

MAP Service Configuration Mode Commands

Mobile Application Part (MAP) is a protocol which provides an application layer for the various nodes in the core mobile network and GPRS and UMTS core network to communicate with each other in order to provide services to mobile phone users. The MAP service provides the application-layer protocol support used to access the Home Location Register (HLR).

Command Modes

The MAP Service Configuration Mode is used to configure properties for Mobile Application Part (MAP) service.

Exec > Global Configuration > Context Configuration > MAP Service Configuration

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

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-map-service-service_name)#
```

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

Important For information on common commands available in this configuration mode, refer to the Common Commands chapter.

- access-protocol, on page 2
- application-context-name, on page 2
- auth-vectors, on page 4
- equipment-identity-register, on page 5
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access-protocol

Configures access protocol parameters for the MAP service as defined for a specific SCCP network instance.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > MAP Service Configuration

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

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-map-service-service_name)#`

Syntax Description

`[ no ] access-protocol { sccp-network` *`sccp_id`* **`[ ssn`** *`subsys_num`* **`] }`**

sccp-network *sccp_id*

Specifies the ID number of the SCCP network to use for the SGSN connection.

sccp_id : Must be an integer from 1 to 16.

ssn *subsys_num*

Identifies the subsystem number for the destination.

subsys_num: Enter an integer from 1 through 255.

no

Removes the access protocol SCCP network instance ID from the configuration.

Usage Guidelines

Use this command to associate access protocol parameters to a specific instance of the MAP service for an SCCP network.

Example

The following command associates the access protocols with the SCCP network ID #10:

`access-protocol sccp-network` *`10`*

application-context-name

Configure the operation timer(s) for one or more MAP application contexts.

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Command Modes

Exec > Global Configuration > Context Configuration > MAP Service Configuration

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

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-map-service-service_name)#`

Syntax Description

application-context-name *application* **operation-timer** *value*
default application-context-name *application* **operation-timer**

default

Resets the operation timers for all applications to system defaults.

application

Select one of the following applications to enable the application:

- **authentication-failure-report** : Sets the reporting operation timer for authentication failure. The setting range for this timer is 15 to 30 seconds and the default setting is 15 seconds.
- **cancel-location** : Sets the cancel location operation timer. The setting range for this timer is 15 to 30 seconds and the default setting is 15 seconds.
- **check-imei** : Sets the check-IMEI operation timer. The setting range for this timer is 15 to 30 seconds for releases 8.0 and 8.1 and 1 to 30 seconds for releases 9.0 and higher. The default setting is 15 seconds.
- **delete-subscriber-data** : Sets the delete subscriber data operation timer. The setting range for this timer is 15 to 30 seconds and the default setting is 15 seconds.
- **mo-fwd-sm** : Sets the operation timer for forwarding mobile-originated SMS. The setting range for this timer is 1 to 10 minutes and the default setting is 1 minute (60 seconds).
- **ms-purge** : Sets the operation timer for MS-purge function. The setting range for this timer is 15 to 30 seconds and the default setting is 15 seconds.
- **mt-fwd-sm** : Sets the operation timer for forwarding mobile-terminated SMS. The setting range for this timer is 1 to 10 minutes and the default setting is 1 minute (60 seconds).
- **ready-for-sm** : Sets the operation timer for the ready for SMS operation. The setting range for this timer is 15 to 30 seconds and the default setting is 15 seconds.
- **send-authentication-info** : Sets the operation timer for the sending authentication information operation. The setting range for this timer is 15 to 30 seconds and the default setting is 15 seconds.
- **stand-alone-insert-subscriber-data** : Sets the operation timer for the standalone insert subscriber data operation. The setting range for this timer is 15 to 30 seconds and the default setting is 15 seconds.
- **ugl-insert-subscriber-data** : Sets the operation timer for the insert subscriber data portion of the update GPRS location operation. The setting range for this timer is 15 to 30 seconds and the default setting is 15 seconds.
- **update-gprs-location** : Sets the operation timer for the update GPRS location operation. The setting range for this timer is 15 to 30 seconds and the default setting is 15 seconds.

operation-timer*value*

Configures the operation timer for the selected application. Timer values are indicated above.

Usage Guidelines Repeat this command entering a different application each time to enable multiple applications.

Example

```
application-context-name stand-alone-insert-subscriber-data operation-timer
 20
```

auth-vectors

Configures the number of authorization vectors to be requested from the home location register (HLR) during call setup to provide subscriber authentication.

Product SGSN

Privilege Security Administrator, Administrator

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

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

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-map-service-service_name)#
```

Syntax Description

```
auth-vectors number-to-request number
default auth-vectors number-to-request
```

default

Resets the number of vectors requested from the HLR to the system default.

number-to-request *number*

number: Must be an integer from 1 to 5 to define the number of authorization vectors be requested from the HLR.

Default is 5.

Usage Guidelines Set the number of requests to be received from the HLR.

Example

```
auth-vectors number-to-request 4
```

equipment-identity-register

Defines the information relevant to the equipment-identity-register (EIR) used by the SGSN.

Product

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Command Modes

Exec > Global Configuration > Context Configuration > MAP Service Configuration

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

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-map-service-service_name)#`

Syntax Description

equipment-identity-register { isdn *E.164_num* **| point code** *pt_code* **} [check-imei-every-n-events** *times***| check-imei-sub-every-n-events** *times***| source-ssn** *ssn***] [include-imsi | map-include-imsi]**
no equipment-identity-register { isdn *E.164_num* **| point code***pt_code* **}] [include-imsi | map-include-imsi]**

no

Deletes the EIR configuration.

isdn *number*

Enter the E.164 number of the EIR.

number: must be a string of 1 to 15 digits.

point code *pt_code*

Enter SS7 point code address of the EIR in dotted-decimal format according to variant settings:

- ITU Range 0.0.1 to 7.255.7
- ANSI Range 0.0.1 to 255.255.255
- TTC Range 0.0.1 to 15.31.255
- or a string of 1 to 11 characters

source-ssn *ssn*

Identifies the subsystem number (SSN) to be used.

ssn must be an integer from 1 to 255.

check-imei-every-n-events *times*

Configures the frequency with which a 'check IMEI' message is sent to the EIR. When set, the SGSN skips sending the 'check IMEI' message for the first N-1 where IMDI/IMEISV is received.

times :

- For releases 8.0 and 8.1, the value must be an integer from 1 to 15.
- For releases 15.0 and higher, the value must be an integer from 1 to 15.



Important This feature requires the enabling of **verify-equipment-identity** for IMEI or IMEISV as specified with the the **gmm retrieve-equipment-identity imei** command of the call-control-profile configuration mode.

check-imei-sub-every-n-events *times*

check-imei-sub-every-n-events times: Performs IMEI check every N events for each subscriber . times must be an integer ranging from 1 to 15.

include-imsi

Enables inclusion of IMSI checking during the IMEI check procedure. By default this function is not included.

map-include-imsi

Enables the inclusion of IMSI parameter in the CHECK_IMEI Request. By default, IMSI is not included in the CHECK_IMEI Request.

Usage Guidelines

Configure the identity of the EIR that the SGSN uses and the interaction parameters.

Increasing the **check-imei-every-n-events** frequency enables the EIR to avoid overload as the number of data-only devices attaching to the network increases.

Example

Configure EIR with point code 1.255.1 to perform IMEI check after every 61st received Attach Request message:

```
equipment-identity-register point code 1.255.1 check-imei-every-n-events
62
```

Configure IMSI to be included in the MAP-CHECK-IMEI operation:

```
equipment-identity-register point code 1.255.1 check-imei-every-n-events
62  include-imsi
```

gmlc

This command identifies the gateway mobile location center (GMLC) associated with the Location Service functionality.

Product

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Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > MAP Service Configuration

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

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-map-service-service_name)#
```

Syntax Description

```
gmlc { isdn E.164_number | point-code point-code } [ gsn-address ipv4 address ]
 [ source-ssn SSN_value ]
no gmlc { isdn | point-code }
```

no

Deletes the GMLC configuration. When the **no** form of the command is used the SGSN aborts all active Location Requests towards that GMLC and stops the Location Service functions.

isdn *number*

Enter the E.164 number of the GMLC.

number: must be a string of 1 to 15 digits.



Important **isdn** can not be used if **point-code** is used.

point-code *pt_code*

Enter SS7 point code address of the GMLC in dotted-decimal format according to variant settings:

- ITU Range 0.0.1 to 7.255.7
- ANSI Range 0.0.1 to 255.255.255
- TTC Range 0.0.1 to 15.31.255
- or a string of 1 to 11 characters



Important **point-code** can not be used if **isdn** is used.

gsn-address *ipv4 address*

Identifies the IP address of the GMLC of the local PLMN. The address will be published to the HLR in the MAP Update_GPRS_Location Request.

ipv4 address must be a standard dotted-decimal notation.



Important Even though **gsn-address** is optional per the CLI grammar, this keyword is a mandatory parameter when configuring the GMLC for the location service feature in the SGSN.

source-ssn *ssn*

Identifies the subsystem number (SSN) to be used.

ssn must be an integer from 1 to 255.

Usage Guidelines

This command identifies the GMLC associated with the MAP Service configuration in support of the Location Services functionality enabled on the SGSN.

Only one GMLC can be defined per MAP Service configuration.

Related Commands:

- **associate map-service** in the Location Service configuration mode associates this MAP service when configuration Location Services functionality.

Example

Use a command similar to the following to define a gateway mobility location center (GMLC) with an ISDN ID of *491720499*, a GSN address of *209.165.201.1*, and an SSN of *131*:

```
gmlc isdn 491720499 gsn-address 209.165.201.1 ssn 131
```

hlr

This command enters the configuration mode for the home location register (HLR). The HLR is a database containing the subscriber profile information for all mobile stations (MS) / user equipment (UE) connecting to a specific GPRS or UMTS core network.



Important The commands and options for this mode are documented in the HLR Configuration Mode chapter.

Product

SGSN

Privilege

Security Administrator, Administrator

Command Modes

Exec > Global Configuration > Context Configuration > MAP Service Configuration

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

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-map-service-service_name)#
```

Syntax Description

hlr

policy

This command configures the Transaction Capabilities Application Part (TCAP) -specific MAP policy for either ANSI or ITU SS7 variants.

Product SGSN

Privilege Security Administrator, Administrator

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

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

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-map-service-service_name)#`

Syntax Description **`[ default ] policy tcap { use-received-destination-address | use-received-source-address }`**

use-received-destination-address

Selecting this keyword overwrites stored CG and CD addresses with a new address received in first TC CNT msg

use-received-source-address

Selecting this keyword instructs the MAP service to use the received source address for the dialog.

Usage Guidelines Use this command to determine how TCAP will handle MAP messages.

Example

`policy tcap use-received-destination-address`

short-message-service

This command enables and disables the short message service (SMS service) and provides access to the SMS Service configuration mode.

Product SGSN

Privilege Security Administrator, Administrator

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

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

Entering the above command sequence results in the following prompt:

`[context_name]host_name(config-map-service-service_name)#`

Syntax Description **`short-message-service`**
`no short-message-service`

no

Disables the SMS service.

Usage Guidelines Enter the command to access the SMS service configuration mode to fine tune the SMS functionality.

Example

```
short-message-service
```

timeout

Use this command to configure the m1 timeout value for the LCS procedure..

Product SGSN

Privilege Administrator

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

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

Entering the above command sequence results in the following prompt:

```
[context_name]host_name(config-map-service-service_name)#
```

Syntax Description **timeout m1** *seconds*

m1 *seconds*

This keyword sets the expiry value for the SGSN's m1 timer, which sets the time the SGSN waits to send a negative PSL Response and clear the location request.

seconds is an integer from 60 to 600. Default is 120.

Usage Guidelines The m1 timer is used for location service (LCS) specific map message PSL (provide subscriber location). The gateway mobile location center (GMLC), associated with the LCS functionality, also maintains an m1 timer when it sends a PSL Request to the SGSN. If the GMLC's timer expires before receiving a response from the SGSN, then the GMLC aborts the location procedure.

This command enables the operator to determine the amount of time the SGSN should wait before sending a negative PSL Response and cleaing the location request to complete the LCS procedure.

Example

Set the expiry value of the m1 timer to *240* seconds.

```
timeout m1 240
```