

SGSN Service Configuration Mode Commands

SGSN Service works with MAP Service, SGTP Service, GTPP Group, and IuPS Service. All five of these services must be configured to enable a 3G SGSN to communicate with other elements within a UMTS network.

Command Modes

The SGSN Service configuration mode is used within the global configuration mode to specify the 3G operations of the SGSN and the available SGSN services for a specific context.

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

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

Important The commands should be added or removed in the startup config only and not when the node is live.

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accounting

This command defines the accounting context name and enables/disables specific types of CDR generation for the accounting in the SGSN service.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > **context** *context_name* > **sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-sgsn-service)#`

Syntax Description

accounting (cdr-types { mcdr | scdr | sms { mo-cdr | mt-cdr } | lcs { mt-cdr | mo-cdr } | smbmscdr }+ | context *cntx_name* **}**
default accounting cdr-types
no accounting (cdr-types | context }

default

Returns the system to default settings for the selected type of CDR.

no

Removes the pre-configured type of CDR generation for accounting from the SGSN service.

cdr-types { mcdr | scdr | sms { mo-cdr | mt-cdr } | lcs { mt-cdr | mo-cdr }| smbmscdr }

Default: enabled

Defines the types of CDRs to be generate:d within the specified SGSN service for accounting:

- **mcdr** Enables generation of M-CDRs.
- **scdr** : Enables generation of S-CDRs.
- **sms** : Enables generation of SMS-type CDRs based on one of the following:
  - **mo-cdr:** : SMS CDRs orignates from the mobile.
  - **mt-cdr:** SMS CDRs terminates at the mobile.
- **smbmscdr:** This CDR type is currently under development and should not be included in configuration for this release.
- **lcs:** Enables the generation of LCS CDRs, based on:
  - **mt-cdr:** Mobile terminated location request CDR
  - **mo-cdr:** Mobile originated location request CDR

+

Specifies that the specified keywords with in the group can be entered multiple times with a single command.

context *cntx_name*

Specifies an accounting context to be associated with the SGSN service.

cntx_name: Define a string of 1 to 79 alphanumeric characters.

Usage Guidelines

Use this command to define the type of CDRs to generate for SGSN service. By default all type of CDRs are generated. Note that change of this configuration will be applied to new call and/or to new PDP contexts only.

By default, the generation of all CDR types is enabled.

Example

The following command configures the system to generate CDRs of M-CDR type for accounting in the current SGSN service:

```
accounting cdr-types mcdr
```

admin-disconnect-behavior

This command defines some of the actions the SGSN will take during an Admin-Disconnect procedure.

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Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

```
admin-disconnect-behavior { clear-subscription | detach-type {
reattach-not-required | reattach-required } }
[ default | no ] admin-disconnect-behavior { clear-subscription |
detach-type }
```

clear-subscription

Including this keyword in the configuration instructs the SGSN to clear subscriber contexts and the subscription data database whenever the **clear subscribers all** command is issued (from the Exec mode) for attached subscribers. As well, the SGSN will issue an appropriate Map-Purge-MS-Req to the HLR if needed.

Default: disabled

detach-type

Including this keyword defines which type of detach instruction to include in the Detach-Request message during an Admin-Disconnect procedure. One of the following options must be included when this command is entered:

- **reattach-not-required**
- **reattach-required**

Default: reattach-required

default | no

Including either **default** or **no** keyword in the command, instructs the SGSN to use the default value for the specified parameter.

Usage Guidelines

Include the **clear-subscription** keyword with this command configuration to ensure that more than attached MM-context and active PDP-contexts are cleared when the clear **subscribers all** command is issued for attached subscribers.

To clear subscription data for detached subscribers, refer to the **sgsn clear-detached-subscriptions** command described in the *Exec* mode chapter.

Including the **detach-type** keyword with this command instructs the SGSN to include either a 'reattach-required' or a 'reattach-no-required' instruction in the Detach-Request message.

Example

Configure the SGSN to clear data such as PTMSI allocated, auth-vectors received, and NGAF flag values stored in the subscriber database for attached subscribers:

```
admin-disconnect-behavior clear-subscription
```

associate

Associates or disassociates supportive services and policies, such as an Evolved GPRS Tunnelling Protocol (eGTP) service, an HSS peer service, or a MAP service.

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Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > **context** *context_name* > **sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-sgsn-service)#`

Syntax Description

associate { { camel-service *camel_svc_name* **[context** *context_name* **] | egtp-service** *egtp_svc_name* **[context** *context_name* **] | gs-service** *gs_svc_name* **[context** *context_name* **] | hss-peer-service** *hss_svc_name* **[context** *context_name* **] | map-service** *map_svc_name* **[context** *context_name* **] | network-global-mme-id-mgmt-db | sgtp-service** *sgtp_svc_name* **[context** *context_name* **] | tai-mgmt-db** *database_name* **}**
no associate { camel-service | egtp-service | gs-service | hss-peer-service | map-service | network-global-mme-id-mgmt-db | sgtp-service | tai-mgmt-db *database_name* **}**

no

Disassociates a previously associated service with this SGSN service.

camel-service *camel_svc_name*

Associates a CAMEL service with SGSN service.

camel_svc_name specifies the name for a pre-configured CAMEL service to associate with the SGSN service.

egtp-service *egtp_svc_name*

Associates an eGTP service with SGSN service.

egtp_svc_name specifies the name for a pre-configured eGTP service to associate with the SGSN service. For more information on the eGTP service, refer to the **egtp-service** command in the *Context Configuration Mode Commands* chapter.



Important Only one eGTP service can be associated with a SGSN service. The eGTP service should be configured prior to issuing this command.

gs-service *gs_svc_name*

Associates a GS service with this SGSN service.

gs_svc_name specifies the name for a pre-configured GS service to associate with the SGSN service.



Important Only one Gs service can be associated with a SGSN service. The Gs service should be configured prior to issuing this command.

hss-peer-service *hss_svc_name*

Associates an HSS peer service with this SGSN service.

hss_svc_name specifies the name for a pre-configured HSS peer service to associate with the SGSN service as an alphanumeric string of 1 through 63 characters. For more information about the HSS peer service, refer to the **hss-peer-service** command in the *Context Configuration Mode Commands* chapter and the *HSS Peer Service Configuration Mode Commands* chapter.



Important Only one HSS peer service can be associated to a service in this release. The HSS peer service should be configured prior to issuing this command.

map-service *map_svc_name*

Associates a MAP service with this SGSN service.

map_svc_name specifies the name for a pre-configured MAP service to associate with the SGSN service.

The MAP service is created with the **map-service** command in the *Context Configuration Mode Commands* chapter. The MAP service provides Mobile Application Part (MAP) protocol support for the interface between the SGSN and the HLR. For more information on the MAP service, refer to the *MAP Service Configuration Mode Commands* chapter.



Important Only one MAP service can be associated with a SGSN service. The MAP service should be configured prior to issuing this command.

network-global-mme-id-mgmt-db

On the S4-SGSN, associates a pre-configured network global MME ID management database with the SGSN service. This enables operators to associate a single custom list of MME Group IDs for use in UMTS to E-UTRAN handovers on the S4-SGSN. The global MME ID management database must be configured on the S4-SGSN using the the **network-global-mme-id-mgmt-db**command in *LTE Policy Configuration Mode* before it can be associated with an SGSN service.

This command is available on the SGSN only if the *SGSN S4 Interface* license is enabled.

sgtp-service *sgtp_svc_name*

Associates an SGTP service with this SGSN service.

sgtp_svc_name specifies the name for a pre-configured SGTP service to associate with the SGSN service as an alphanumeric string of 1 through 64 characters. For more information on the SGTP service, refer to the

sgtp-service command in the *Context Configuration Mode Commands* chapter and/or the *SGTP Service Configuration Mode Commands* chapter.



Important The SGTP service should be configured prior to issuing this command. Only one SGTP service can be associated with an SGSN service. When co-locating an SGSN and an MME, the SGSN Service cannot be associated with the same SGTP Service that is used by the MME.

context *ctx_name*

Identifies a specific context name where the named service is configured. If this keyword is omitted, the named service must exist in the same context as the SGSN service.

ctx_name is name of the configured context of the named service expressed as an alphanumeric string of 1 through 63 characters that is case sensitive.

tai-mgmt-db *database_name*

Associates this SGSN service with a pre-configured TAI Management Database.

database_name specifies the name of a pre-configured TAI Management Database to associate with the SGSN service as alphanumeric string of 1 through 64 characters. For more information, refer to the **tai-mgmt-db** command in the *LTE Policy Configuration Mode Commands* chapter and the *LTE TAI Management Database Configuration Mode Commands* chapter.

This command is available on the SGSN only if the *SGSN S4 Interface* license is enabled.

Usage Guidelines

Use this command to associate a pre-configured service or policy with an SGSN service.

The eGTP service provides eGTP-C protocol interface support between EPS nodes. For more information on the eGTP service and the supported interface type, refer to the *eGTP Service Configuration Mode Commands* chapter.



Important Only one eGTP service can be associated with a service. The eGTP service should be configured prior to issuing this command.

The HSS peer service provides S6d and S13-prime interface support via the Diameter protocol between the SGSN and an HSS (S6d) or EIR (S13-prime). For more information on HSS peer service and other parameters, refer to the *HSS Peer Service Configuration Mode Commands* chapter.



Important Only one HSS peer service can be associated to a service in this release. The HSS peer service should be configured prior to issuing this command.



Caution This is a critical configuration. The SGSN service cannot be started without this configuration. Any change to this configuration would lead to restarting the SGSN service. Removing or disabling this configuration will stop the SGSN service.

Example

The following command associates a pre-configured eGTP service called *egtp1* in the *dst_ctx* context to an SGSN service:

```
associate egtp-service egtp1 context dst_ctx
```

The following command associates a pre-configured HSS peer service called *hss1* in the same context as SGSN service to an SGSN service:

```
associate hss-peer-service hss1
```

cc profile

Configures the charging characteristic (CC) profile with the triggers for generating various types of CDR as defined with the **accounting** command.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > **context** *context_name* > **sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

cc profile *profile_bits* **[buckets** *number* **| interval** *time* **| tariff time1** *mins hours* **[time2** *mins hours* **] [time3** *mins hours* **] [time4** *mins hours* **] | volume { downlink** *down_vol* **uplink** *up_vol* **| total** *total_vol* **}] +**
[no | default] cc profile *profile_bits* **[buckets | interval | tariff | volumne]**

no

Removes a previously configured CC profile.

default

Returns the specified CC profile to the original default system settings.

profile_bits

Defines the value of the profile bits for the SGSN service.

index can be configured to any integer value from 0 to 15. Some of the values have been predefined according to 3GPP standard:

- 1 for hot billing
- 2 for flat billing

- 4 for prepaid billing
- 8 for normal billing

buckets *number*

Specifies the number of statistics container changes in the CDR due to QoS changes or tariff times that can occur before an accounting record (CDR) is closed

Default: 4

number : Must be integer from 1 to 4.

interval *time*

Specifies the normal time duration (in seconds) that must elapse before closing an accounting record (CDR) provided that any or all of the following conditions occur:

time : Enter any integer from 60 to 40000000.

tariff time1 *mins hours* [time2 *mins hours* time3 *mins hours* time4 *mins hours*]

Specifies the time-of-day (based on a 24-hour clock) to close the current statistics container in the CDR, but not necessarily the CDR itself. One tariff time must be defined and up to four tariff times can be specified.



Important The system assumes that the billing system uses the day/date to determine if the statistics container represents an actual tariff period.

- *mins*: The minutes of the hour. Enter an integer from 0 to 59.
- *hours*: The hour of the day. Enter an integer from 0 to 23.

volume { downlink *down_vol* uplink *up_vol* | total *total_vol* }

Specifies the downlink, uplink, and total volumes octet counts that must be met for the closure of the CDR.

down_vol : Enter any integer from 100000 to 1345294336.

up_vol : Enter any integer from 100000 to 400000000.

total_vol : Enter any integer from 100000 to 400000000.

Usage Guidelines

Charging characteristics consist of a profile index and behavior settings. This command configures the profile index for the SGSN's charging characteristics. The SGSN supports up to 16 profile indexes.

Example

The following command configures a profile index of 10 with tariff times of 7:00 AM and 7:30 PM:

```
cc profile 10  tariff time1 0 7 time2 30 19 time3 0 7 time4 30 19
```

check-imei

This command configures the action the SGSN will take if the route towards the EIR is down.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

```
check-imei { gf-failure-action | gf-timeout-action } { continue | reject
 }
default check-imei { gf-failure-action | gf-timeout-action }
```

default

Resets the default function to reject the Attach.

gf-failure-action

Coupled with either **continue** or **reject**, this keyword instructs the SGSN to take action if a valid EIR configuration exists under the MAP service and if the EIR is temporarily unreachable due to associated DPC/SSN inaccessible/out-of-service.

gf-timeout-action

Coupled with either **continue** or **reject**, this keyword instructs the SGSN to take action if a valid EIR configuration exists under the MAP service and the route to the EIR is available, but no response is received from the EIR.

continue

Instructs the SGSN to continue the Attach process.

reject

Instructs the SGSN to reject the Attach process.

Usage Guidelines

Typically, the Attach process will be continued when there is an IMEI check timeout based on the configuration under the SGSN service configuration and/or the GPRS service configuration. But this works only if the route towards the EIR is UP and the IMEI request timer expires. This command configures the SGSN to allow the Attach process to continue in the case the route towards the EIR is down, that is the DPC / SSN is out-of-service.

Example

Use the following command to reset the default and reject Attach:

```
default check-imei gf-failure-action
```

check-imei-timeout-action

In Releases 12.0 and higher, this command has been replaced with enhanced functionality in the **check-imei** command, also available in this configuration mode.

core-network

This command specifies the numeric ID for a core network to identify which CN is to be used by the SGSN service.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

core-network id *cn_id*
no core-network id

no

Removes the currently configured core network ID from the current SGSN configuration.

id *cn_id*

This number identifies the core network to connect the SGSN service.

cn_id : Must be an integer from 0 through 4095.

Usage Guidelines

Use this command to set a global ID to identify this SGSN in the core network.

Example

The following command sets the core network ID for the current SGSN service to 127:

core-network id *127*

disable/enable super-charger

This command has been deprecated and replaced by the **super-charger** command. For the commands to configure the SuperCharger feature, refer to the *Call-Control Profile Configuration Mode* chapter.

dns israu-mcc-mnc-encoding

Configures either decimal or hexadecimal format for the MCC and MNC values in the DNS query which is sent during the ISRAU.

This command is deprecated from release 16.0 onwards, it is replaced by the **dns mcc-mnc-encoding** command. See the **dns mcc-mnc-encoding** command for more information.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

```
dns israu-mcc-mnc-encoding { decimal | hexidecimal }
default dns israu-mcc-mnc-encoding
```

default

Resets the SGSN to send the MCC and MNC values in decimal format for DNS queries.

decimal

Default.

Instructs the SGSN to send the MCC and MNC in decimal format in the DNS query.

hexadecimal

Instructs the SGSN to send the MCC and MNC in hexadecimal format in the DNS query.

Usage Guidelines

Use this command to determine the type of encoding for the MCC and MNC to be included in the DNS query sent during the inter-SGSN RAU (ISRAU). The choice must match the format of the DNS server. For example:

In decimal, the MNC/MCC in a DNS query would appear like:

```
rac0017.lac42e3.mnc310.mcc722.gprs
```

In hexadecimal, the MNC/MCC in a DNS query would appear like:

```
rac0017.lac42e3.mnc0136.mcc02d2.gprs
```

Example

Use hexadecimal values for the MCC/MNC in the DNS query.

```
dns israu-mcc-mnc-encoding hexadecimal
```

dns mcc-mnc-encoding

Configures the encoding format for the MCC and MNC values in the DNS query.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

```
dns mcc-mnc-encoding  { apn-fqdn | mmec-fqdn | rai-fqdn| rnc-fqdn|
tai-fqdn }* { a-query | snaptr-query }*  { decimal | hexadecimal }
default dns mcc-mnc-encoding
```

default

Resets the SGSN to send the MCC and MNC values in decimal format for DNS queries.

apn-fqdn

This keyword is used for PGW/GGSN selection during PDP activation.

mmec-fqdn

This keyword is used for Peer MME selection during MME to SGSN ATTACH/RAU procedure and Suspend procedure.

rai-fqdn

This keyword is used for SGW selection, Peer SGSN selection during RAU/Attach procedure, Suspend procedure and RIM procedure.

rnc-fqdn

This keyword is used for Peer SGSN selection during SRNS re-location.

tai-fqdn

This keyword is used for Peer MME selection during SGSN to MME SRNS re-location and RIM procedure.

a-query

This keyword is used to control the DNS A/AAAA query MCC/MNC encoding format.

snaptr-query

This keyword is used to control the DNS SNAPTR query MCC/MNC encoding format.

decimal

Default

Instructs the SGSN to send the MCC and MNC in decimal format in the DNS query.

hexadecimal

Instructs the SGSN to send the MCC and MNC in hexadecimal format in the DNS query.

Usage Guidelines

In order to provide effective control on DNS queries for particular type of procedures, existing CLI commands in GPRS and SGSN services have been deprecated and replaced with new enhanced commands. The command **dns israu-mcc-mnc-encoding [hexadecimal | decimal]** has been deprecated and this new CLI command is introduced. New keyword options **snaptr-query** and **a-Query** are provided to control different types of queries.

Example

Use the following command to configure hexadecimal encoding in the DNS query:

```
dns mcc-mnc-encoding rai-fqdn apn-fqdn mmec-fqdn rnc-fqdn tai-fqdn a-query
 hexadecimal
```

do show

Executes all **show** commands while in Configuration mode.

Product

All

Privilege

Security Administrator, Administrator

Syntax Description

```
do show
```

Usage Guidelines

Use this command to run all Exec mode **show** commands while in Configuration mode. It is not necessary to exit the Config mode to run a **show** command.

The pipe character **|** is only available if the command is valid in the Exec mode.



Caution

There are some Exec mode **show** commands which are too resource intensive to run from Config mode. These include: **do show support collection**, **do show support details**, **do show support record** and **do show support summary**. If there is a restriction on a specific **show** command, the following error message is displayed:

```
Failure: Cannot execute 'do show support' command from Config mode.
```

end

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

Product SGSN

Privilege Security Administrator, Administrator

Syntax Description **end**

Usage Guidelines Return to the Exec mode.

exit

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

Product SGSN

Privilege Security Administrator, Administrator

Syntax Description **exit**

Usage Guidelines Return to the context configuration mode.

gmm

This command defines the GPRS mobility management parameters for the SGSN service.

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Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

```
gmm { [ Extended-T3312-timeout  { value exT3312_minutes | when-subscribed }
 [ low-priority-ind-ue ] ] | T3302-timeout t3302_dur | T3312-timeout t3312_dur
 | T3313-timeout initial t3313_init [ decrease t3313_decrement | increase
t3313_increment ] | T3322-timeout t3322_dur | T3323-timeout T3323_dur |
T3350-timeout t3350_dur | T3360-timeout t3360_dur | T3370-timeout t3370_dur |
 implicit-detach-timeout secs | max-auth-retransmission auth_retrans |
max-identity-retransmission id_retrans | max-page-retransmission page_retrans
 | max-ptmsi-reloc-retransmission ptmsi_reloc_retrans |
mobile-reachable-timeout ms_reach_dur | paging-failure-action
downlink-data-lockout-timer seconds [ repeat number_repeats ] |
perform-identity-on-auth-failure | purge-timeout minutes | t3346 min minimum
 max maximum | trau-timeout trau_dur }
default gmm { T3302-timeout | T3312-timeout | T3313-timeout | T3322-timeout
 | T3323-timeout | T3350-timeout | T3360-timeout | T3370-timeout |
```

```
implicit-detach-timeout | max-auth-retransmission |
max-identity-retransmission | max-page-retransmission |
max-ptmsi-reloc-retransmission | mobile-reachable-timeout |
perform-identity-on-auth-failure | purge-timeout | trau-timeout }
no gmm  {Extended-T3312-timeout | implicit-detach-timeout |
max-auth-retransmission | max-identity-retransmission |
perform-identity-on-auth-failure | t3346 }
```

default

Sets the default value for the specified parameter.

Extended-T3312-timeout

This keyword enables the operator to determine how the SGSN handles Extended T3312 timer values in a 3G UMTS network environment.

- **value** : This keyword instructs the SGSN to send the defined Extended T3312 timer value in Attach or RAU Accept messages to the MS if the subscriber has a subscription for the Extended T3312 timer (Subscribed Periodic RAU/TAU Timer in ISD) and indicates support for the extended periodic timer via the MS Network Feature Support.
- *exT3312_minutes* : Enter an integer from 0 to 18600 to identify the number of minutes for the timeout; default is 186 minutes.
- **when-subcribed**: This keyword instructs the SGSN to only send the extended T3312 period RAU timer value in Attach or RAU Accept messages if the SGSN receives the timeout value in an ISD when the MS has indicated support in MS Network Feature Support.
- **low-priority-ind-ue**: This keyword instructs the SGSN to include the extended T3312 timer value only if the Attach/RAU Request messages include a LAPI (low access priority indicator) in the "MS Device Properties".
- **no**: This command filter instructs the SGSN to remove the extended T3312 configuration from the SGSN Service configuration.

T3302-timeout *t3302_dur*

Default: 10

Specifies the retransmission timer value to guard the GPRS attach or RAU procedure on MS side.

t3302_dur is the waiting duration in minutes before retransmitting the specific message and must be an integer from 1 through 186.

T3312-timeout *t3312_dur*

Default: 54

Specifies the retransmission timer value to guard the RAU procedure initiation on network side.

t3312_dur is the waiting duration in minutes before retransmitting the specific message and must be an integer from 1 through 186.

T3313-timeout initial *t3313_init* [decrease *t3313_decrement* | increase *t3313_increment*]

Default: 5

Specifies the retransmission timer value to guard the for paging request procedure initiation on network side.

initial *t3313_init* - Specifies the initial wating duration in seconds before retransmitting the specific message. *t3313_init* must be an integer from 1 through 60.

decrease *t3313_decrement* - Specifies the decrement of the initial timer value in seconds. *t3313_decrement* must be an integer from 1 through 5.

increase *t3313_increment* - Specifies the increment of the initial timer value in seconds. *t3313_decrement* must be an integer from 1 through 5.

T3322-timeout *t3322_dur*

Default: 6

Specifies the retransmission timer value to guard the GPRS detach request procedure on network side.

t3322_dur is the waiting duration in seconds before retransmitting the specific message and must be an integer from 1 through 20.

T3323-timeout *T3323_dur*

Default: 54

Specifies that the S4-SGSN Idle Mode Signaling Reduction T3323-timeout deactivation timer will be sent to the UE in Attach Accept and Routing Area Update Accept Messages.

*T3323_dur*specifies the amount of time, in minutes, that will transpire before the UE deactivates the ISR feature if the UE is no longer in the UMTS coverage area and has not completed a Routing Area Update with the S4-SGSN within the specified time duration. Once the timer expires, the S4-SGSN waits an additional four minutes before beginning an Implicit Detach for the UE and sends a Detach Notification message (cause = local detach) to the MME across the S3 interface. The MME will then deactivate ISR for the UE since it now also is aware that the UE is no longer in the UMTS coverage area. Valid entry is an integer from 1 to 186.

This command is available only if the *Idle Mode Signaling Reduction* license is enabled on the S4-SGSN and the Idle Mode Signaling Reduction feature has been activated via the **idle-mode-signaling-reduction** command in *Call Control Profile Configuration Mode*.

T3350-timeout *t3350_dur*

Default: 6

Specifies the retransmission timer value to guard the GPRS attach accept/RAU accept/realloc request procedure sent with P-TMSI and/or TMSI on network side.

t3350_dur is the waiting duration in seconds before retransmitting the specific message and must be an integer from 1 through 20.

T3360-timeout *t3360_dur*

Default: 6

Specifies the retransmission timer value to guard the authentication and cipher request procedure on network side.

t3360_dur is the waiting duration in seconds before retransmitting the specific message and must be an integer from 1 through 20.

T3370-timeout *t3370_dur*

Default: 6

Specifies the retransmission timer value to guard the identity request procedure on network side.

t3370_dur is the waiting duration in seconds before retransmitting the specific message and must be an integer from 1 through 20.

implicit-detach-timeout *secs*

Default: 3600

Specifies the implicit detach timer (IDT) timeout value for any 3G calls (not specific to ISR activated calls) as part of the implicit detach procedure on the network side. The IDT starts after expiry of the mobile reachable timer (MNR). Soon after IDT expiry, the subscriber is implicitly detached from the SGSN.

secs value must be an integer from 1 to 86400.

Important From R15.0 release onwards the lowest configurable limit of the IDT timeout is modified to "240" seconds.

max-auth-retransmission *auth_retrans*

Default: 4

Specifies the maximum retransmission of authentication requests allowed.

auth_retrans is the number of retries before declaring the authentication failure and must be an integer from 1 through 10.

max-identity-retransmission *id_retrans*

Default: 4

Specifies the maximum retransmission of identity requests allowed.

id_retrans is the number of retries before declaring the identity failure and must be an integer from 1 through 10.

max-page-retransmission *page_retrans*

Default: 5

Specifies the maximum retransmission of page requests allowed.

id_retrans is the number of retries before declaring the paging request failure and must be an integer from 1 through 5.

max-ptmsi-reloc-retransmission *ptmsi_reloc_retrans*

Default: 5

Specifies the maximum retransmission for P-TMSI relocation procedure allowed.

id_retrans is the number of retries before declaring the P-TMSI relocation procedure failure and must be an integer from 1 through 10.

mobile-reachable-timeout *ms_reach_dur*

Default: 58

Specifies the timeout duration for the mobile reachable timer (MNR) for the mobile reachable procedure on network side.

impli_detach_dur sets the waiting duration in minutes before retransmitting the specific message and must be an integer from 4 through 1440.

paging-failure-action downlink-data-lockout-timer *seconds* [repeat *number_repeats*]

Default: 1000 seconds.

Enables and configures the downlink data lockout timer, for the SGSN services, to reduce the frequency of mobile-initiated keep alive messages.

seconds set the number of seconds before timer expire, range of 0 to 10000.

repeat *number_repeats* optionally sets the number of times (1 to 10) that the timer restarts after paging failure. **Note**: If repeat is not configured then paging proceeds endlessly until the MR timer expires.

[default | no] gmm paging-failure-action disables the downlink data lockout timer.

perform-identity-on-auth-failure

Default: Enabled

Configures the SGSN service to perform an identity check to ascertain the IMSI after an authentication failure on a PTMSI-based message.

Beginning with Release 19.2, a new default behavior has the SGSN initiate the Identity Procedure

- (1) on receiving authentication failure with cause "GSM Authentication Unacceptable" from a 3G subscriber during an Attach/RAU, or
- (2) on receiving authentication failure with cause "MAC failure" during 2G ISRAU.

purge-timeout *minutes*

Default: 10080 (7 days)

The purge timer defines the MM-context lifetime, part of the MM-context procedure on the network side. The configured value sets the duration (number of minutes) the SGSN holds the detached subscriber's MM-context profile. If the subscriber does not reattach to the SGSN during this time, then the SGSN purges this detached subscriber's MM-context information from its database and sends a MAP purge request towards the HLR to indicate that the subscribers profile is gracefully purged from SGSN's database.

minutes must be an integer from 1 through 20160.

t3346

This keyword enables the mobility management (MM) T3346 back-off timer for the 3G service. When the SGSN is confronted by a situation involving congestion, the SGSN can assign the back-off timer value to the UEs and requests the UEs not to access the network for a given period of time.

min *minimum*: Enter an integer from 1 to 15 to identify the minimum number of minutes that the timer will run; default is 15 minutes.

max *maximum*: Enter an integer from 1 to 30 to identify the maximum number of minutes the timer can run; default is 30 minutes.

- If an Attach Request or RAU Request or Service Request is rejected due to congestion, then the T3346 value will be included in the reject message with GMM cause code 22 (congestion). The MM back-off timer value sent will be chosen randomly from within the configured T3346 timer value range.
- The timer will be ignored if an Attach Request or RAU Request is received after congestion has cleared.
- If T3346 timer value is configured in a Call-Control Profile then that value will override the back-off timer values defined for this SGSN Service configurations.

trau-timeout *trau_dur*

This timer is available in releases 9.0 and higher.

Default: 30

Specifies the number of seconds the "old" 3G SGSN waits to purge the MS's data. This timer is started by the "old" SGSN after completion of the inter-SGSN RAU.

trau_dur : Must be an integer from 5 to 60.

Usage Guidelines

Repeat this command as needed to configure multiple parameters for GPRS mobility management in a UMTS network. This command provides the configuration of timers for mobility procedures and retries for different messages. GMM layer is defined in the 3GPP TS 24.008 (Release 7).

Example

Following command configures the timer to wait for *5* mins before retransmitting the message for GPRS attach or RAU procedure on MS side with maximum number of retries as *6* for authentication:

```
gmm T3302-timeout 5 max-auth-retransmission 6
```

gs-service

This command associates a previously defined Gs service configuration, for the Gs interface to an MSC/VLR, with this SGSN service.



Important This command is used in Releases 12.0 and 12.2. For Release 14.0 refer to the **associate** command.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

gs-service *gs_srvc_name* **context** *ctx_name*
no gs-service *gs_srvc_name*

no

Removes/disassociates the named Gs service from this SGSN service.

gs_srvc_name

Specifies the name of a specific Gs service for which to display information.

svc_name is the name of a configured Gs service and can be from 1 to 63 alpha and/or numeric characters and is case sensitive.

context *ctx_name*

Specifies the specific context name where Gs service is configured. If this keywork is omitted, the named Gs service must be exist in the same context as the SGSN service.

ctx_name is name of the configured context of Gs service. This can be from 1 to 63 alpha and/or numeric characters and is case sensitive.

Usage Guidelines

Use this command to associate a specific Gs service interface with this SGSN service instance.

Important A single Gs service can be used with multiple SGSN and/or GPRS service.

Example

Following command associates a Gs service instance named *stargs1*, which is configured in context named *star_ctx*, with an SGSN service:

gs-service *stargs1* **context** *star_ctx*

lac

This command defines the location area code (LAC) in hexadecimal format.

Note This command is new in releases 8.1 and higher.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > **context** *context_name* > **sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

lac *hex*
no lac

no

Erases the **lac** configuration statement.

hex

Enter a hexadecimal number between 0x0 and 0xFFFF

max-pdp-contexts

Configures the maximum number of PDP contexts for a MS (mobile station) that will be supported on this SGSN service.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > **context** *context_name* > **sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

max-pdp-contexts per-ms *number*
default max-pdp-contexts per-ms

default

Resets the maximum number of PDP contexts per mobile station to the default of 11 for the Gs service configuration

per-ms *number*

Default: 11

Defines the combined total number of primary and secondary PDP contexts for the SGSN service.

number can be an integer from 2 to 11.

Usage Guidelines

The following example defines 5 as the maximum number of primary and secondary PDP contexts that this SGSN will support for any connected MS.

Example

```
max-pdp-contexts per-ms 5
```

mobile-application-part

This command identifies an already defined MAP service (Mobile Application Part service) to associate with the SGSN service. Although the MAP service does not need to be defined in the same context as the SGSN service, there is a one-to-one relationship between a MAP service and an SGSN service.

Important This command is used in Releases 12.0 and 12.2. For Release 14.0 refer to the **associate** command.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

mobile-application-part service *map_srvc* **[context** *ctx_name*]
no mobile-application-part service

no

Remove the MAP service association from the SGSN service configuration.

service *map_srvc*

Specifies the name of the MAP service to be associated with this SGSN service.

map_srvc must be the name of a MAP service previously configured on the system.

context *ctx_name*

Specifies the name of the context where the MAP service is configured. If the MAP service is not configured in the current context, then the context where it is configured must be specified to enable the SGSN to reach the MAP service.

If this keyword is not specified, the current context is used.

ctxt_name: Must be the name of the context where the specified MAP service is configured.

Usage Guidelines

Use this command to identify the MAP service configuration to be used by the SGSN service configuration. Also use this command to specify the context in which the MAP service configuration was created.

If the MAP service is not identified or if the correct context is not identified, then the SGSN service will not START.

Example

The following command specifies a MAP service named map1 that is configured in the same context as the current SGSN service:

mobile-application-part service *map1*

network-sharing cs-ps-coordination

Enables/disables the SGSN service to perform a CS-PS coordination check.



Important This command is no longer available in all 12.0 and 12.2 releases. If you do not see this command in your release, look for the **network-sharing cs-ps-coordination** command in the IuPS Service configuration mode to accomplish the same task. Configuring in the IuPS Service configuration mode allows for the possibility of multiple IuPS services with network-sharing and differing CS-PS coordination requirements.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

[context_name]host_name(config-sgsn-service)#

Syntax Description

network-sharing cs-ps-coordination
default network-sharing cs-ps-coordination
no network-sharing cs-ps-coordination

default

Including this keyword resets the SGSN service to allow the check to be performed.

no

Disables this feature for the SGSN service.

Usage Guidelines

Use this command to facilitate the network sharing functionality. With this command, the SGSN can be instructed to perform a check to determine if CS-PS coordination is needed.

3GPP TS 25.231 section 4.2.5 describes the functionality of the SGSN to handle CS-PS (circuit-switching/packet-switching) coordination for attached networks not having a Gs-interface. In compliance with the standard, the SGSN rejects an Attach in a MOCN configuration with cause 'CS-PS coordination

required', after learning the IMSI, to facilitate the RNC choosing the same operator for both CS and PS domains.

Example

Use the following syntax to disable the CS-PS coordination check:

```
no network-sharing cs-ps-coordination
```

nri length

This command defines the Network Resource Identifier (NRI) of the SGSN that is stored in the P-TMSI (bits 23 to 18).

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > **context** *context_name* > **sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

```
nri length  nri_length [ nri-value nri_value | null-nri-value null_nri_value
non-broadcast mcc mcc mnc mnc lac lac_id rac rac_id nri-value value
non-pooled-nri-value value ]
default nri
no nri
```

default

Release 14.0 and higher.

Resets the nri configuration to **nri length** 6 and **nri-value** 0.

no

Deprecated in Release 14.0

Releases prior to 14.0, this command removes the configured NRI value and location information in the P-TMSI that would be retrieved by this SGSN.

nri length *nri_length*

Specifies the number of bits to be used in the P-TMSI, bits 23 to 18. to define the network resource identifier (NRI). The NRI length configuration also sets the maximum size of the pool. If not configured, the NRI length will be of zero length.

nri_length : Must be an integer from 1 to 6 to identify the number of bits.

null-nri-value *null_nri_value*

This keyword is only available in releases 8.1 and higher.

Configures the null NRI value which must be unique across the pool areas. This keyword is used for the offloading procedure for SGSN pooling (enabled with the **sgsn offloading** command, see the Exec Mode chapter).

null_nri_value is an integer 0 (zero) to 63 which identifies the SGSN to be used for the offloading procedure for SGSN pooling. There is no default value for this parameter.

non-broadcast mcc *mcc* mnc *mnc* lac *lac_id* rac *rac_id*

This keyword set is only available in releases 8.1 and higher.

Defines the non-broadcast LAC/RAC to be used in combination with the null-NRI for the offloading procedure. Including the MCC and MNC to specify the PLMN because the Iu-Flex feature supports multiple IuPS Services.

mcc identifies the mobile country code, the first part of the PLMN ID. Must be an integer between 100 and 999.

mnc identifies the mobile network code portion of the PLMN ID. Must be a 2- or 3-digit integer between 01 and 999.

lac_id defines a location area code associated with an RNC. Must be an integer between 1 and 65535.

rac_id defines the remote area code to be associated with an RNC. Must be an integer between 1 and 255.

nri-value *nri_value*

Specifies the MS-assigned value of the NRI to retrieve from the P-TMSI. This value must not exceed the maximum possible value specified by the NRI length. The NRI value must be unique across the pool or across all overlapping pools.

nri_value must be an integer from 1 to 63 to identify a specific SGSN in a pool. Use of 0 (zero) value is not recommended.

Multiple NRI values can be identified by providing multiple nri-values separated by a blank space for example: **nri length** *6* **nri-value** *29 43 61*

The NRIs configured using this keyword will be used only in pooled area if the keyword **non-pooled-nri-value** is configured, else the NRIs configured using the **nri-value** keyword will be used for both pooled and non-pooled areas.

non-pooled-nri-value *value*

If pooling is supported (the **null-nri-value** keyword is configured) use this keyword to configure values of NRIs to be used for non-pooled area. If the NRI CLI is configured as **nri length** *length_value* **nri-value** *values* **non-pooled-nri-value** *values* (null-nri-value is not configured, that is pooling not supported at SGSN) , NRIs will be used from "non-pooled-nri-value" irrespective of RNC/BSC being pooled or non-pooled.

Note The same NRI can be configured using both the keywords **nri-value** and **non-pooled-nri-value**, this implies the NRI can be used either in pooled area or non-pooled area. If an NRI is configured for both pooled and non-pooled areas, then the SGSN re-uses the same NRI when moving from pooled to non-pooled areas and vice versa.

Usage Guidelines

Use this command to identify the SGSN identified with the NRI in the MS generated P-TMSI.

This command adds or removes the Iu Flex configuration for this SGSN service. When using Iu Flex, all keywords must be defined. The command can be repeated to specify different values for any of the keyword parameters. If more than one NRI is configured, the SGSN service will round-robin between the available NRIs when new subscribers (re)connect.

Use this command to retrieve the NRI (identity of an SGSN) stored in in bits 23 to 18 of the packet-temporary mobile subscriber identity (P-TMSI). If more than one NRI value is configured, the SGSN service will round-robin between the available NRIs when new subscribers (re)connect.

When using MOCN mode for network sharing without SGSN pooling, the NRI length and the NRI value should both be used.

Important In Releases prior to 14.0, selection of one of the keywords (**nri-value** or **null-nri-value**) was manadatory. With Release 14.0 use of the keywords is optional.

Example

The following command specifies the the NRI length as *5* bits, identifies SGSN *23* with MCC *123* and MNC *22* and LAC *222* and RAC *12* for offloading procedure with NRIs *6* and *41*:

```
nri length 5 null-nri-value 34 non-broadcast mcc 123 mnc 22 lac 222 rac
12 nri-value 6 41
```

override-lac-li

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

LI-specific

This command defines the override routing area code needed for the lawful intercept function.

Note This command is available in releases 8.1 and higher.

Product

SGSN

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-sgsn-service)#`

Syntax Description

rac *hex*
no rac

no

Erases the routing area code configuration statement.

hex

Enter a hexadecimal number between 0x0 and 0xFFFF

override-rac-li

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

Li-specific

This command defines the override routing area code needed for the lawful intercept function.

Note This command is only available in 8.0 releases.

Product SGSN

Privilege Security Administrator, Administrator

Command Modes Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-sgsn-service)#`

Syntax Description

override-rac-li *hex*
no override-rac-li

no

Erases the override routing area code for this GGSN service from the configuration.

hex

Enter a hexadecimal number between 0x0 and 0xFFFF

qos-modification

This command provides the operator the flexibility to control RAB setup and negotiations based on the RNC.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

qos-modification { inform-rnc-before-ue | allow-s4-rab-negotiation [inform-pgw]}
no qos-modification [inform-rnc-before-ue | allow-s4-rab-negotiation [inform-pgw]]

no

The SGSN uses the default behavior

- to inform the UE before the RNC or
- to reject PDP Context Activation (in compliance with TS 23.00 section 9.2.2.1A), if the RNC negotiates QoS in the RAB assignment response when the S4 interface is used for the PDP context.

inform-rnc-before-ue

When this keyword is used the SGSN informs the RNC of new QoS before informing the UE. On execution of the command with this keyword, the SGSN initiates a RAB assignment to inform the RNC followed by UPCQ towards the GGSN / Modify towards the UE based on whether or not the RNC downgrades the QoS.

allow-s4-rab-negotiation

With this keyword used as part of the configuration, if the S4 interface is used for PDP activation then the SGSN locally accepts what the RNC sends as QoS in the RAB Assigment Response and sends that QoS in the Activate Response.

This CLI is applicable only for PDP activation. For any other scenario, if the RNC negotiates the QoS then the SGSN ignores this configuration and locally accepts the change and continues with the call.

inform-pgw

This CLI option is used to enable or disable sending of Modify Bearer Command to the PGW. By default this option is disabled. When this option is enabled, the S4-SGSN triggers a Modify Bearer Command if QoS is downgraded by the RNC in RAB Assignment Procedure. To avoid looping of messages between S4-SGSN and PGW, PCRF should be configured to "NOT" upgrade QoS when RAT-Type is 3G.

Usage Guidelines

This command enables the operator the flexibility to accommodate legacy RNCs that don't meet the parameters set by TS 23.060.

With **allow-s4-rab-negotiation**, this keyword is needed for activation cases only as the default behaviour, per 3GPP spec, is to reject activation, which is service impacting. Hence to avoid such service impacts a configuration is added to control the behavior

Example

Use this command to override the SGSN default behavior during the PDP modification procedure.

qos-modification inform-rnc-before-ue

Use this command to override the SGSN default behavior and accept PDP activation with legacy RNCs using the S4 interface for context activation:

qos-modification allow-s4-rab-negotiation

rac

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

LI-specific

This command defines the override routing area code needed for the lawful intercept function.



Note This command is available in releases 8.1 and higher.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

rac *hex*
no rac

no

Erases the routing area code configuration statement.

hex

Enter a hexadecimal number between 0x0 and 0xFFFF

ran-protocol

This command specifies the IuPS service for the SGSN service to use for communication with the RAN.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

```
ran-protocol iups-service iups_srvc [ context ctx_name ]
no ran-protocol iups-service
```

no

Removes the IuPS service information from the SGSN service configuration.

iups-service *iups_srvc*

Specifies the name of an IuPS service already configured on the system.

iups_srvc : Enter an alphanumeric string of 1 to 63 characters.

ctx_name

ctx_name : Enter the name of the IuPS context, an alphanumeric string of 1 to 63 characters.

Usage Guidelines

Use this command to configure the IuPS service context that the current SGSN service will use to communicate with the RAN. Up to 8 definitions can be defined for a single SGSN service to allow for multiple PLMNs support.

Example

The following command configures the SGSN service to use an IuPS service named **iups1** that has been configured. in the same context as the SGSN service:

```
ran-protocol iups-service iups1
```

reporting-action event-record

This command enables the SGSN to log GMM/SM events in EDR files for 3G services.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

```
reporting-action event-record
[ default | no ] reporting-action event-record
```

default

Disables the logging function.

no

Removes the logging function from the configuration file.

Usage Guidelines

This command is one of the steps needed to enable the SGSN to create a log for events such as Attach, RAU, and Activations. The log is an EDR (event data record) in CSV format. For details about how this feature works, refer to the *GMM-SM Event Logging* chapter in the *SGSN Administration Guide*.

Related Commands:

- To enable GMM/SM event logging for 2G services, the **reporting-action event-record** command must be configured in the GPRS service configuration.
- To enable a log to be generated in an EDR file, the **edr-module active-charging-service** command must be enabled in the Context configuration mode.
- To configure parameters for the logging file characteristics and for file transfer, use the commands in the EDR Module Configuration Mode.

Example

Enable GMM/SM event logging for 3G services:

```
reporting-action event-record
```

s4-overcharge-protection

This command enables or disables Subscriber Overcharging Protection functionality for the S4-SGSN in the 3G network *and* associates a RANAP cause code group with the SGSN Service configuration.

Product



Important We recommend that you enable Release Access Bearer, with the **release-access-bearer command** in the Call-Control Profile configuration mode, *before* this **s4-overcharge-protection** command is used to enable Subscriber Overcharging Protection.

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

s4-overcharge-protection ranap-cause-code-group *group_name*
no s4-overcharge-protection

no

Disables Subscriber Overcharging Protection functionality for 3G. Disabled is the default.

ranap-cause-code-group *group_name*

Associates a RANAP cause code group with the SGSN Service configuration. You can enter a group's name before the cause code group is actually created but the names must match.

*group_name*Enter an alphanumeric string up to 16 characters long to identify the cause code group.

Usage Guidelines

The cause code group is created with the **cause-code-group** command in the LTE Policy configuration mode.

To see the name of the defined cause code group(s) or the configuration of the RANAP cause code groups, use the **show lte-policy cause-code-group [name | summary]** command in Exec mode.

To see the status of the Subscriber Overcharging Functionality and the associated RANAP cause code group, use Exec command **show gprs-service name** *service_name*.



Important If Release Access Bearer is enabled and going out of the S4-SGSN, the ARRL bit will be included if this CLI is enabled and if LORC (loss of radio coverage) is detected.

Example

Enable Subscriber Overcharging Protection and associated cause code group *3Gccgp1* with a command similar to the following:

```
s4-overcharge-protection bssgp-cause-code-group 3Gccgp1
```

Disable Subscriber Overcharging Protection and automatically disassociate the cause code group with the SGSN Service configuration by using a command similar to the following:

```
no s4-overcharge-protection
```

sgsn-number

This command defines the E.164 number that identifies this particular SGSN service context.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

sgsn-number *E.164_number*
no sgsn-number

no

Removes the SGSN number configuration from the SGSN service configuration.

E.164_number

Enter a maximum of 15 digits to define the 'phone' number associated with this SGSN service in the specified context.

Usage Guidelines

The SGSN supports multiple SGSN numbers – different numbers in the 2G GPRS service configuration and the the 3G SGSN service configuration. If an HLR-initiated dialog is received, the SGSN will perform a lookup based on the IMSI and find the correct SGSN number with which the MS is associated. Subsequent messaging will use this address.

Example

To delete the sgsn-number associated with this SGSN service context, enter:

```
no sgsn-number
```

sgtp-service

This command creates an instance of an SGTP service and associates the SGTP service instance with this SGSN service.



Important This command is used in Releases 12.0 and 12.2. For Release 14.0 refer to the **associate** command.

Product

SGSN

PDG/TTG

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > context *context_name* **> sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

sgtp-service *sgtp_srvc_name*
no sgtp-service

sgtp_srvc_name

Enter the name of an SGTP service that will be used by this SGSN service

sgtp_srvc_name : Enter a string of 1 to 63 alphanumeric characters.

Usage Guidelines

Use this command to access the SGTP Service configuration mode to configure SGTP parameters.

Example

sgtp-service *sgtp1*

sm

This command configures session management parameters for this SGSN service. This command can be repeated multiple times to configure each parameter individually.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > SGSN Service Configuration

configure > **context** *context_name* > **sgsn-service** *service_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-sgsn-service)#
```

Syntax Description

sm { T3385-timeout *time* **| T3386-timeout** *time* **| T3395-timeout***time* **| guard-timer** *guard_seconds* **| ignore-asi | max-actv-retransmission** *number* **| max-deactv-retransmission** *number* **| max-modf-retransmission** *number* **| radio-priority from-arp** *arp-rp_prof_name* **| t3396 min** *minimum* **max** *maximum* **cause** *cause_code* **| ue-3gpp-compliance-unknown restrict-16mbps }**
default sm { T3385-timeout | T3386-timeout | T3395-timeout | guard-timer | max-actv-retransmission | max-deactv-retransmission | max-modf-retransmission }
no sm { ignore-asi | radio-priority from-arp | t3396 | ue-3gpp-compliance-unknown [restrict-16mbps] }

default

Resets the selected timer to the system default value.

no

Removes the specified parameter configuration from this SGSN service configuration.

T3385-timeout

Retransmission timer for network-initiated Activate Request.

Default is 8 sec

T3386-timeout

Retransmission timer for network-initiated Modify Request.

Default is 8 sec

T3395-timeout

Retransmission timer for network-initiated Deactivate Request.

Default is 8 sec

guard-timer *guard_seconds*

Sets the number of seconds before the session manager resources are cleared.

guard_seconds is an integer from 30 to 150.

Default: 80 seconds

ignore-asi

Enables the operator to modify the SGSN service default configuration and instructs the SGSN to ignore the ASI bit in the SGSN Context Response during RAU-based handovers over Gn interfaces and to ignore establishing a RAB for any PDPs.

radio-priority from-arp

This keyword associates an ARP-RP Mapping Profile with the SGSN service. The profile is created and configured via the ARP-RP Mapping Profile configuration mode under the SGSN-Global configuration mode.

arp-rp_prof_name - Enter a string of 1 to 64 alphanumeric characters to identify the mapping profile and moves into the ARP-RP mapping profile configuration mode.

Use the **show configuration** command to display the association.

max-actv-retransmission

Configures maximum retries for activate PDP ctxt request.

Default is 4

max-deactv-retransmission

Configures maximum retries for deactivate PDP ctxt request.

Default is 4

max-modf-retransmission

Configures maximum retries for modify PDP ctxt request.

Default is 4

t3396

This keyword enables the session management (SM) T3396 back-off timer for the 3G service. When the SGSN is confronted by a situation involving congestion, the SGSN can assign the back-off timer value to the UEs and reques the UEs not to access the network for a given period of time.

min *minimum*: Enter an integer from 1 to 15 to identify the minimum number of minutes that the timer will run; default is 15 minutes.

max *maximum*: Enter an integer from 1 to 30 to identify the maximum number of minutes the timer can run; default is 30 minutes.

cause *cause_code*: Enter an integer from 1 to 255 to identify the appropriate rejection cause code. The default is 26. During congestion, the configured value is ignored and 26 is sent.

- During congestion, the SGSN randomly chooses a T3396 value from the configured range and sends that timer value to the UE in the Reject message with the cause code #26.
- The command can be repeated to define a maximum of 16 cause codes.

ue-3gpp-compliance-unknown restrict-16mbps

If this keyword is configured, the SGSN caps the APN-AMBR for non-GBR bearers to "16" Mbps and rejects the activation of GBR bearers with GBR higher than "16" Mbps.

If the **no** form of this keyword is configured, the APN-AMBR and GBR higher than "16" Mbps are allowed.

By default, the SGSN does not cap APN-AMBR or reject GBR bearer activation with bitrates higher than "16" Mbps.

Usage Guidelines

Repeat the command to configure multiple session management parameters for the SGSN service.

Example

Use a command similar to the following to set the expiry for 5 seconds for the session manager's T3385-timeout:

```
sm T3385-timeout 5
```