiple characters and the $ wildcard matches a single character. If you do not want the wildcard characters interpreted as a wildcard enclose them in single quotes ('). For example; '$'.
- **username** *name*: Displays information for connections for the subscriber identified by *name*. The user must have been previously configured. *name* must be a sequence of characters and/or wildcard characters ('$' and '*') from 1 to 127 characters. The * wildcard matches multiple characters and the $ wildcard

matches a single character. If you do not want the wildcard characters interpreted as wildcard enclose them in single quotes ('). For example; '$'.

dhcp-server *ipv4_address*

Displays subscribers based on a specific DHCP server where their IP address was allocated. Must be followed by IP address of the server, using IPv4 dotted-decimal notation.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, ebi, epdg-address, epdg-service, fa, fa-service, firewall,
fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service,
 ha, ha-ipsec-only, ha-service, idle-time, imei, ims-auth-service, imsi, ip-address, ip-pool,
 ipv6-address, ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service,
 lns, lns-service, long-duration-time-left, msid, msisdn, nat, nemo-only, network-requested,
 pcf, pdsn-service, pdsnclosedrp-service, plmn-type, profile-id, profile-name, qci, rx-data,
 s1u-state, session-time-left, sgsn-address, sgsn-service, smgr-instance, tpo, tx-data,
username, grep, more
```

domain *name*

Displays all subscribers with an Address-of-Record (AoR) from the specified domain. *name* is an alphanumeric string of 1 through 79 characters.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, all, apn, asn-peer-address, asngw-service,
asnpc-service, bandwidth-policy, bearer-establishment, bng-service, callid, card-num,
cbb-policy, configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
 fa, firewall, fw-and-nat, ggsn-service, graph, gsm-traffic-class, gtp-version,
gtpu-bind-address, gtpu-service, ha, hnbgw-service, hsgw-only, hsgw-service, idle-time,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, long-duration-time-left, mipv6ha-service, msid,
 network-type, pcc-service, profile-id, profile-name, qci, rulebase, rx-data, s1u-state,
s5-proto, security-type, session-time-left, sgw-address, smgr-instance, summary, tpo,
tx-data, ue-type, username, grep, more
```

dormant *number*

Displays all dormant subscribers, those registered but not transmitting/receiving data.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, hnbgw-service, hsgw-service, idle-time, imei,
ims-auth-service, imsi, ip-address, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
 l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-service, mip-udp-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, pcc-service,
pcf, pdg-service, pdif-service, pdsn-service, pdsnclosedrp-service, pgw-address, plmn-type,
 profile-id, profile-name, qci, rulebase, rx-data, s1u-state, security-type,
session-time-left, sgsn-address, sgsn-service, sgw-address, sgw-service, smgr-instance,
tpo, tx-data, ue-type, username, grep, more
```

ebi *number*

Displays subscribers based on an EPS bearer identity. *number* specifies the EBI number and must be an integer value from 5 to 15.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, epdg-address,
epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, hnbgw-service, hsgw-service, idle-time, imei,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
 long-duration-time-left, mag-service, mipv6ha-service, mme-address, mme-service, msid,
msisdn, nat, nemo-only, network-requested, network-type, pcc-service, pcf, pdg-service,
pdif-service, pdsn-service, pgw-address, plmn-type, profile-id, profile-name, qci, rulebase,
 rx-data, s1u-state, s5-proto, security-type, session-time-left, sgsn-address, sgw-address,
 sgw-service, smgr-instance, tx-data, ue-type, username, grep, more
```

enodeb-address *ip_address*

Displays subscribers based on the eNodeB to which they are attached. *ip_address* must be a valid IP address of an existing eNodeB specified in IPv4 dotted-decimal or IPv6 colon-separated-hexadecimal notation.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, hnbgw-service, hsgw-service, idle-time, imei,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
 long-duration-time-left, mag-service, mme-address, mme-service, msid, msisdn, nat, nemo-only,
 network-requested, network-type, pcc-service, pcf, pdg-service, pdif-service, pdsn-service,
 pgw-address, plmn-type, profile-id, profile-name, qci, rx-data, s1u-state, s5-proto,
security-type, session-time-left, sgsn-address, sgw-address, sgw-service, smgr-instance,
tx-data, ue-type, username, grep, more
```

epdg-address *ipv4_ipv6_address*

Displays subscribers connected to the specified ePDG peer specified in IPv4 dotted-decimal or IPv6 colon-separated-hexadecimal notation.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
gtpu-service, ha, ha-ipsec-only, ha-service, henbgw-access-service, idle-time, imei,
ims-auth-service, imsi, interface-type, ip-address, ip-alloc-method, ip-pool, ipv6-address,
 ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lns, lns-service,
 long-duration-time-left, mip-udp-tunnel-only, mipv6ha-service, mme-address, mme-service,
msid, msisdn, nat, nemo-only, network-requested, network-type, pcf, pdg-service, pdif-service,
 pdsn-service, pgw-address, plmn-type, profile-id, profile-name, qci, rx-data, s1u-state,
s5-proto, session-time-left, sgsn-address, sgsn-service, sgw-address, sgw-service,
smgr-instance, tpo, tx-data, username, wsg-service, grep, more
```

fa *ipv4_address*

Displays subscribers for a specified Peer Foreign Agent. Must be followed by the IP address of a Remote FA, in IPv4 dotted-decimal notation.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, hnbgw-service, hsgw-service, idle-time, imei,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
 long-duration-time-left, mag-service, mipv6ha-service, mme-address, mme-service, msid,
msisdn, nat, nemo-only, network-requested, network-type, pcc-service, pcf, pdg-service,
pdif-service, pdsn-service, pdsnclosedrp-service, pgw-address, plmn-type, profile-id,
profile-name, qci, rulebase, rx-data, s1u-state, s5-proto, security-type, session-time-left,
 sgsn-address, sgsn-service, sgw-address, sgw-service, smgr-instance, tpo, tx-data, ue-type,
 username, grep, more
```

epdg-only

Displays epdg-specific context information for the session.

The following filter keywords are valid with this command:

```
all, callid, card-num, configured-idle-timeout, connected-time, counters, data-rate, full,
 gtp-version, gtpu-bind-address, gtpu-service, idle-time, ip-address, ipv6-prefix,
long-duration-time-left, network-type, qci, rx-data, session-time-left, smgr-instance,
summary, tft, tx-data, username, grep, more
```

epdg-service *srvc_name*

Displays subscribers for a specified Evolved Packet Data Gateway service. Must be followed by ePDG service name expressed as an alphanumerical string of 1 through 63 characters.

The following filter keywords are valid with this command:

```
all, callid, card-num, configured-idle-timeout, connected-time, counters, data-rate,
epdg-address, epdg-service, full, gtp-version, gtpu-bind-address, gtpu-service, idle-time,
 ip-address, ipv6-prefix, long-duration-time-left, network-type, qci, rx-data,
session-time-left, smgr-instance, summary, tft, tx-data, username, grep, more
```

fa-only

Displays FA-specific context information for the session.

The following filter keywords are valid with this command:

```
aaa-configuration, access-flows, active, activity, all, asn-peer-address, asngw-service,
asnpc-service, bearer-establishment, callid, card-num, configured-idle-timeout,
connected-time, counters, data-rate, dhcp-server, dormant, ebi, enodeb-address, epdg-address,
 epdg-service, fa, fa-service, firewall, full, fw-and-nat, ggsn-service, gsm-traffic-class,
 gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, idle-time,
imei, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
 l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, long-duration-time-left,
mag-service, mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only,
network-requested, network-type, pcf, pdif-service, pdsn-service, pgw-address, plmn-type,
policy, profile-id, profile-name, qci, rx-data, s1u-state, s5-proto, session-time-left,
sgw-address, sgw-service, smgr-instance, subscription, summary, tft, tx-data, username,
wf1, grep, more
```

fa-service *srvc_name*

Displays subscribers for a specified Foreign Agent service. Must be followed by FA service name expressed as an alphanumerical string of 1 through 63 characters.

The following filter keywords are valid with this command:

```
aaa-configuration, access-flows, active, activity, all, asn-peer-address, asngw-service,
asnpc-service, bearer-establishment, bng-service, callid, card-num, ccoa-only, configuration,
 configured-idle-timeout, connected-time, counters, data-rate, debug-info, dhcp-server,
dormant, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-only, fa-service, firewall,
 full, fw-and-nat, ggsn-only, ggsn-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
 gtpu-service, ha, ha-ipsec-only, ha-service, henbgw-access-service, idle-time, imei,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-only, lac-service, lns, lns-only,
long-duration-time-left, mag-service, mip-udp-tunnel-only, mipv6ha-only, mipv6ha-service,
msid, msisdn, nat, nemo-only, network-requested, network-type, pcf, pdif-service,
pdsn-service, pgw-address, plmn-type, policy, profile-id, profile-name, qci, rx-data,
s1u-state, s5-proto, session-time-left, sgsn-address, sgw-address, sgw-service, smgr-instance,
 subscription, summary, tft, tx-data, username, wf1, grep, more
```

firewall { not-required | required }

Displays information for subscribers based on whether or not firewall processing is required.

The following filter keywords are valid with this command:

```
apn, asn-peer-address, asngw-service, asnpc-service, bearer-establishment, bng-service,
callid, card-num, ccoa-only, configured-idle-timeout, connected-time, dhcp-server, ebi,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, hsgw-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv4, ipv6, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
 long-duration-time-left, mag-service, mme-address, mme-service, msid, msisdn, nat, nemo-only,
 network-requested, network-type, pcf, pdg-service, pdif-service, pdsn-service,
pdsnclosedrp-service, pgw-address, plmn-type, profile-id, profile-name, qci, rx-data,
s1u-state, s5-proto, session-time-left, sgsn-address, sgsn-service, sgw-address, sgw-service,
 smgr-instance, tpo, tx-data, username, grep, more
```

fng-only

Displays Femto Network Gateway (FNG) context information for the session.

The following filter keywords are valid with this command:

```
aaa-configuration, access-flows, active, activity, all, bearer-establishment, bng-service,
 callid, card-num, configured-idle-timeout, connected-time, counters, data-rate, dormant,
ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service, firewall, fng-service,
full, fw-and-nat, gtp-version, gtpu-bind-address, gtpu-service, ha, henbgw-access-service,
 idle-time, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address,
ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, long-duration-time-left,
mipv6ha-service, msid, nat, network-type, pdif-service, policy, profile-id, profile-name,
qci, rx-data, s1u-state, s5-proto, session-time-left, sgw-address, smgr-instance,
subscription, summary, tft, tx-data, username, wf1, grep, more
```

fng-service *srvc_name*

Displays information for subscribers accessing the specified FNG service.

service_name must be an existing service expressed as an alphanumeric string of 1 through 63 characters.

The following filter keywords are valid with this command:

```
bearer-establishment, bng-service, callid, card-num, configured-idle-timeout, connected-time,
 ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service, firewall, fng-service,
full, fw-and-nat, gtp-version, gtpu-bind-address, gtpu-service, ha, henbgw-access-service,
 idle-time, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address,
ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, long-duration-time-left,
mipv6ha-service, msid, nat, network-type, pdif-service, profile-id, profile-name, qci,
rx-data, session-time-left, sgw-address, smgr-instance, subscription, summary, tft, tx-data,
 username, grep, more
```

full

Shows all available subscriber information. The following filter keywords are valid with this command:

```
access-type, active, active-charging-service, all, apn, asn-peer-address, asngw-service,
asnpc-service, bandwidth-policy, bearer-establishment, bng-service, callid, card-num,
cbb-policy, ccoa-only, configured-idle-timeout, connected-time, dhcp-server, domain, dormant,
 ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat,
ggsn-service, gprs-service, gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service,
 ha, ha-ipsec-only, ha-service, henbgw-access-service, hnbgw-service, hsgw-service, idle-time,
 imei, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address,
ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lns, lns-service,
 long-duration-time-left, mag-service, mip-udp-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, network-requested, network-type, pcc-service, pcf, pdg-service,
pdif-service, pdsn-service, pdsnclosedrp-service, pgw-address, plmn-type, profile-id,
profile-name, qci, rulebase, rx-data, s1u-state, s1-proto, security-type, session-time-left,
 sgsn-address, sgsn-service, sgw-address, sgw-service, smgr-instance, tpo, tx-data, ue-type,
 username, grep, more
```

fw-and-nat policy *fw_nat_policy*

Important This option is customer-specific and is only available in StarOS 8.1.

Displays information for subscribers using an existing Firewall-and-NAT policy specified as an alphanumeric string of 1 through 15 characters.

ggsn-only

Displays only GGSN-specific subscriber context information.

The following filter keywords are valid with this command:

```
aaa-configuration, access-flows, active, activity, all, apn, bearer-establishment,
bng-service, callid, card-num, ccoa-only, configured-idle-timeout, connected-time, counters,
 data-rate, dhcp-server, dormant, ebi, enodeb-address, epdg-address, epdg-service, fa,
fa-service, firewall, full, fw-and-nat, ggsn-service, gprs-service, gsm-traffic-class,
gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, idle-time,
imei, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
 l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-only,
 long-duration-time-left, mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only,
 network-requested, network-type, pcf, pdsn-service, plmn-type, policy, profile-id,
profile-name, qci, rx-data, s1u-state, s5-proto, session-time-left, sgsn-address, sgw-address,
 smgr-instance, subscription, summary, tft, tx-data, username, wf1, grep, more
```

ggsn-service *srvc_name*

Displays only subscribers for a specified GGSN service. Must be followed by the GGSN service name expressed as an alphanumeric string of 1 through 63 characters.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, dormant, ebi, enodeb-address, epdg-address, epdg-service, fa,
 fa-service, firewall, fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version,
gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei, ip-address,
 ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lns, lns-service, long-duration-time-left,
mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only, network-requested,
network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name, qci, rx-data, s1u-state,
 s5-proto, session-time-left, sgsn-address, sgw-address, smgr-instance, tx-data, username,
 grep, more
```

gsm-traffic-class { background | conversational | interactive }

Displays subscribers associate with the specified 3GPP QoS traffic class.

The following filter keywords are valid with this keyword:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lns, lns-service, long-duration-time-left,
mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only, network-requested,
network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name, qci, rx-data, s1u-state,
 s5-proto, session-time-left, sgsn-address, sgw-address, smgr-instance, tx-data, username,
 grep, more
```

gprs-only

This keyword is specific to the SGSN and only displays 2G SGSN subscriber information.

The following filter keywords are valid with this keyword:

```
aaa-configuration, active, active-charging-service, activity, all, apn, callid, card-num,
configured-idle-timeout, connected-time, counters, data-rate, full, ggsn-address,
gprs-service, gsm-traffic-class, idle-time, imsi, msid, msisdn, partial, plmn-type,
profile-name, rx-data, session-time-left, summary, tx-data, wide-format, grep, more
```

gprs-service *srvc_name*

Enter the name of the configured 2G GPRS service to display subscriber information specific to the named GPRS service for the SGSN.

srvc_name must be an alphanumeric string of 1 through 63 characters that identifies a configured GPRS service.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, dormant, ebi, enodeb-address, epdg-address, epdg-service, fa,
 fa-service, firewall, fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version,
gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei, ip-address,
 ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lns, lns-service, long-duration-time-left,
mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only, network-requested,
network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name, qci, rx-data, s1u-state,
 s5-proto, session-time-left, sgsn-address, sgw-address, smgr-instance, tx-data, username,
 grep, more
```

gsm-traffic-class { background | conversational | interactive | streaming }

Displays information for subscriber traffic that matches the specified 3GPP traffic class.

- **background**: 3GPP QoS background class.
- **conversational**: 3GPP QoS conversational class.
- **interactive**: 3GPP QoS interactive class. Must be followed by a traffic priority.
- **streaming**: 3GPP QoS streaming class.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gprs-service, gsm-traffic-class, gtp-version,
gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei,
ims-auth-service, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lns, lns-service,
long-duration-time-left, mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only,
 network-requested, network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name,
qci, rx-data, s1u-state, s5-proto, session-time-left, sgsn-address, sgsn-service, sgw-address,
 smgr-instance, tx-data, username, grep, more
```

gtp-version { 0 | 1 }

Displays the specific GTP version number. Must be followed by one of the supported GTP versions (0 or 1).

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, configured-idle-timeout,
connected-time, ebi, enodeb-address, epdg-address, epdg-service, fa, firewall, fw-and-nat,
 gprs-service, gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha,
henbgw-access-service, hsgw-service, idle-time, imei, ims-auth-service, imsi, ip-address,
ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, long-duration-time-left, mag-service, mipv6ha-service, msid, msisdn,
 nat, network-type, nri, nsei, pdg-service, pdif-service, plmn-type, profile-id, profile-name,
 qci, rx-data, s1u-state, s5-proto, session-time-left, sgsn-service, sgw-address,
smgr-instance, tx-data, username, grep, more
```

gtpu-bind-address *ipv4_address*

Displays the subscribers associated with the specified GTPU service bind address. Must be followed by an IPv4 address in dotted decimal notation.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, hnbgw-service, hsgw-service, idle-time, imei,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
 long-duration-time-left, mag-service, mip-udp-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, pcc-service,
pcf, pdg-service, pdif-service, pdsn-service, pgw-address, plmn-type, profile-id,
profile-name, qci, rulebase, rx-data, s1u-state, s5-proto, security-type, session-time-left,
 sgsn-address, sgw-address, sgw-service, smgr-instance, tx-data, ue-type, username, grep,
more
```

gtpu-service *svc_name*

Displays the subscribers associated with an existing GTPU service specified as an alphanumeric string of 1 through 63 characters.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, hnbgw-service, hsgw-service, idle-time, imei,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
 long-duration-time-left, mag-service, mip-udp-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, pcc-service,
pcf, pdg-service, pdif-service, pdsn-service, pgw-address, plmn-type, profile-id,
profile-name, qci, rulebase, rx-data, s1u-state, s5-proto, security-type, session-time-left,
 sgsn-address, sgw-address, sgw-service, smgr-instance, tx-data, ue-type, username, grep,
more
```

ha *ipv4_address*

Displays the subscribers associated with the specified Peer Home Agent. Must be followed by the IP address of a Remote HA in IPv4 dotted-decimal notation.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, hnbgw-service, hsgw-service, idle-time, imei,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
 long-duration-time-left, mag-services, mip-udp-tunnel-only, mipv6ha-service, mme-address,
 mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, pcc-service,
pcf, pdg-service, pdif-service, pdsn-service, pgw-address, plmn-type, profile-id,
profile-name, qci, rulebase, rx-data, s1u-state, s5-proto, security-type, session-time-left,
 sgsn-address, sgw-address, sgw-service, smgr-instance, tx-data, ue-type, username, grep,
more
```

ha-ipsec-only

Displays MIPHA subscribers with subscriber IPSec tunnel only.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lns, lns-service, long-duration-time-left,
mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only, network-requested,
network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name, qci, rx-data, s1u-state,
 s5-proto, session-time-left, sgsn-address, sgw-address, smgr-instance, tx-data, username,
 grep, more
```

ha-service *svc_name*

Displays the subscribers associated with an existing Home Agent service specified as an alphanumeric string of 1 through 63 characters.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lns, lns-service, long-duration-time-left,
mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only, network-requested,
network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name, qci, rx-data, s1u-state,
 s5-proto, session-time-left, sgsn-address, sgw-address, smgr-instance, tx-data, username,
 grep, more
```

henbgw-access-service*svc_name*

Displays specific configured HENBGW access service information. This must be followed by HENBGW access service name.

The following filters/keywords are valid with this command:

```
bearer-establishment, bng-service, callid, card-num, configured-idle-timeout, congestion_mgmt,
 connected-time, ebi, enodeb-address, epdg-address, fa, fa-service, firewall, fng-service,
 fw-and-nat, gtp-version, gtpu-bind-address, gtpu-service, ha, henbgw-access-service,
hnbgw-service,  idle-time, ims-auth-service, imsi, interface-type, ip-address,
ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, long-duration-time-left, mipv6ha-service, msid, nat, network-type,
pcp, profile-id, profile-name, qci, rx-data, s1u-state, s5-proto, session-time-left,
smgr-instance, tx-data, username, grep, more
```

henbgw-only

Displays specific HENBGW information for the session.

The following filters/keywords are valid with this command:

```
aaa-configuration, access-flows, active, activity, all, bearer-establishment, bng-service,
 callid, card-num, configured-idle-timeout, congestion_mgmt, connected-time, counters,
data-rate, dormant, ebi, enodeb-address, epdg-address, fa, fa-service, firewall, fng-service,
 full, fw-and-nat, gtp-version, gtpu-bind-address, gtpu-service, ha, henbgw-access-service,
 hnbgw-service, idle-time, ims-auth-service, imsi, interface-type, ip-address,
ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, long-duration-time-left, mipv6ha-service, msid, nat, network-type,
pcp, policy, profile-id, profile-name, qci, rx-data, s1u-state, s5-proto, session-time-left,
 smgr-instance, subscription, summary, tft, tx-data, username, wf1, grep, more
```

hnbgw-only

Displays HNB-GW subscriber session information.

The following filters/keywords are valid with this command:

```
aaa-configuration, access-flows, access-type, active, active-charging-service, activity,
bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy,
configured-idle-timeout, connected-time, counters, data-rate, domain, ebi, enodeb-address,
 epdg-address, epdg-service, fa, firewall, full, fw-and-nat, gtp-version, gtpu-bind-address,
 gtpu-service, ha, henbgw-access-service, hnbgw-service, idle-time, ims-auth-service, imsi,
 ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, long-duration-time-left, mipv6ha-service, msid, nat, network-type,
pcc-service, policy, profile-id, profile-name, qci, rulebase, rx-data, s1u-state, s5-proto,
```

```
security-type, session-time-left, sgsn-address, sgsn-service, sgw-address, smgr-instance,
subscription, summary, tpo, tx-data, ue-type, username, wf1, grep, more
```

hnbgw-service *svc_name*

Displays subscriber information based on the HNB-GW service name.

svc_name must be an existing HNB-GW service expressed as an alphanumeric string of 1 through 63 characters.

The following filters/keywords are valid with this command:

```
access-type, active-charging-service, bandwidth-policy, bearer-establishment, bng-service,
 callid, card-num, cbb-policy, configured-idle-timeout, connected-time, domain, ebi,
enodeb-address, epdg-address, epdg-service, fa, firewall, full, fw-and-nat, gtp-version,
gtpu-bind-address, gtpu-service, ha, henbgw-access-service, hnbgw-service, idle-time,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, long-duration-time-left, mipv6ha-service, msid,
 nat, network-type, pcc-service, profile-id, profile-name, qci, rulebase, rx-data, s1u-state,
 s5-proto, security-type, session-time-left, sgsn-address, sgsn-service, sgw-address,
smgr-instance, tpo, tx-data, ue-type, username, grep, more
```

hsgw-only

Displays HSGW subscriber session information.

The following filters/keywords are valid with this command:

```
aaa-configuration, access-flows, active, active-charging-only, all, bandwidth-policy,
bearer-establishment, bng-service, callid, card-num, cbb-policy, configured-idle-timeout,
connected-time, counters, data-rate, dormant, ebi, enodeb-address, epdg-address, epdg-service,
 fa, firewall, full, fw-and-nat, gtp-version, gtpu-bind-address, gtpu-service, ha,
hsgw-service, idle-time, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool,
ipv6-address, ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr,
long-duration-time-left, mag-service, mipv6ha-service, msid, nat, network-type, pgw-address,
 policy, profile-id, profile-name, qci, rulebase, rx-data, s1u-state, s5-proto,
session-time-left, sgw-address, smgr-instance, subscription, summary, tft, tx-data, username,
 wf1, grep, more
```

hsgw-service *svc_name*: Displays subscriber information based on the HSGW service name. *svc_name* must be an existing HSGW service expressed as an alphanumeric string of 1 through 63 characters.

hsgw-service *svc_name*

Displays subscriber information based on the HSGW service name. *svc_name* must be an existing HSGW service expressed as an alphanumeric string of 1 through 63 characters.

The following filters/keywords are valid with this command:

```
active-charging-service, bandwidth-policy, bearer-establishment, bng-service, callid,
card-num, cbb-policy, configured-idle-timeout, connected-time, ebi, enodeb-address,
epdg-address, epdg-service, fa, firewall, fw-and-nat, gtp-version, gtpu-bind-address,
gtpu-service, ha, hsgw-service, idle-time, ims-auth-service, imsi, ip-address,
ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, long-duration-time-left, mag-service, mipv6ha-service, msid, nat,
network-type, profile-id, profile-name, qci, rulebase, rx-data, s1u-state, s5-proto,
session-time-left, sgw-address, smgr-instance, tx-data, username, grep, more
```

idle-time

Displays current configuration for all subscribers within the specified idle-time interval.

- <: Filters output so that only information less than the specified value is displayed.

- <: Filters output so that only information less than the specified value is displayed.
- >: Filters output so that only information greater than the specified value is displayed.
- **greater-than**: Filters output so that only information greater than the specified value is displayed.
- **less-than**: Filters output so that only information less than the specified value is displayed.
- *value*: Used in conjunction with <, >, greater-than, less-than, If no other filtering options are specified only output matching *value* is displayed. If *value* is not specified all data is displayed. *value* must be an integer from 0 through 4294967295.

The following filter keywords are valid with this command:

```
epdg-address, epdg-service
```

imei *imei_number*

Displays subscribers having the specified International Mobile Equipment Identity (IMEI/IMEISV) Number. Must be followed by IMEI number.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gprs-service, gsm-traffic-class, gtp-version,
gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lns, lns-service,
long-duration-time-left, mip-udp-tunnel-only, mipv6ha-service, mme-address, mme-service,
msid, msisdn, nat, nemo-only, network-requested, network-type, pcf, pdsn-service, plmn-type,
 profile-id, profile-name, qci, rx-data, s1u-state, s5-proto, session-time-left, sgsn-address,
 sgw-address, smgr-instance, tx-data, username, grep, more
```

ims_auth-service *svc_name*

Displays subscriber information based on the IMS authentication service name. *svc_name* must be an existing service expressed as an alphanumeric string of 1 through 63 characters.

The following filters/keywords are valid with this command:

```
access-type, active-charging-service, asn-peer-address, asngw-service, asnpc-service,
bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, gprs-service, gtp-version,
 gtpu-bind-address, gtpu-service, ha, ha-ipsec, ha-service, henbgw-access-service,
hnbgw-service, hsgw-service, idle-time, ims-auth-service, imsi, ip-address, ip-alloc-method,
 ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, lac,
lac-service, lma-service, lns, lns-service, long-duration-time-left, mag-service,
mip-up-tunnel-only, mipv6ha-service, mme-address, mme-service, msid, msisdn, nat, nemo-only,
 network-requested, network-type, pcc-service, pcf, pdg-service, pdif-service, pdsn-service,
 pgw-address, plmn-type, profile-id, profile-name, qci, rulebase, rx-data, s1u-state,
s5-proto, security-type, session-time-left, sgsn-address, sgsn-service, sgw-address,
sgw-service, smgr-instance, tpo, tx-data, ue-type, username, grep, more
```

imsi *imsi*

Displays information specific to one subscriber or group of subscribers. Enter 1 to 15 digits to identify a specific subscriber's IMSI (International Mobile Subscriber Identity).

The following filters/keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, hnbgw-service, hsgw-service, idle-time, ims-auth-service,
 imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
 l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-services, mip-up-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, nsapi,
pcc-service, pcf, pdg-service, pdif-service, pdsn-service, pgw-address, plmn-type, profile-id,
 profile-name, qci, rulebase, rx-data, s1u-state, s5-proto, security-type, session-time-left,
 sgsn-address, sgsn-service, sgw-address, sgw-service, smgr-instance, tpo, tx-data, ue-type,
 username, grep, more
```

interface-type { S2aGTP | S2bGTP | S5S8GTP }

Specifies subscrber type as either **S2a** (eHRPD), **S2b** (ePDG) or **S5/S8** (PMIPv6/GTP).

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 congestion_mgmt, connected-time, dhcp-server, ebi, enodeb-address, epdg-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, idle-time, imei, ims-auth-service, imsi, interface-type,
 ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lns, lns-service, long-duration-time-left,
mip-udp-tunnel-only, mipv6ha-service, mme-address, mme-service, msid, msisdn, nat, nemo-only,
 network-requested, network-type, pcf, pcp, pdsn-service, plmn-type, profile-id, profile-name,
 qci, rx-data, s1u-state, s5-proto, session-time-left, sgsn-address, sgw-address,
smgr-instance, tx-data, username, wsg-service, grep, more
```

ip-address *ipv4_address*

Displays the subscribers associated with the specified IPv4 address. Must be followed by the IP address in IPv4 dotted-decimal notation.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, hnbgw-service, hsgw-service, idle-time, ims-auth-service,
 imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
 l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-service, mip-up-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, nsapi,
pcc-service, pcf, pdg-service, pdif-service, pdsn-service, pgw-address, plmn-type, profile-id,
 profile-name, qci, rulebase, rx-data, s1u-state, s5-proto, security-type, session-time-left,
 sgsn-address, sgsn-service, sgw-address, sgw-service, smgr-instance, tpo, tx-data, ue-type,
 username, grep, more
```

ip-alloc-method {aaa-assigned | dhcp [relay-agent | proxy-client] | dynamic-pool | l2tp-lns-assigned | mip-ha-assigned | ms-provided-static | not-ms-provided-static | static pool }

Displays the specific IP Allocation Method. Must be followed by one of the IP Allocation Methods:

- **aaa-assigned**: Selects subscribers whose IP addresses were assigned by AAA.
- **dhcp**: Selects subscribers whose IP addresses were assigned by DHCP.

- **relay-agent**: Selects subscribers whose IP addresses were assigned by the DHCP Relay Agent
- **proxy-client**: Selects subscribers whose IP addresses were assigned by the DHCP Proxy Client

- **dynamic-pool**: Selects subscribers whose IP addresses were assigned from a dynamic IP address pool.
- **l2tp-lns-assigned**: Selects subscribers whose IP addresses were assigned by the Layer 2 Tunneling Protocol (LT2P) Network Server.
- **mip-ha-assigned**: Selects subscribers whose IP addresses were assigned by the Mobile IP Home Agent.
- **ms-provided-static**: Selects subscribers whose IP addresses were provided by the Mobile Station.
- **not-ms-provided-static**: Selects subscribers whose IP addresses were not provided by the Mobile Station.
- **static-pool**: Selects subscribers whose IP addresses were assigned from a static IP address pool.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, hnbgw-service, hsgw-service, idle-time, ims-auth-service,
 imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
 l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-service, mip-up-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, nsapi,
pcc-service, pcf, pdg-service, pdif-service, pdsn-service, pgw-address, plmn-type, profile-id,
 profile-name, qci, relay-agent, rulebase, rx-data, s1u-state, s5-proto, security-type,
session-time-left, sgsn-address, sgsn-service, sgw-address, sgw-service, smgr-instance,
tpo, tx-data, ue-type, username, grep, more
```

ip-pool *ip_pool_name*

Displays subscriber information based on the IP pool name. *ip_pool_name* must be an existing IP pool name expressed as an alphanumeric string of 1 through 31 characters.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, henbgw-access-service, hnbgw-service, hsgw-service, idle-time, ims-auth-service,
 imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
 l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-service, mip-up-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, nsapi,
pcc-service, pcf, pdg-service, pdif-service, pdsn-service, pgw-address, plmn-type, profile-id,
 profile-name, qci, rulebase, rx-data, s1u-state, s5-proto, security-type, session-time-left,
 sgsn-address, sgsn-service, sgw-address, sgw-service, smgr-instance, tpo, tx-data, ue-type,
 username, grep, more
```

ipcf-only

Displays Intelligent Policy Control Function (IPCF) subscriber session information.

ipsg-only

Displays IP Services Gateway (IPSG) subscriber session information.

The following filter keywords are valid with this command:

```
epdg-address, epdg-service
```

ipv6-address *ipv6_address*

Displays the subscribers associated with the specified IPv6 address. Must be followed by the IP address in IPv8 colon-separated-hexadecimal notation.

The following filter keywords are valid with this command:

```
apn, asn-peer-address, asngw-service, asnpc-service, bearer-establishment, bng-service,
callid, card-num, ccoa-only, configured-idle-timeout, connected-time, dhcp-server, ebi,
enodeb-address, epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat,
ggsn-service, gprs-service, gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service,
 ha, ha-ipsec-only, ha-service, hsgw-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-service, mip-udp-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, pcf, pdg-service,
 pdif-service, pdsn-service, pgw-address, plmn-type, profile-id, profile-name, qci, rx-data,
 s1u-state, s5-proto, session-time-left, sgsn-address, sgw-address, sgw-service,
smgr-instance, tx-data, username, grep, more
```

ipv6-prefix *ipv6_prefix*

Displays the subscribers associated with the specified IPv6 address prefix. Must be followed by an IPv6 address prefix in the format xx:xx:xx::/len

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, hnbgw-service, hsgw-service, idle-time, ims-auth-service, imsi, ip-address,
ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-service, mip-up-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, nsapi,
pcc-service, pcf, pdg-service, pdif-service, pdsn-service, pgw-address, plmn-type, profile-id,
 profile-name, qci, rulebase, rx-data, s1u-state, s5-proto, security-type, session-time-left,
 sgsn-address, sgsn-service, sgw-address, sgw-service, smgr-instance, tpo, tx-data, ue-type,
 username, grep, more
```

l3-tunnel-local-addr *ipv4_address*

Displays subscriber information based on the layer 3 tunneling interface. Must be followed by an IP address of the local interface, using IPv4 dotted-decimal notation.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, hnbgw-service, hsgw-service, idle-time, ims-auth-service, imsi, ip-address,
```

```
ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-service, mip-up-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, nsapi,
pcc-service, pcf, pdg-service, pdif-service, pdsn-service, pgw-address, plmn-type, profile-id,
 profile-name, qci, rulebase, rx-data, s1u-state, s5-proto, security-type, session-time-left,
 sgsn-address, sgsn-service, sgw-address, sgw-service, smgr-instance, tpo, tx-data, ue-type,
 username, grep, more
```

l3-tunnel-remote-addr *ipv4_address*

Displays subscriber information based on the layer 3 tunneling interface. Must be followed by an IP address of the remote interface, using IPv4 dotted-decimal notation.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, hnbgw-service, hsgw-service, idle-time, ims-auth-service, imsi, ip-address,
ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-service, mip-up-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, nsapi,
pcc-service, pcf, pdg-service, pdif-service, pdsn-service, pgw-address, plmn-type, profile-id,
 profile-name, qci, rulebase, rx-data, s1u-state, s5-proto, security-type, session-time-left,
 sgsn-address, sgsn-service, sgw-address, sgw-service, smgr-instance, tpo, tx-data, ue-type,
 username, grep, more
```

lac *ipv4_address*

Displays subscriber information based on the Peer L2TP Access Concentrator (LAC). Must be followed by the IP address of a Remote LAC in IPv4 dotted-decimal notation.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lns, lns-service, long-duration-time-left,
mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only, network-requested,
network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name, qci, rx-data, s1u-state,
 s5-proto, session-time-left, sgsn-address, sgw-address, smgr-instance, tx-data, username,
 grep, more
```

lac-only

Displays subscriber information based on the L2TP Access Concentrator (LAC) context information for the session.

lac-service *svc_name*

Displays subscriber information based on an existing LAC service name expressed as an alphanumeric string of 1 through 63 characters.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lns, lns-service, local-tunnel-id,
long-duration-time-left, mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only,
 network-requested, network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name,
qci, remote-tunnel-id, rx-data, s1u-state, s5-proto, session-time-left, sgsn-address,
sgw-address, smgr-instance, tx-data, username, grep, more
```

lma-only

Displays Local Mobility Anchor (LMA) specific context information for the session.

lma-service *svc_name*

Displays subscriber information based on the LMA service name. *svc_name* must be an existing LMA service expressed as an alphanumeric string of 1 through 63 characters.

lns *ipv4_address*

Displays subscriber information based on the L2TP Network Server (LNS)). Must be followed by the IP address of an LNS in IPv4 dotted-decimal notation.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lns, lns-service, long-duration-time-left,
mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only, network-requested,
network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name, qci, rx-data, s1u-state,
 s5-proto, session-time-left, sgsn-address, sgw-address, smgr-instance, tx-data, username,
 grep, more
```

lns-only

Displays LNS specific information only.

lns-service *svc_name*

Displays subscriber information based on an existing L2TP Network Server (LNS) service name expressed as an alphanumeric string of 1 through 63 characters.

The following filter keywords are valid with this command:

```
bearer-establishment, bng-service, callid, card-num, configured-idle-timeout, connected-time,
 ebi, enodeb-address, epdg-address, epdg-service, fa, firewall, fw-and-nat, gtp-version,
gtpu-bind-address, gtpu-service, ha, idle-time, ims-auth-service, imsi, ip-address,
ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lns-service, local-tunnel-id,
long-duration-time-left,mipv6ha-service, msid, nat, network-type, profile-id, profile-name,
 qci, remote-tunnel-id, rx-data, s1u-state, s5-proto, session-time-left, sgw-address,
smgr-instance, tx-data, username, grep, more
```

long-duration-time-left [< | > | greater-than | less-than] *value*

Shows how much time is left for the maximum duration of a specified subscriber session.

- <: Filters output so that only information less than the specified value is displayed.
- >: Filters output so that only information greater than the specified value is displayed.
- **greater-than**: Filters output so that only information greater than the specified value is displayed.
- **less-than**: Filters output so that only information less than the specified value is displayed.
- *value*: Used in conjunction with <, >, greater-than, less-than, If no other filtering options are specified only output matching *value* is displayed. If *value* is not specified all data is displayed. *value* must be an integer from 0 through 4294967295.

mag-only

Displays Mobile Access Gateway (MAG) subscriber session information.

mag-service *svc_name*: Displays subscriber information based on the Mobile Access Gateway (MAG) service name. *svc_name* must be an existing MAG service expressed as an alphanumeric string of 1 through 63 characters.

mag-service *svc_name*

Displays subscriber information based on the Mobile Access Gateway (MAG) service name. *svc_name* must be an existing MAG service expressed as an alphanumeric string of 1 through 63 characters.

mip-udp-tunnel-only

Displays Mobile IP Home Agent (MIP-HA) subscriber information for subscribers that negotiated MIP-UDP tunnels.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lns, lns-service, long-duration-time-left,
mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only, network-requested,
network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name, qci, rx-data, s1u-state,
 s5-proto, session-time-left, sgsn-address, sgw-address, smgr-instance, tx-data, username,
 grep, more
```

mipv6ha-only

Displays MIP-HA-IPv6 context information for the session.

The following filters/keywords are valid with this command:

```
aaa-configuration, access-flows, access-type, active, active-charging-service, activity,
all, apn, asn-peer-address, asngw-service, asnpc-service, bandwidth-policy,
bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
configured-idle-timeout, connected-time, counters, data-rate, dhcp-server, domain, dormant,
 ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service, firewall, full, fw-and-nat,
 ggsn-address, gprs-service, gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service,
 ha, ha-ipsec-only, ha-service, hnbgw-service, hsgw-service, idle-time, imei,
```

```
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
 long-duration-time-left, mag-service, mipv6ha-service, mme-address, mme-service, msid,
nat, network-requested, network-type, pcc-service, pcf, pdg-service, pdif-service,
pgw-address, policy, profile-id, profile-name, qci, rulebase, rx-data, s1u-state, s5-proto,
 security-type, session-time-left, sgsn-address, sgsn-service, sgw-address, sgw-service,
smgr-instance, subscription, summary, tft, tpo, tx-data, ue-type, username, wf1, grep, more
```

mipv6ha-service *svc_name*

Displays subscriber information based on an existing MIP Home Agent IPv6 service name expressed as an alphanumeric string of 1 through 63 characters.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, hnbgw-service, hsgw-service, idle-time, imei, ims-auth-service, imsi, ip-address,
 ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-service, mip-up-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, pcc-service,
pcf, pdg-service, pdif-service, pdsn-service, pgw-address, plmn-type, profile-id,
profile-name, qci, rulebase, rx-data, s1u-state, s5-proto, security-type, session-time-left,
 sgsn-address, sgsn-service, sgw-address, sgw-service, smgr-instance, tpo, tx-data, ue-type,
 username, grep, more
```

mme-address

Displays subscriber information based on the Mobility Management Entity (MME) IP address. *ip_address* must be an existing MME IP address and be entered in IPv4 dotted-decimal notation or IPv6 colon-separated-hexadecimal notation.

The following filter keywords are valid with this command:

```
bearer-establishment, bng-service, callid, card-num, configured-idle-timeout, connected-time,
 ebi, enodeb-address, epdg-address, epdg-service, fa, firewall, fw-and-nat, gtp-version,
gtpu-bind-address, gtpu-service, ha, idle-time, imei, ims-auth-service, imsi, ip-address,
ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, long-duration-time-left, mipv6ha-service, mme-address, mme-service,
 msid, msisdn, nat, network-type, profile-id, profile-name, qci, rx-data, s1u-state, s5-proto,
 session-time-left, sgw-address, smgr-instance, tx-data, username, grep, more
```

mme-only

Displays MME subscriber session information.

mme-service *svc_name*: Displays subscriber information based on the MME service name. *svc_name* must be an existing MME service expressed as an alphanumeric string of 1 through 63 characters.

mme-address *ip_address*: Displays subscriber information based on the MMM IP address. *ip_address* must be an existing MME IP address entered in IPv4 dotted-decimal notation or IPv6 colon-separated-hexadecimal notation.

The following filter keywords are valid with this command:

```
bearer-establishment, bng-service, callid, card-num, configured-idle-timeout, connected-time,
 ebi, enodeb-address, epdg-address, epdg-service, fa, firewall, fw-and-nat, gtp-version,
gtpu-bind-address, gtpu-service, ha, idle-time, imei, ims-auth-service, imsi, ip-address,
```

```
ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, long-duration-time-left, mipv6ha-service, mme-address, mme-service,
 msid, msisdn, nat, network-type, profile-id, profile-name, qci, rx-data, s1u-state, s5-proto,
 session-time-left, sgw-address, smgr-instance, tx-data, username, grep, more
```

mseg-only

Important This keyword is not supported in this release.

mseg-service *mseg_service_name*

Important This keyword is not supported in this release.

msid *msid*

For this SGSN-specific keyword, enter the MSID (Mobile Station IDentifier) to display information specific to one subscriber's equipment by entering the MSID.

The following filter keywords are valid with this command:

```
apn, asn-peer-address, asngw-service, asnpc-service, bearer-establishment, bng-service,
callid, card-num, ccoa-only, configured-idle-timeout, connected-time, dhcp-server, ebi,
enodeb-address, epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat,
ggsn-service, gprs-service, gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service,
 ha, ha-ipsec-only, ha-service, hsgw-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-service, mip-udp-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, pcf, pdg-service,
 pdif-service, pdsn-service, pgw-address, plmn-type, profile-id, profile-name, qci, rx-data,
 s1u-state, s5-proto, session-time-left, sgsn-address, sgw-address, sgw-service,
smgr-instance, tx-data, username, grep, more
```

msisdn *msisdn*

For this SGSN-specific keyword, enter the MSISDN (Mobile Station ISDN number - unique SIM phone number) to display information specific to one subscriber's equipment by entering the MSISDN.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gprs-service, gsm-traffic-class, gtp-version,
gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lns, lns-service,
long-duration-time-left, mip-udp-tunnel-only, mipv6ha-service, mme-address, mme-service,
msid, msisdn, nat, nemo-only, network-requested, network-type, pcf, pdsn-service, plmn-type,
 profile-id, profile-name, qci, rx-data, s1u-state, s5-proto, session-time-left, sgsn-address,
 sgw-address, smgr-instance, tx-data, username, grep, more
```

nat { not-required | required }

Displays information for subscribers based on whether or not Network Address Translation (NAT) processing is required.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, asn-peer-address, asngw-service, asnpc-service,
 bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, ccoa-only,
 configured-idle-timeout, connected-time, dhcp-server, domain, ebi, enodeb-address,
epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only,
ha-service, hnbgw-service, hsgw-service, idle-time, imei, ims-auth-service, imsi, ip-address,
 ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-service, mip-up-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, multiple-ips-per-nat-realm, nat, nat-ip, nat-realm, nemo-only,
network-requested, network-type, pcc-service, pcf, pdg-service, pdif-service, pdsn-service,
 pgw-address, plmn-type, profile-id, profile-name, qci, rulebase, rx-data, s1u-state,
s5-proto, security-type, session-time-left, sgsn-address, sgsn-service, sgw-address,
sgw-service, smgr-instance, tpo, tx-data, ue-type, usage-time, username, grep, more
```

nemo-only

Displays information on MIP-HA subscribers that are mobile routers (Network Mobility).

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lns, lns-service, long-duration-time-left,
mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only, network-requested,
network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name, qci, rx-data, s1u-state,
 s5-proto, session-time-left, sgsn-address, sgw-address, smgr-instance, tx-data, username,
 grep, more
```

network-requested

Selects the currently active subscribers whose sessions were initiated by a GGSN network requested to create a PDP context.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, apn, bandwidth-policy, bearer-establishment,
bng-service, callid, card-num, cbb-policy, ccoa-only, configured-idle-timeout, connected-time,
 dhcp-server, domain, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
firewall, fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
gtpu-service, ha, ha-ipsec-only, ha-service, hnbgw-service, idle-time, ims-auth-service,
imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
 l3-tunnel-remote-addr, lac, lac-service, lns, lns-service, long-duration-time-left,
mip-up-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only, network-requested,
network-type, nsapi, pcc-service, pcf, pdsn-service, plmn-type, profile-id, profile-name,
qci, rulebase, rx-data, s1u-state, s5-proto, security-type, session-time-left, sgsn-address,
 sgsn-service, sgw-address, smgr-instance, tpo, tx-data, ue-type, username, grep, more
```

network-type { gre | ipip | ipsec | ipv4 | ipv4-pmipv6 | ipv4v6 | ipv4v6-pmipv6 | ipv6 | ipv6-pmipv6 | l2tp | mobile-ip | proxy-mobile-ip }

Selects the currently active subscribers based on network service access type.

- **gre**: Generic Routing Encapsulation
- **ipip**: IP-in-IP
- **ipsec**: IPSec
- **ipv4**: IPv4 only
- **ipv4-pmipv6**: IPv4 and/or Proxy Mobile IPv6 (PMIP)
- **ipv4v6**: IPv4 and/or IPv6
- **ipv4v6-pmipv6**: IPv4, IPv6 and/or Proxy Mobile IPv6
- **ipv6**: IPv6 only
- **ipv6-pmipv6**: IPv6 and/or Proxy Mobile IPv6 (PMIP)
- **l2tp**: Layer 2 Tunneling Protocol
- **mobile-ip**: Mobile IP (MIP)
- **proxy-modile-ip**: Proxy Mobile IPv6 (PMIP)

The following filter keywords are valid with this command:

```
apn, asn-peer-address, asngw-service, asnpc-service, bearer-establishment, bng-service,
callid, card-num, ccoa-only, configured-idle-timeout, connected-time, dhcp-server, ebi,
enodeb-address, epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat,
ggsn-service, gprs-service, gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service,
 ha, ha-ipsec-only, ha-service, hsgw-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-service, mip-udp-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, pcf, pdg-service,
 pdif-service, pdsn-service, pgw-address, plmn-type, profile-id, profile-name, qci, rx-data,
 s1u-state, s5-proto, session-time-left, sgsn-address, sgw-address, sgw-service,
smgr-instance, tx-data, username, grep, more
```

pcc-service *name*

Displays statistics for users associated with an existing Policy and Charging Control (PCC) service name expressed as an alphanumeric string of 1 through 63 characters.

pcf [< | > | less-than | greater-than] *ipv4_address* [< | > | less-than | greater-than] *ipv4_address*]

Displays information for subscribers connected via the packet control function (PCF) with a specific or range of IP addresses. The address must be specified using IPv4 dotted-decimal notation.

- <: Filters output so that only information less than the specified IPv4 address value is displayed.
- >: Filters output so that only information greater than the specified IPv4 address value is displayed.
- **less-than**: Filters output so that only information less than the specified IPv4 address value is displayed.
- **greater-than**: Filters output so that only information greater than the specified IPv4 address value is displayed.

Note: It is possible to define a limited range of IP addresses by using the less-than and greater-than options to define minimum and maximum values.

The following filter keywords are valid with this command:

```
<, apn, bearer-establishment, bng-service, callid, card-num, ccoa-only,
configured-idle-timeout, connected-time, dhcp-server, ebi, enodeb-address, epdg-address,
epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gsm-traffic-class,
gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, idle-time,
imei, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
 l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, less than, lns, lns-service,
 long-duration-time-left, mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only,
 network-requested, network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name,
qci, rx-data, s1u-state, s5-proto, session-time-left, sgsn-address, sgw-address,
smgr-instance, tx-data, username, grep, more
```

pdg-only

Displays a summary of PDG subscriber statistics.

The following filters/keywords are valid with this command:

```
aaa-configuration, access-flows, active, activity, all, apn, bearer-establishment,
bng-service, callid, card-num, configured-idle-timeout, connected-time, counters, data-rate,
 dormant, ebi, enodeb-address, epdg-address, epdg-service, fa, firewall, full, fw-and-nat,
 gtp-version, gtpu-bind-address, gtpu-service, ha, idle-time, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, long-duration-time-left, mipv6ha-service, msid, nat, network-type,
pdg-service, policy, profile-id, profile-name, qci, rx-data, s1u-state, s5-proto,
session-time-left, sgw-address, smgr-instance, subscription, summary, tft, tx-data, username,
 wf1, grep, more
```

pdg-service *name*

Displays statistics for users associated with an existing Packet Data Gateway (PDG) service name expressed as an alphanumeric string of 1 through 63 characters.

The following filters/keywords are valid with this command:

```
bearer-establishment, bng-service, callid, card-num, configured-idle-timeout, connected-time,
 ebi, enodeb-address, epdg-address, epdg-service, fa, firewall, fng-service, fw-and-nat,
gtp-version, gtpu-bind-address, gtpu-service, ha, idle-time, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, long-duration-time-left, mipv6ha-service, msid, nat, network-type,
pdg-service, profile-id, profile-name, qci, rx-data, s1u-state, s5-proto, session-time-left,
 sgw-address, smgr-instance, tx-data, username, grep, more
```

pdif-only

Displays a summary of Packet Data Interworking Function (PDIF) subscriber statistics.

The following filters/keywords are valid with this command:

```
aaa-configuration, access-flows, active, activity, all, apn, bearer-establishment,
bng-service, callid, card-num, configured-idle-timeout, connected-time, counters, data-rate,
 dormant, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service, firewall,
fng-service, full, fw-and-nat, gtp-version, gtpu-bind-address, gtpu-service, ha, idle-time,
 ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, long-duration-time-left, mipv6ha-service, msid,
 nat, network-type, pdif-service, policy, profile-id, profile-name, qci, rx-data, s1u-state,
 s5-proto, session-time-left, sgw-address, smgr-instance, subscription, summary, tft,
tx-data, username, wf1, grep, more
```

pdif-service *name*

Displays connection statistics for users associated with a specific PDIF service name.

The following filters/keywords are valid with this command:

```
bearer-establishment, bng-service, callid, card-num, configured-idle-timeout, connected-time,
 ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service, firewall, fng-service,
fw-and-nat, gtp-version, gtpu-bind-address, gtpu-service, ha, idle-time, ims-auth-service,
 imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
 l3-tunnel-remote-addr, long-duration-time-left, mipv6ha-service, msid, nat, network-type,
 pdif-service, profile-id, profile-name, qci, rx-data, s1u-state, s5-proto, session-time-left,
 sgw-address, smgr-instance, tx-data, username, grep, more
```

pdsn-only

Displays a summary of Packet Data Serving Node (PDSN) subscriber statistics.

The following filters/keywords are valid with this command:

```
aaa-configuration, access-flows, active, activity, all, apn, bandwidth-policy,
bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
connected-time, counters, data-rate, dhcp-server, dormant, ebi, enodeb-address, epdg-address,
 epdg-service, fa, fa-service, firewall, full, fw-and-nat, ggsn-service, gsm-traffic-class,
 gtp-version, gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, idle-time,
imei, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
 l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lns, lns-service,
long-duration-time-left, mip-udp-tunnel-only, mipv6ha-service, msid, nat, nemo-only,
network-requested, network-type, pcf, pdsn-service, plmn-type, policy, profile-id,
profile-name, qci, rx-data, s1u-state, s5-proto, session-time-left, sgsn-address,
sgsn-service, sgw-address, smgr-instance, subscription, summary, tft, tpo, tx-data, username,
 wfl, grep, more
```

pdsn-service *name*

Displays statistics for users associated with an existing PDSN service name expressed as an alphanumeric string of 1 through 63 characters.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
 connected-time, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
 firewall, fw-and-nat, ggsn-service, gsm-traffic-class, gtp-version, gtpu-bind-address,
gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, lac, lac-service, lns, lns-service, long-duration-time-left,
mag-address,  mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only,
network-requested, network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name,
qci, rx-data, s1u-state, s5-proto, session-time-left, sgsn-address, sgw-address,
smgr-instance, tx-data, username, grep, more
```

pgw-address *ip_address*

Displays information about the subscribers connected to the specified P-GW.

ip_address must be specified by its IP address using dotted-decimal notation for IPv4 or colon separated notation for IPv6.

The following filters/keywords are valid with this command:

```
active-charging-service, apn, bandwidth-policy, bearer-establishment, bng-service, callid,
 card-num, cbb-policy, configured-idle-timeout, connected-time, ebi, enodeb-address,
epdg-address, epdg-service, fa, firewall fw-and-nat, gtp-version, gtpu-bind-address,
gtpu-service, ha, idle-time, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool,
 ipv6-address, ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, lac-service,
lma-service, lns, long-duration-time-left, mag-service, mipv6ha-service, msid, nat,
network-type, pgw-address, pgw-address, plmn-type, profile-id, profile-name, qci, rulebase,
```

```
rx-data, s1u-state, s5-proto, saegw-service, session-time-left, sgw-address, sgw-service,
smgr-instance, tx-data, username
```

pgw-only

Displays PDN-Gateway (P-GW) subscriber session information.

The following filters/keywords are valid with this command:

```
all, apn, callid, card-num, ebi, epdg-address , full, imsi, interface-type, ip-address,
ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, network-type, pgw-service, plmn-type,
profile-name, qci, sgw-address, smgr-instance, summary
```

- **epdg-address** *ip_address*: Displays subscriber information based on the ePDG IP address. *ip_address* must be an existing ePDG IP address.
- **interface-type**: Interface type of subscriber.

  S2aGTP: Interface type S2a GTP.

  S2bGTP: Interface type S2b GTP.

  S5S8GTP: Interface type S5/S8 GTP.
- **pgw-service** *svc_name*: Displays subscriber information based on the P-GW service name. *svc_name* must be an existing P-GW service expressed as an alphanumeric string of 1 through 63 characters.
- **qci** *number*: Displays subscriber session information based on the QoS Class Identifier (QCI) value assigned to the subscriber. *number* must be an integer value from 0 to 9.
- **sgw-address** *ip_address*: Displays subscriber information based on the S-GW IP address. *ip_address* must be an existing S-GW IP address.

plmn-type [home | roaming | visiting }

Displays subscriber information based on the type of Public Land Mobile Network (PLMN).

- **home**: For GGSN/PGW, shows all the subscribers of charging type HOME.
- **roaming**: For GGSN/PGW, shows all the subscribers of charging type ROAMING.
- **visiting**: For GGSN/PGW, shows all the subscribers of charging type VISITING.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, ccoa-only, configured-idle-timeout,
connected-time, dhcp-server, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
firewall, fw-and-nat, ggsn-service, gprs-service, gsm-traffic-class, gtp-version,
gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, idle-time, imei,
ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mip-udp-tunnel-only, mipv6ha-service, msid, msisdn, nat, nemo-only,
network-requested, network-type, pcf, pdsn-service, plmn-type, profile-id, profile-name,
qci, rx-data, s1u-state, s5-proto, session-time-left, sgsn-address, sgw-address,
smgr-instance, tx-data, username, grep, more
```

policy

Displays the current policies associated with the subscriber session.

The following filter keywords are valid with this command:

```
access-type, active-charging-service, all, apn, asn-peer-address, asngw-service,
asnpc-service, bandwidth-policy, bearer-establishment, bng-service, callid, card-num,
cbb-policy, ccoa-only, configured-idle-timeout, connected-time, dhcp-server, domain, dormant,
 ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat,
ggsn-service, gprs-service, gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service,
 ha, ha-ipsec-only, ha-service, hnbgw-service, hsgw-service, idle-time, ims-auth-service,
imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
 l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
long-duration-time-left, mag-service, mip-up-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, nsapi,
pcc-service, pcf, pdg-service, pdif-service, pdsn-service, pgw-address, plmn-type, profile-id,
 profile-name, qci, rulebase, rx-data, s1u-state, s5-proto, security-type, session-time-left,
 sgsn-address, sgsn-service, sgw-address, sgw-service, smgr-instance, tpo, tx-data, ue-type,
 username, grep, more
```

profile-id *id_number*

Displays subscriber session information based on the profile-id granted for the flow. *id_number* must be an integer from 0 to 4294967295.

profile-name *name*

Displays subscriber session information based on an existing policy profile name expressed as an alphanumeric string of 1 through 63 characters.

qci *number*

Displays subscriber session information based on the QoS Class Identifier (QCI) value assigned to the subscriber. *number* must be an integer value from 0 to 9.

rulebase *name*

Displays subscriber session information based on the named Active Charging System rulebase. *name* must be an alphanumeric string of 1 through 63 characters.

rulename *rule_name*

Displays subscribers associated with the specific charging rule name. The *rule_name* options are: predefined, static, and dynamic rules..

rx-data [< | > | greater-than | less-than] *value*

The number of bytes received by the specified subscriber.

- <: Filters output so that only information less than the specified value is displayed.
- >: Filters output so that only information greater than the specified value is displayed.
- **greater-than**: Filters output so that only information greater than the specified value is displayed.
- **less-than**: Filters output so that only information less than the specified value is displayed.
- *value*: Used in conjunction with <, >, greater-than, less-than, If no other filtering options are specified only output matching *value* is displayed. If *value* is not specified all data is displayed. *value* must be an integer from 0 through 18446744073709551615.

s1u-state { active | idle | idle-active }

Displays session information based on the subscriber's S1-U state. The S1-U interface is the interface from the eNodeB to the S-GW.

- **active**: Displays session information for subscribers with an S1-U state set to active.
- **idle**: Displays session information for subscribers with an S1-U state set to idle.
- **idle-active**: Displays session information for subscribers with an S1-U state set to idle-active.

s5-proto { gtp | pmip }

Displays subscriber session information based on the S5 interface protocol used. This interface provides user plane tunneling and tunnel management between S-GW and P-GW. Choose either GPRS Tunneling Protocol (GTP) or Proxy Mobile IPv6 (PMIP).

saegw-only

Displays System Architecture Evolution Gateway (SAEGW) subscriber session information.

The following filters/keywords are valid with this command:

```
aaa-configuration, access-flows, active, active-charging-service, activity, all, apn,
bandwidth-policy, bearer-establishment, bng-service, callid, card-num, cbb-policy, co-located,
 configured-idle-timeout, connected-time, counters, data-rate, dormant, ebi, enodeb-address,
 epdg-address, epdg-service, fa, firewall, full, fw-and-nat, gtp-version, gtpu-bind-address,
 gtpu-service, ha, idle-time, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool,
 ipv6-address, ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, lac-service,
lma-service, lns, long-duration-time-left, mipv6ha-service, msid, nat, network-type,
pgw-address, pgw-anchored, plmn-type, policy, profile-id, profile-name, qci, rulebase,
rx-data, s1u-state, s5-proto, saegw-service, session-time-left, sgw-address, sgw-anchored,
 smgr-instance, subscription, summary, tft, tx-data, username, wf1
```

- **co-located**: Shows only co-located subscribers which have both S-GW and P-GW functions.
- **pgw-anchored**: Shows only PGW-anchored subscribers.
- **saegw-service** *svc_name*: Displays subscriber information based on the SAEGW service name. *svc_name* must be an existing SAEGW service expressed as an alphanumeric string of 1 through 63 characters.
- **sgw-anchored** : Shows only SGW-anchored subscribers.

saegw-service *svc_name*

Displays subscriber information based on the SAEGW service name.

svc_name must be an existing SAEGW service expressed as an alphanumeric string of 1 through 63 characters.

The following filters/keywords are valid with this command:

```
active-charging-service, apn, bandwidth-policy, bearer-establishment, bng-service, callid,
 card-num, cbb-policy, configured-idle-timeout, connected-time, ebi, enodeb-address,
epdg-address, epdg-service, fa, firewall, fw-and-nat, gtp-version, gtpu-bind-address,
gtpu-service, ha, idle-time, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool,
 ipv6-address, ipv6-prefix, l3-tunnel-local-addr, l3-tunnel-remote-addr, lac-service,
lma-service, lns, long-duration-time-left, mipv6ha-service, msid, nat, network-type,
pgw-address, plmn-type, profile-id, profile-name, qci, rulebase, rx-data, s1u-state, s5-proto,
 saegw-service, session-time-left, sgw-address, smgr-instance, tx-data, username
```

security-type { ipsec | tls }

Displays subscriber information based on the specified type of security.

- **ipsec**: IPSec
- **tls**: Transport Layer Security

session-time-left [< | > | greather-than | less] *value*

How much session time is left for the specified subscriber.

- <: Filters output so that only information less than the specified value is displayed.
- >: Filters output so that only information greater than the specified value is displayed.
- **greater-than**: Filters output so that only information greater than the specified value is displayed.
- **less-than**: Filters output so that only information less than the specified value is displayed.
- *value*: Used in conjunction with <, >, greater-than, less-than, If no other filtering options are specified only output matching *value* is displayed. If *value* is not specified all data is displayed. *value* must be an integer from 0 through 4294967295.

sgsn-address *ipv4_address*

This SGSN-only keyword displays only subscriber context information for the specified interface. Must be followed by the IP address of the interface, using IPv4 dotted-decimal notation.

The following filter keywords are valid with this command:

```
apn, callid, card-num, connected-time, idle-time, gprs-service, gsm-traffic-class,
gtp-version, imsi, msid, msisdn, nri, nsei, sgsn-service, smgr-instance
```

sgsn-only

This SGSN-only keyword displays only 3G SGSN-specific subscriber context information.

The following filter keywords are valid with this command:

```
aaa-configuration, active, active-charging-service, activity, all, apn, callid, card-num,
configured-idle-timeout, connected-time, counters, data-rate, fa, full, ggsn-address,
gsm-traffic-class, idle-time, imei, imsi, msid, partial, plmn-type, profile-name, rnc,
rx-data, session-time-left, sgsn-service, summary, tx-data, wide-format, grep, more
```

sgsn-service *service_name*

For this SGSN-only keyword, enter the name of the configured 3G SGSN service to display subscriber information specific to the named SGSN service.

The following filter keywords are valid with this command:

```
apn, bearer-establishment, bng-service, callid, card-num, configured-idle-timeout,
connected-time, ebi, enodeb-address, epdg-address, epdg-service, fa, firewall, fw-and-nat,
 gprs-service, gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, idle-time,
 imei, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
l3-tunnel-local-addr, l3-tunnel-remote-addr, long-duration-time-left, mipv6ha-service, msid,
 msisdn, nat, network-type, nri, plmn-type, profile-id, profile-name, qci, rx-data, s1u-state,
 s5-proto, session-time-left, sgsn-service, sgw-address, smgr-instance, tx-data, username,
 grep, more
```

sgw-address *ip_address*

For this MME-only keyword, enter the IP address of the peer S-GW to display information about the subscribers connected to the specified S-GW. *ip_address* must be specified by its IP address using IPv4 dotted-decimal or IPv6 colon-separated-hexadecimal notation.

sgw-only

Displays S-GW subscriber session information.

The following filters/keywords are valid with this command:

```
all, full, summary
```

- **sgw-service** *svc_name*: Displays subscriber information based on en existing S-GW service specified as an alphanumeric string of 1 through 63 characters.
- **pgw-address** *ip_address*: Displays subscriber information based on an existing P-GW specified by its IP address in IPv4 dotted-decimal notation.

sgw-service *svc_name*

Displays subscriber information based on an existing S-GW service specified as an alphanumeric string of 1 through 63 characters.

The following filter keywords are valid with this command:

```
epdg-address, epdg-service,
```

smgr-instance *instance_id*

Displays subscription information associated with the Session Manager identifier express as an integer from 1 through 4294967295.

The following filter keywords are valid with this command:

```
epdg-address, epdg-service,
```

subscription { aor *address* | callid *id* | full }

Displays subscription information for defined subscribers, based on defined parameters.

- **aor** *address*: Clears session(s) by Address of Record.
- **callid** *id*: Specifies a Call Identification Number as an 8-digit hexadecimal number.
- **full**: Displays all available information.

summary

Displays only a summary of the subscriber information. The following filter keywords are valid with this command:

```
access-type, active, active-charging-service, activity, all, asn-peer-address, asngw-service,
 asnpc-service, apn, bandwidth-policy, bearer-establishment, callid, card-num, cbb-policy,
 configured-idle-timeout, connected-time, dhcp-server, domain, dormant, ebi, enodeb-address,
 epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, ggsn-service, gprs-service,
 gsm-traffic-class, gtp-version, gtpu-bind-address, gtpu-service, ha, ha-service,
hnbgw-service, hsgw-service, idle-time, ims-auth-service, imsi, ip-address, ip-alloc-method,
 ip-pool, ipv6-address, ipv6-prefix, lac, lac-service, lma-service, lns, lns-service,
```

```
long-duration-time-left, mag-services, mme-address, mme-service, mseg-service, msid, msisdn,
 nat, network-requested, network-type, pcc-service, pcf, pdg-service, pdif-service,
pdsn-service, pdsnclosedrp-service, pgw-address, plmn-type, profile-id, qci, rulebase,
rulename <rule_name>,  rx-data, s1u-state, s5-proto, security-type, session-time-left,
sgsn-address, sgw-address, sgw-service, smgr-instance, tx-data, ue-type, username,
without-dynamic-rule, without-override-control, grep, more
```

tft

Displays the current Traffic Flow Template (TFT) associated with the subscriber session.

The following filter keywords are valid with this command:

```
active, all, apn, asn-peer-address, asngw-service, asnpc-service, bearer-establishment,
bng-service, callid, card-num, ccoa-only, configured-idle-timeout, connected-time,
dhcp-server, dormant, ebi, enodeb-address, epdg-address, epdg-service, fa, fa-service,
firewall, fw-and-nat, ggsn-service, gprs-service, gsm-traffic-class, gtp-version,
gtpu-bind-address, gtpu-service, ha, ha-ipsec-only, ha-service, hsgw-service, idle-time,
imei, ims-auth-service, imsi, ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix,
 l3-tunnel-local-addr, l3-tunnel-remote-addr, lac, lac-service, lma-service, lns, lns-service,
 long-duration-time-left, mag-service, mip-udp-tunnel-only, mipv6ha-service, mme-address,
mme-service, msid, msisdn, nat, nemo-only, network-requested, network-type, pcf, pdg-service,
 pdif-service, pdsn-service, pgw-address, plmn-type, profile-id, profile-name, qci, rx-data,
 s1u-state, s5-proto, session-time-left, sgsn-address, sgw-address, sgw-service,
smgr-instance, tx-data, username, grep, more
```

tx-data [< | > | greater-than | less-than] *value*

The number of bytes transmitted by the specified subscriber.

- <: Filters output so that only information less than the specified value is displayed.
- >: Filters output so that only information greater than the specified value is displayed.
- **greater-than**: Filters output so that only information greater than the specified value is displayed.
- **less-than**: Filters output so that only information less than the specified value is displayed.
- *value*: Used in conjunction with <, >, greater-than, less-than, If no other filtering options are specified only output matching *value* is displayed. If *value* is not specified all data is displayed. *value* must be an integer from 0 through 18446744073709551615.

The following filter keywords are valid with this command:

```
epdg-address, epdg-service,
```

ue-type { ims | non-ims }

Displays information for the subscribers based on User Equipment type.

- **ims**: IP Multimedia Subsystem
- **non-ims**: UE other than IMS

The following filter keywords are valid with this command:

```
access-type, active-charging-service, bandwidth-policy, bearer-establishment, callid,
card-num, cbb-policy, configured-idle-timeout, connected-time, domain, ebi, enodeb-address,
 epdg-address, epdg-service, fa, fa-service, firewall, fw-and-nat, gprs-service, gtp-version,
 gtpu-bind-address, gtpu-service, ha, hnbgw-service, idle-time, ims-auth-service, imsi,
ip-address, ip-alloc-method, ip-pool, ipv6-address, ipv6-prefix, l3-tunnel-local-addr,
l3-tunnel-remote-addr, long-duration-time-left, msid, nat, network-type, pcc-service,
```

```
profile-id, qci, rulebase, rx-data, s1u-state, s5-proto, security-type, session-time-left,
 sgw-address, smgr-instance, tx-data, ue-type, username, grep, more
```

user-plane-only callid *callid_value* drop-statistics

Displays information for packet drops and their respective causes, which are pegged at instance and session levels.

user-plane-only callid *callid_value* flows full

Displays the detailed information at the flow level that is required for debugging purposes.

user-plane-only callid *callid_value* flows flow-id *flow_id*

Displays the detailed information at the flow level that is required for debugging purposes.

show subscribers user-plane-only full msid *msid_value*

Displays the specific user information at instance-level and session-level for data collection during troubleshooting.

username *name*

Displays information for connections for the subscriber identified by *name*. The user must have been previously configured. *name* must be a sequence of characters and/or wildcard characters ('$' and '*') from 1 to 127 characters. The * wildcard matches multiple characters and the $ wildcard matches a single character. If you do not want the wildcard characters interpreted as a wildcard enclose them in single quotes ('). For example; '$'.

The following filter keywords are valid with this command:

```
epdg-address, epdg-service,
```

wf1

Displays subscriber information in wide format number 1. Wide format number 1 includes the following information for each listed subscriber session:

- Access Type
- Access Technology
- Call State
- Link Status
- Network Type
- Call ID
- MSID
- Username
- IP Address
- Time-Idle
- Access Peer Address

- Service Address
- Network Peer Address
- Connect Time

The following filter keywords are valid with this command:

```
epdg-address, epdg-service,
```

without-dynamic-rule

Displays subscribers without any dynamic rule associated with them.

without-override-control

Displays subscribers without any override control rule associated with them.

filter_keywords

The following keywords are filters that modify or filter the output of the Command Keywords. Not all filters are available for all Command Keywords. Multiple Filter Keywords can be entered on a command line.

When multiple Filter Keywords are specified, the output conforms to all of the Filter Keywords specifications.

For example; if you enter the following command:

show subscribers counters ip-pool pool1 card-num 1

Counters for all subscriber sessions that were assigned an IP address from the IP pool named pool1 and also are being processed by the processing card in slot 1 is displayed. Information for all other subscribers is not displayed.

active

Only display information for those subscribers who currently have active sessions.

active-charging-service *acs_service*

Displays information for subscribers being processed by the active charging service specified as an alphanumeric string of 1 through 15 characters.

activity

Displays subscriber link activity percentage.

all

If no keywords are specified before **all**, information for all subscribers is displayed. If keywords are specified before **all**, all information is displayed with no further options being allowed.

apn *name*

Displays subscribers currently facilitated by the access point name (APN) configured on the SGSN or GGSN.

asngw-only

Displays counters for subscribers accessing the ASN-GW service only.

asnpc-only

Displays counters for subscribers accessing the ASN Paging Controller and Location Registry service only.

bandwidth-policy *policy_name*

Displays information for subscribers associated with the specified Active Charging bandwidth policy.

bearer-establishment { direct-tunnel | normal | pending } *id*

Displays subscriber information for selected bearer establishment type.

bng-service *srvc_name*

Displays the current configuration for the specified Broadband Network Gateway (BNG) service.

callid *id*

Displays subscriber information for the call ID specified as an 8-byte hexadecimal number.

card-num *card_num*

The slot number of the processing card by which the subscriber session is processed. The slot number is an integer from 1 through 7 and 10 through 16 on the ASR 5000, or 1 through 4 and 7 through 10 on the ASR 5500.

cbb-policy *policy_name*

Displays information for subscribers associated with the specified Active Charging Content Based Billing (CBB) policy.

ccoa-only

Displays the subscribers that registered a MIP with CoA directly with the HA.

This option is only valid when a MIPHA session license is enabled.

configuration { all | username *name* }

Displays current configuration for all subscribers or a specified subscriber.

configured-idle-timeout [< | > | greater-than | less-than] *value*

Shows the idle timeout that is configured for the specified subscriber. A value of 0 (zero) indicates that the subscribers idle timeout is disabled.

<: Filters output so that only information less than the specified value is displayed.

>: Filters output so that only information greater than the specified value is displayed.

greater-than: Filters output so that only information greater than the specified value is displayed.

less-than: Filters output so that only information less than the specified value is displayed.

value: Used in conjunction with <, >, greater-than, less-than, If no other filtering options are specified only output matching *value* is displayed. If *value* is not specified all data is displayed. *value* must be an integer from 0 through 4294967295.

connected-time [< | > | greater-than | less-than] *value*

Shows how long the subscriber has been connected. <: Filters output so that only information less than the specified value is displayed.

- <: Filters output so that only information less than the specified value is displayed.
- >: Filters output so that only information greater than the specified value is displayed.
- **greater-than**: Filters output so that only information greater than the specified value is displayed.
- **less-than**: Filters output so that only information less than the specified value is displayed.
- *value*: Used in conjunction with <, >, greater-than, less-than, If no other filtering options are specified only output matching *value* is displayed. If *value* is not specified all data is displayed. *value* must be an integer from 0 through 4294967295.

counters *keyword*

Displays the specified counter for the subscribers.

cpu-num *number*

Displays information for calls processed through the specified CPU number.

dhcp-server *address*

Displays subscribers currently accessing the system that have been provided an IP address by the DHCP server specified by its address. GGSN only.

dns-proxy

Displays all subscribers associated with a DNS proxy.

domain *name*

Displays all subscribers with an Address-of-Record (AoR) from the specified domain. *name* is an alphanumeric string of 1 through 79 characters.

dormant

Shows information for subscriber sessions that are dormant (not transmitting or receiving data).

dormant

Shows information for subscriber sessions that are dormant (not transmitting or receiving data).

ebi *number*

Displays subscribers based on an EPS bearer identity number.

enodeb-address *ip_address*

Displays subscribers based on the eNodeB to which they are attached.

epdg-address *ip_address*

Displays information of subscribers connected to the specified ePDG address in IPv4 dotted-decimal notation or IPv6 (::) notation.

epdg-service *service_name*

Displays information of subscribers of ePDG service specified as an alphanumeric string of 1 through 63 characters.

fa *address*

Displays information for subscribers connected to the foreign agent specified by its IP address in IPv4 dotted-decimal notation.

fa-only

Only display FA-specific context information.

fa-service *name*

Displays information for subscribers connected to the named foreign agent (FA) service.

firewall { not-required | required }

Displays information for the specified subscribers:

- **not-required**: Subscribers for whom firewall processing is not required.
- **required**: Subscribers for whom firewall processing is required.

firewall-policy *fw_policy_name*

This keyword is obsolete.

full

Displays all available information for subscribers.

fw-and-nat policy *fw_nat_policy*

Important This option is customer-specific and is only available in StarOS 8.1.

Displays information for subscribers using an existing Firewall-and-NAT policy specified as an alphanumeric string of 1 through 15 characters.

ggsn-address *ip_address*

Displays information for subscribers connected to an existing GGSN specified by its IP address in IPv4 doted-decimal notation. SGSN only

ggsn-preservation-mode

Displays information for subscribers connected to the GGSN service with preservation mode enabled. GGSN only.

ggsn-service *name*

Displays information for subscribers connected to the named GGSN service. This keyword is for GGSN only.

gprs-only

Displays only 2G SGSN subscribers content. SGSN only.

gprs-service *srvc_name*

Displays subscriber information for the named 2G GPRS service. SGSN only.

gsm-traffic-class { background | conversational | interactive | streaming }

Displays information for subscriber traffic that matches the specified 3GPP traffic class.

- **background**: 3GPP QoS background class.
- **conversational**: 3GPP QoS conversational class.
- **interactive**: 3GPP QoS interactive class. Must be followed by a traffic priority.
- **streaming**: 3GPP QoS streaming class.

ha *address*

Displays information for subscribers connected to the home agent specified by its IP address in IPv4 dotted-decimal notation.

ha-ipsec-only

Only displays information for subscriber sessions that are using IP-Security (IPSec).

ha-only

Only displays HA-specific context information.

ha-service *name*

Displays information for subscribers connected to the named home agent service.

hnbgw-only

Displays counters for subscribers accessing the Home evolved NodeB Gateway (HNB-GW) service only.

idle-time [< | > | greater-than | less-than] *value*

Displays how long the subscriber session has been idle or display subscriber sessions that meet the idle time criteria specified.

- <: Filters output so that only information less than the specified value is displayed.
- >: Filters output so that only information greater than the specified value is displayed.
- **greater-than**: Filters output so that only information greater than the specified value is displayed.
- **less-than**: Filters output so that only information less than the specified value is displayed.
- *value*: Used in conjunction with <, >, greater-than, less-than, If no other filtering options are specified only output matching *value* is displayed. If *value* is not specified all data is displayed. *value* must be an integer from 0 through 4294967295.

imei *imei_number*

Displays information for subscribers having the specified International Mobile Equipment Identity (IMEI/IMEISV) number.

ims-auth-service *service_name*

Displays information for subscribers for an existing IMS Authorization Service name.

imsi *id*

Displays the subscriber with the specified ID. The IMSI (International Mobile Subscriber Identity) ID is a 15-character string which identifies the subscriber's home country and carrier. Wildcard characters $ and * are allowed. The * wildcard matches multiple characters and the $ wildcard matches a single character. If you do not want the wildcard characters interpreted as a wildcard enclose them in single quotes ('). For example; '$'.

ip-address [< | > | greater-than | less-than] *address*

Displays information for subscribers connected to the specified *address*.

- <: Filters output so that only information for subscribers with an IP address lower than the specified address is displayed.
- >: Filters output so that only information for subscribers with an IP address higher than the specified address is displayed.
- **greater-than**: Filters output so that only information for subscribers with an IP address higher than the specified address is displayed.
- **less-than**: Filters output so that only information for subscribers with an IP address lower than the specified address is displayed.
- *address*: The address must be specified using IPv4 dotted-decimal notation. Used in conjunction with <, >, greater-than, less-than. If the IP address is specified without a qualifier, only subscribers with the specified IP address have their information displayed.

ip-alloc-method {aaa-assigned | dhcp [relay-agent | proxy-client] | dynamic-pool | l2tp-lns-assigned | mip-ha-assigned | ms-provided-static | not-ms-provided-static | static pool }

Displays the specific IP Allocation Method. Must be followed by one of the IP Allocation Methods:

- **aaa-assigned**: Selects subscribers whose IP addresses were assigned by AAA.
- **dhcp**: Selects subscribers whose IP addresses were assigned by DHCP.
  - **relay-agent**: Selects subscribers whose IP addresses were assigned by the DHCP Relay Agent
  - **proxy-client**: Selects subscribers whose IP addresses were assigned by the DHCP Proxy Client
- **dynamic-pool**: Selects subscribers whose IP addresses were assigned from a dynamic IP address pool.
- **l2tp-lns-assigned**: Selects subscribers whose IP addresses were assigned by the Layer 2 Tunneling Protocol (LT2P) Network Server.
- **mip-ha-assigned**: Selects subscribers whose IP addresses were assigned by the Mobile IP Home Agent.
- **ms-provided-static**: Selects subscribers whose IP addresses were provided by the Mobile Station.
- **not-ms-provided-static**: Selects subscribers whose IP addresses were not provided by the Mobile Station.
- **static-pool**: Selects subscribers whose IP addresses were assigned from a static IP address pool.

ip-pool *name*

Displays information for subscribers assigned addresses from an existing IP address pool or IP pool group. *name* will be an IP address in IPv4 dotted-decimal or IPv6 colon-separated-hexadecimal notation based on the call line setup for the specified pool.

ipv4

Displays information for subscribers with an IPv4 Firewall enabled/disabled.

ipv6

Displays information for subscribers with an IPv6 Firewall enabled/disabled.

ipv6-address *address*

Displays information for subscribers connected to the specified IPv6 address.

ipv6-prefix *prefix*

Displays information for subscribers connected to the specified IPv6 address prefix.

l3-tunnel-local-addr *ip_address*

A layer 3 tunneling interface specified by its IP address in IPv4 dotted-decimal notation.

l3-tunnel-remote-addr *ip_address*

A layer 3 tunneling peer specified by its IP address in IPv4 dotted-decimal notation.

lac *address*

Displays information for calls to the peer L2TP Access Concentrator (LAC) specified by its IP address.

lac-only

Displays LAC specific information only.

lac-service *name* [local-tunnel-id id | remote-tunnel-id *id*]

Displays information for calls associated with the LAC service specified as an alphanumeric string of 1 through 63 characters.

- **local-tunnel-id** *id*: Specifies a local tunnel from which to clear calls as an integer from 1 through 65535.
- **remote-tunnel-id** *id*: Specifies a remote tunnel from which to clear calls as an integer from 1 through 65535.

lns *address*

Displays information for calls to the peer L2TP Network Server (LNS) specified by its IP address.

lns-only

Displays LNS specific information only.

lns-service *name* [local-tunnel-id *id* | remote-tunnel-id *id*]

Displays information for calls associated with the LNS service specified as an alphanumeric string of 1 through 63 characters.

- **local-tunnel-id** *id*: Indicates a specific local tunnel from which to clear calls. *id* must be an integer from 1 through 65535.
- **remote-tunnel-id** *id*: Indicates a specific remote tunnel from which to clear calls. *id* must be an integer from 1 through 65535.

local-tunnel-id *identifier*

Displays information for a local tunnel identifier specified as an integer from 1 to 65535.

long-duration-time-left [< | > | greater-than | less-than] *value*

Shows how much time is left for the maximum duration of a specified subscriber session.

- <: Filters output so that only information less than the specified value is displayed.
- >: Filters output so that only information greater than the specified value is displayed.
- **greater-than**: Filters output so that only information greater than the specified value is displayed.
- **less-than**: Filters output so that only information less than the specified value is displayed.
- *value*: Used in conjunction with <, >, greater-than, less-than, If no other filtering options are specified only output matching *value* is displayed. If *value* is not specified all data is displayed. *value* must be an integer from 0 through 4294967295.

mag-only

Displays Mobile Access Gateway (MAG) subscriber session information.

mag-service *svc_name*

Displays subscriber information based on the Mobile Access Gateway (MAG) service name. *svc_name* must be an existing MAG service expressed as an alphanumeric string of 1 through 63 characters.

mip-udp-tunnel-only

Displays the subscribers that negotiated MIP-UDP tunneling with the HA.

This option is only valid when MIP NAT Traversal license is enabled.

mipv6ha-only

Displays MIPV6HA-specific context information for the session.

mipv6ha-service *service_name*

Displays specific configured MIPV6 Home Agent service. *service_name* must have been previously defined.

msid *id*

Displays information for the mobile user identified by *id*. *id* must be from 7 to 16 hexadecimal digits specified as an IMSI, MIN, or RMI. Wildcard characters $ and * are allowed. The * wildcard matches multiple characters and the $ wildcard matches a single character. If you do not want the wildcard characters interpreted as a wildcard enclose them in single quotes ('). For example: '$'.

In case of **enforce imsi-min equivalence** is enabled on the chassis and MIN or IMSI numbers supplied, this filter will show subscribers with a corresponding MSID (MIN or IMSI) whose lower 10 digits matches to lower 10 digits of the supplied MSID.

show subscribers msid *ABCD0123456789* or

show subscribers msid *0123456789*

will show any subscriber with a MSID that match the lower 10 digits of MSID supplied, for example, 0123456789.

msisdn *msisdn*

Displays information for the mobile user identified by the Mobile Subscriber ISDN Number (MSISDN).

msisdn must be 7 to 16 digits; specified as an IMSI, MIN, or RMI.

nat { not-required | required }

Displays information for the specified subscribers.

- **not-required**: Subscribers for whom Network Address Translation (NAT) processing is not required.
- **required**: Subscribers for whom NAT processing is required.

nat-ip *nat_ip_address*] }

Displays information for the subscribers for whom NAT processing is enabled and are using the specified NAT IP address. *nat_ip_address* specifies the NAT IP address and must be in IPv4 dotted-decimal notation. **The nat-ip keyword is only available in StarOS 8.3 and later releases.**

nat-realm *nat_realm*

Displays information for the subscribers for whom NAT processing is enabled and are using the specified NAT realm. *nat_realm* specifies the NAT realm name and must be a string from 1 through 63 characters.

network-requested

Display information for currently active subscribers whose sessions were initiated by the GGSN network requested create PDP context procedure.

network-type { gre | ipip | ipsec | ipv4 | ipv4-pmipv6 | ipv4v6 | ipv4v6-pmipv6 | ipv6 | ipv6-pmipv6 | l2tp | mobile-ip | proxy-mobile-ip }

Selects the currently active subscribers based on network service access type.

- **gre: Generic Routing Encapsulation**
- **ipip**: IP-in-IP
- **ipsec**: IPSec
- **ipv4**: IPv4 only
- **ipv4-pmipv6**: IPv4 and/or Proxy Mobile IPv6 (PMIP)
- **ipv4v6**: IPv4 and/or IPv6
- **ipv4v6-pmipv6**: IPv4, IPv6 and/or Proxy Mobile IPv6
- **ipv6**: IPv6 only
- **ipv6-pmipv6**: IPv6 and/or Proxy Mobile IPv6 (PMIP)
- **l2tp**: Layer 2 Tunneling Protocol
- **mobile-ip**: Mobile IP (MIP)
- **proxy-modile-ip**: Proxy Mobile IPv6 (PMIP)

nri *nri_value*

This SGSN-specific filter uses the configured network resource identifier (NRI) to identify a specific SGSN in a pool to fine-tuned the subscriber information to be displayed.

nri_value: enter an integer from 0 through 63

This filter can be used in combination with further refining filters.

nsapi *nsap_id*

Displays session information for the mobile user identified by Network Service Access Point Identifier (NSAPI) between MS and SGSN. NSAPI is also used as part of the tunnel identifier between GPRS Support Nodes

(GSNs). The user identity IMSI and the application identifier (NSAPI) are integrated into the Tunnel IDentifier (GTPv0) (TID) or Tunnel Endpoint Identifier (GTPv1) (TEID) that uniquely identifies the subscriber's sublink between the GSNs (SGSN and GGSN). The NSAPI is an integer value within the PDP context header.

nsap_id must be an integer from 5 through 15.

partial qos { negotiated | requested }

This filter is specific to the SGSN.

Is limits the display of information to requested or negotiated QoS information for the subscriber.

This filter can be used in combination with further defining filters: active, active-charging-service, all, apn, callid, card-num, configured-idle-timeout, connected-time, ggsn-address, gprs-service, gsm-traffic-class, idle-time, imsi, msid, msisdn, negotiated, plmn-type, requested, rx-data, session-time-left, tx-data

pcc-service *name*

Displays statistics for users associated with an existing Policy and Charging Control (PCC) service name expressed as an alphanumeric string of 1 through 63 characters.

pcf [< | > | less-than | greater-than] *ipv4_address* [< | > | less-than | greater-than] *ipv4_address*]

Displays information for subscribers connected via the packet control function with a specific or range of IP addresses. The address must be specified using IPv4 dotted-decimal notation.

- <: Filters output so that only information less than the specified IPv4 address value is displayed.
- >: Filters output so that only information greater than the specified IPv4 address value is displayed.
- **less-than**: Filters output so that only information less than the specified IPv4 address value is displayed.
- **greater-than**: Filters output so that only information greater than the specified IPv4 address value is displayed.

Note: It is possible to define a limited range of IP addresses by using the less-than and greater-than options to define minimum and maximum values.

pdsn-only

Show PDSN specific information only.

pdsn-service *name*

Displays information for subscribers connected to the packet data service *name*. The packet data service must have been previously configured.

pdsnclosedrp-service *service_name*

Displays information for subscribers connected to the Closed R-P service *service_name*. The Closed R-P service must have been previously configured.

plmn-type

Displays subscriber type (HOME, VISITING, or ROAMING).

This keyword is for the GGSN or the SGSN only.

policy

Displays the current policies associated with the subscriber session.

profile-id *id_number*

Displays subscriber session information based on the profile-id granted for the flow. *id_number* must be an integer from 0 to 4294967295.

profile-name *profile_name*

Displays the subscribers filtered with PCC profile named *profile_name* in particular IP-CAN session.

qci *number*

Displays subscriber session information based on the QoS Class Identifier (QCI) value assigned to the subscriber. *number* must be an integer value from 0 to 9.

relay-agent

Selects subscribers whose IP Addresses were assigned by the DHCP Relay Agent.

remote-tunnel-id *identifier*

Displays information for a remote tunnel identifier specified as an integer from 1 to 65535.

rnc id *rnc_id* mcc *mcc_num* mnc *mnc_num*

Displays information for subscribers connected to the SGSN via a specific RNC (radio network controller) identified by the RNC ID, the MCC (mobile country code), and the MNC (mobile network code). SGSN only

rulebase *name*

Selects subscribers associated with the specified Active Charging rulebase.

rx-data [< | > | greater-than | less-than] *value*

The number of bytes received by the specified subscriber.

- <: Filters output so that only information less than the specified value is displayed.
- >: Filters output so that only information greater than the specified value is displayed.
- **greater-than**: Filters output so that only information greater than the specified value is displayed.
- **less-than**: Filters output so that only information less than the specified value is displayed.
- *value*: Used in conjunction with <, >, greater-than, less-than, If no other filtering options are specified only output matching *value* is displayed. If *value* is not specified all data is displayed. *value* must be an integer from 0 through 18446744073709551615.

saegw-only

Displays System Architecture Evolution Gateway (SAEGW) subscriber session information only.

saegw-service *svc_name*

Displays subscriber information based on the SAEGW service name.

svc_name must be an existing SAEGW service expressed as an alphanumeric string of 1 through 63 characters.

security-type { ipsec | tls }

Displays subscriber information based on the specified type of security.

- **ipsec**: IPSec
- **tls**: Transport Layer Security

session-time-left [< | > | greather-than | less] *value*

How much session time is left for the specified subscriber.

- <: Filters output so that only information less than the specified value is displayed.
- >: Filters output so that only information greater than the specified value is displayed.
- **greater-than**: Filters output so that only information greater than the specified value is displayed.
- **less-than**: Filters output so that only information less than the specified value is displayed.
- *value*: Used in conjunction with <, >, greater-than, less-than, If no other filtering options are specified only output matching *value* is displayed. If *value* is not specified all data is displayed. *value* must be an integer from 0 through 4294967295.

smgr-instance *number*

Specific sessmgr instance. *number* must be in the range of 1 to 4294967295.

sgsn-address *address*

Shows information for subscribers whose PDP contexts are currently being facilitated by the SGSN specified by address. This command is for GGSN only.

sgsn-service *srvc_name*

Shows subscriber information for a specified 3G SGSN service. *srvc_name* must be an alphanumeric string of 1 through 63 characters that identifies a configured SGSN service.

This command is for SGSN only.

subscription { aor *address* | callid *id* | full }

Displays subscription information for defined subscribers, based on defined parameters.

- **aor** *address*: Clears session(s) by Address of Record.
- **callid** *id*: Specifies a Call Identification Number as an 8-digit hexadecimal number.
- **full**: Displays all available information.

tft

Displays the current Traffic Flow Template (TFT) associated with the subscriber session.

tpo { not-required | required }

Important The Traffic Performance Optimization (TPO) in-line service is not supported in this release.

Displays information for specified subscribers.

- **not-required**: Subscribers for whom Traffic Performance Optimizer (TPO) processing is not enabled.
- **required**: Subscribers for whom TPO processing is enabled.

tx-data [< | > | greater-than | less-than] *value*

The number of bytes transmitted by the specified subscriber.

- <: Filters output so that only information less than the specified value is displayed.
- >: Filters output so that only information greater than the specified value is displayed.
- **greater-than**: Filters output so that only information greater than the specified value is displayed.
- **less-than**: Filters output so that only information less than the specified value is displayed.
- *value*: Used in conjunction with <, >, greater-than, less-than, If no other filtering options are specified only output matching *value* is displayed. If *value* is not specified all data is displayed. *value* must be an integer from 0 through 18446744073709551615.

ue-type { ims | non-ims }

Displays information for the subscribers based on User Equipment type.

- **ims**: IP Multimedia Subsystem
- **non-ims**: UE other than IMS

username *name*

Displays information for connections for the subscriber identified by *name*. The user must have been previously configured. *name* must be a sequence of characters and/or wildcard characters ('$' and '*') from 1 to 127 characters. The * wildcard matches multiple characters and the $ wildcard matches a single character. If you do not want the wildcard characters interpreted as a wildcard enclose them in single quotes ('). For example; '$'.

verbose

Display detailed information.

wide-format

Display detailed information in a wider screen format.

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to view information about subscriber sessions. The output of this command may be considered for part of a periodic system auditing program by verifying active and dormant subscribers.

The Command Keywords may be used standalone to display detailed information. The show subscribers contains multiple options which can be used in any sequence. The keywords can also be repeated but only the later repeated keyword will be effective. Use the **show subscribers** command to select different keywords for command and filters. If the same keyword is used twice, only the later keyword is taken into account as described in the following example 1 and 2.

Example 1

The following command displays subscribersinformation belonging to only APN **xyz**:

```
show subscribers apn abc apn xyz
```

Example 2

The following command displays subscribers that are connected for more than 10 seconds:

```
show subscribers connected-time < 5 connected-time > 10
```

Usage Guidelines

Caution Executing this command may negatively impact performance if multiple instances are executed while the system is under heavy load and simultaneously facilitating multiple CLI sessions.

Example 3

The following command displays information for all subscriber sessions:

```
show subscribers all
```

The following command displays information for all ggsn-only subscriber sessions:

```
show subscribers ggsn-only all
```

The following command displays information for all subscriber sessions in wide format 1:

```
show subscribers wf1 all
show subscribers aaa-configuration
show subscribers counters username isp1user1
```

The following command displays information for subscriber in GGSN service:

```
show subscribers ggsn-only all
show subscribers ggsn-only full
```

The following command displays information for all subscriber with SGSN session having partial QoS requests:

show subscribers sgsn-only partial qos requested

The following command displays information for all subscriber with MME session connected to MME service having IP address as *10.1.1.1*:

show subscribers mme-only mme-address 209.165.200.225

Important Output descriptions for commands are available in the *Statistics and Counters Reference*.

show subscribers samog-only

Displays SaMOG specific context information for the session.

Product

SaMOG

Privilege

Inspector

Syntax Description

show subscribers samog-only [[all] [callid *call_id* **] [card-num** *card_num* **] [connected-time [< | > | greater-than | less-than]** *connected_time* **] [full] [idle-time [< | > | greater-than | less-than]** *idle_time* **] [ip-address [< | > | greater-than | less-than]** *ipv4_adress* **] [ipv6-prefix** *ipv6_prefix* **] [network-type { gre | ipip | ipsec | ipv4 | ipv4-pmipv6 | ipv4v6 | ipv4v6-pmipv6 | ipv6 | ipv6-pmipv6 | l2tp | mobile-ip | proxy-mobile-ip }] [session-time-left [< | > | greater-than | less-than]** *session_time_left* **] [smgr-instance***smgr_instance* **] [summary] [username** *user_name* **] [| { grep** *grep_options* **| more }]]**

idle-time [< | > | greater-than | less-than] ***idle_time***

Displays how long the subscriber has been idle.

> and **greater-than** Specifies greater than. This must be followed by *idle_time*, an integer ranging from *0*and *4294967295*.

< and **less-than** Specifies less than. This must be followed by *idle_time*, an integer ranging from *0*and *4294967295*.

ipv6-prefix ***ipv6_prefix***

Displays the subscribers associated with the specified IPv6 address prefix. Must be followed by an IPv6 address prefix in the format xx:xx:xx::/len

| { grep ***grep_options*** **| more }**

Pipes (sends) the output of this command to a specified command. You must specify a command to which the output of this command will be sent.

For details on using the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

show subscribers wsg-service

Displays information for specific configured WSG service. This command must be followed by the WSG service name.

Product

SecGW (WSG)

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show subscribers wsg-service *service_name* **[| { grep** *grep_options* **| more }]**

service_name

Specifies the name of the WSG service as an alphanumeric string of 1 through 63 characters.

Usage Guidelines

Use this command to displays information about selected WSG calls and services.

Example

The following command displays counter information for wsg-service wsg01:

show subscribers wsg-service wsg01 *arg1*

show super-charger

Lists subscribers with valid super-charger configuration. When super-charger is enabled for a subscriber, the SGSN handles 2G or 3G connections controlled by an operator policy and changes hand-off and location update procedures to reduce signaling traffic management (3GPP, TS.23.116).

Product

SGSN

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

show super-charger { imsi imsi | all }

imsi

Defines a specific subscriber's international mobile subscriber identity (IMSI) number.

imsi is a string of up to 15 digits that includes the MCC (mobile country code), the MNC (mobile network code) and the MSIN (mobile station identification number),

all

Instructs the SGSN to display super charger subscription information for all subscribers.

Usage Guidelines

Use this command to determine if a single subscriber, identified by the IMSI, has a super charger configuration. Also, this command can display the list of all subscribers with a super charger configuration. If a subscriber has super charger as part of the configuration, subscriber data is backed up (using the IMSI Manager) after the subscriber detaches and the purge timer expires.

Example

The following command displays the super charger configuration information for the subscriber identified by the IMSI 90121882144672.

```
show super-charger imsi 90121882144672
```

show supplementary-service statistics

Displays the statistics for Supplementary Service Information.

Product

SGSN

Privilege

Security Administrator, Administrator, Operator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show supplementary-service statistics
```

Usage Guidelines

Use this command to display the Supplementary Service Information.

Example

The following command displays the Supplementary Service Information:

show supplementary-service statistics

show support collection

Displays information about when and where the Support Data Collector (SDC) stores its Support Data Record (SDR) files.

Product All

Privilege All

Command Modes Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description **show support collection [definitions] [| { grep** *grep_options* **| more }]**

definitions

Displays the list of default support record section definitions. This is the list of all valid record section definitions. The display also indicates whether the record section is enabled or disabled by default.

| { grep *grep_options* | more }

Pipes (sends) the output of this command to a specified command. You must specify a command to which the output of this command will be sent.

For details on using the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines Use this command to display the status of SDR collection, collection times, SDR file names and sizes, as well as the date/time the files were written. If SDR collection has occurred this command displays the pathname where the files have been stored.

With the **definitions** option this command lists existing record sections and their associated CLI commands.

For additional information, refer to the descriptions of the **support collection** and **support record** commands in the *Global Configuration Mode (L - S) Commands* chapter. Also see the *System Administration Guide*.

Example

The following command displays the SDR collection information.

```
show support collection
```

show support details

Displays a comprehensive list of system information that is useful for troubleshooting purposes. In most cases, the output of this command is requested by the Technical Assistance Center (TAC). A single instance of the output of this command is known as an SSD.

Important To improve output performance when executing the **show cli history** command, this command displays the **config** command but not the individual CLI commands within the config file.

Product All

Privilege

All

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

```
show support details [ force ] [ to file url] [ compress ] [ icsr ] [
no-bulkstats ] [ vpn-npu ]
[ -noconfirm ] [ | { grep grep_options | more } ]
```

force

Overrides an currently running **show support details** command.

Important To avoid a possible file collision with the output of a currently running SSD, use a different target URL file (*force_url*) for the forced SSD.

to file *url*

Specifies the location where a .tar file with the support detail information should be created. *url* may refer to a local or a remote file and must be entered using the following format:

For the ASR 5000:

```
[ file: ] { /flash | /pcmcia1 | /hd } [ /directory ] /file_name [ compress ]

tftp:// { host [ :port# ] } [ /directory ] /file_name
[ ftp: | sftp: ] // [ username[ :password ] @ ] { host } [ :port# ] [ /directory
 ] /file_name
```

For the ASR 5500:

```
[ file: ] { /flash | /usb1 | /hd } [ /directory ] /file_name [ compress ]
tftp:// { host [ :port# ] } [ /directory ] /file_name
[ ftp: | sftp: ] // [ username[ :password ] @ ] { host } [ :port# ] [ /directory
 ] /file_name
```

Important Do not use the following characters when entering a string for the field names below: "/" (forward slash), ":" (colon) or "@" (at sign).

directory is the directory name.

filename is the actual file of interest.

username is the user to be authenticated.

password is the password to use for authentication.

host is the IP address or host name of the server.

port# is the logical port number that the communication protocol is to use.

If the filename is not specified with a .tar extension, it is automatically appended to the filename when the file is created and a message is generated.

The .tar file includes:

- **support_summary** - An ASCII text file that contains the support detail information.
- **information.minicores.tar** - A tar file that contains any minicore files found on the system. Minicore files contain memory core dumps that are captured during some events. These core dumps provide specific memory locations and other information about the event. This information is useful to the technical support team in identifying where and when an event occurred along with its probably cause.

icsr

Captures only ICSR-specific information needed for debugging. This keyword reduces the **show support details** (SSD) capture time when debugging ICSR timing issues between the Active and Standby chassis, facilitating quicker resolution of the problem.

See the *Statistics and Counters Reference* for a list of the **show** commands output in the mini SSD for this keyword.

no-bulkstats

When the SSD archive is being created in the temporary storage, the bulk statistics samples might occupy a large amount of the storage space. As a result, the SSD archive creation might fail. During such scenarios, use this keyword to exculde the bulkstats samples from the SSD archive.

Also see the **bulkstats ssd-samples** command under the *Global Configuration Mode* chapter for information on enabling bulkstats sample collection in the SSD archive.

compress

Generates a compressed .tar.gz file for the output of the command.

vpn-npu

Captures only VPN and NPU-specific information needed for debugging. This keyword reduces the SSD capture time and facilitates quicker resolution of the problem. This keyword can be used for any of the other options supported by the **show support details** command.

-noconfirm

Specifies that the command must execute without any prompts and confirmation from the user.

| { grep *grep_options* | more }

Pipes (sends) the output of this command to a specified command. You must specify a command to which the output of this command will be sent.

For details on using the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to obtain extensive system information for use in troubleshooting. This command does the work of multiple separate commands, which saves time and ensures that all of the information needed is collected and displayed in the same order every time.

In addition to the information provided, the **show support details** command includes information that is not otherwise accessible to users but that is helpful in the swift resolution of issues.

Example

The following command displays the system information on your console.

```
show support details
```

The following command displays the information on your console and also writes it to the local device (pcmcia1 in this case) and includes the mini core dumps, using the filename *r-p_problem.tar*:

```
show support details to file /pcmcia1/r-p_problem.tar
```

The following command displays the information on your console and also writes it to /flash, placing the file in the **ssd** directory and includes the mini core dumps, using the filename *re_problem.tar*:

```
show support details to file /flash/ssd/re_problem.tar
```

show support record

Displays the output of one or more Support Data Records (SDRs) previously saved by the Support Data Collector (SDC). SDRs are displayed in the order of lowest record-id to highest record-id.

Product

All

Privilege

All

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show support record *record-id* **[to** *record-id* **] [section** *section_name* **] [| { grep** *grep_options* **| more }]**

record-id

Specifies a record-id as an integer from 0 through 65536.

Each SDR is identified by a time index called the record-id. For example, the most recent record is always record-id 0 (filename = sdr.0.gz). The next older record is record-id 1 (filename = sdr.1.gz), and so on.

When a new record is collected it is given a record-id of 0. The previously most recent record is renamed to record-id 1, and so on. The display includes the record-id along with the collection time-stamp.

to *record-id*

Specifies a the end point of a range of record-ids as an integer from 0 through 65536.

section *section_name*

Specifies the name of an existing record section as an alphanumerical string of 1 through 64 characters.

| { grep *grep_options* | more }

Pipes (sends) the output of this command to a specified command. You must specify a command to which the output of this command will be sent.

For details on using the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Use this command to display the output of one or more SDRs. This information is a useful troubleshooting tool when data is compared chronologically across several SDRs. For additional information refer to the *System Administration Guide*.

Example

The following command displays the SDRs from 2 through 4:

```
show support record 2 to 4
```

show system ssh key status

Displays the fingerprint of the current internal SSH key in use, the source of where the key was found, and the SSH status of all online VMs.

Product

VPC-DI

Privilege

Security Administrator, Administrator, Operator

Command Modes

Exec

The following prompt is displayed in the Exec mode:

```
[local]host_name#
```

Syntax Description

show system ssh key status [| { grep *grep_options* **| more }]**

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

This command displays information about the SSH keys used for internal communication between all component VMs in a VPC-DI system, such as for remote command execution and file transfers.

show system uptime

Displays the amount of time the system has been operational since its last down time (maintenance or otherwise).

Product

All

Privilege

Security Administrator, Administrator, Operator, Inspector

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

`show system uptime [ | { grep` *`grep_options`* **`| more } ]`

uptime

Displays system up time in days (D), hours (H) and minutes (M).

| { grep *grep_options* | more }

Pipes (sends) the output of the command to the command specified. You must specify a command to which the output will be sent.

For details on the usage of the **grep** and **more** commands, refer to the *Regulating a Command's Output* section of the *Command Line Interface Overview* chapter.

Usage Guidelines

Display the system up time to check for the possibility of anomalous behavior related to shorter or longer up times.

Example

The following command displays basic system basic information and up time.

`show system uptime`

show sx peers

Displays the Sx peer monitor related parameters.

Product

CUPS

Privilege

All

Command Modes

Exec

The following prompt is displayed in the Exec mode:

`[local]host_name#`

Syntax Description

`show sx peers { full address` *`peer-ip-address`* **`| wide }`**

full address *peer_ip_address*

Displays the monitor related information for the specified Sx peer (for example, VPN context name, group name, and state).

peer_ip_address is the IP address of the Sx peer.

wide

Displays “Monitor State” with the default state being “U” for UP, “D” for Down, and “N” for Not Applicable.

Usage Guidelines

Use this command to display the information about the Sx peer devices and the peer connections.

Example

The following command displays the details on peer connections:

```
show sx peers wide
```