



# Gs Service Configuration Mode Commands

## Command Modes

The Gs Service configuration mode configures the parameters used to setup and maintain a Gs interface for a connection between the SGSN and an MSC/VLR.

Exec > Global Configuration > Context Configuration > Gs Service Configuration

**configure** > **context** *context\_name* > **gs-service** *service\_name*

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-gs-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-sccp-network

This command associates a previously defined Signaling Connection Control Part (SCCP) network instance with the Gs service. This association is required to access Visitor Location Register(s) (VLRs).

## Product

SGSN

## Privilege

Security Administrator, Administrator

**Command Modes** Exec > Global Configuration > Context Configuration > Gs Service Configuration

**configure** > **context** *context\_name* > **gs-service** *service\_name*

Entering the above command sequence results in the following prompt:

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

**Syntax Description** **associate-sccp-network** *sccp\_net\_id*  
**no associate-sccp-network**

**no**

Removes the associated SCCP network configuration instance from this Gs service configuration.

**sccp\_net\_id**

Identifies the SCCP network configuration instance to associate with this Gs interface to enable connection with VLR(s).

*sccp\_network\_num*: Must be an integer from 1 through 12.

**Usage Guidelines** Use this command to associate the SCCP network configuration instance with the Gs interface in this service.



**Important**

A single SCCP network configuration instance can not be shared with multiple Gs services.



**Important**

To enable a Gs service, the user needs to configure **ssn** with the **bssap+** command.

**Example**

Following command associates SCCP network 2 with this Gs service.

```
associate-sccp-network 2
```

## bssap+

This command defines the Base Station System Application Part Plus configuration parameters for the Gs service to enable the SGSN to access a Visitor Location Register(s) (VLRs).

**Product** SGSN

**Privilege** Security Administrator, Administrator

**Command Modes** Exec > Global Configuration > Context Configuration > Gs Service Configuration

**configure** > **context** *context\_name* > **gs-service** *service\_name*

Entering the above command sequence results in the following prompt:

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

**Syntax Description**

```
bssap+ ssn ss_num
no bssap+ ssn ss_num
```

**no**

Removes the configured BSSAP+ subsystem number from this Gs service.

**ssn *ss\_num***

Specifies the subsystem number to configure in this Gs interface to use BSSAP+.

*ss\_num* must be an integer from 1 through 255.

**Usage Guidelines**

Use this command to configure the BSSAP+ subsystem with Gs interface in this service to communicate with VLR(s).

**Important**

A single SCCP network configuration instance can not be shared with multiple Gs services.

**Important**

To start a Gs service, the user needs to configure the command parameter.

**Example**

Following command configures subsystem 101 with BSSAP+ in this Gs service.

```
bssap+ ssn 101
```

# 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 previous configuration mode.

**Product**

SGSN

**Privilege**

Security Administrator, Administrator

**Syntax Description****exit****Usage Guidelines**

Return to the previous configuration mode.

## max-retransmission

This command configures the retransmission values for different procedure counters in Gs service as described in TS 29.018.

**Product**

SGSN

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec &gt; Global Configuration &gt; Context Configuration &gt; Gs Service Configuration

**configure** > **context** *context\_name* > **gs-service** *service\_name*

Entering the above command sequence results in the following prompt:

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

**Syntax Description**

```
max-retransmission { n10 | n12 | n8 | n9 } retrans_num
default max-retransmission { n10 | n12 | n8 | n9 }
```

**no**

Removes the configured Gs procedures from this Gs service.

**{ n10 | n12 | n8 | n9 }**

Specifies the various Gs service procedures that are available to be used to communicate with VLR(s).

- **n10**: Defines the maximum number of retries for implicit IMSI detach from the GPRS service. Default is 2.
- **n12**: Defines the maximum number of retries for BSSAP+ to send Reset Indication messages. Default is 2.
- **n8**: Defines the maximum number of retries for explicit IMSI detach from a GPRS service. Default is 2.
- **n9**: Defines the maximum number of retries for explicit IMSI detach from a non-GPRS service. Default is 2.

***retrans\_num***

Specifies the number of retransmission of message for specified procedures.

*retrans\_num* is an integer from 0 to 10.

Default: 2

**Usage Guidelines**

Use this command to configure the retransmission values for specific procedure counters in Gs service, based on TS 29.018.

This command can be entered for each procedure counter separately.

**Example**

The following command configures the retransmission value as 3 for the Gs service procedure to send BSSAP+ Reset Indication messages in this Gs service:

```
max-retransmission n12 3
```

## non-pool-area

This command creates a non-pool area for a set of subscriber location area code (LAC) values that can be used with a specific VLR for the Gs service.

**Product**

SGSN

**Privilege**

Security Administrator, Administrator

**Command Modes**

Exec > Global Configuration > Context Configuration > Gs Service Configuration

**configure** > **context** *context\_name* > **gs-service** *service\_name*

Entering the above command sequence results in the following prompt:

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

### Syntax Description

**non-pool-area** *non\_pool\_name* { **use-vlr** *vlr\_name* **lac** *lac\_num* } +  
**no non-pool-area** *non\_pool\_name* [ **lac** *lac\_num*

**no**

Removes the configured non-pool area from this Gs service.

**non\_pool\_name**

Specifies the name of the non-pool area to configure with this command.

*non\_pool\_name* must be an alpha and/or numeric string of 1 to 63 characters.

**use-vlr** *vlr\_name*

Specifies the name of the VLR to be associated with this non-pool area.

*vlr\_name* is the name of VLR and must be an alpha and/or numeric string of 1 to 63 characters.

**lac** *lac\_num*

Specifies the subscribers' location area code to be attached with this non-pool area and specific VLR. This LAC of subscriber is obtained from the radio area indicator (RAI).

Including this keyword with the **no** form of the command enables the operator to remove a specific LAC from the non-pool area configuration.

*lac\_num* is the LAC value and must be an integer value from 1 through 65535.

**+**

More than one *lac\_num*, separated by a space, can be entered within a single command.

### Usage Guidelines

This command can be repeated as necessary to define a total of 32 configured LACs for the combined **non-pool-area** and **pool-area** configurations per Gs service.

### Example

Following command configure a non-pool area *starpool1* to use VLR named *starv1r1* for LAC *101* in a Gs service.

```
non-pool-area starpool1 use-vlr starv1r1 lac 101
```

## pool-area

This command creates a pool area configuration instance. This command also enters the Pool Area configuration mode to define the set of VLRs to use for a pool area for a set of subscriber location area code (LAC) values in the Gs service.

|                           |   |
|---------------------------|---|
| <b>Product</b>            | SGSN  |
| <b>Privilege</b>          | Security Administrator, Administrator   |
| <b>Command Modes</b>      | Exec > Global Configuration > Context Configuration > Gs Service Configuration<br><b>configure &gt; context</b> <i>context_name</i> > <b>gs-service</b> <i>service_name</i><br>Entering the above command sequence results in the following prompt:<br>[ <i>context_name</i> ]host_name(config-gs-service) #  |
| <b>Syntax Description</b> | <b>pool-area</b> <i>pool_name</i> [ <b>-noconfirm</b> ]<br><b>no pool-area</b> <i>non_pool_name</i><br><br><b>no</b><br>Removes the configured pool area from this Gs service.<br><br><b>pool_name</b><br>Specifies the name of the pool area to configure with this command for VLR pooling and association of a LAC.<br><i>pool_name</i> : Must be an alpha and/or numeric string of 1 to 63 characters.<br><br><b>-noconfirm</b><br>Indicates that the command is to execute without any additional prompt and confirmation from the user.   |
| <b>Usage Guidelines</b>   | Use this command to create/enter the pool area configuration mode. This mode is used configure the set of VLRs to be used for a set of subscriber LAC.<br><br>This command can be used multiple times, subject to a limit of 128 LAC values (the total number of <b>non-pool-area</b> and <b>pool-area</b> configurations) per Gs service.<br><br><b>Example</b><br>The following command configures a pool area named <i>starpool1</i> in a Gs service without any confirmation prompt.<br><b>pool-area</b> <i>starpool1</i> <b>-noconfirm</b> |

## sgsn-number

Define the SGSN's E164 number to associate an SGSN with this Gs Service.

|                      |  |
|----------------------|--|
| <b>Product</b>       | SGSN   |
| <b>Privilege</b>     | Security Administrator, Administrator  |
| <b>Command Modes</b> | Exec > Global Configuration > Context Configuration > Gs Service Configuration |

```
configure > context context_name > gs-service service_name
```

Entering the above command sequence results in the following prompt:

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

---

### Syntax Description

**sgsn-number** *E.164\_number*

#### *E.164\_number*

Defines the SGSN's 'telephone' number, the ISDN number for per ITU-T E.164 numbering plan. The number must be a numerical string of 1 to 15 digits.

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### Usage Guidelines

For releases 8.1 or higher, use this command to define the SGSN's E.164 ISDN number. This value should match the **sgsn-number** defined for SGSN Service or GPRS Service.




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### Important

Note: the Gs Service will not start unless the SGSN's E.164 number is configured.

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### Example

```
sgsn-number 12345678901234
```

## timeout

This command configures various timers defining the wait before retransmitting a specific message for Gs service procedures.

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### Product

SGSN

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### Privilege

Security Administrator, Administrator

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### Command Modes

Exec > Global Configuration > Context Configuration > Gs Service Configuration

```
configure > context context_name > gs-service service_name
```

Entering the above command sequence results in the following prompt:

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

---

### Syntax Description

```
timeout { t6-1-timer t6_1_dur | t8-timer t8_dur | t9-timer t9_dur | t10-timer t10_dur | t12-1-timer minute t12_1_dur | t12-2-timer t12_2_dur }
[ default ] timeout { t6-1-timer | t8-timer | t9-timer | t10-timer | t12-1-timer | t12-2-timer }
```

#### **default**

Sets the timer value to wait in seconds/minutes to default values. Default values for timers are:

- **t6-1-timer**: 10 seconds
- **t8-timer**: 4 seconds



- **t9-timer**: 4 seconds
- **t10-timer**: 4
- **t12-1-timer**: 54 mins (+ 8 seconds)
- **t12-2-timer**: 4 seconds

**t6-1-timer t6\_1\_dur**

Default: 10

Specifies the retransmission timer value to guard the location update.

*t6\_1\_dur* is the waiting duration in seconds before retransmitting the specific message and must be an integer from 10 through 90.

**t8-timer t8\_dur**

Default: 4

Specifies the retransmission timer value to guard the explicit IMSI detach from the GPRS service procedure.

*t8\_dur* is the waiting duration in seconds before retransmitting the specific message and must be an integer from 1 through 30.

**t9-timer t9\_dur**

Default: 4

Specifies the retransmission timer value to guard the explicit IMSI detach from the non-GPRS service procedure.

*t9\_dur* is the waiting duration in seconds before retransmitting the specific message and must be an integer from 1 through 30.

**t10-timer t10\_dur**

Default: 4

Specifies the retransmission timer value to guard the implicit IMSI detach from the GPRS service procedure.

*t10\_dur* is the waiting duration in seconds before retransmitting the specific message and must be an integer from 1 through 30.

**t12-1-timer minute t12\_1\_dur**

Default: 54 minutes (plus 8 seconds for transmission delay)

Specifies the retransmission timer value to control the resetting of SGSN-Reset variable procedure.

*t12\_1\_dur* is the waiting duration in minutes before retransmitting reset message for the SGSN Reset variable and must be an integer from 0 through 384.

**t12-2-timer t12\_2\_dur**

Default: 4

Specifies the retransmission timer value to guard the SGSN reset procedure.

*t12\_2\_dur* is the waiting duration in seconds before retransmitting the specific message and must be an integer from 1 through 120.

### Usage Guidelines

Use this command to configure the time, for different procedure timers, to wait before retransmitting a procedure message.

This command can be repeated for each timer to configure multiple timers.

### Example

Following command sets the timeout duration of 4 seconds for t8 timer to wait before retransmitting the procedure message to explicitly do the IMSI detach from GPRS service:

```
default timeout t8-timer
```

## vlr

This command defines a VLR configuration for use with this Gs service.

### Product

SGSN

### Privilege

Security Administrator, Administrator

### Command Modes

Exec > Global Configuration > Context Configuration > Gs Service Configuration

**configure** > **context** *context\_name* > **gs-service** *service\_name*

Entering the above command sequence results in the following prompt:

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

### Syntax Description

```
vlr vlr_name isdn-number E164_num [exclude-opc-in-sccp] [point-code pt_code
| bssap+ ssn ssn [exclude-opc-in-sccp] [point-code pt_code]
no vlr vlr_name
```

**no**

Removes the configured VLR from the Gs service.

***vlr\_name***

Specifies the name of the VLR to configure in this Gs mode with ISDN number.

*vlr\_name* must be an alpha and/or numeric string of 1 to 63 characters.

**isdn-number** ***E164\_num***

Specifies the VLR number to configure with this command.

*E164\_num*: The ISDN number for the target VLR. Value must be defined according to the E.164 numbering plan and must be a numeric string of 1 to 15 digits.

**bssap+ ssn *ssn***

Specifies the subsystem number to configure with this VLR to use BSSAP+.

*ssn*: Must be an integer from 1 through 255. Default value is 252.

**point-code *pt\_code***

Specifies SS7 address of VLR in point code value to this configured VLR name.

*pt\_code*: Must be in SS7 point code dotted-decimal ###.###.### format or decimal ##### format.

**exclude-opc-in-sccp**

This keyword provides the operator with an option to either include or exclude OPC in the SGSN generated SCCP Calling Party Address for "route-on-gt" on the Gs Service.

By default this keyword is not enabled and the OPC is included in the SCCP calling party address for "route-on-gt".

**Usage Guidelines**

Use this command to define VLR configuration instances to be associated with the Gs service.

A maximum of 32 VLRs can be configured per Gs service.

**Example**

Following command configures the VLR named *starv1r1* with an ISDN number *12344567*, a subsystem number of *252*, and a point code value of *123.345.567*:

```
vlr starv1r1 isdn-number 12344567 point-code 123.345.567
```

The following command is used to exclude OPC in the SCCP Calling Party Address for "route-on-gt":

```
vlr v1r1 isdn-number 12345 bssap+ ssn 121 exclude-opc-in-sccp
```

```
vlr v1r2 isdn-number 92349 exclude-opc-in-sccp
```

vlr