

HeNB-GW Access Service Configuration Mode Commands

Important In Release 20, 21.0 and 21.1, HeNBGW is not supported. Commands in this configuration mode must not be used in these releases. For more information, contact your Cisco account representative.

A new service "henbgw-access-service" is defined under Context Configuration Mode to initialize HeNB-GW functionality. This service configuration controls the S1-MME interface for communication between HeNB-GW to HeNB(s). HeNBs connect to the S1-MME bind address configured in this service.

Command Modes

Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > context *context_name* **> henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-henbgw-access-service)#
```

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

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associate henbgw-network-service

Associates a previously configured HeNB-GW Network service to this HeNB-GW Access service. An HeNB-GW Network service must be configured in Context Configuration mode before using this configuration.

Product

HeNB-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > context *context_name* **> henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-henbgw-access-service)#
```

Syntax Description

associate henbgw-network-service *svc_name* **[context** *contxt_name* **]**
no associate henbgw-network-service

no

Removes the associated HeNB-GW Network service from this HeNB-GW Access service configuration.

svc_name

Identifies the name of the pre-configured HeNB-GW Network service to associate with this HeNB-GW Access service.

svc_name is an alphanumeric string of 1 through 63 characters.

context *contxt_name*

Identifies the name of the context to which the HeNBGW service belongs.

contxt_name is an alphanumeric string of 1 through 79 characters.

Usage Guidelines

Use this command to bind/associate a pre-configured HeNB-GW Network service to the this HeNB-GW Access service. The HeNB-GW Network service can be configured in Context configuration mode. The associate configuration is used to establish associations with other helper services in general.

Example

Following command associates an HeNB-GW Network service named *henb-network* with specific HeNB-GW Access service.

```
associate henbgw-network-service henb-network
```

associate sctp-param-template

Associates a previously configured SCTP Parameter Template to this HeNB-GW Access service. An SCTP Parameter Template must be configured globally before using this configuration.

Product

HeNB-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > context *context_name* **> henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-henbgw-access-service)#
```

Syntax Description

associate sctp-param-template *template_name*
no associate sctp-param-template

no

Removes the associated SCTP Parameter Template from this HeNB-GW Access service configuration.

template_name

Identifies the name of the pre-configured SCTP Parameter Template to associate with this HeNB-GW Access service.

template_name is an alphanumeric string of 1 through 63 characters.

Usage Guidelines

Use this command to bind/associate a pre-configured SCTP Parameter Template to the this HeNB-GW Access service. The SCTP Parameter Template can be configured global mode. The associate configuration is used to establish associations with other helper services in general.

Example

Following command associates an SCTP Parameter Template named *sctp_tmpl* with specific HeNB-GW Access service.

associate sctp-param-template sctp_tmpl

associate x2gw-service

This command Configures x2gw-service for this HENBGW ACCESS service.

Product

HeNB-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > context *context_name* **> henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-henbgw-access-service)#`

Syntax Description

associate x2gw-service *associate_x2gw-service_name* **context** *context_name*
no associate x2gw-service

no

Removes the association of x2gw-service interface from this HeNB-GW Access service configuration.

associate_x2gw-service_name

Name of the service that will be used by this HENBGW ACCESS service to associate with. Name of the string is an alphanumeric, 1 through 63 characters.

context_name

Name of the context that will be used by this HENBGW ACCESS service to associate with. Name of the string is an alphanumeric, 1 through 79 characters.

Usage Guidelines

Use this command to associate x2gw-service with HeNBGW Access service.

Example

Following command associates an x2gw-service with specific HeNB-GW Access service with name *gate123*:

associate x2gw-service gate123 **context** ctx1

bind s1-mme

Binds the pre configured HeNB-GW Access Service to the IP address of the S1-MME interface.

Product

HeNB-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > context *context_name* **> henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-henbgw-access-service)#`

Syntax Description

bind s1-mme { ipv4-address *ipv4_addr* **[ipv6-address** *ipv6_addr* **] | ipv6-address** *ipv6_addr* **[ipv4-address** *ipv4_addr* **] } max-subscribers** *max_sub*

no bind s1-mme

no

Removes the binding of S1-MME interface from this HeNB-GW Access service configuration.

ipv4-address | ipv6-address

Identifies the IPv4 and/or IPv6 address of the S1-MME interface to associate with this HeNB-GW Access service.

ipv4_addr must be an IPv4 (dotted decimal notation) address.

ipv6_addr must be an IPv6 (colon-separated) address.

max-subscribers *max_sub*

Configures the maximum number of subscribers HENBGW ACCESS service can support.

max_sub is an integer ranging from *0* through *4000000*.

Usage Guidelines Use this command to bind the pre configured IPv4 address of the S1-MME interface to the HeNB-GW Access Service.

Example

Following command binds the S1-MME interface having *209.165.202.128*IP address with specific HeNB-GW Access service.

```
bind s1-mme ipv4-address 209.165.202.128 max-subscribers 20
```

csg-optimized-paging

Configures the support for Paging Optimization Function on this HeNB-GW Access service based on the CSG-ID in the Paging message

Product HeNB-GW

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > context *context_name* **> henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-henbgw-access-service)#
```

Syntax Description **[no] csg-optimized-paging**

no

Removes the paging optimization function from this HeNB-GW Access service configuration.

Usage Guidelines Use this command to enable the CSG-ID based paging optimization function to the HeNB-GW Access Service.

Example

Following command enables the CSG-ID based paging optimization on a specific HeNB-GW Access service.

csg-optimized-paging

end

Exits the current configuration mode and returns to the Exec mode.

Product All

Privilege Security Administrator, Administrator

Syntax Description **end**

Usage Guidelines Use this command to return to the Exec mode.

exit

Exits the current mode and returns to the parent configuration mode.

Product All

Privilege Security Administrator, Administrator

Syntax Description **exit**

Usage Guidelines Use this command to return to the parent configuration mode.

mme-id

Configures the MME ID for this HeNB-GW Access service. For this configuration, MME Group ID and MME Code has to be configured.

Product HeNB-GW

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > **context** *context_name* > **henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-henbgw-access-service)#`

Syntax Description

mme-id group-id *mme_group_id* **mme-code** *mme_code*
no mme-id

no

Removes the configured MME ID from this HeNB-GW Access service configuration.

mme_group_id

Identifies the MME Group ID which must be entered as an integer between 32768 and 65535.

mme_code

Identifies the MME code which is again an integer value between 0 and 255.

Usage Guidelines

Use this command to configure the MME Identifier which includes the MME Group ID and MME Code for this HeNB-GW Access service. MME ID configuration is required, because it is the same ID which HeNB-GW sends in response messages to HeNBs.



Caution Changing the MME ID is a disruptive operation. HeNB-GW service is restarted on any change.

Example

Following command configures 32770 as the MME Group ID and 105 as MME code on a specific HeNB-GW Access service.

mme-id group-id *32770* **mme-code** *105*

nas-node-selection

This command configures the selection of logical eNodeB/ MME based on TAI or Global eNodeB id.

Product

HeNB-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > context *context_name* **> henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-henbgw-access-service)#`

Syntax Description

nas-node-selection { global-eNodeB-id-based | tai-based }



Important This command is functional for 8 logical eNodeBs only.

global-eNodeB-id-based

Specifies the Global eNodeB id Based selection.

tai-based

Specifies the TAI based selection.This is the default option.

Usage Guidelines Use this command to configure the selection of logical eNodeB/ MME based on TAI or Global eNodeB id.

Example

Following command configures the selection of logical eNodeB/ MME based on Global eNodeB id.

```
nas-node-selection global-eNodeB-id-based
```

plmn

Configures the PLMN identifier for this HeNB-GW Access service. Other identifiers that are configured along with the PLMN include the MCC and MNC values too.

Product HeNB-GW

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > context *context_name* **> henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-henbgw-access-service)#
```

Syntax Description **[no] plmn id mcc** *mcc_val* **mnc** *mnc_val*

no

Removes the existing PLMN configuration from this HeNB-GW Access service configuration.

mcc_val

Identifies the mobile country code for the IMSI which must be entered between 100 and 999 as a string of size 3.

mnc_val

Identifies the Mobile Network Code which is a value between 00 and 999, as a string of size 2 to 3.

Usage Guidelines Use this command to configure the PLMN related configuration for this HeNB-GW Access service.

Example

Following command configures 123 as the MCC value and 456 as the MNC value as part of the PLMN configuration for this HeNB-GW Access service.

plmn id mcc *123* **mnc** *456*

s1-mme ip qos-dscp

This command configures the quality of service (QoS) differentiated service code point (DSCP) marking for IP packets sent out on the S1-MME interface, from the HeNB-GW to the HeNB(s).

Product

HeNB-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > context *context_name* **> henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-henbgw-access-service)#`

Syntax Description

s1-mme ip qos-dscp { af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | be | cs0 | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef }
default s1-mme ip qos-dscp

qos-dscp { af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | be | cs0 | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef }

Default: **af11**

Specifies the DSCP for the specified QoS traffic pattern. **qos-dscp** can be configured to any one of the following:

af11: Assured Forwarding 11 per-hop-behavior (PHB)

af12: Assured Forwarding 12 PHB

af13: Assured Forwarding 13 PHB

af21: Assured Forwarding 21 PHB

af22: Assured Forwarding 22 PHB

af23: Assured Forwarding 23 PHB

af31: Assured Forwarding 31 PHB

af32: Assured Forwarding 32 PHB

af33: Assured Forwarding 33 PHB

af41: Assured Forwarding 41 PHB

af42: Assured Forwarding 42 PHB

af43: Assured Forwarding 43 PHB

be: Best effort forwarding PHB

cs0: Designates use of Class Selector 0 PHB.This is same as DSCP Value BE

cs1: Designates use of Class Selector 1 PHB

cs2: Designates use of Class Selector 2 PHB

cs3: Designates use of Class Selector 3 PHB

cs4: Designates use of Class Selector 4 PHB

cs5: Designates use of Class Selector 5 PHB

cs6: Designates use of Class Selector 6 PHB

cs7: Designates use of Class Selector 7 PHB

ef: Expedited forwarding PHB

default

Specifies the default DSCP for the specified QoS traffic pattern. The default value of DSCP is af11.

Usage Guidelines

DSCP levels can be assigned to specific traffic patterns to ensure that data packets are delivered according to the precedence with which they are tagged. The diffserv markings are applied to the IP header of every subscriber data packet transmitted over the S1-MME interface(s).

Example

The following command sets the DSCP-level for data traffic sent over the S1-MME interface to **af12**:

```
s1-mme ip qos-dscp af12
```

s1-mme sctp port

This command configures the local Stream Control Transmission Protocol (SCTP) port used for binding the SCTP socket to communicate with the HeNBs over S1-MME interface.

Product

HeNB-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > context *context_name* **> henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-henbgw-access-service)#
```

Syntax Description

s1-mme sctp port *port_num*
default s1-mme sctp port

default

Sets the SCTP port to the default value of 36412 to communicate with the HeNBs using S1-MME interface.

port_num

Specifies the SCTP port number to communicate with the HeNBs using S1-MME interface as an integer from 1 through 65535. Default: 36412

Usage Guidelines

Use this command to assign the SCTP port with SCTP socket to communicate with the HeNB using S1AP.

Only one SCTP port can be associated with one MME service.

Example

The following command sets the default SCTP port number 699 for to interact with Home eNodeB using S1AP on S1-MME interface:

```
default s1-mme sctp port
```

s1u-relay

This command configures the S1-U Relay service for the HeNB-GW Access service. The user enters in the S1-U Relay configuration mode using this command.

Product

HeNB-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > context *context_name* **> henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-henbgw-access-service)#
```

Syntax Description

```
[ no ] s1u-relay
```

no

Removes the S1-U Relay service function from this HeNB-GW Access service configuration.

Usage Guidelines

Use this command to enable the S1-U Relay service function to the HeNB-GW Access Service. S1-U relay service is disabled by default.

Example

Following command enables the S-U Relay service on a specific HeNB-GW Access service.

```
s1u-relay
```

security-gateway bind

This command configuration defines the IPv4 or IPv6 address to be used as the connection point for establishing IKEv2 sessions, and to specify the crypto template for the security gateway (SecGW) for the HeNB-GW Access service.

Product

HeNB-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > context *context_name* **> henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-henbgw-access-service)#
```

Syntax Description

```
security-gateway bind { ipv4-address | ipv6-address } ip_addr
crypto-template template_name [ context ctxt_name ]
no security-gateway bind
```

no

Removes the security gateway related configuration associated with this HeNB-GW Access service configuration.

ip_addr

Identifies the security gateway address used for this HeNB-GW Access service.

For **ipv4-address** , *ip_addr* must be an IPv4 address in dotted decimal notation.

For **ipv6-address** , *ip_addr* must be an IPv6 address in colon-separated hexa-decimal notation.

template_name

Identifies the crypto template name for security gateway for this HeNB-GW Access service. It must be entered a string of size 0 to 127.

ctxt_name

Identifies the context name where crypto template is defined for this HeNB-GW Access service. It must be entered a string of size 1 to 79.

Usage Guidelines

Use this command to configure the IPv4 or IPv6 address to be used as the connection point for establishing IKEv2 sessions for this HeNB-GW Access service, and the crypto template for the SecGW . The SecGW configuration includes crypto template configuration as part of IPSec settings. Therefore, if the crypto-template is defined in a different context than the current HeNB-GW Access service, the context name has to be specified.

Example

Following command configures 209.165.201.15 as the SecGW address and crypto-temp as the crypto template name on a specific HeNB-GW Access service.

security gateway bind ipv4-address*209.165.201.15* **crypto-template** *crypto-temp*

security-gateway ip

Configures the behavior of IP allocation when HeNB requests for a dual IP.

Product

HeNB-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > context *context_name* **> henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-henbgw-access-service)#`

Syntax Description

security-gateway ip alloc-mode { single | dual }

default security-gateway ip alloc-mode

default

Restores the configuration to its default value.

Default: single

alloc-mode { single | dual }

Specifies to allocate a single or dual IP address.

single: On receiving a request for dual IP, the HeNB-GW access service will try to allocate an IPv6 address to HeNB. If the IPv6 address is unavailable, an IPv4 address will be allocated. This is the default behaviour.

dual: On receiving a request for dual IP, the HeNB-GW access service will allocate both IPv6 and IPv4 addresses to HeNB based on availability.

Usage Guidelines

Use this command to configure the behavior of IP allocation when HeNB requests for a dual IP.

Example

Following command allocates both IPv4 and IPv6 addresses when a dual IP request comes from HeNB:

security gateway ip alloc-mode dual

timeout

Configures the the maximum duration of the session for this HeNB-GW Access service, in seconds, before system automatically reports/terminates the session.

Product

HeNB-GW

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > HeNBGW-Access Service Configuration

configure > context *context_name* **> henbgw-access-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-henbgw-access-service)#
```

Syntax Description

timeout long-duration *dur* **action { detection | disconnect }**
no timeout long-duration

no

Removes the currently setup maximum duration of session.

dur

Specifies the number of seconds for the session's timeout duration, before system automatically terminates the session or a defined action is to be taken.

dur is an integer from 1 through 2147483647. Default: 0

Usage Guidelines

Use this command to configure the maximum duration of the session, in seconds, before system automatically reports/terminates the session of this HeNB-GW Access service.

Example

The following command sets the timeout duration of 60 seconds for a particular HeNB-GW Access service and disconnect the session:

timeout long-duration 60 action disconnect