

show hnbgw

Important In Release 20 and later, HNBGW is not supported. For more information, contact your Cisco account representative.

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show hnbgw access-control-db

Table 1: show hnbgw access-control-db Command Output Descriptions

Field	Description
Total Number of IMSIs	The total number of IMSIs available in White List of Access Control database on HNB-GW service instance.
Number of Registered IMSIs	The total number of IMSIs from Access Control database are registered on HNB-GW service instance.

Field	Description
Number of IMSIs undergoing Relocation	The total number of IMSIs from Access Control database are under the process of relocation on HNB-GW service instance. **Important** From StarOS 14.0 onward, this counter is deprecated.
Number of IMSIs marked for Purging	The total number of IMSIs from Access Control database are marked for purging from database on HNB-GW service instance.

show hnbgw access-control-db imsi

Table 2: show hnbgw access-control-db imsi Command Output Descriptions

Field	Description
IMSI	Indicates the IMSI for which statistics queried in White List of Access Control database on HNB-GW service instance.
Owner Location Area Code (LAC)	Indicates the Location Area Code (LAC) of the owner of specific IMSI registered in Access Control database on HNB-GW service instance.
Undergoing Relocation	Indicates whether queried IMSI is going through relocation procedure or not.
HNBs having IMSI in whitelist	Indicates the total number of HNBs where specific IMSI is in White List in Access Control database on HNB-GW service instance.
Core Network Id	Indicates the core Network ID of specific IMSI.
IMSI Purge Timer	This group indicates status of IMSI purge timer for Access Control database.
State	Indicates the status of Access Control database purge process.
Start Time	Indicates the configured time for start of purge process on Access Control database for specific IMSI.
End Time	Indicates the configured time for completion of purge process on Access Control database for specific IMSI.

show hnbgw counters

Note Show command output described in table below is not supported in StarOS Release 14.0 and onward.

Table 3: show hnbgw counters Command Output Descriptions

Field	Description
Number of registered HNBs	The total number of HNB devices (Open and Closed) registered with this HNB-GW service.
Number of registered Open HNBs	The total number of Open HNB devices registered with this HNB-GW service.
Number of registered Closed HNBs	The total number of Closed HNB devices registered with this HNB-GW service.
Number of registered UEs	The total number of User Equipment devices registered with this HNB-GW service through open and closed HNBs.
Number of UEs registered from Open HNBs	The total number of User Equipment devices registered with this HNB-GW service through open HNBs.
Number of UEs registered from Closed HNBs	The total number of User Equipment devices registered with this HNB-GW service through closed HNBs.
Number of UEs with IuPS connection	The total number of User Equipment devices that have established a connection with the Packet Switched network.
Number of UEs with IuCS connection	The total number of User Equipment devices that have established a connection with the Circuit Switched network
Number of UEs with IuPS and IuCS connection	The total number of User Equipment devices that have established connections to both the Packet Switched and Circuit Switched networks.
Number of Idle UEs	The total number of User Equipment devices that have no active connections to either the Packet Switched or Circuit Switched networks.

show hnbgw counters



Note Show command output described in table below is supported in StarOS Release 14.0 and onward only.

Table 4: show hnbgw counters Command Output Descriptions 1

Field	Description
Registered HNBs	This group dispalys the total number of Closed, Hybrid, and Open HNBs registered with HNB-GW services.
Closed HNBs	The total number of Closed HNB devices registered with this HNB-GW service.
Hybrid HNBs	The total number of Hybrid HNB devices registered with this HNB-GW service.
Open HNBs	The total number of Open HNB devices registered with this HNB-GW service.

Field	Description
Registered UEs	This group displays the total number of User Equipment devices registered with this HNB-GW service through Closed, Hyrbids, and Open HNBs.
Closed HNB UEs	The total number of User Equipment devices registered with this HNB-GW service through Closed HNBs.
Hybrid HNB UEs	The total number of User Equipment devices registered with this HNB-GW service through Hybrid HNBs.
Open HNB UEs	The total number of User Equipment devices registered with this HNB-GW service through Open HNBs.
UEs with IuPS connection	This group displays the total number of User Equipment devices that have established a connection with the Packet Switched network through Closed, Hybrid, and Open HNBs.
Closed HNB UEs	The total number of User Equipment devices that have established a connection with the Packet Switched network through Closed HNBs.
Hybrid HNB UEs	The total number of User Equipment devices that have established a connection with the Packet Switched network through Hybrid HNBs.
Open HNB UEs	The total number of User Equipment devices that have established a connection with the Packet Switched network through Open HNBs.
UEs with IuCS connection	This group displays the total number of User Equipment devices that have established a connection with the Circuit Switched network through Closed, Hybrid, and Open HNBs.
Closed HNB UEs	The total number of User Equipment devices that have established a connection with the Circuit Switched network through Closed HNBs.
Hybrid HNB UEs	The total number of User Equipment devices that have established a connection with the Circuit Switched network through Hybrid HNBs.
Open HNB UEs	The total number of User Equipment devices that have established a connection with the Circuit Switched network through Open HNBs.
UEs with IuPS and IuCS connection	This group displays the total number of User Equipment devices that have established connections to both the CN; i.e. PS and CS through Closed, Hybrid, and Open HNBs.
Closed HNB UEs	The total number of User Equipment devices that have established connections to both the CN; i.e. PS and CS through Closed HNBs.
Hybrid HNB UEs	The total number of User Equipment devices that have established connections to both the CN; i.e. PS and CS through Hybrid HNBs.
Open HNB UEs	The total number of User Equipment devices that have established connections to both the CN; i.e. PS and CS through Open HNBs.
Idle UEs	This group displays the total number of User Equipment devices that have no active connections to either of the Packet Switched or Circuit Switched networks and registered through Closed, Hybrid, and Open HNBs..

Field	Description
Closed HNB UEs	The total number of User Equipment devices that have no active connections to either of the Packet Switched or Circuit Switched networks and registered through Closed HNBs.
Hybrid HNB UEs	The total number of User Equipment devices that have no active connections to either of the Packet Switched or Circuit Switched networks and registered through Hybrid HNBs.
Open HNB UEs	The total number of User Equipment devices that have no active connections to either of the Packet Switched or Circuit Switched networks and registered through Open HNBs.
PS Rab connections	This group displays the total number of RAB connections established with PS network through Closed, Hybrid, and Open HNBs.
Closed HNB PS Rabs	The total number of RABs connections etablished in PS CN through through Closed HNBs.
Hybrid HNB PS Rabs	The total number of RABs connections etablished in PS CN through through Hybrid HNBs.
Open HNB PS Rabs	The total number of RABs connections etablished in PS CN through through Open HNBs.
CS Rab connections	This group displays the total number of RAB connections established with CS network through Closed, Hybrid, and Open HNBs.
Closed HNB PS Rabs	The total number of RABs connections etablished in CS CN through through Closed HNBs.
Hybrid HNB PS Rabs	The total number of RABs connections etablished in CS CN through through Hybrid HNBs.
Open HNB PS Rabs	The total number of RABs connections etablished in CS CN through through Open HNBs.

show hnbgw counters hnbgw-service

Table 5: show hnbgw counters hnbgw-serivce Command Output Descriptions

Field	Description
HNBGW Service	The name that identifies this HNB-GW service.
Number of registered HNBs	The total number of HNB devices (Open and Closed) registered with this HNB-GW service.
Number of registered Open HNBs	The total number of Open HNB devices registered with this HNB-GW service.
Number of registered Closed HNBs	The total number of Closed HNB devices registered with this HNB-GW service.

Field	Description
Number of registered UEs	The total number of User Equipment devices registered with this HNB-GW service through open and closed HNBs.
Number of UEs registered from Open HNBs	The total number of User Equipment devices registered with this HNB-GW service through open HNBs.
Number of UEs registered from Closed HNBs	The total number of User Equipment devices registered with this HNB-GW service through closed HNBs.
Number of UEs with IuPS connection	The total number of User Equipment devices that have a Packet Switched network connection to a SGSN via this HNB-GW service.
Number of UEs with IuCS connection	The total number of User Equipment devices that have established a Circuit Switched network connection to a MSC via this HNB-GW service.
Number of UEs with IuPS and IuCS connection	The total number of User Equipment devices that have established Packet Switched (SGSN) and Circuit Switched (MSC) network connections via this HNB-GW service.
Number of Idle UEs	The total number of User Equipment devices that do not have an active connection to a Packet Switched (SGSN) or Circuit Switched (MSC) network.

show hnbgw counters hnbid

Table 6: show hnbgw counters hnbid Command Output Descriptions

Field	Description
HNB Id	The HNB device ID sent to the HNB-GW during registration.
Number of registered UEs	The number of User Equipment devices that have registered with this HNB.
Number of UEs with IuPS connection	The number of User Equipment devices that have established a connection to a SGSN via the Packet Switched network.
Number of UEs with IuCS connection	The number of User Equipment devices that have established a connection to a MSC via the Circuit Switched network.
Number of UEs with IuPS and IuCS connection	The number of User Equipment devices that have established connections to an MSC via the Circuit Switched interface and an SGSN via the Packet Switched network.
Number of Idle UEs	The number of User Equipment devices that do not have an active connection to Packet Switched (SGSN) or Circuit Switched (MSC) networks.

show hnbgw disconnect-reasons

Table 7: show hnbgw disconnect-reasons Command Output Descriptions

Field	Description
HNB	This group displays the detailed disconnect reasons at the HNB-GW for particular HNB.
HNB Re-Registered over same SCTP Association	Total number of HNBs disconnected on HNB-GW as HNB tried to re-registration over same SCTP association between HNB and HNB-GW.
Duplicate HNB Registration	Total number of HNBs disconnected on HNB-GW as duplicate registration was tried for same HNB.
Admin Disconnect	Total number of HNBs disconnected on a HNB-GW due to administrative decision like removal of service, subscriber or result of clearing subscriber session through Exec mode.
Miscellaneous	Total number of HNBs disconnected on a HNB-GW due to miscellaneous or unknown reasons, the reason not mentioned in this table.
HNB Terminated SCTP Association	Total number of HNBs disconnected on a HNB-GW as HNB terminated the SCTP association with HNB-GW.
SCTP Idle Timeout	Total number of HNBs disconnected on a HNB-GW as HNB was idle for long time and timer for SCTP idle duration triggered the termination after timeout duration expired.
Access Accept Message had issue	Total number of HNBs disconnected on a HNB-GW due to some error in Access Accept message format or missing value or parameters.
Access Reject	Total number of HNBs disconnected on a HNB-GW as HNB access was rejected by HNB-GW.
Unauthorised Location	Total number of HNB registration requests rejected on an HNB-GW due to mismach of Macro LAC configured on the HNB-GW.
Open Access Mode disabled	Total number of HNBs disconnected on a HNB-GW as AAA server has sent the Access Accept message with access mode for particular HNB as 2 but Open Access Mode is disabled on HNB-GW.
Hybrid Access Mode disabled	Total number of HNBs disconnected on a HNB-GW as HNB requesting registration is of Hybrid mode but Hybrid Access Mode is disabled on HNB-GW.
Configuration Issue	Total number of HNBs disconnected on a HNB-GW due to some error or misconfiguration found in configuration on HNB or on HNB-GW for particular HNB.
Deregister from HNB	Total number of HNBs disconnected on a HNB-GW as HNB sent de-registration request to HNB-GW.
Deregister Radius DM	Total number of HNBs disconnected on a HNB-GW as AAA server sent the Disconnect message to deregister the HNB with HNB-GW.
Cleared due to SCTP timeouts	Total number of HNBs disconnected on a HNB-GW as timer for SCTP idle duration triggered the clearing of session after timeout duration expired.

Field	Description
Access mode mismatch	Total number of HNBs disconnected on a HNB-GW as there is mismatch in value sent by AAA server in Access-Accept message for access mode and configuration allowed on HNB-GW.
UE	This group displays the detailed disconnect reasons at the HNB-GW for particular UE.
Duplicate UE Registration	Total number of UEs disconnected on HNB-GW as duplicate registration was tried for same UE.
UE Relocated to another HNB	Total number of UEs disconnected on a HNB-GW as same UR relocated to another HNB.
UE Register Reject - Miscellaneous	Total number of UEs registration rejected on a HNB-GW due to miscellaneous or unknown reasons, the reason not mentioned in this table.
UE Deregister from HNB	Total number of UEs disconnected on a HNB-GW as UE deregisters it self from associated HNB.
RUA Connect after COA	Total number of UEs disconnected on a HNB-GW as RANAP User Adaptation connected after Change of Authorization from AAA server.
HNB Removed	Total number of UEs disconnected on a HNB-GW as particular associated HNB is removed from HNB-GW.
UE Idle time out	Total number of UEs disconnected on a HNB-GW as UE was idle for long time and timer for idle duration triggered the termination after timeout duration expired.
Auth Failure - UE Register Rejected	Total number of UEs disconnected on a HNB-GW as AAA server has sent the Authentication Failure and UE registration is rejected.
UE Reg reject - Max UEs per Open HNB Limit	Total number of UEs disconnected on a HNB-GW as number of UEs connected through an Open HNB exceeds the limit of maximum UEs allowed for particular Open HNB on HNB-GW in Open Access mode.
UE Reg rej - Max non-access-ctrl UEs per Hybrid HNB	Total number of UEs disconnected on a HNB-GW as number of non-access type UEs connected through a Hybrid HNB exceeds the limit of maximum UEs allowed for particular Hybrid HNB on HNB-GW in Hybrid Access mode.
Miscellaneous	Total number of UEs disconnected on a HNB-GW due to miscellaneous or unknown reasons, the reason not mentioned in this table.
Stale UE Session cleared on Relocation arrival	Total number of stale UEs sessions cleared on a HNB-GW due to relocation arrival with particular HNB.
IuCS	This group displays the detailed disconnect reasons at the HNB-GW for particular IuCS connection.
UE Deregistered	Total number of IuCS association disconnected on HNB-GW as de-registration procedure was initiated for UE.
Miscellaneous	Total number of IuCS association disconnected on a HNB-GW and CN due to miscellaneous or unknown reasons, the reason not mentioned in this table.
Relocation Failure from HNB	Total number of IuCS association disconnected due to relocation failure message received from HNB.

Field	Description
Connect over Connect	Total number of IuCS association disconnected on a HNB-GW as same connection tried over the same association.
RUA Disconnect	Total number of IuCS association disconnected on a HNB-GW due to RANAP User Adaptation disconnected.
SCCP Released	Total number of IuCS association disconnected on a HNB-GW as SCCP association is release between HNB-GW and associated CN.
HNB Reset	Total number of IuCS association disconnected on a HNB-GW due to trigger of RESET procedure from HNB.
Admin Disconnect	Total number of IuCS disconnected on a HNB-GW due to administrative decision like removal of service, subscriber or result of clearing subscriber session through Exec mode.
Iar Expiry	Total number of IuCS disconnected on a HNB-GW due to expiry of Iar timer.
Common-ID IMSI check failed	Total number of IuCS disconnected on a HNB-GW due to failure in IMSI and common id check of UE.
MSC Reset/Unreachable	Total number of IuCS association disconnected on a HNB-GW due to trigger of RESET procedure from MSC or MSC is not reachable in CN.
IuPS	This group displays the detailed disconnect reasons at the HNB-GW for particular IuPS connection.
UE Deregistered	Total number of IuPS association disconnected on HNB-GW as de-registration procedure was initiated for UE.
Miscellaneous	Total number of IuPS association disconnected on a HNB-GW and CN due to miscellaneous or unknown reasons, the reason not mentioned in this table.
Relocation Failure from HNB	Total number of IuPS association disconnected due to relocation failure message received from HNB.
Connect over Connect	Total number of IuPS association disconnected on a HNB-GW as same connection tried over the same association.
RUA Disconnect	Total number of IuPS association disconnected on a HNB-GW due to RANAP User Adaptation disconnected.
SCCP Released	Total number of IuPS association disconnected on a HNB-GW as SCCP association is release between HNB-GW and associated CN.
HNB Reset	Total number of IuPS association disconnected on a HNB-GW due to trigger of RESET procedure from HNB.
Admin Disconnect	Total number of IuPS disconnected on a HNB-GW due to administrative decision like removal of service or any entity, subscriber or result of clearing subscriber session through Exec mode.
Iar Expiry	Total number of IuPS disconnected on a HNB-GW due to expiry of Iar timer.
Common-ID IMSI check failed	Total number of IuPS disconnected on a HNB-GW due to failure in IMSI and common id check of UE.

Field	Description
SGSN Reset/Unreachable	Total number of IuPS association disconnected on a HNB-GW due to trigger of RESET procedure from SGSN or SGSN is not reachable in CN.
GTPU Path Failure towards HNB	Total number of IuPS association disconnected on a HNB-GW due to failure of GTP-U path towards HNB.
CS-RAB	This group displays the detailed disconnect reasons at the HNB-GW for particular RAB in CS domain.
Issue in RAB Asst Req Message	Total number of RABs disconnected on HNB-GW due to issue in RAB AssignmentRequest message from MSC to HNB-GW.
Issue in Reloc Req Message	Total number of RABs disconnected on HNB-GW due to issue in RAB RelocationRequest message.
Config Issue	Total number of RABs disconnected on a HNB-GW due to some error or misconfiguration found in configuration in CS domain or on HNB-GW for particular CN.
AAL2 Channel Establish failure	Total number of RABs disconnected on a HNB-GW due to failure in AAL2 channel establishment between MSC and HNB-GW in particular CS domain.
Issue in RAB Assgt Resp Message	Total number of RABs disconnected on a HNB-GW due to issues in RAB Assignment Response message from HNB-GW to MSC in particular CS domain.
HNB Failed RAB in RAB Assgt Resp Message	Total number of RABs disconnected on a HNB-GW as RAB establishment failed between HNB and HNB-GW and response received in RAB Assignment Response message from HNB-GW to MSC in particular CS domain.
HNB Failed RAB in Reloc Request Ack Message	Total number of RABs disconnected on a HNB-GW as RAB Relocation failed between HNB and HNB-GW and response received in RAB Relocation Request Ack message from HNB-GW to MSC in particular CS domain.
Issue in Reloc Req Ack Message	Total number of RABs disconnected on a HNB-GW due to issues in RAB Relocation Request Ack message from HNB-GW to MSC in particular CS domain.
CN Initiated RAB Release	Total number of RABs disconnected on a HNB-GW as CN node (MSC) initiated the RAB release procedure in particular CS domain.
RAB Assignment Timer Expiry	Total number of RABs disconnected on a HNB-GW due to expiry of RAB Assignment timer duration.
RAB Release Timer Expiry	Total number of RABs disconnected on a HNB-GW due to expiry of RAB Release Timer duration.
AAL2 Connection Released	Total number of RABs disconnected on a HNB-GW due to release of AAL2 connections.
IU went down	Total number of RABs disconnected on a HNB-GW due failure of IuCS interface.
Admin Disconnect	Total number of RABs disconnected on a HNB-GW due to administrative decision like removal of service or any entity, subscriber or result of clearing subscriber session through Exec mode.
Dropped - RAB Assgt Req Decoding failed	Total number of RABs disconnected on a HNB-GW due to failure in decoding of RAB Assignment Request message from HNB-GW to MSC in particular CS domain.
Miscellaneous	Total number of RABs disconnected on a HNB-GW and CN due to miscellaneous or unknown reasons, the reason not mentioned in this table.

Field	Description
PS-RAB	This group displays the detailed disconnect reasons at the HNB-GW for particular RAB in PS domain.
Issue in RAB Asst Req Message	Total number of RABs disconnected on HNB-GW due to issue in RAB AssignmentRequest message from SGSN to HNB-GW.
Issue in Reloc Req Message	Total number of RABs disconnected on HNB-GW due to issue in RAB RelocationRequest message.
Config Issue	Total number of RABs disconnected on a HNB-GW due to some error or misconfiguration found in configuration in PS domain or on HNB-GW for particular CN.
Issue in RAB Assgt Resp Message	Total number of RABs disconnected on a HNB-GW due to issues in RAB Assignment Response message from HNB-GW to SGSN in particular PS domain.
HNB Failed the RAB in RAB Assgt Resp Message	Total number of RABs disconnected on a HNB-GW as RAB establishment failed between HNB and HNB-GW and response received in RAB Assignment Response message from HNB-GW to SGSN in particular PS domain.
HNB Failed the RAB in Reloc Request Ack Message	Total number of RABs disconnected on a HNB-GW as RAB Relocation failed between HNB and HNB-GW and response received in RAB Relocation Request Ack message from HNB-GW to SGSN in particular PS domain.
Issue in Reloc Req Ack Message	Total number of RABs disconnected on a HNB-GW due to issues in RAB Relocation Request Ack message from HNB-GW to SGSN in particular PS domain.
CN Initiated RAB Release	Total number of RABs disconnected on a HNB-GW as CN node (SGSN) initiated the RAB release procedure in particular PS domain.
RAB Assignment Timer Expiry	Total number of RABs disconnected on a HNB-GW due to expiry of RAB Assignment timer duration.
IU went down	Total number of RABs disconnected on a HNB-GW due failure of IuPS interface.
Admin Disconnect	Total number of RABs disconnected on a HNB-GW due to administrative decision like removal of service or any entity, subscriber or result of clearing subscriber session through Exec mode.
Dropped - RAB Assgt Req Decoding failed	Total number of RABs disconnected on a HNB-GW due to failure in decoding of RAB Assignment Request message from HNB-GW to SGSN in particular PS domain.
Miscellaneous	Total number of RABs disconnected on a HNB-GW and CN due to miscellaneous or unknown reasons, the reason not mentioned in this table.
GTPU CN Error Indication	Total number of RABs disconnected on a HNB-GW and CN due to CN Error Indication in GTP-U message.
GTPU CN Path Failure	Total number of RABs disconnected on a HNB-GW and CN due to CN Path Failure in GTP-U message.
GTPU HNB Error Indication	Total number of RABs disconnected on a HNB-GW and CN due to HNB Error Indication GTP-U message.
GTPU HNB Path Failure	Total number of RABs disconnected on a HNB-GW and CN due to HNB Path Failure in GTP-U message.

show hnbgw-global

Table 8: show hnbgw-global Command Output Descriptions

Field	Description
NNSF TIMER for Paging in IuFlex	Indicates the duration set in seconds for NAS Node Selection Function (NNSF) timer (T-NNSF) which is used by the HNB-GW to store the IMSI and the relevant *CN Global-ID* in the short term after Paging. This timer is used for IuFlex feature support. Default timer value is 30 seconds.
IMSI Purge Timeout	Indicates the timeout duration set in minutes for to store the IMSI and the relevant information after which IMSI information will be purged from HNB-GW db. This timer is used for IuFlex feature support. Default timeout value is 1440 minutes.
SCTP ALPHA-RTO	The retransmission timeout attempt set for initial phase for SCTP heartbeat retransmission between HNB and HNB-GW. Default value is 5 attempts.
SCTP BETA-RTO	The retransmission timeout attempt set for second phase for SCTP heartbeat retransmission between HNB and HNB-GW. Default value is 10 attempts.
SCTP MAX-RETX-INIT	Indicates the maximum number of SCTP INIT messages retransmitted for SCTP communication between HNB and HNB-GW.
SCTP MAX-RETX-PATH	Indicates the maximum number of SCTP PATH messages retransmitted for SCTP communication between HNB and HNB-GW.
SCTP MAX-RETX-ASSOC	Indicates the maximum number of SCTP ASSOC messages retransmitted for SCTP communication between HNB and HNB-GW.
SCTP MAX-IN-STRMS	Indicates the maximum number of incoming SCTP streams allowed on HNB-GW for SCTP communication between HNB and HNB-GW
SCTP MAX-OUT-STRMS	Indicates the maximum number of outgoing SCTP streams allowed from HNB-GW for SCTP communication between HNB and HNB-GW **Important** From StarOS 14.0 onward, this counter is moved to show hnbgw-global command outputs.
Paging Optimization Policy	Displays configuration of the Paging Optimization policy for Open Access support on an HNB-GW service instance.
Page Open HNBs	Indicates the status of paging optimization configuration for open HNBs, with and without paging-area, in an HNB-GW service instance. Possible configuration is: • Always • Never

Field	Description
Page Open HNB Where UE Registered	Indicates the status of paging optimization configuration for open HNBs, with and without paging-area, and UEs registered in an HNB-GW service instance. Possible settings are: • Disabled • Enabled

show hnbgw-service

Table 9: show hnbgw-service all Command Output Descriptions

Field	Description
Service name	The name used to identify the HNB-GW service to the system.
Context name	The name of the system context in which the HNB-GW service is defined.
SCTP IP Address	The IP address used to transmit SCTP messages from HNBs to the HNB-GW.
SCTP Port	The HNB-GW uses this port to listen for SCTP messages from HNBs.
GTP-U Service	The defined GTP-U service name(s) associated with the HNB-GW service in a Packet Switched network instance. The GTP-U service(s) are used for GTP-U tunneling towards the HNB-GW access network.
CBS Service	The defined CBS service name(s) associated with the HNB-GW service. Cell broadcasting services are used for simultaneous delivery of messages to multiple users in a specified area, primarily for emergencies and alerting services.
RTP MUX	Indicates if RTP multiplexing is enabled or disabled. If enabled, multiple subscriber voice packets can be multiplexed and sent as one RTP packet towards the HNB-GW. This is explicitly negotiated between the HNB and the HNB-GW during HNB Registration.
RTP MUX Port	This is the RTP multiplexing port number used for used in the binding-id in the RAB request sent to the HNB by the HNB-GW during voice call setup. The HNB will send RTP data (packetized voice) to this MUX port number.
RTP Pool	This is the IP pool used to allocate IP address to subscriber in the RAB request by the HNB-GW as the transport layer endpoint. The HNB will send RTP data (packetized voice) to IP address allocated from this pool.
RTCP report interval	Indicates if the RTCP (Real time Transport Control Protocol) report interval is enabled or not. RTCP enables the receiver to detect if there is any packet loss and to compensate for any delay jitter. RTP and RTCP protocols work independently of the underlying Transport layer and Network layer protocols.

Field	Description
HNBGW Initiated Ranap Reset	Indicates if the HNB-GW Initiated RANAP Reset function is enabled or disabled. **Important** From StarOS 14.0 onward, this counter is moved to show cs-network and show ps-network command outputs.
Ranap Reset Ack Timer	The timer value, in seconds, that defines how long the HNB-GW waits for a RESET ACK message from the SGSN or MSC after transmitting a RESET message. This setting is used only if the HNB-GW Initiated RANAP Reset function is enabled. **Important** From StarOS 14.0 onward, this counter is moved to show cs-network and show ps-network command outputs.
Ranap Reset Maximum Retransmissions	Sets the maximum number of retries allowed for the HNB-GW to transmit a RANAP RESET message to the SGSN or MSC if the RESET ACK timer expires. This setting is used only if the HNB-GW Initiated RANAP Reset function is enabled. **Important** From StarOS 14.0 onward, this counter is moved to show cs-network and show ps-network command outputs.
Ranap Reset Guard Timer	The timer that the HNB-GW starts after receiving a RESET message from the core network. While this timer is running, the HNB-GW discards any new RESET messages that it receives. **Important** From StarOS 14.0 onward, this counter is moved to show cs-network and show ps-network command outputs.
SCTP HEARTBEAT Timeout	The timeout duration set in milliseconds for SCTP heartbeat transmission between HNB and HNB-GW. Default value is 3000 milliseconds. After this duration retransmission will start.
SCTP RTO-MIN Timeout	The minimum retransmission timeout duration set in milliseconds for SCTP heartbeat retransmission between HNB and HNB-GW. Default value is 1000 milliseconds.
SCTP RTO-MAX Timeout	The maximum retransmission timeout duration set in milliseconds for SCTP heartbeat retransmission between HNB and HNB-GW. Default value is 10000 milliseconds.
SCTP RTO-INITIAL Timeout	The initial retransmission timeout duration set in milliseconds for SCTP heartbeat retransmission between HNB and HNB-GW. Default value is 10000 milliseconds.

Field	Description
SCTP ALPHA-RTO	The retransmission timeout attempt set for initial phase for SCTP heartbeat retransmission between HNB and HNB-GW. Default value is 5 attempts. **Important** From StarOS 14.0 onward, this counter is moved to show hnbgw-global command outputs.
SCTP BETA-RTO	The retransmission timeout attempt set for second phase for SCTP heartbeat retransmission between HNB and HNB-GW. Default value is 10 attempts. **Important** From StarOS 14.0 onward, this counter is moved to show hnbgw-global command outputs.
SCTP CHECKSUM-TYPE	Indicates the checksum type set for SCTP communication between HNB and HNB-GW. Default checksum type is **CRC32**.
SCTP COOKIE-LIFE	Indicates the life duration set for SCTP Cookies for SCTP communication between HNB and HNB-GW. Default value is 60000 msecs.
SCTP MAX-RETX-INIT	Indicates the maximum number of SCTP INIT messages retransmitted for SCTP communication between HNB and HNB-GW. **Important** From StarOS 14.0 onward, this counter is moved to show hnbgw-global command outputs.
SCTP MAX-RETX-PATH	Indicates the maximum number of SCTP PATH messages retransmitted for SCTP communication between HNB and HNB-GW. **Important** From StarOS 14.0 onward, this counter is moved to show hnbgw-global command outputs.
SCTP MAX-RETX-ASSOC	Indicates the maximum number of SCTP ASSOC messages retransmitted for SCTP communication between HNB and HNB-GW. **Important** From StarOS 14.0 onward, this counter is moved to show hnbgw-global command outputs.
SCTP MTU-SIZE-MIN	Indicates the minimum transmission unit size set for MTU for SCTP communication between HNB and HNB-GW. Default value is 508 bytes.
SCTP MTU-SIZE-MAX	Indicates the minimum transmission unit size set for MTU for SCTP communication between HNB and HNB-GW. Default value is 1500 bytes.
SCTP MTU-SIZE-INITIAL	Indicates the initial transmission unit size set for MTU for SCTP communication between HNB and HNB-GW. Default value is 508 bytes.
SCTP SACK-FREQUENCY	Indicates the frequency of set for Selective Acknowledgement (SACK) messages for SCTP communication between HNB and HNB-GW

Field	Description
SCTP SACK-PERIOD	Indicates the Selective Acknowledgement (SACK) period between two SACK messages set for SCTP communication between HNB and HNB-GW
SCTP MAX-IN-STRMS	Indicates the maximum number of incoming SCTP streams allowed on HNB-GW for SCTP communication between HNB and HNB-GW **Important** From StarOS 14.0 onward, this counter is moved to show hnbgw-global command outputs.
SCTP MAX-OUT-STRMS	Indicates the maximum number of outgoing SCTP streams allowed from HNB-GW for SCTP communication between HNB and HNB-GW **Important** From StarOS 14.0 onward, this counter is moved to show hnbgw-global command outputs.
SCTP Connection Timeout	Indicates the timeout duration set for SCTP communication between HNB and HNB-GW after which reconnection procedure will start. Default value is 10 secs.
UE Registration Timeout	Indicates the timeout duration set for UE registration between UE and HNB-GW after which re-registration procedure will start. Default value is 120 secs.
NNSF TIMER for Paging in IuFlex	Indicates the duration set in seconds for NAS Node Selection Function (NNSF) timer (T-NNSF) which is used by the HNB-GW to store the IMSI and the relevant *CN Global-ID* in the short term after Paging. This timer is used for IuFlex feature support. Default timer value is 30 seconds. **Important** From StarOS 14.0 onward, this counter is moved to show hnbgw-global command outputs.
IMSI Purge Timeout	Indicates the timeout duration set in minutes for to store the IMSI and the relevant information after which IMSI information will be purged from HNB-GW db. This timer is used for IuFlex feature support. Default timeout value is 1440 minutes. **Important** From StarOS 14.0 onward, this counter is moved to show hnbgw-global command outputs.
Incoming handover for CS domain	Indicates the status of incoming handover permission/restriction set in HNB-GW service instance for incoming handover of an MS via SRNS Relocation procedure for CS core network domain. Possible values are: • Disabled • Enabled

Field	Description
Incoming handover for PS domain	Indicates the status of incoming handover permission/restriction set in HNB-GW service instance for incoming handover of an MS via SRNS Relocation procedure for PS core network domain. Possible values are: • Disabled • Enabled
HNB Access-Mode mismatch handling	Access mode received in HNB Reg request and access mode received in access accept can be different. If there is mismatch based on this flag, HNB is rejected or accepted with access mode received from AAA.
HNB-id Leading Character Discard	
Open HNB Support	Indicates the status of Open Access support on an HNB-GW service instance. Possible values are: • Disabled • Enabled
Maximum UEs Allowed Per Open HNB	Indicates the total number of UEs allowed to register through an open HNB when Open Access support is enabled on an HNB-GW service instance. Possible range is between 1 through 32 where default value is 16.
Paging Optimization Policy	Displays configuration of the Paging Optimization policy for Open Access support on an HNB-GW service instance. **Important** From StarOS 14.0 onward, this counter is moved to show hnbgw-global command outputs.
Page Open HNBs	Indicates the status of paging optimization configuration for open HNBs, with and without paging-area, in an HNB-GW service instance. Possible configuration is: • Always • Never **Important** From StarOS 14.0 onward, this counter is moved to show hnbgw-global command outputs.
Page Open HNB Where UE Registered	Indicates the status of paging optimization configuration for open HNBs, with and without paging-area, and UEs registered in an HNB-GW service instance. Possible settings are: • Disabled • Enabled **Important** From StarOS 14.0 onward, this counter is moved to show hnbgw-global command outputs.

Field	Description
Hybrid HNB support	Indicates the status of Hybrid Access support on an HNB-GW service instance. Possible values are: • Disabled • Enabled
Maximum non-access-controlled UEs allowed per Hybrid HNB	Indicates the total number of non access controlled UEs allowed to register through a hybrid HNB on an HNB-GW service instance. Maximum allowed number is 1000.
Available Radio Network PLMN	The Public Land Mobile Network ID configured for this HNB-GW service. It consists of the MCC and MNC (see below).
MCC	The Mobile Country Code defined for use with this HNB-GW service. It consists of the first 3 digits of the Available Radio Network PLMN ID.
MNC	The Mobile Network Code defined for use with this HNB-GW service. It consists of the last 3 digits of the Available Radio Network PLMN ID.
RNC-Id	The Radio Network Controller ID provided to HNBs for use by the core network for this HNB-GW service. It is configured under the PLMN-ID.
Macro Coverage IE Absent Action	The action, accept or reject, to be taken if macro coverage inforamtion IE is absent in HNB location information.
Authorised Macro LAI	The information pertaining to following parameters for macro LAC authorization: • MCC • MNC • LAC Range
Lac	The defined Location Area Identifier provided to HNBs during registration with this HNB-GW service. The LAC signifies which location area this HNB-GW service belongs to, and is configured under the PLMN-ID. **Important** From StarOS 14.0 onward, this counter is deprecated.
Rac	The Routing Area Identifier provided to HNBs during registration with this HNB-GW service. The RAC signifies the routing area that this HNB-GW service belongs to and is configured under the PLMN-ID **Important** From StarOS 14.0 onward, this counter is deprecated.
PS Network Name	The PS-network to be used for selecting the packet-switched core-network (i.e., SGSN) and its point-code. **Important** From StarOS 14.0 onward, this counter is deprecated.

Field	Description
CS Network Name	The CS-network to be used for selecting circuit-switched core-network (i.e., MSC) and its point-code. **Important** From StarOS 14.0 onward, this counter is deprecated.
Service Status	The current operating status of this HNB-GW service. If the status does not read 'enabled' HNB-GW functionality is not available.
Security GW service Address	The IP address of the HNB-Security Gateway associated with this HNB-GW service. Security Gateway configurations are used when the IPsec GW is co-located with the HNB-GW service on the chassis. If the services are co-located, the SeGW IP address will be used as the IPsec tunnel endpoint by HNBs.
Security Gateway Context	Specifies the context name in which Security Gateway service is configured.
Crypto-template	Specifies the Crypto-Map template being used by the HNB-GW service for secure IPsec IKEv2 tunneling for the configured Iuh (HNB to HNB-GW) interface. The Crypto-Map template is used only if the HNB-GW and SeGW are co-located on the chassis.
Service in IPSec	Specifies whether specific HNB-GW service is started in secure IPsec IKEv2 tunneling for the configured Iuh (HNB to HNB-GW) interface.
Newcall Policy	Indicates the policy for action on new calls coming on this HNB-GW service instance. Possible actions are: • Accept • Reject
Paging	
CS Domain: Handle unknown IMSI	Indicates that the configuration for "Handle unknown IMSI" has been provided or not in the Paging Manager in CS domain.
CS Domain: Page last known HNB timeout	Indicates the timeout configured for paging the last know HNB in the CS doamin. Default timeout value for CS domain is 3 seconds.
CS Domain: Fanout Paging timeout	Indicates the timeout configured for fanout paging in CS doamin. Default timeout value for CS doamin is 5 seconds.
PS Domain: Handle unknown IMSI	Indicates that the configuration for "Handle unknown IMSI" has been provided or not in the Paging Manager in PS domain.
PS Domain: Page last known HNB timeout	Indicates the timeout configured for paging the last know HNB in the PS doamin. Default timeout value for CS domain is 6 seconds
PS Domain: Fanout Paging timeout	Indicates the timeout configured for fanout paging in CS doamin. Default timeout value for CS doamin is 10 seconds.
IP QoS DSCP marking	This group indicates the DSCP marking used for egress traffic for various protocols used on IuH and Iu interface in a HNB-GW service instance.

Field	Description
Traffic egress on Iuh	Indicates the DSCP marking used for egress traffic for various protocols used on IuH interface in a HNB-GW service instance.
Traffic egress on Iu	Indicates the DSCP marking used for egress traffic towards CN for various protocols used on Iu-CS/Iu-PS interface in a HNB-GW service instance.

show hnbgw sessions all

Table 10: show hnbgw sessions all Command Output Descriptions

Field	Description
vvvv	Displays service and session state information. This column displays a code consisting of six characters. From left-to-right, the first character represents the **Access Technology** that the subscriber is using. The possible access technologies are: • **F**: FEMTO UTRAN • **.**: Other/Unknown From left-to-right, the second character represents the **Session Type**. The possible HNB Session types are: • **H**: HNB • **U**: UE From left-to-right, the third character represents the **HNB State**. The possible HNB states are: • **R**: Registered • **D**: Deregistered • **I**: Idle • **d**: Disconnecting • **u**: Unknown From left-to-right, the fourth character represents the session **Network Type**. The possible network types are: • **I**: IP • **S**: IPSEC • **u**: Unknown
HNBID	The HNB identification (HNBID) number used for this session.

Field	Description
USERNAME	The subscriber's user name.
IP	The IP address assigned to the subscriber.
TIME-IDLE	The amount of time that the subscriber session has been idle either in an active or dormant state.
Total subscribers matching specified criteria	The total number of subscribers using HNB sessions.

show hnbgw sessions full

Table 11: show hnbgw sessions full Command Output Descriptions

Field	Description
	This is the first row which indicates the name of the HNB(s) registered for this HNB-GW session.
Card/Cpu	Indicates the card and CPU ID used for this session.
Sessmgr Instance	The session manager instances for this HNB-GW session used.
Access Tech	Indicates the accessing technology. Possible access technologies are: • **F**: FEMTO UTRAN • **.**: Other/Unknown
Network Type	Indicates the network service used for the subscriber session. The possible network types are: • **I**: IP • **S**: IPSEC • **u**: Unknown
Status	Indicates the session status. Possible HNB status are: • Online/Active • Offline/Inactive
Access Type	Indicates the session type for this subscriber. The possible access types are: • hnbgw • Unknown

Field	Description
HNB Id	The HNB identification (HNBID) number used for this session in Femto UTRAN network.
state	Indicates the state of the HNBs. Possible HNB states are: • Registered • Deregistered
Service Name	Indicates the name of the HNB-GW service which is used by this session instance to display the information.
HNB Local Id	The HNB identification (HNBID) number used locally for this session on HNB-GW.
HNB IP address	Indicates the primary IP address of the HNB in the session. In HNB-GW session this is the primary IP address of Femto CPE.
idle time	The time period that the subscriber session has been idle, either in an active or dormant state.
source context	The name of a configured source context from which the subscriber initiates a session.
callid	Indicates the identity number of call used by this instance of HNB-GW service.
PLMN-ID	The Public Land Mobile Network ID configured for this HNB-GW service. It consists of the MCC and MNC.
LAC	The defined Location Area Identifier provided to HNBs during registration with this HNB-GW service. The LAC signifies which location area this HNB-GW service belongs to, and is configured under the PLMN-ID.
RAC	The Routing Area Identifier provided to HNBs during registration with this HNB-GW service. The RAC signifies the routing area that this HNB-GW service belongs to and is configured under the PLMN-ID
RNC-ID	Indicates the Radio Network Controller ID provided to HNBs for use by the core network for this HNB-GW service. It is configured under the PLMN-ID
Cell ID	The cell identifier provided to HNBs during registration with this HNB-GW service. The cell id signifies the geographical location of HNB-GW session user belongs to.
Service Area Code	This identify a SA (Service Area) within a LA (Location Area) used during this HNB-GW session.

Field	Description
Access Mode	Indicates the access mode used by HNBs for this HNB-GW session. Possible access modes are: • Closed: Indicates that HNB is connected to HNB-GW using Closed Access mode in this session. • Hybrid: Indicates that HNB is connected to HNB-GW using Hybrid Access mode in this session. • Open: Indicates that HNB is connected to HNB-GW using Open Access mode in this session. This counter is applicable for HNB access mode.
IMSI White List	This group displays the White List IMSI database on HNB-GW.
IMSI #	Indicates the IMSI number entered in White List and have clear access to HNB-GW.
Registered IMSI List	This group displays the list of IMSIs registered on HNB-GW. This group is not supported in StarOs 14.0 and onward.
IMSI #	Indicates the IMSI number which is currently registered with HNB-GW service session instance.
Context Id	Indicates the identity number of the context used by specific IMSI.
Registration	Indicates the status of registration of IMSI on HNB-GW.
IuPS connection	Indicates the availability of Iu-PS connection for specific registered IMSI on HNB-GW.
Sessmgr Instance	Indicates the SessManager instance used by specific IMSI for Iu-PS or Iu-CS connection.
callid	Indicates the identity number of call used by specific IMSI for Iu-PS or Iu-CS connection on this instance of SessManager.
IuCS connection	Indicates the availability of Iu-CS connection for specific registered IMSI on HNB-GW.
IuPS connection	Indicates the availability of Iu-PS connection for specific registered IMSI on HNB-GW.
Registered UE List	This group displays the list of IMSIs registered on HNB-GW. This group is supported in StarOs 14.0 and onward.
UE #	Indicates the UE identifier which is currently registered with HNB-GW service session instance.
IMSI #	Indicates the IMSI number which is currently registered with HNB-GW service session instance.
Context Id	Indicates the identity number of the context used by specific IMSI.

Field	Description
Registration	Indicates the status of registration of IMSI on HNB-GW.
Type	Indicates the type of UE which is registered in this UE list having specific IMSI on HNB-GW. Possible type of UEs are: • Access-Controlled • Non-Access Controlled
IuCS connection	Indicates the availability of Iu-CS connection for specific registered IMSI on HNB-GW.
IuPS connection	Indicates the availability of Iu-PS connection for specific registered IMSI on HNB-GW.
Registered UE Summary	This group displays the summary of Registered UE based on access control type on HNB-GW.
Access-Controlled	Indicates the total number of Access-Controlled UEs currently registered with HNB-GW service session instance.
Non-Access-Controlled	Indicates the total number of Non-Access-Controlled UEs currently registered with HNB-GW service session instance.

show hnbgw statistics paging-only

Table 12: show hnbgw statistics paging-only Command Output Descriptions

Field	Description
CS Domain Paging	
Total paging RX	Number of total paging messages received in CS domain.
Paging for unknown IMSI - Received	Number of paging messages received for unknown IMSI.
Paging for unknown IMSI - Handled	Number of paging messages handled for unknown IMSI.
Paging for unknown IMSI - Dropped	Number of paging messages dropped for unknown IMSI.
Paging for unknown IMSI - Success	Number of successful paging messages for unknown IMSI.
Paging for unknown IMSI - Failure	Number of failed paging messages for unknown IMSI.
Paging for last-registered-hnb - Attempted	Number of paging messages attempted for last registered HNB.
Paging for last-registered-hnb - Success	Number of successful paging messages for last registered HNB.
Paging for last-registered-hnb - Failure	Number of failed paging messages for last registered HNB.
Paging for last-registered-hnb - Skipped	Number of skipped paging messages for last registered HNB.
Paging for last-known-LA - Attempted	Number of attempted paging messages for last known location area..

Field	Description
Paging for last-known-LA - Success	Number of successful paging messages for last known location area.
Paging for last-known-LA - Failure	Number of failed paging messages for last known location area.
Paging for last-known-LA - Dropped	Number of dropped paging messages for last known location area.
PS Doamin Paging	
Total paging RX	Number of total paging messages received in PS domain.
Paging for unknown IMSI - Received	Number of paging messages received for unknown IMSI.
Paging for unknown IMSI - Handled	Number of paging messages handled for unknown IMSI.
Paging for unknown IMSI - Dropped	Number of paging messages dropped for unknown IMSI.
Paging for unknown IMSI - Success	Number of successful paging messages for unknown IMSI.
Paging for unknown IMSI - Failure	Number of failed paging messages for unknown IMSI.
Paging for last-registered-hnb - Attempted	Number of paging messages attempted for last registered HNB.
Paging for last-registered-hnb - Success	Number of successful paging messages for last registered HNB.
Paging for last-registered-hnb - Failure	Number of failed paging messages for last registered HNB.
Paging for last-registered-hnb - Skipped	Number of skipped paging messages for last registered HNB.
Paging for last-known-LA - Attempted	Number of attempted paging messages for last known location area..
Paging for last-known-LA - Success	Number of successful paging messages for last known location area.
Paging for last-known-LA - Failure	Number of failed paging messages for last known location area.
Paging for last-known-LA - Dropped	Number of dropped paging messages for last known location area.