

## show samog-services

This chapter describes the output of the **show samog-services** command variants.

• show samog-service statistics, on page 1

## show samog-service statistics

## Table 1: show samog-service statistics

| Field                             | Description  |  |
|-----------------------------------|--|--|
| SaMOG Statistics for all services |  |  |
| MRME Service Stats                |  |  |
| Session Stats                     |  |  |
| Total Attempted                   | Total number of sessions attempted.                        |  |
| Total Setup                       | Total number of sessions setup.                            |  |
| Total Current                     | Total number of sessions that are currently active.        |  |
| Total Released                    | Total number of sessions released                          |  |
| Total Aborted                     | Total number of sessions aborted.                          |  |
| Total Disconnected                |  |  |
| Disconnected locally              | Total number of sessions that were disconnected locally.   |  |
| Disconnected by UE                | Total number of sessions that were disconnected by the UE. |  |
| Disconnected by NAS               | Total number of sessions that were disconnected by NAS.    |  |
| Disconnected by CGW               | Total number of sessions that were disconnected CGW.       |  |
| Disconnected by AAA               | Total number of sessions that were disconnected by AAA.    |  |
| Radius Message Stats              |  |  |

| Field                                   | Description  |
|---|--|
| Total Start Req rcvd                    | Total number of RADIUS start request message received.                   |
| Total Start Req (Retransmitted) rcvd    | Total number of RADIUS retransmitted start request message received.     |
| Total Start Rsp sent                    | Total number of RADIUS start response message sent.                      |
| Total Interim Updt rcvd                 | Total number of RADIUS interim update received.                          |
| Total Interim Updt (Retransmitted) rcvd | Total number of RADIUS retransmitted interim update received.            |
| Total Interim Updt Rsp sent             | Total number of RADIUS interim update response sent.                     |
| Total Stop Req rcvd                     | Total number of RADIUS stop request message received.                    |
| Total Stop Req (Retransmitted) rcvd     | Total number of RADIUS retransmitted stop request message received.      |
| Total Stop Rsp sent                     | Total number of RADIUS stop response sent.                               |
| Total Accounting On revd                | Total number of accounting on message received.                          |
| Total Accounting Off revd               | Total number of accounting off message received.                         |
| Total Access Req rcvd                   | Total number of access request message received.                         |
| Total Access Req (Retransmitted) rcvd   | Total number of retransmitted access request message received.           |
| Total Access Challenge sent             | Total number of Access Challenge message sent.                           |
| Total Access Accept sent                | Total number of Access Accept sent due to congestion policy.             |
| Total Access Reject sent                | Total number of Access Rejected sent due to congestion policy.           |
| Congestion control policy applied       |  |
| Total Unknown Req rcvd                  | Total number of unknown requests received for congestion control policy. |
| Total Send Failure                      | Total number of congestion control policy sent that failed.              |
| Total Discarded                         | Total number of congestion control policy discarded.                     |
| Mandatory Attr Missing                  | Total number of missing mandatory attributes.                            |
| Start For Non-Existing Session          | Total number of start messages sent to non-existing sessions.            |
| Interim For Non-Existing Session        | Total number of interim messages sent to non-existing sessions.          |
| Stop For Non-Existing Session           | Total number of stop messages sent to non-existing sessions.             |
| Unknown Client                          | Total number of unknown client.  |
| Invalid Authenticator                   | Total number of authenticators that is invalid                           |

| Field                             | Description  |  |
|-----------------------------------|--|--|
| Stale Packets                     | Total number of stale packets.   |  |
| Service Not Supported             | Total number of services that are not supported.   |  |
| No Resource                       | Total number of resources that are not available.  |  |
| Internal Error                    | Total number of internal errors that occurred.   |  |
| License Limit Exceeded            | Total number of license limit exceeded.  |  |
| Service Limit Exceeded            | Total number of license limit exceeded.  |  |
| Invalid Length                    | Total number of call control profiles with invalid length.   |  |
| Invalid EAP                       | Total number of call control profiles with invalid EAP.  |  |
| Pending Server Response           | Total number of call control profiles with server response pending.                                  |  |
| Congestion control policy applied | Total number of congestion control policies applied.   |  |
| No Policy Match                   | Total number of Access-Requests dropped due to non-availability of matching PLMN based local policy. |  |
| DHCP Message Stats                |  |  |
| DHCP Messages Discarded           | Total number of DHCP messages discarded.   |  |
| Max Size Exceeded                 | Total number of DHCP messages discarded due to the maximum size exceeded.                            |  |
| Non-Existing Session              | Total number of DHCP messages discarded due to a non-existing session.                               |  |
| GiAddr Mismatch                   | Total number of DHCP messages due to a Gi address mismatch.  |  |
| Unsupported HW Type or Length     | Total number of DHCP messages due to an unsupported hardware type or length.                         |  |
| Stale Packets                     | Total number of DHCP messages discarded due to stale packets.  |  |
| Service Not Supported             | Total number of DHCP messages discarded due to an unsupported service.                               |  |
| Reauthorization Stats             |  |  |
| Attempts                          | Total number of reauthorization attempts.  |  |
| Success                           | Total number of reauthorization succeeded.   |  |
| Failure                           | Total number of reauthorization failure.   |  |
| Reauthentication Stats            |  |  |
| Attempts                          | Total number of reauthentication attempts.   |  |

| Field                   | Description  |
|-------------------------|--|
| Success                 | Total number of reauthentication succeeded.  |
| Failure                 | Total number of reauthentication failure.  |
| Handoff Stats           |  |
| With Authentication     |  |
| Attempts                | Total number of sessions attempted for handoff using authentication mechanism.       |
| Success                 | Total number of sessions with successful handoff using authentication mechanism.     |
| Failure                 | Total number of handoff failure sessions using authentication mechanism.             |
| With Accounting Start   |  |
| Attempts                | Total number of sessions attempted for handoff using accounting mechanism.           |
| Success                 | Total number of sessions with successful handoff using accounting mechanism.         |
| Failure                 | Total number of sessions with handoff failure using accounting mechanism.            |
| With Accounting Interim |  |
| Attempts                | Total number of sessions attempted for handoff using accounting interim mechanism.   |
| Success                 | Total number of sessions with successful handoff using accounting interim mechanism. |
| Failure                 | Total number of sessions with handoff failure using accounting inerim mechanism.     |
| EAP Client Stats        |  |
| Initial Identity Msgs   |  |
| NAI Formats             |  |
| Root NAI                | Total number of UE Identity that uses the root NAI format.                           |
| Decorated NAI           | Total number of UE Identity that uses the decorated NAI format.                      |
| UE Identity formats     |  |
| IMSI Identity           | Total number of UE Identity that uses an IMSI identity.                              |
| Fast Reauth             | Total number of UE Identity that uses the fast reauth NAI format.                    |

| Field                     | Description  |  |
|---------------------------|--|--|
| Pseudonym                 | Total number of UE Identity that uses the pseudonym NAI format.                  |  |
| Emergency                 | Total number of UE Identity that uses the emergency NAI format.                  |  |
| Unknown NAI               | Total number of UE Identity that uses an NAI format that is unknown.             |  |
| EAP type                  |  |  |
| EAP-AKA                   | Total number of Extensible Authentication Protocol AKA.                          |  |
| EAP-SIM                   | Total number of Extensible Authentication Protocol SIM.                          |  |
| EAP-AKA'                  | Total number of Extensible Authentication Protocol AKA'.                         |  |
| EAP Unsupported           | Total number of Extensible Authentication Protocol that is unsupported.          |  |
|                           | Important This counter has been removed in Release 18 and later.                 |  |
| EAP Other                 | Total number of Extensible Authentication Protocol EAP-TLS or EAP-TTLS/MSCHAPv2. |  |
| Initial Non-Identity Msgs |  |  |
| Total Requested           | Total number of initial non-identity messages requested.                         |  |
| Total Rejected            | Total number of initial non-identity messages rejected.                          |  |
| Invalid Len               | Total number of initial non-identity messages with invalid length.               |  |
| Invalid Code              | Total number of initial non-identity messages with invalid code.                 |  |
| Id Mismatch               | Total number of initial non-identity messages with ID mismatch.                  |  |
| Invalid NAI               | Total number of initial non-identity messages with invalid NAI.                  |  |
| Invalid IMSI              | Total number of initial non-identity messages with invalid IMSI number.          |  |
| Total Dropped             | Total number of initial non-identity messages that were dropped.                 |  |
| Invalid code              | Total number of initial non-identity messages with invalid code.                 |  |
| EAP Server Stats          |  |  |
| Total Sent                | Total number of EAP server status sent.  |  |
| Total Received            | Total number of EAP server status received.                                      |  |
| Success                   | Total number of EAP server connections succeeded.                                |  |
| Request                   | Total number of EAP server requests sent.  |  |

| Field                                | Description  |
|--------------------------------------|--|
| Failure                              | Total number of EAP server requests failed.  |
| Drop                                 | Total number of EAP server requests dropped.   |
| Total Discarded                      | Total number of EAP server requests discarded  |
| Framed MTU                           | Total number of framed MTUs sent.  |
| Non-EAP Session Stats                |  |
| Attempted                            | Total number of non-EAP sessions attempted.  |
| AAA Rejects                          | Total number of non-EAP sessions rejected by AAA server or rejected during AAA auth response parsing in SaMOG (invalid attributes, missing mandatory AVPs etc.)  |
| Pre-authentication Calls             | '  |
| Success                              | Total number of non-EAP sessions successfully established during the pre-authentication phase.   |
| Failure                              | Total number of non-EAP sessions failed to be created during the pre-authentication phase. Possible reasons: internal errors, missing pre-auth phase configs, missing ACL/pool/rulebase etc.   |
| AAA Disconnect with IMSI             | Total number of AAA disconnects with IMSI during the pre-authentication phase.   |
| AAA Disconnect without IMSI          | Total number of AAA disconnects without IMSI during pre-authentication phase.  |
| AAA Disconnect timeout               | Total number of AAA disconnects due to a timeout during the pre-authentication phase.  |
| Authentication & Authorization Calls |  |
| Success                              | Total number of non-EAP sessions successfully established after UE is authenticated and authorized by AAA (i.e. TAL phase, wherein AAA provides User Identity).  |
| Failure                              | Total number of non-EAP sessions failed to be created after UE is authenticated and authorized by AAA (i.e. TAL phase, wherein AAA provides User Identity). Possible reasons are network type selection failure, PGW selection failure, multi-device demux failure, internal errors etc. |
| Abort                                | Total number of non-EAP sessions aborted specifically due to IPSG demux failure, when multiple devices of same user are  |

| Field                     | Description  |
|---------------------------|--|
| IP Address                | Total number of PGW/GGSN IP addresses resolved during PGW selection.                         |
| Hostname                  |  |
| SNAPTR Procedure          |  |
| Success                   | Total number of Snaptr queries that are successful for the given hostname for PGW selection. |
| Failure                   | Total number of Snaptr queries that failed for the given hostname for PGW selection.         |
| APN FQDN                  |  |
| SNAPTR Procedure          |  |
| Success                   | Total number of Snaptr queries that are successful for given APN FQDN for PGW selection.     |
| Failure                   | Total number of Snaptr queries that failed for a given APN FQDN for PGW selection            |
| A/AAAA Procedure          |  |
| Success                   | Total number of A/AAAA queries that are successful for given APN FQDN for PGW selection.     |
| Failure                   | Total number of A/AAAA queries that failed for a given APN FQDN for PGW selection.           |
| Network Access Mode Stats |  |
| Local Offload             | Total number of sessions selected for local offload network access mode.                     |
| GTPv1                     | Total number of sessions selected with network access mode as GTPv1.                         |
| GTPv2                     | Total number of sessions selected with network access mode as GTPv2.                         |
| PMIP                      | Total number of sessions selected with network access mode as PMIP.                          |
| Local Offload Flow Stats  | 1  |
| GTPv1                     | Total number of local offload flows with network mode as GTPv1.                              |
| GTPv2                     | Total number of local offload flows with network mode as GTPv2.                              |
| PMIP                      | Total number of local offload flows with network mode as PMIP.                               |
| Disconnect Messages Stats |  |

| Field                             | Description   |  |
|-----------------------------------|---|--|
| Disconnect Messages Sent          | Total number of disconnect messages sent.                     |  |
| Disconnect Response Received      | Total number of disconnect responses received.                |  |
| Disconnect Response Ack Received  | Total number of disconnect response acknowledgement received. |  |
| Residual Session Removed          | Total number of residual sessions removed.                    |  |
| Disconnect Response Nack Received | Total number of disconnect response acknowledgement received. |  |
| Unsupported Attribute             | Total number of unsupported attribute.                        |  |
| Missing Attribute                 | Total number of missing attribute.                            |  |
| NAS Id Mismatch                   | Total number of mismatch in the NAS ID.                       |  |
| Invalid Request                   | Total number of invalid requests.                             |  |
| Unsupported Service               | Total number of unsupported services.                         |  |
| Unsupported Extension             | Total number of unsupported extensions.                       |  |
| Admin Prohibited                  | Total number of administration prohibited.                    |  |
| Session Context Not Found         | Total number of session context not found.                    |  |
| Session Context Not Removable     | Total number of session context not removable.                |  |
| Resource Unavailable              | Total number of unavailable resources.                        |  |
| CGW Service Stats                 |   |  |
| Subscribers Total                 |   |  |
| Active                            | Total number of active subscribers.                           |  |
| Setup                             | Total number of subscribers setup.                            |  |
| Released                          | Total number of subscribers released.                         |  |
| PDNs Total                        |   |  |
| Active                            | Total number of PDN connections active.                       |  |
| Setup                             | Total number of PDN connections setup.                        |  |
| Released                          | Total number of PDN connections released.                     |  |
| Rejected                          | Total number of PDN connections rejected.                     |  |
| PDNs By PDN-Type                  |   |  |
| IPv4 PDNs                         |   |  |
| Active                            | Total number of IPv4 PDNs active.                             |  |

| Field                | Description   |  |
|----------------------|---|--|
| Setup                | Total number of IPv4 PDNs connected.  |  |
| Released             | Total number of IPv4 PDNs released.   |  |
| Rejected             | Total number of IPv4 PDNs rejected.   |  |
| IPv6 PDNs            |   |  |
| Active               | Total number of IPv6 PDNs active.   |  |
| Setup                | Total number of IPv6 PDNs connected.  |  |
| Released             | Total number of IPv6 PDNs released.   |  |
| Rejected             | Total number of IPv6 PDNs rejected.   |  |
| IPv4v6 PDNs          |   |  |
| Active               | Total number of IPv4v6 PDNs active.   |  |
| Setup                | Total number of IPv4v6 PDNs connected.  |  |
| Released             | Total number of IPv4v6 PDNs released.   |  |
| Rejected             | Total number of IPv4v6 PDNs rejected.   |  |
| PDNs By Network-Type |   |  |
| GTPv1 PDNs           |   |  |
| Active               | Total number of current active GTPv1 PDN connections.   |  |
| Setup                | Total number of GTPv1 PDN connections created.  |  |
| Released             | Total number of GTPv1 PDN connections released.   |  |
| Rejected             | Total number of GTPv1 PDN connections rejected.   |  |
| GTPv2 PDNs           |   |  |
| Active               | Total number of current active GTPv2 PDN connections.   |  |
| Setup                | Total number of GTPv2 PDN connections created.  |  |
| Released             | Total number of GTPv2 PDN connections released.   |  |
| Rejected             | Total number of GTPv2 PDN connections rejected.   |  |
| Gi Redirect PDNs     |   |  |
| Active               | Total number of locally offloaded PDN (including Pre-authentication) calls that are currently active.             |  |
| Setup                | Total number of locally offloaded PDN (including Pre-authentication) calls setup on SaMOG after a chassis reboot. |  |

| Field                              | Description   |
|------------------------------------|---|
| Released                           | Total number of locally offloaded PDN (including Pre-authentication) calls released by the SaMOG service. |
| Rejected                           | Total number of locally offloaded PDN (including Pre-authentication) calls rejected by the SaMOG service. |
| PDNs Released By Reason            |   |
| MAG Ini                            | Total number of PDN connections released by MAG.  |
| PGW Ini                            | Total number of PDN connections released by PGW.  |
| DHCP Client Ini                    | Total number of PDN connections released by DHCP.   |
| GGSN Ini                           | Total number of PDN connections released by GGSN.   |
| GTPC Path Failure                  | Total number of PDN connections released because of GTPC path failure.                                    |
| GTPU Path Failure                  | Total number of PDN connections released because of GTPU path failure.                                    |
| GTPU Error Ind                     | Total number of PDN connections released because of GTPU Error Indication.                                |
| Local                              | Total number of PDN connections released Locally.   |
| Other                              | Total number of PDN connections released by reason undefined.   |
| PDNs Aborted By Reason             |   |
| IP Allocation Failure              | Total number of PDN connections aborted due to an IP allocation failure.                                  |
| Bearer Id Alloc Failure            | Total number of PDN connections aborted due to a bearer ID allocation failure.                            |
| IPv6 Neighbor Discovery Statistics |   |
| IPv6 RS Received                   | Total number of IPv6 Router Solicitation messages received.   |
| IPv6 RS Dropped                    | Total number of IPv6 Router Solicitation messages dropped.  |
| IPv6 RA Sent                       | Total number of IPv6 Router Advertisement messages sent.  |
| Data Statistics Per Interface      |   |
| S2A-GTP Total Data Statistics      |   |
| Uplink                             |   |
| Total Pkts                         |   |

| Field            | Description  |
|------------------|--|
| IPv4 Pkts(IPv4)  | Total number of IPv4 payload packets sent over the IPv4 GTP tunnel towards P-GW.                   |
| IPv4 Pkts(IPv6)  | Total number of IPv6 payload packets sent over the IPv4 GTP tunnel towards P-GW.                   |
| IPv6 Pkts(IPv4)  | Total number of IPv4 payload packets sent over the IPv6 GTP tunnel towards P-GW.                   |
| IPv6 Pkts(IPv6)  | Total number of IPv6 payload packets sent over the IPv6 GTP tunnel towards P-GW.                   |
| Total Bytes      |  |
| IPv4 Bytes(IPv4) | Total number of IPv4 payload bytes sent over the IPv4 GTP tunnel towards P-GW.                     |
| IPv4 Bytes(IPv6) | Total number of IPv6 payload bytes sent over the IPv4 GTP tunnel towards P-GW.                     |
| IPv6 Bytes(IPv4) | Total number of IPv4 payload bytes sent over the IPv6 GTP tunnel towards P-GW.                     |
| IPv6 Bytes(IPv6) | Total number of IPv6 payload bytes sent over the IPv6 GTP tunnel towards P-GW.                     |
| Dropped Pkts     | <u> </u>   |
| IPv4 Pkts(IPv4)  | Total number of dropped IPv4 payload packets that were sent over the IPv4 GTP tunnel towards P-GW. |
| IPv4 Pkts(IPv6)  | Total number of dropped IPv6 payload packets that were sent over the IPv4 GTP tunnel towards P-GW. |
| IPv6 Pkts(IPv4)  | Total number of dropped IPv4 payload packets that were sent over the IPv6 GTP tunnel towards P-GW. |
| IPv6 Pkts(IPv6)  | Total number of dropped IPv6 payload packets that were sent over the IPv6 GTP tunnel towards P-GW. |
| Dropped Bytes    |  |
| IPv4 Bytes(IPv4) | Total number of dropped IPv4 payload bytes that were sent over the IPv4 GTP tunnel towards P-GW.   |
| IPv4 Bytes(IPv6) | Total number of dropped IPv6 payload bytes that were sent over the IPv4 GTP tunnel towards P-GW.   |
| IPv6 Bytes(IPv4) | Total number of dropped IPv4 payload bytes that were sent over the IPv6 GTP tunnel towards P-GW.   |
| IPv6 Bytes(IPv6) | Total number of dropped IPv6 payload bytes that were sent over the IPv6 GTP tunnel towards P-GW.   |

| Field            | Description  |
|------------------|--|
| Downlink         |  |
| Total Pkts       | Total number of downlink packets sent on S2a Interface.  |
| IPv4 Pkts(IPv4)  | Total number of IPv4 payload packets received over the IPv4 GTP tunnel towards P-GW.                   |
| IPv4 Pkts(IPv6)  | Total number of IPv6 payload packets received over the IPv4 GTP tunnel towards P-GW.                   |
| IPv6 Pkts(IPv4)  | Total number of IPv4 payload packets received over the IPv6 GTP tunnel towards P-GW.                   |
| IPv6 Pkts(IPv6)  | Total number of IPv6 payload packets received over the IPv6 GTP tunnel towards P-GW.                   |
| Total Bytes      | ,  |
| IPv4 Bytes(IPv4) | Total number of IPv4 payload bytes received over the IPv4 GTP tunnel towards P-GW.                     |
| IPv4 Bytes(IPv6) | Total number of IPv6 payload bytes received over the IPv4 GTP tunnel towards P-GW.                     |
| IPv6 Bytes(IPv4) | Total number of IPv4 payload bytes received over the IPv6 GTP tunnel towards P-GW.                     |
| IPv6 Bytes(IPv6) | Total number of IPv6 payload bytes received over the IPv6 GTP tunnel towards P-GW.                     |
| Dropped Pkts     |  |
| IPv4 Pkts(IPv4)  | Total number of dropped IPv4 payload packets that were received over the IPv4 GTP tunnel towards P-GW. |
| IPv4 Pkts(IPv6)  | Total number of dropped IPv6 payload packets that were received over the IPv4 GTP tunnel towards P-GW. |
| IPv6 Pkts(IPv4)  | Total number of dropped IPv4 payload packets that were received over the IPv6 GTP tunnel towards P-GW. |
| IPv6 Pkts(IPv6)  | Total number of dropped IPv6 payload packets that were received over the IPv6 GTP tunnel towards P-GW. |
| Dropped Bytes    |  |
| IPv4 Bytes(IPv4) | Total number of dropped IPv4 payload bytes that were received over the IPv4 GTP tunnel towards P-GW.   |
| IPv4 Bytes(IPv6) | Total number of dropped IPv6 payload bytes that were received over the IPv4 GTP tunnel towards P-GW.   |

| Field                          | Description  |
|--------------------------------|--|
| IPv6 Bytes(IPv4)               | Total number of dropped IPv4 payload bytes that were received over the IPv6 GTP tunnel towards P-GW. |
| IPv6 Bytes(IPv6)               | Total number of dropped IPv6 payload bytes that were received over the IPv6 GTP tunnel towards P-GW. |
| S2A-PMIP Total Data Statistics |  |
| Uplink                         |  |
| Total Pkts                     | Total number of Uplink packets sent on S2a PMIP Interface.   |
| Total Bytes                    | Total number of Uplink bytes sent on S2a PMIP Interface.   |
| Dropped Pkts                   | Total number of Uplink packets dropped on S2a PMIP Interface.  |
| Dropped Bytes                  | Total number of Uplink bytes dropped on S2a PMIP Interface.  |
| Downlink                       | 1  |
| Total Pkts                     | Total number of downlink packets sent on S2a PMIP Interface.   |
| Total Bytes                    | Total number of downlink bytes sent on S2a PMIP Interface.   |
| Dropped Pkts                   | Total number of downlink packets dropped on S2a PMIP Interface.                                      |
| Dropped Bytes                  | Total number of downlink bytes dropped on S2a PMIP Interface.  |
| Gn-U Total Data Statistics     |  |
| Uplink                         |  |
| Total Pkts                     | Total number of Uplink packets sent on Gn-U Interface.   |
| Total Bytes                    | Total number of Uplink data bytes sent on Gn-U Interface.  |
| Dropped Pkts                   | Total number of Uplink packets dropped on Gn-U Interface.  |
| Dropped Bytes                  | Total number of Uplink data bytes dropped on Gn-U Interface.   |
| Downlink                       |  |
| Total Pkts                     | Total number of Downlink packets sent on Gn-U Interface.   |
| Total Bytes                    | Total number of Downlink data bytes sent on Gn-U Interface.  |
| Dropped Pkts                   | Total number of Downlink packets dropped on Gn-U Interface.  |
| Dropped Bytes                  | Total number of Downlink data bytes dropped on Gn-U Interface.                                       |
| Data Statistics Per PDN-Type   | I  |
| IPv4 PDNs                      |  |
| Uplink                         |  |

| Field                  | Description   |  |
|------------------------|---|--|
| Total Pkts             | Total number of uplink packets sent for IPv4 PDNs.        |  |
| Total Bytes            | Total number of uplink bytes sent for IPv4 PDNs.          |  |
| Downlink               |   |  |
| Total Pkts             | Total number of downlink packets sent for IPv4 PDNs.      |  |
| Total Bytes            | Total number of downlink bytes sent for IPv4 PDNs.        |  |
| IPv6 PDN               |   |  |
| Uplink                 |   |  |
| Total Pkts             | Total number of uplink packets sent for IPv6 PDNs.        |  |
| Total Bytes            | Total number of uplink bytes sent for IPv6 PDNs.          |  |
| Downlink               |   |  |
| Total Pkts             | Total number of downlink packets sent for IPv6 PDNs.      |  |
| Total Bytes            | Total number of downlink bytes sent for IPv6PDNs.         |  |
| IPv4v6 PDNs            |   |  |
| Uplink v4              |   |  |
| Total Pkts             | Total number of downlink packets sent for IPv4 PDNs.      |  |
| Total Bytes            | Total number of downlink bytes sent for IPv4PDNs.         |  |
| Downlink v4            |   |  |
| Total Pkts             | Total number of downlink packets sent for IPv4 PDNs.      |  |
| Total Bytes            | Total number of downlink bytes sent for IPv4 PDNs.        |  |
| Uplink v6              |   |  |
| Total Pkts             | Total number of downlink packets sent for IPv6 PDNs.      |  |
| Total Bytes            | Total number of downlink bytes sent for IPv6 PDNs.        |  |
| Downlink v6            |   |  |
| Total Pkts             | Total number of downlink packets sent for IPv6 PDNs.      |  |
| Total Bytes            | Total number of downlink bytes sent for IPv6 PDNs.        |  |
| MIP AAA Authentication |   |  |
| Attempts               | Total number of sessions for MIP authentication attempts. |  |
| Success                | Total number of successful MIP authentication sessions.   |  |

| Field                           | Description  |  |
|---------------------------------|--|--|
| Total Failures                  | Total number of MIP authentication failures.                           |  |
| Actual Auth Failures            | Total number of actual MIP Authentication failures.                    |  |
| Misc Auth Failures              | Total number of Miscellaneous MIP Authentication failures.             |  |
| Binding Updates Received        |  |  |
| Total Received                  | Total number of PMIPv6 PBUs received.                                  |  |
| Total Accepted                  | Total number of PMIPv6 PBUs accepted.                                  |  |
| Total Denied                    | Total number of PMIPv6 PBUs denied/failed during processing.           |  |
| Total Discarded                 | Total number of PMIPv6 PBUs discarded or dropped.                      |  |
| Initial Binding Update Requests |  |  |
| Received                        | Total number of initial binding update requests received.              |  |
| Accepted                        | Total number of initial binding update requests accepted.              |  |
| Denied                          | Total number of initial binding update requests denied.                |  |
| Refresh Binding Update Requests |  |  |
| Received                        | Total number of PMIPv6 PBUs received for renew.                        |  |
| Accepted                        | Total number of PMIPv6 PBUs for renew accepted.                        |  |
| Denied                          | Total number of PMIPv6 PBUs for renew denied/failed during processing. |  |
| DeReg Requests                  |  |  |
| Received                        | Total number of PMIPv6 PBUs received for Deregistration.               |  |
| Accepted                        | Total number of PMIPv6 PBUs for Deregistration accepted.               |  |
| Denied                          | Total number of PMIPv6 PBUs for deregistration denied.                 |  |
| Handoff Requests                |  |  |
| Received                        | Total number of PMIPv6 PBUs received for Handoff.                      |  |
| Accepted                        | Total number of PMIPv6 PBUs for Handoff accepted.                      |  |
| Denied                          | Total number of PMIPv6 PBUs for handoff denied.                        |  |
| DHCP Discover Handoff Stats     |  |  |
| Received                        | Total number of DHCP Discover messages received during handoff.        |  |

| Field                              | Description  |
|------------------------------------|--|
| Accepted                           | Total number of DHCP Discover messages accepted during handoff.                        |
| Denied                             | Total number of DHCP Discover messages denied during handoff.                          |
| Binding Acknowledgements Sent      |  |
| Total                              | Total number of PMIPv6 PBAs sent.  |
| Accepted Reg                       | Total number of PMIPv6 PBAs sent accepting registrations and renew.                    |
| Accepted DeReg                     | Total number of PMIPv6 Deregistration PBUs accepted sending PBAs.                      |
| Denied                             | Total number of PMIPv6 PBUs denied sending PBAs.                                       |
| Send Error                         | Total number of PMIPv6 PBAs failed to send.  |
| <b>Binding Update Deny Reasons</b> |  |
| Insufficient Resource              | Total number of PMIPv6 PBUs rejected with insufficient resources.                      |
| Mismatched ID                      | Total number of PMIPv6 PBUs rejected for mismatch in ID.                               |
| MN Auth Failure                    | Total number of PMIPv6 PBUs rejected for MN Authentication failure.                    |
| Admin Prohibited                   | Total number of PMIPv6 PBUs rejected for Administratively Prohibited reason.           |
| Msg ID Required                    | Total number of PMIPv6 PBUs rejected for Message ID Required.                          |
| DAD Failed                         | Total number of PMIPv6 PBUs rejected for requested Home Address allocation failure.    |
| Not Home Subnet                    | Total number of PMIPv6 PBUs rejected for address allocation failure from address pool. |
| Sequence Out Of Window             | Total number of PMIPv6 PBUs rejected for incorrect sequence number.                    |
| Reg Type Change Disallowed         | Total number of PMIPv6 PBUs rejected for renews.                                       |
| Unspecified Reason                 | Total number of PMIPv6 PBUs rejected for other reasons.                                |
| Service-Authorization Failed       | Total number of PMIPv6 PBUs rejected for authorization failure.                        |
| Proxy Reg Not Enabled              | Total number of PMIPv6 PBUs rejected when proxy registrations are not enabled.         |
| Timestamp Mismatch                 | Total number of PMIPv6 PBUs rejected when timestamp in PBU is incorrect.               |

| Field  | Description   |
|--|---|
| Timestamp Lower Than Expected                        | Total number of PMIPv6 PBUs rejected when timestamp in PBU is in past.                                    |
| Missing MN-ID Option                                 | Total number of PMIPv6 PBUs rejected when MN NAI Extension is missing.                                    |
| Missing HNP Option                                   | Total number of PMIPv6 PBUs rejected when Home Network Prefix Extension is missing.                       |
| Missing Access Tech Option                           | Total number of PMIPv6 PBUs rejected when Access Tech Type Extension is missing.                          |
| Missing Handoff Ind Option                           | Total number of PMIPv6 PBUs rejected when Handoff Indicator is missing.                                   |
| Not Authorized For HNP                               | Total number of PMIPv6 PBUs rejected when Requested Home Address Prefix is not authorized.                |
| Not LMA For Mobile                                   | Total number of PMIPv6 PBUs rejected when LMA for Mobile is incorrect.                                    |
| Not Authorized For Proxy Reg                         | Total number of PMIPv6 PBUs rejected when Proxy registrations are not allowed.                            |
| BCE Prefix Do Not Match                              | Total number of PMIPv6 PBUs rejected when requested Prefix session is not found.                          |
| GRE Key Option Required                              | Total number of PMIPv6 PBUs rejected when GRE key option is not found.                                    |
| MCOA Unknown CoA                                     | Total number of PMIPv6 PBUs rejected when Care of Address is incorrect.                                   |
| <b>Update Denied - Insufficient Resource Reasons</b> |   |
| No Session Manager                                   | Total number of Binding Update Request Denied because of no Session Manager is available.                 |
| No Memory  | Total number of Binding Update Request Denied because of no Memory available.                             |
| Session Manager Rejected                             | Total number of Binding Update Request Denied because of Session Manager Rejection.                       |
| Input-Q Exceeded                                     | Total number of Binding Update Request Denied because of Input queue size is exceeded.                    |
| Simul Bindings Exceeded                              | Total number of Binding Update Request Denied because of number of simultaneous Binding Updates exceeded. |
| Address Alloc Failed                                 | Total number of Binding Update Request Denied because of address allocation failed.                       |

| Field                                    | Description   |
|--|---|
| Update Denied - Admin Prohibited Reasons |   |
| MN-AAA Auth Option Missing               | Total number of PMIPv6 PBUs denied due to MN AAA Authentication mobility option missing.    |
| H-bit Not Set                            | Total number of PMIPv6 PBUs are denied due to H (Home Registration)-Bit not set.            |
| Invalid MN-AAA Option SPI                | Total number of PMIPv6 PBUs denied due to invalid MN-AAA Authentication mobility option.    |
| Invalid MN-HA Option SPI                 | Total number of PMIPv6 PBUs are denied due to invalid MN-HA Authentication mobility option. |
| Congestion Control Denied                | Total number of PMIPv6 PBUs denied due to overload congestion control.                      |
| Policy Rejected                          | Total number of PMIPv6 PBUs are denied due to policy rejection.                             |
| HoA Not Authorized                       | Total number of PMIPv6 PBUs are denied as Home Address is not authorized.                   |
| No Permission                            | Total number of PMIPv6 PBUs denied with no permission.                                      |
| Bad Request                              | Total number of PMIPv6 PBUs denied due to bad request.                                      |
| Binding Updates Discard Reasons          |   |
| Congestion Discarded                     | Total number of PMIPv6 PBUs discarded due to overload congestion.                           |
| Checksum Error                           | Total number of PMIPv6 PBUs discarded due to checksum errors.                               |
| Initial Auth Pending                     | Total number of PMIPv6 PBUs are discarded due to initial authentication pending.            |
| Session Not Found                        | Total number of PMIPv6 PBU denied and discarded due to session not found.                   |
| HAMGR Not Ready                          | Total number of PMIPv6 PBUs discarded as HAMgr is not ready.                                |
| Decode Failure                           | Total number of PMIPv6 PBUs discarded due to failure to decode.                             |
| Invalid Buffer Length                    | Total number of PMIPv6 PBUs discarded due to invalid buffer length.                         |
| Revocation Pending                       | Total number of PMIPv6 PBUs discarded due to revocation pending for the session.            |
| Binding Revocation                       |   |
| Sent                                     | Total number of PMIPv6 Binding Revocations sent.  |
| Retries Sent                             | Total number of PMIPv6 Binding Revocation retries sent.                                     |

| Field                           | Description   |
|---------------------------------|---|
| Ack Revd                        | Total number of PMIPv6 Binding Revocation Ack Messages received.  |
| Not Acknowledged                | Total number of PMIPv6 Binding Revocation Ack Timeouts.   |
| Revd                            | Total number of PMIPv6 Binding Revocations received.  |
| Ack Sent                        | Total number of PMIPv6 Binding Revocation Ack sent.   |
| Sent Revocation Trigger Reasons |   |
| Unspecified                     | Total number of Binding Revocation Indications(BRI) sent with Revocation Trigger Reason Unspecified (0).                                |
| Administrative Reason           | Total number of Binding Revocation Indications(BRI) sent with Revocation Trigger Reason Administrative Reason (1).                      |
| Inter-MAG Handoff-Same ATT      | Total number of Binding Revocation Indications(BRI) sent with Revocation Trigger Reason Inter-MAG Handover - same Access Type (2).      |
| Inter-MAG - Unknown Handoff     | Total number of Binding Revocation Indications(BRI) sent with Revocation Trigger Reason Inter-MAG Handover - Unknown (4).               |
| Inter-MAG Handoff-Diff ATT      | Total number of Binding Revocation Indications(BRI) sent with Revocation Trigger Reason Inter-MAG Handover - different Access Type (3). |
| Per-Peer Policy                 | Total number of Binding Revocation Indications(BRI) sent with Revocation Trigger Reason Per-Peer Policy (128).                          |
| Revoking Node Local Policy      | Total number of Binding Revocation Indications(BRI) sent with Revocation Trigger Reason Revoking Mobility Node Local Policy (129).      |
| User Initiated Session Term     | Total number of Binding Revocation Indications(BRI) sent with Revocation Trigger Reason User-Initiated Session(s) Termination (5).      |
| Access Network Session Term     | Total number of Binding Revocation Indications(BRI) sent with Revocation Trigger Reason Access Network Session(s) Termination (6).      |
| Out-of Sync BCE State           | Total number of Binding Revocation Indications(BRI) sent with Revocation Trigger Reason Possible Out-of-Sync BCE State (7).             |
| Unknown                         | Total number of Binding Revocation Indications(BRI) sent with Revocation Trigger Reason other than defined values.                      |
| Received Revocation ACK Status  |   |

| Field                            | Description   |
|----------------------------------|---|
| Success                          | Total number of Binding Revocation Acknowledgements(BRA) received with Status Code as success (0).                                    |
| Partial-Success                  | Total number of Binding Revocation Acknowledgements(BRA) received with Status Code as partial success (1).                            |
| Binding-Does-Not-Exist           | Total number of Binding Revocation Acknowledgements(BRA) received with Status Code as Binding Does NOT Exist (128).                   |
| No IPv4-HoA-Bind                 | Total number of Binding Revocation Acknowledgements (BRA) received with Status Code as IPv4 Home Address Option Required (129).       |
| Global-Revoc-Not-Authorized      | Total number of Binding Revocation Acknowledgements (BRA) received with Status Code as Global Revocation NOT Authorized (130).        |
| Revoc-MN-ID-Required             | Total number of Binding Revocation Acknowledgements(BRA) received with Status Code as Revoked Mobile Nodes Identity Required (131).   |
| Revoc-Failed-MN-Attached         | Total number of Binding Revocation Acknowledgements(BRA) received with Status Code as Revocation Failed - MN is Attached (132).       |
| Trigger-Not-Supported            | Total number of Binding Revocation Acknowledgements(BRA) received with Status Code as Revocation Trigger NOT Supported (133).         |
| Proxy-Bind-Rev-Not-Supported     | Total number of Binding Revocation Acknowledgements(BRA) received with Status Code as Proxy Binding Revocation NOT Supported (135).   |
| Revoc-Func-Not-Supported         | Total number of Binding Revocation Acknowledgements(BRA) received with Status Code as Revocation Function NOT Supported (134).        |
| Unknown                          | Total number of Binding Revocation Acknowledgements(BRA) received with Status Code other than defined values.                         |
| Binding Revocation ACK Discarded |   |
| Total                            | Total number of received Binding Revocation Acknowledgements(BRA) discarded.  |
| Session Not Found                | Total number of received Binding Revocation<br>Acknowledgements(BRA) discarded due to corresponding Session<br>Not Found for the BRA. |
| Badly Formed Request             | Total number of received Binding Revocation<br>Acknowledgements(BRA) discarded due to Badly Formed<br>message.                        |

| Field                      | Description   |
|----------------------------|---|
| Decode Error               | Total number of received Binding Revocation Acknowledgements(BRA) discarded due to Decode failure.  |
| Checksum Error             | Total number of received Binding Revocation Acknowledgements(BRA) discarded due to Checksum Error.  |
| Invalid Message Type       | Total number of received Binding Revocation Acknowledgements(BRA) discarded due to Invalid Message Type.                                    |
| HAMGR Not Ready            | Total number of received Binding Revocation Acknowledgements (BRA) discarded due to HAMGR Not Ready to process requests (recovering).       |
| Matching Request Not Found | Total number of received Binding Revocation Acknowledgements(BRA) discarded due to matching revocation request not found.                   |
| Invalid Buffer Length      | Total number of received Binding Revocation Acknowledgements (BRA) discarded due to Invalid Buffer Length found while decoding the message. |
| PMIPv6 Data Statistics     |   |
| Tunnel Data Received       |   |
| Total Packets              |   |
| IPv4 GRE(IPv4)             | Total number of IPv4 data packets received on IPv4 GRE tunnel.  |
| IPv4 GRE(IPv6)             | Total number of IPv6 data packets received on IPv4 GRE tunnel.  |
| IPv6 GRE(IPv4)             | Total number of IPv4 data packets received on IPv6 GRE tunnel.  |
| IPv6 GRE(IPv4)             | Total number of IPv6 data packets received on IPv6 GRE tunnel.  |
| Total Bytes                |   |
| IPv4 GRE(IPv4)             | Total bytes of IPv4 bytes received on IPv6 GRE tunnel.  |
| IPv4 GRE(IPv6)             | Total bytes of IPv4 bytes received on IPv6 GRE tunnel.  |
| IPv6 GRE(IPv4)             | Total number of IPv4 bytes received on IPv6 GRE tunnel.   |
| IPv6 GRE(IPv4)             | Total number of IPv6 bytes received on IPv6 GRE tunnel.   |
| Total Errors               |   |
| Protocol Type Error        | Total number of data packets received on IPv6 GRE tunnel with invalid next header.  |
| Invalid Pkt Length         | Total number of data packets received on IPv6 GRE tunnel with invalid length.   |

| Field                 | Description  |
|-----------------------|--|
| No Session Foun       | Total number of data packets received on IPv6 GRE tunnel for which binding is not found at SaMOG based on CoA address. |
| Tunnel Data Sent      |  |
| Total Packets         |  |
| IPv4 GRE(IPv4)        | Total number of IPv4 data packets sent on IPv4 GRE tunnel.   |
| IPv4 GRE(IPv6)        | Total number of IPv6 data packets sent on IPv4 GRE tunnel.   |
| IPv6 GRE(IPv4)        | Total number of IPv4 data packets sent on IPv6 GRE tunnel.   |
| IPv6 GRE(IPv4)        | Total number of IPv6 data packets sent on IPv6 GRE tunnel.   |
| Total Bytes           |  |
| IPv4 GRE(IPv4)        | Total bytes of IPv4 bytes sent on IPv4 GRE tunnel.   |
| IPv4 GRE(IPv6)        | Total bytes of IPv6 bytes sent on IPv4 GRE tunnel.   |
| IPv6 GRE(IPv4)        | Total number of IPv4 bytes sent on IPv6 GRE tunnel.  |
| IPv6 GRE(IPv4)        | Total number of IPv6 bytes sent on IPv6 GRE tunnel.  |
| EoGRE Data Statistics |  |
| Tunnel Data Received  |  |
| Total Packets         |  |
| IPv4 EoGRE(IPv4)      | Total number of IPv4 payload packets received over the IPv4 GRE tunnel (EoGRE tunnel with v4 transport).               |
| IPv4 EoGRE(IPv6)      | Total number of IPv6 payload packets received over the IPv4 GRE tunnel (EoGRE tunnel with v4 transport)                |
| IPv6 EoGRE(IPv4)      | Total number of IPv4 payload packets received over the IPv6 GRE tunnel (EoGRE tunnel with v6 transport)                |
| IPv6 EoGRE(IPv6)      | Total number of IPv6 payload packets received over the IPv6 GRE tunnel (EoGRE tunnel with v6 transport)                |
| Total Bytes           |  |
| IPv4 EoGRE(IPv4)      | Total number of IPv4 payload bytes received over the IPv4 GRE tunnel (EoGRE tunnel with v4 transport).                 |
| IPv4 EoGRE(IPv6)      | Total number of IPv6 payload bytes received over the IPv4 GRE tunnel (EoGRE tunnel with v4 transport)                  |
| IPv6 EoGRE(IPv4)      | Total number of IPv4 payload bytes received over the IPv6 GRE tunnel (EoGRE tunnel with v6 transport)                  |

| Field              | Description   |
|--------------------|---|
| IPv6 EoGRE(IPv6)   | Total number of IPv6 payload bytes received over the IPv6 GRE tunnel (EoGRE tunnel with v6 transport)   |
| Total Errors       |   |
| Drop Error         | Total number of Data Packets dropped on EoGRE Tunnel.   |
| Dest MAC Violation | Total number of destination MAC address in the packet received over the EoGRE tunnel that does not match with SaMOG's virtual MAC, broadcast, or multicast address. |
| Tunnel Data Sent   |   |
| Total Packets      | Total number of IPv4 payload packets sent over the IPv4 GRE tunnel (EoGRE tunnel with v4 transport).  |
| IPv4 EoGRE(IPv4)   | Total number of IPv6 payload packets sent over the IPv4 GRE tunnel (EoGRE tunnel with v4 transport)   |
| IPv4 EoGRE(IPv6)   | Total number of IPv4 payload packets sent over the IPv6 GRE tunnel (EoGRE tunnel with v6 transport)   |
| IPv6 EoGRE(IPv4)   | Total number of IPv6 payload packets sent over the IPv6 GRE tunnel (EoGRE tunnel with v6 transport)   |
| IPv6 EoGRE(IPv6)   | Total number of IPv4 payload packets sent over the IPv4 GRE tunnel (EoGRE tunnel with v4 transport).  |
| Total Bytes        | Total number of data bytes sent on the EoGRE tunnel.  |
| IPv4 EoGRE(IPv4)   | Total number of IPv4 payload bytes sent over the IPv4 GRE tunnel (EoGRE tunnel with v4 transport).  |
| IPv4 EoGRE(IPv6)   | Total number of IPv6 payload bytes sent over the IPv4 GRE tunnel (EoGRE tunnel with v4 transport)   |
| IPv6 EoGRE(IPv4)   | Total number of IPv4 payload bytes sent over the IPv6 GRE tunnel (EoGRE tunnel with v6 transport)   |
| IPv6 EoGRE(IPv6)   | Total number of IPv6 payload bytes sent over the IPv6 GRE tunnel (EoGRE tunnel with v6 transport)   |

show samog-service statistics