



# Multi-Access Gateway – controller

Release 24.10

## MAG-c CLI Reference Guide

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# 1 Getting started

*Find general information about this guide.*

## 1.1 About this guide

This guide provides descriptions of the Command Line Interface (CLI) commands used to configure and manage the Multi-Access Gateway – controller (MAG-c) for the BNG CUPS solution. This includes **configure**, **clear**, **monitor**, **show**, and **tools** commands and supported values and parameters for each command.

The MAG-c is based on Release 20.10 of the SR OS from which it inherits many, but not all, SR OS Release 20.10 features.



**Note:** This guide generically covers content for the release specified on the title page of the guide, and may also contain some content that will be released in later maintenance loads. See the applicable *MAG-c Release Notes* for information about features supported in each load of the software release.



**Note:** The information in this guide is intended to be used in conjunction with the SR OS software user guides. The SR OS software user guides describe SR OS service features that are supported by the MAG-c. See the *7450 ESS, 7750 SR, 7950 XRS, and VSR Documentation Suite Overview Card 20.10.R1* for specific guide titles.



**Note:** Configuration outputs shown in this guide are examples only; actual displays may differ depending on supported functionality and user configuration.

## 1.2 Conventions

This section describes the general conventions used in this guide.

### 1.2.1 Precautionary and information messages

The following information symbols are used in the documentation.



**DANGER:** Danger warns that the described activity or situation may result in serious personal injury or death. An electric shock hazard could exist. Before you begin work on this equipment, be aware of hazards involving electrical circuitry, be familiar with networking environments, and implement accident prevention procedures.



**WARNING:** Warning indicates that the described activity or situation may, or will, cause equipment damage, serious performance problems, or loss of data.



**Caution:** Caution indicates that the described activity or situation may reduce your component or system performance.



**Note:** Note provides additional operational information.



**Tip:** Tip provides suggestions for use or best practices.

## 1.2.2 Options or substeps in procedures and sequential workflows

Options in a procedure or a sequential workflow are indicated by a bulleted list. In the following example, at step 1, the user must perform the described action. At step 2, the user must perform one of the listed options to complete the step.

### Example: Options in a procedure

1. User must perform this step.
2. This step offers three options. User must perform one option to complete this step.
  - This is one option.
  - This is another option.
  - This is yet another option.

Substeps in a procedure or a sequential workflow are indicated by letters. In the following example, at step 1, the user must perform the described action. At step 2, the user must perform two substeps (a. and b.) to complete the step.

### Example: Substeps in a procedure

1. User must perform this step.
2. User must perform all substeps to complete this action.
  - a. This is one substep.
  - b. This is another substep.

## 1.3 Command tree

The MAG-c CLI command tree is a hierarchical inverted tree. The highest level in the tree is the root and below the root are the major command groups. The major command groups include, for example, the **admin**, **clear**, **configure**, **debug**, **show**, and **tools** command trees. See [Navigating between trees and command descriptions](#) for more information.

## 1.4 Search and navigation aids

### Searching for CLI commands

Use the following search tips and best practices to easily find information about a specific command using a search function:

- Enter the command name in the search input field.
- To optimize your search, specify one or more levels of the contextual path before the command name.



**Note:**

The context section in each command description shows the full path to the command.

- Do not include variables in the search phrase.

For example, to search for the **configure li target source** command, entering "**target source**" is more efficient than "**source**" and limits the number of search results. Using "**target <name> source**" does not return any results.



**Caution:** Using a combination of hyphenated terms with other terms within the same quoted search phrase (for example, searching for "bng-charging chf chf-profile") may produce inaccurate search results in WebHelp.

### Navigating between trees and command descriptions

As described in [Command tree](#), this guide provides hierarchically organized CLI command trees to configure and manage the MAG-c. You can jump between a CLI command in the command tree and the corresponding command description as follows:

- In a CLI command tree, click the hyperlinked command to jump to the corresponding description.
- In a CLI command description, click [Tree] in the command context section to go to the tree.

The following figures show the links between the command tree and command description for the **default-ipv4-signaling-method** command.

Figure 1: Link to command description

```

    - nf-id-list
  - del-bearer-reactivation-req-cause
  - description
  - dhcp-profile
  - dhcpv4-server-ip
  - dhcpv6-profile
  - dhcpv6-server-duid
  - fixed-wireless-access
    - authentication-flow
      - adb
    - default-ipv4-signaling-method
    - shutdown
  - max-pdn-connections
  - max-session-attach
  - network-realm
  - pcf-selection
    - dnn-format
    - exclude-gpsi
    - exclude-snssais
    - exclude-supi
    - nf-id-list
    - pcf-id
    - pcf-profile

```

sw4220

Figure 2: Link to CLI tree

## default-ipv4-signaling-method

### Syntax

```
default-ipv4-signaling-method signaling-method
```

### Context

[\[Tree\]](#) configure mobile-gateway pdn apn fixed-wireless-access default-ipv4-signaling-method

### Description

This command configures whether to signal an allocated IPv4 address to the FWA RG using NAS or DHCP (deferred allocation) messaging. This value is used if no other method is provided during session setup; for example, by the ADB, RADIUS, or PCO.

### Default

```
default-ipv4-signaling-method nas
```

### Parameters

*signaling-method*

Specifies the method to signal allocated IPv4 addresses.

Values: nas | dhcp

Default: nas

sw1383

## 1.5 Command descriptions

Command descriptions in this guide appear in the order in which they are found in the command tree.

The following figure shows an example of the fields of the command description.

Figure 3: Command description example

**cp-nat-profile****Syntax**[no] cp-nat-profile *name***Context**

[Tree] configure mobile-gateway profile bng cp-nat-profile

**Description**

This command configures a BNG CUPS CP NAT profile. A CP NAT profile is a container for NAT specific parameters and is used to associate IPoE and PPPoE sessions with NAT.

The **no** form of this command removes the configuration.

**Parameters***name*

specifies the CP NAT profile name, up to 32 characters

sw1385

The following table describes the fields that may be shown for a command. Not all fields are applicable for all commands.

Table 1: Command description fields

Field	Description
Command Name	Name of the command
Syntax	Command syntax required to execute the command. See <a href="#">CLI command syntax</a> for information about syntax symbols.
Context	Complete contextual path to perform the command
Description	Description of the command functionality and any restrictions
Default	Command default value
Parameters	Descriptions of command parameters
Values	Values allowed for the parameter
Default	Parameter default value

## 1.6 CLI command syntax

The following table describes command syntax symbols used in this CLI reference guide.

Table 2: Command syntax symbols

Symbol	Description
	A vertical line indicates that only one of the parameters within the brackets or braces can be selected.

Symbol	Description
[ ]	Brackets indicate optional parameters.
{ }	Braces indicate that one of the parameters must be selected.
[{ }]	Braces within square brackets indicate that the parameters are optional, but if one is selected, the information within the braces is required.
<b>Bold</b>	<b>Bold</b> indicates commands and keywords.
<i>Italic</i>	<i>Italic</i> indicates that you must enter text for the parameter.

## 1.7 CLI contexts

Use the CLI to access, configure and manage the MAG-c.

Enter CLI commands at the command line prompt. Your system administrator sets the permissions that control access to specific CLI commands. Entering a CLI command makes navigation possible from one command context (or level) to another.

When you initially enter a CLI session, you are in the ROOT context. Navigate to another level by entering the name of successively lower contexts. For example, use the following command at the ROOT context (command prompt #) to navigate to the **config** context.

```
A:node-2# configure
A:node-2>config#
```

The active context displays at the command prompt.

In a specific CLI context, enter commands at that context level by entering the text. It is also possible to include a command in a lower context, as long as you format the command with the correct command and parameter syntax. The following examples show two methods to navigate to a call trace level.

### Example: Method 1

```
A:node-2# configure mobile-gateway profile call-insight
A:node-2>config>mobile>profile>call-insight#
```

### Example: Method 2

```
A:node-2>config# mobile-gateway
A:node-2>config>mobile# profile
A:node-2>config>mobile>profile# call-insight
A:node-2>config>mobile>profile>call-insight#
```

When the syntax is incorrect, the CLI returns the following error message:

```
config# mobile
Error: Bad command.
```

## 2 isa command reference

### 2.1 isa hierarchy descriptions

This section provides the following isa hierarchy descriptions:

- [clear isa command hierarchy](#)
- [show isa command hierarchy](#)

#### 2.1.1 clear isa command hierarchy

```
clear
  - isa
    - ip-reas-stats
```

#### 2.1.2 show isa command hierarchy

```
show
  - isa
    - ip-reas-stats
```

### 2.2 isa command descriptions

This section provides the following isa command descriptions:

- [clear isa command descriptions](#)
- [show isa command descriptions](#)

#### 2.2.1 clear isa command descriptions

##### 2.2.1.1 ip-reas-stats

###### Syntax

```
ip-reas-stats port-name {ipv4 | ipv6}
```

```
ip-reas-stats all
```



## Context

[\[Tree\]](#) clear isa ip-reas-stats

## Description

This command clears the IP reassembly port statistics.

## Parameters

*port-name*

Specifies the port name.

Values: *port-id* [:*context-val*] where

- *port-id*

Specifies the configured port ID.

Values: *slot/mda/port* or *lag-id* where

*id* – 1 to 200

- *context-val* – 1 to 31

**all**

Keyword to clear all IP reassembly port statistics.

**ipv4 | ipv6**

Keyword to specify the IP address type.

## 2.2.2 show isa command descriptions

### 2.2.2.1 ip-reas-stats

#### Syntax

**ip-reas-stats** [*port-name*] [**ipv4 | ipv6**]

#### Context

[\[Tree\]](#) show isa ip-reas-stats

#### Description

This command displays the reassembly packet statistics.

#### Parameters

*port-name*

Specifies the port name.

Values: *port-id* [:*context-val*] where

- *port-id*

Specifies the configured port ID.

Values: *slot/mda/port* or *lag-id* where  
*id* – 1 to 200

- *context-val* – 1 to 31

**ipv4 | ipv6**

Keyword to specify the IP address type.

## 3 li command reference

### 3.1 li hierarchy descriptions

This section provides the following Lawful Interception hierarchy descriptions:

- [configure li command hierarchy](#)
- [show li command hierarchy](#)

#### 3.1.1 configure li command hierarchy

```
configure
- li
  - mobile-gateway
    - 3gpp-5g-release
    - 3gpp-release
    - 5g-iri-ip-id
    - client-tls-profile
    - custom-correlation-id-format
    - df-peer
    - fan-out
    - include-rai
    - iri
      - gw-function-iri-mode
      - iri-per-mb-request
      - ne-id
      - te-id
      - x2-iri-ice-type
    - li-x1
      - admf-peer
      - alpn
      - li-x1-keep-alive-time-p2
      - li-x1-local-interface
      - sni
    - li-x2
      - li-x2-keep-alive-time-p1
      - li-x2-keep-alive-time-p2
    - local-interface
    - nf-id-value
    - num-conn-retries
    - operator-id
    - server-tls-profile
    - target
    - tls
    - x2-iri-cache-size
    - x2-iri-qos
    - x2-keep-alive-time
  - pfcpl-shared-key
  - target
    - description
    - source
```

### 3.1.2 show li command hierarchy

```
show
  - li
    - mobile-gateway
      - df-peer
      - summary
      - target
```

## 3.2 li command descriptions

This section provides the following Lawful Interception command descriptions:

- [configure li command descriptions](#)
- [show li command descriptions](#)

### 3.2.1 configure li command descriptions

#### 3.2.1.1 mobile-gateway

##### Syntax

**mobile-gateway**

##### Context

[\[Tree\]](#) configure li mobile-gateway

##### Description

Commands in this context configure lawful intercept (LI) functionality for the MAG-c.

#### 3.2.1.2 3gpp-5g-release

##### Syntax

**3gpp-5g-release** *release*

##### Context

[\[Tree\]](#) configure li mobile-gateway 3gpp-5g-release

##### Description

This command configures the 3GPP release option used for the 5G LI interfaces.

The **no** form of this command reverts to the default (base release).

## Parameters

*release*

Specifies the 3GPP release.

Values: rel-base | rel-16

Default: rel-base (Release 15)

### 3.2.1.3 3gpp-release

#### Syntax

**3gpp-release** *release*

#### Context

[\[Tree\]](#) configure li mobile-gateway 3gpp-release

#### Description

This command configures the 3GPP release option used for LI interfaces.

The **no** form of this command reverts to the default (base release).

## Parameters

*release*

Specifies the 3GPP release.

Values: rel-base | rel-13

Default: rel-base (Release 11)

### 3.2.1.4 5g-iri-ip-id

#### Syntax

**5g-iri-ip-id address** *ip-address* | *ipv6-address*

**5g-iri-ip-id auto**

#### Context

[\[Tree\]](#) configure li mobile-gateway 5g-iri-ip-id

#### Description

This command configures the interception product identifier (IP ID) of the 5G intercept-related information (IRI).

#### Default

5g-iri-ip-id auto

## Parameters

*ip-address* | *ipv6-address*

Specifies the IP address as 5G IRI IP ID.

Values:

- *ip-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

**auto**

Keyword to automatically generate the 5G IRI IP ID.

### 3.2.1.5 client-tls-profile

#### Syntax

**client-tls-profile** *tls-profile-name*

**no client-tls-profile**

#### Context

[\[Tree\]](#) configure li mobile-gateway client-tls-profile

#### Description

This command configures a default client TLS profile on the MAG-c. When the TLS profile is configured, the MAG-c tries to establish a TCP connection with the lawful intercept gateway (LIG) over TLS for the 5G LI X2 interface. The MAG-c supports strict TLS-only mode for the 5G LI X2 interface. Both the MAG-c and the LIG must support TLS.

The **no** form of this command removes the configuration.

#### Default

no client-tls-profile

#### Parameters

*tls-profile-name*

Specifies the TLS profile name, up to 32 characters.

### 3.2.1.6 custom-correlation-id-format

#### Syntax

**custom-correlation-id-format** {enable | disable}

**no custom-correlation-id-format**

## Context

[\[Tree\]](#) configure li mobile-gateway custom-correlation-id-format

## Description

This command facilitates sending the correlation ID with four octets charging ID (without including the gateway IP address). The correlation ID is included in IRI as well as in CC messages, so that the LIG can correlate IRI and CC messages.

The **no** form of this command reverts to default (disable).

## Parameters

### enable

Keyword to send the correlation ID with four octets charging identifier.

### disable

Keyword to not send the correlation ID with four octets charging identifier.

Default: disable

## 3.2.1.7 df-peer

### Syntax

**df-peer** *df-peer-id* **df2-addr** *ip-address* **df2-port** *port* [**df2-tls-profile** *profile-name*]

**no df-peer** *df-peer-id*

### Context

[\[Tree\]](#) configure li mobile-gateway df-peer

### Description

This command configures the DF peer of an LI gateway as DF2 (X2) only. It supports the following configuration options:

- DF2 IP address and port
- DF2 TLS profile

The **no** form of this command removes the DF peer information from the configuration.

### Parameters

#### *df-peer-id*

Specifies the DF peer ID.

Values: 1 to 254

#### *ip-address*

Specifies the DF peer IP address where the X2 is sent.

Values:

- IPv4 address – a.b.c.d

- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where  
   x – [0..FFFF]H  
   d – [0..255]D

*port*

Specifies the DF port number (TCP/UDP port) where the X2 is sent.

Values: 1 to 65535

Default: 0

*profile-name*

Specifies the DF profile name, up to 32 characters.

**Note:**

- The DF peers can use the same or different TLS client profiles.
- To use a TLS profile, the TLS protocol must be enabled (using the **tls** command).
- The TLS client profiles must be in the administratively disabled (**no shutdown**) state.

### 3.2.1.8 fan-out

#### Syntax

[no] fan-out

#### Context

[\[Tree\]](#) configure li mobile-gateway fan-out

#### Description

This command enables IRI and IRI+CC fan-out functionality for LI on the mobile gateway. Each target activation must be uniquely identified by the lawful interception ID (LIID) specified using the **target** command. A maximum of 10 target activations are supported for a UE. There could be, for example, 5 activations using IMSI, 3 activations using MSISDN, and 2 activations using IMEI. A maximum of 7 activations are supported using the same target type (for example, IMSI). Each activation must be deactivated separately using the same LIID used at the time of activation.

The **no** form of this command reverts to the default.

#### Default

no fan-out



### 3.2.1.9 include-rai

#### Syntax

[no] include-rai

#### Context

[\[Tree\]](#) configure li mobile-gateway include-rai

#### Description

This command supports the inclusion of the Routing Area Identifier (RAI) from the message level along with the ULI received from the SGSN, within the Location of the Target Information Element that is sent in the IRI messages to the LIG.

The **no** form of this command reverts to the default.

#### Default

no include-rai

### 3.2.1.10 iri

#### Syntax

iri

#### Context

[\[Tree\]](#) configure li mobile-gateway iri

#### Description

Commands in this context configure LI IRI settings.

### 3.2.1.11 gw-function-iri-mode

#### Syntax

[no] gw-function-iri-mode

#### Context

[\[Tree\]](#) configure li mobile-gateway iri gw-function-iri-mode

#### Description

This command controls the IRI mode of generating events for a combined 4G SGW/PGW session on the MAG-c. For a combined session, by default, only MAG-c IRI events are generated. When this command is enabled, separate events are generated for the combined session from both the SGW and the PGW function.

The **no** form of this command reverts to the default (only PGW events are generated for the combined SGW/PGW session).

**Default**

no gw-function-iri-mode

### 3.2.1.12 iri-per-mb-request

**Syntax**

[no] iri-per-mb-request

**Context**

[\[Tree\]](#) configure li mobile-gateway iri iri-per-mb-request

**Description**

This command enables the additional MBReq event on a MAG-c acting as the SGW.

The **no** form of this command reverts to the default.

**Default**

no iri-per-mb-request

### 3.2.1.13 ne-id

**Syntax**

ne-id address *ip-address* | *ipv6-address*

ne-id s5

**Context**

[\[Tree\]](#) configure li mobile-gateway iri ne-id

**Description**

This command configures the network element identifier (NEID).

**Default**

ne-id s5

**Parameters**

*ip-address* | *ipv6-address*

Specifies the IP address as NEID.

Values:

- ip-address – a.b.c.d

- ipv6-address – x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where  
x – [0..FFFF]H  
d – [0..255]D

**s5**

Keyword to use the IP address of the S5 interface.

### 3.2.1.14 te-id

**Syntax**

[no] te-id

**Context**

[\[Tree\]](#) configure li mobile-gateway iri te-id

**Description**

This command enables the population of the tunnel endpoint identifier (TEID) (S5/S8-U PGW F-TEID: TEID + IP address) information element (IE) in a bearer activation IRI event from the SGW or PGW. This is an operator-custom IE.

The **no** form of this command reverts to the default (disabled).

**Default**

no te-id

### 3.2.1.15 x2-iri-ice-type

**Syntax**

[no]x2-iri-ice-type

**Context**

[\[Tree\]](#) configure li mobile-gateway iri x2-iri-ice-type

**Description**

This command enables inclusion of the ICE-Type in GTP signaling-related IRI messages sent by the mobile gateway. Applicable gateway types include SGW, PGW, and combined SGW/PGW.

The **no** form of this command reverts to the default (ICE-Type is not included in GTP signaling related IRI messages).

**Default**

no x2-iri-ice-type

### 3.2.1.16 li-x1

#### Syntax

**li-x1**

#### Context

[\[Tree\]](#) configure li mobile-gateway li-x1

#### Description

Commands in this context configure LI\_X1 interface settings.

### 3.2.1.17 admf-peer

#### Syntax

**admf-peer** *df-peer-id* **admf-addr** *admf-peer-address* [**x1-port** *x1-port-num*]  
**no admf-peer** *df-peer-id*

#### Context

[\[Tree\]](#) configure li mobile-gateway li-x1 admf-peer

#### Description

This command configures the administration function (ADMf) peer IP address, and optionally a port if other than the default value of 443 is used.

The **no** form of this command removes the specified ADMf peer.

#### Parameters

*df-peer-id*

Specifies the peer ID.

Values: 1 to 254

*admf-peer-address*

Specifies the peer IP address.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*x1-port-num*

Specifies the port number.

Values: 1 to 65535

Default: 443

### 3.2.1.18 alpn

#### Syntax

**alpn** {enable | disable}

#### Context

[\[Tree\]](#) configure li mobile-gateway li-x1 alpn

#### Description

This command enables or disables the Application Layer Protocol Negotiation (ALPN) extension handling for TLS over the LI\_X1 interface.

#### Default

alpn enable

### 3.2.1.19 li-x1-keep-alive-time-p2

#### Syntax

**li-x1-keep-alive-time-p2** *x1-time-p2-value*

**no li-x1-keep-alive-time-p2**

#### Context

[\[Tree\]](#) configure li mobile-gateway li-x1 li-x1-keep-alive-time-p2

#### Description

This command specifies the keep-alive time for the LI\_X1 interface. If the timer is set to zero, the keep-alive mechanism is disabled.

The **no** form of this command reverts to the default.

#### Default

li-x1-keep-alive-time-p2 0

#### Parameters

*x1-time-p2-value*

Specifies the keep-alive time in seconds.

Values: 0 | 3600 to 86400; 0 disables the keep-alive mechanism.

Default: 0

### 3.2.1.20 li-x1-local-interface

#### Syntax

```
li-x1-local-interface ip-address [router router-instance] [local-port port-num]  
no li-x1-local-interface
```

#### Context

[\[Tree\]](#) configure li mobile-gateway li-x1 li-x1-local-interface

#### Description

This command configures the IP address for the LI\_X1 local end point.

#### Default

no li-x1-local-interface

#### Parameters

*ip-address*

Specifies the IP address.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*router-instance*

Specifies the router instance, up to 32 characters.

Default: base

*port-num*

Specifies the port number.

Values: 1 to 65535

Default: 443

### 3.2.1.21 sni

#### Syntax

```
sni {enable | disable}
```

#### Context

[\[Tree\]](#) configure li mobile-gateway li-x1 sni

## Description

This command enables or disables the Service Name Indication (SNI) extension handling for TLS over the LI\_X1 interface.

The **no** form of this command reverts to default.

## Default

sni enable

### 3.2.1.22 li-x2

#### Syntax

li-x2

#### Context

[\[Tree\]](#) configure li mobile-gateway li-x2

#### Description

Commands in this context configure LI\_X2 interface settings.

### 3.2.1.23 li-x2-keep-alive-time-p1

#### Syntax

li-x2-keep-alive-time-p1 *x2-time-p1-value*

no li-x2-keep-alive-time-p1

#### Context

[\[Tree\]](#) configure li mobile-gateway li-x2 li-x2-keep-alive-time-p1

#### Description

This command specifies the keep-alive time for the LI\_X2 interface on the MAG-c acting as the SMF. The POI sends a keepalive PDU at least every *x2-time-p1-value* seconds (the default is 60 seconds). If the POI does not receive a keep-alive Acknowledgment PDU within the number of seconds specified for *x2-time-p2-value*, it disconnects the connection and attempts to reconnect to the MDF while reporting an error through the X1 interface as defined in ETSI TS 103 221-1. The default **x2-time-p2-value** is 180 seconds and it can be modified using the **li-x2-keep-alive-time-p2** command.

The **no** form of this command reverts to the default. If the timer is set to 0 value, the keep-alive mechanism is disabled.

#### Parameters

*x2-time-p1-value*

Specifies the keep-alive time, in seconds.

Values: 0 to 300

Default: 60

### 3.2.1.24 li-x2-keep-alive-time-p2

#### Syntax

**li-x2-keep-alive-time-p2** *x2-time-p2-value*

**no li-x2-keep-alive-time-p2**

#### Context

[\[Tree\]](#) configure li mobile-gateway li-x2 li-x2-keep-alive-time-p2

#### Description

This command specifies the keep-alive time for the LI\_X2 interface on the SMF. If the POI does not receive a keep-alive Acknowledgment PDU within the number of seconds specified for *x2-time-p2-value* (the default is 180 seconds), it disconnects the connection and attempts to reconnect to the MDF while reporting an error through the X1 interface as defined in ETSI TS 103 221-1.

The **no** form of this command reverts to the default. If the timer is set to 0 value, the keep-alive mechanism is disabled.

#### Parameters

*x2-time-p2-value*

Specifies the keep-alive time, in seconds.

Values: 0 to 1800

Default: 180

### 3.2.1.25 local-interface

#### Syntax

**local-interface** *ip-address* [**router** *router-instance*] [**override-x2-interface** *x2-ip-address* [**x2-router** *x2-router-instance*]]

**no local-interface**

#### Context

[\[Tree\]](#) configure li mobile-gateway local-interface

#### Description

This command configures the source IP address used by the xGW/GGSN for the LI interface. Specifying the **override-x2-interface** option enables each X2 interface to use a different VPRN context. When the **override-x2-interface** option is not specified, the X2 interfaces use the same IP address and VPRN context.



The **no** form of this command reverts to the default.

### Default

no local-interface

### Parameters

#### *ip-address*

Specifies the source IP address.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where  
x – [0..FFFF]H  
d – [0..255]D

#### *router-instance*

Specifies the router instance, up to 32 characters.

#### *x2-ip-address*

Specifies the source X2 IP address.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where  
x – [0..FFFF]H  
d – [0..255]D

#### *x2-router-instance*

Specifies the X2 router instance, up to 32 characters.

## 3.2.1.26 nf-id-value

### Syntax

**nf-id-value** {**uuid** | **ip-addr** | **ip-addr-hex-string**}

**no nf-id-value**

### Context

[\[Tree\]](#) configure li mobile-gateway nf-id-value

### Description

This command specifies the NF identifier choice of **uuid** or **ip-addr** to use for IRI and CC messages over the LI\_X1, LI\_X2 and LI\_X3 interfaces. The **ip-addr** option specifies to use the configured local

source IP address for the LI\_X1, LI\_X2 and LI\_X3 interfaces as the NF identifier in IRI and CC messages respectively.

The **no** form of this command reverts to the default (uuid).

### Default

no nf-id-value

### Parameters

#### uuid

Keyword to use the UUID as the NF identifier in IRI and CC messages.

#### ip-addr

Keyword to use the local source IP address configured for the LI\_X1, LI\_X2 and the LI\_X3 interfaces as the NF identifiers in the IRI and CC messages respectively.

Default: disable

#### ip-addr-hex-string

Keyword to use the local source IP address for the LI\_X1, LI\_X2 and the LI\_X3 interfaces, encoded as a hex string (individual digits and the character '.' are converted to the hex form) as the NF identifiers for the IRI and CC messages respectively.

Default: **uuid**

## 3.2.1.27 num-conn-retries

### Syntax

**num-conn-retries** *num-of-retries*

**no num-conn-retries**

### Context

[\[Tree\]](#) configure li mobile-gateway num-conn-retries

### Description

This command is used to specify the number of (TCP) connection retries to the LIG server, before it is deemed to be down.

The **no** form of this command reverts to the default.

### Default

num-conn-retries 3

### Parameters

*num-of-retries*

Specifies the number of retries.

Values: 1 to 10

Default: 3

### 3.2.1.28 operator-id

#### Syntax

**operator-id** *id-string*  
**no operator-id**

#### Context

[\[Tree\]](#) configure li mobile-gateway operator-id

#### Description

This command configures the operator ID for the deployment. The configured value is used to populate the operator-identifier field of the Network-Identifier IE.

The **no** form of this command reverts to the default

#### Default

operator-id oprld

#### Parameters

*id-string*

Specifies the operator ID, up to 5 characters.

### 3.2.1.29 server-tls-profile

#### Syntax

**server-tls-profile** *tls-profile-name*  
**no server-tls-profile**

#### Context

[\[Tree\]](#) configure li mobile-gateway server-tls-profile

#### Description

This command configures the default server TLS profile for the MAG-c lawful intercept X1 interface.

The **no** form of this command removes the server TLS profile configuration.

#### Default

no server-tls-profile

## Parameters

*tls-profile-name*

Specifies the TLS profile name, up to 32 characters.

### 3.2.1.30 target

#### Syntax

**target** *target-type id target-value intercept intercept peer df-peer-id* [*liid liid-string*]

**no target** *target-type id target-value* [*liid liid-string*]

#### Context

[\[Tree\]](#) configure li mobile-gateway target

#### Description

This command configures the LI target peer.

The **no** form of this command removes the specified LI target peer.

#### Parameters

*target-type*

Specifies the LI target type.

Values: imsi | msisdn

*target-value*

Specifies the LI target value.

Values: imsi | msisdn – up to 16 digits

*intercept*

Specifies that the interception is for IRI only.

Values: iri

*df-peer-id*

Specifies the peer ID.

Values: 1 to 255

*liid-string*

Specifies the lawful intercept ID (LIID), up to 25 characters.

### 3.2.1.31 tls

#### Syntax

[no] **tls**

## Context

[\[Tree\]](#) configure li mobile-gateway tls

## Description

This command enables the TLS protocol in the LI X2 and X3 interfaces. To enable the TLS protocol, make sure that following conditions apply:

- a valid client TLS profile is configured and administratively enabled (not shutdown) in all DF peers
- the X3 interface is using TCP as the transport option

The **no** form of this command reverts to the default.

## Default

no tls

### 3.2.1.32 x2-iri-cache-size

#### Syntax

**x2-iri-cache-size** *cache-size*

**no x2-iri-cache-size**

#### Context

[\[Tree\]](#) configure li mobile-gateway x2-iri-cache-size

#### Description

This command is used to specify the size of the IRI buffer cache. (IRI messages buffered when connectivity to the LIG is down). Setting the cache size to a value of 0 disables buffering.

The **no** form of this command reverts to the default.

### 3.2.1.33 x2-iri-qos

#### Syntax

**x2-iri-qos dscp** {*dscp-value* | *dscp-name*}

**no x2-iri-qos**

#### Context

[\[Tree\]](#) configure li mobile-gateway x2-iri-qos

#### Description

This command specifies the DSCP to be set for interception related information (IRI) messages sent to a lawful interception gateway (LIG).

The **no** form of this command reverts to the default.

## Parameters

### *dscp-value*

Specifies the value of the DSCP to be set for IRI.

Values: 0 to 63

### *dscp-name*

Specifies the name of the DSCP to be set for IRI.

Values: none | be | ef | cp1 | cp2 | cp3 | cp4 | cp5 | cp6 | cp7 | cp9 | cs1 | cs2 | cs3 | cs4 | cs5 | nc1 | nc2 | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cp11 | cp13 | cp15 | cp17 | cp19 | cp21 | cp23 | cp25 | cp27 | cp29 | cp31 | cp33 | cp35 | cp37 | cp39 | cp41 | cp42 | cp43 | cp44 | cp45 | cp47 | cp49 | cp50 | cp51 | cp52 | cp53 | cp54 | cp55 | cp57 | cp58 | cp59 | cp60 | cp61 | cp62 | cp63

Default: af41

## 3.2.1.34 x2-keep-alive-time

### Syntax

**x2-keep-alive-time** *keep-alive-time*

**no x2-keep-alive-time**

### Context

[\[Tree\]](#) configure li mobile-gateway x2-keep-alive-time

### Description

This command configures the keep-alive time for the X2 interface. An LI message including a keep-alive parameter is sent to the LIG when no LI message has been sent for the configured amount of time (for example, five minutes), indicating to the LIG that the LI connection is still up.

The **no** form of this command reverts to the default. A value of 0 disables the keep-alive mechanism.

### Parameters

#### *keep-alive-time*

Specifies the keep-alive time in minutes.

Values: 0 to 5

Default: 0

## 3.2.1.35 pfcpl-shared-key

### Syntax

**pfcpl-shared-key** *key-value*

**pfcpl-shared-key** *key-value* hash2

**no pfcpl-shared-key**

## Context

[Tree] configure li pfcpl-shared-key

## Description

This command configures the shared key used between the MAG-c and the UP over the Sx/N4 interface. The PFCP IEs are sent from the MAG-c to the SR OS UPs. This is used to encrypt the LI container IE at the MAG-c, and decrypt the LI container IE at the UP.

The **no** form of this command reverts to the default.

## Default

no pfcpl-shared-key

## Parameters

*key-value*

Specifies the value of the shared key for the Sx/N4 interface, up to 128 characters.

**hash2**

Keyword to specify hash2.

### 3.2.1.36 target

## Syntax

**target** *name*

**no target**

## Context

[Tree] configure li target

## Description

This command configures an LI target name. This name only serves as an alias for the LI target.

The **no** form of this command removes the LI target configuration.

## Parameters

*name*

Specifies the target name, up to 32 characters.

### 3.2.1.37 description

## Syntax

**description** *description-string*

## Context

[\[Tree\]](#) configure li target description

## Description

This command configures a description for the LI target.

## Parameters

*description-string*

Specifies the target description, up to 80 characters.

### 3.2.1.38 source

## Syntax

**no source** *id*

**source** *id imsi imsi-number [ingress] [egress] [fc fc-name [fc-name... (up to 8 max)]] intercept-id intercept-id session-id session-id [mirror-destination service-name]*

**source** *id subscriber name [ingress] [egress] [fc fc-name [fc-name...(up to 8 max)]] intercept-id intercept-id session-id session-id mirror-destination service-name*

**source** *id msisdn msisdn-number [ingress] [egress] [fc fc-name [fc-name... (up to 8 max)]] intercept-id intercept-id session-id session-id [mirror-destination service-name]*

## Context

[\[Tree\]](#) configure li target source

## Description

This command configures activation and deactivation of subscriber LI. The MAG-c supports 4G, 5G, and BNG subscriber LI.

The **no** form of this command removes the configuration of the source ID.

## Parameters

*id*

Specifies a target source ID, or a name up to 64 characters; for example, if the target has 4 IMSIs. The *imsi-number* and *id* parameters are mutually exclusive. If you are performing LI on a wireline (BNG) subscriber, use the **subscriber** keyword.

Value: 1 to 4

*imsi-number*

Specifies an IMSI or SUPI number. The *imsi-number* and the *id* parameters are mutually exclusive. If you perform LI on a 4G or 5G wireless subscriber, use the **imsi** keyword.

Values: 10 to 15

*name*

Specifies the subscriber name, up to 64 characters.



**ingress**

Keyword to specify the ingress source.

**egress**

Keyword to specify the egress source.

*fc-name*

Specifies the FC type.

Values: **be** | **l2** | **af** | **l1** | **h2** | **ef** | **h1** | **nc**

*intercept-id*

Specifies the intercept ID.

Values: 1 to 1073741823

*session-id*

Specifies the session ID.

Values: 1 to 4294967295

*service-name*

Specifies the service name, up to 64 characters.

*msisdn-number*

Specifies the Mobile Station International Subscriber Directory Number (MSISDN).

Values: 9 to 15

## 3.2.2 show li command descriptions

### 3.2.2.1 mobile-gateway

**Syntax**

**mobile-gateway**

**Context**

[\[Tree\]](#) show li mobile-gateway

**Description**

Commands in this context display LI information.

### 3.2.2.2 df-peer

**Syntax**

**df-peer ip-addr** *ip-address* | *ipv6-address*

**df-peer** [*df-peer-id*]

**Context**

[\[Tree\]](#) show li mobile-gateway df-peer

**Description**

This command displays only information about the 4G delivery function (DF) peer.

**Parameters**

*ip-address* | *ipv6-address*

Specifies the DF peer IP address.

Values:

- *ip-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where  
   x – [0..FFFF]H  
   d – [0..255]D

*df-peer-id*

Specifies the DF peer ID.

Values: 1 to 254

**3.2.2.3 summary****Syntax**

**summary**

**Context**

[\[Tree\]](#) show li mobile-gateway summary

**Description**

This command displays a summary of the LI information.

**3.2.2.4 target****Syntax**

**target** [*target-type*] [*id target-value*] [*liid liid-string*]

**target** *target-type* *id target-value* **detail**

**target** *target-type* *id target-value* **stats**

**Context**

[\[Tree\]](#) show li mobile-gateway target

## Description

This command displays only information about the 4G LI target type and value.

## Parameters

### *target-type*

Keyword that specifies the target type.

Values: **imsi** | **imei** | **msisdn** | **mac** | **nai**

### *target-value*

Specifies the target value.

Values:

- **imsi** | **imei** | **msisdn**  
up to 16 digits
- **mac** – xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx
- **nai** – username@realm  
up to 253 characters

### **detail**

Keyword to display detailed information for the LI target context.

### *liid-string*

Specifies the LI ID string for the target, up to 24 characters.

### **stats**

Keyword to display statistics for the LI target context.

## Output

The following output examples display configuration and statistics information for LI targets.

- [LI target information](#)
- [LI target information for a specified IMSI](#)
- [LI target information for a specified MSISDN](#)
- [LI target information for a specified IMSI ID and LI ID](#)
- [LI target information for a specified MSISDN ID and LI ID](#)
- [LI target statistics for a specified IMSI ID](#)
- [LI target statistics for a specified MSISDN ID](#)
- [LI target detailed statistics for a specified IMSI ID](#)
- [LI target detailed statistics for a specified MSISDN ID](#)

### Output example: LI target information

```
# show li mobile-gateway target
=====
LI Target Information
=====
Target id (imsi)       : 206010000000004
Intercept type        : iri           Df peer           : 6
Li ID                 : 40
```

```

Sec Df Peer      : 0              HA Df peer      : 0
-----
Target id (msisdn) : 8801812300005
Intercept type    : iri              Df peer        : 6
Li ID             : 200
Sec Df Peer      : 0              HA Df peer      : 0
-----
Number of targets : 2
=====

```

### Output example: LI target information for a specified IMSI

```

# show li mobile-gateway target imsi id 206010000000004
=====
LI Target Information
=====

Target id (imsi)      : 206010000000004
Intercept type       : iri              Df peer        : 6
Intercept id        : 40
Sec Df Peer         : 0              HA Df peer      : 0
-----
Number of targets : 1
=====

```

### Output example: LI target information for a specified MSISDN

```

# show li mobile-gateway target msisdn id 8801812300005
=====
LI Target Information
=====

Target id (msisdn)   : 8801812300005
Intercept type      : iri              Df peer        : 6
Li ID               : 200
Sec Df Peer        : 0              HA Df peer      : 0
-----
Number of targets : 1
=====

```

### Output example: LI target information for a specified IMSI ID and LI ID

```

# show li mobile-gateway target imsi id 206010000000004 liid 40
=====
LI Target Information
=====

Target id (imsi)      : 206010000000004
Intercept type       : iri              Df peer        : 6
Li ID                : 40
Sec Df Peer         : 0              HA Df peer      : 0
-----
Number of targets : 1
=====

```

### Output example: LI target information for a specified MSISDN ID and LI ID

```

# show li mobile-gateway target msisdn id 8801812300005 liid 200
=====
LI Target Information

```

```

=====
Target id (msisdn)   : 8801812300005
Intercept type      : iri           Df peer           : 6
Li ID               : 200
Sec Df Peer         : 0             HA Df peer       : 0
-----
Number of targets : 1
=====

```

### Output example: LI target statistics for a specified IMSI ID

```

# show li mobile-gateway target imsi id 206010000000004 stats
=====
LI Target Information
=====
Target id (imsi)    : 206010000000004
Intercept type     : iri           Df peer           : 6
Li ID              : 40
Sec Df Peer        : 0             HA Df peer       : 0
-----
Start of Interception with active bearer : 1
Number of targets : 1
=====

```

### Output example: LI target statistics for a specified MSISDN ID

```

# show li mobile-gateway target msisdn id 8801812300005 stats
=====
LI Target Information
=====
Target id (msisdn) : 8801812300005
Intercept type     : iri           Df peer           : 6
Li ID              : 200
Sec Df Peer        : 0             HA Df peer       : 0
-----
Number of targets : 1
=====

```

### Output example: LI target detailed statistics for a specified IMSI ID

```

# show li mobile-gateway target imsi id 206010000000004 detail
=====
LI Target Information
=====
Target id (imsi)    : 206010000000004
Intercept type     : iri           Df peer           : 6
Li ID              : 40
Sec Df Peer        : 0             HA Df peer       : 0
-----
Number of targets : 1
-----
IMSI                : 206010000000004
IMEI                : 358505010000004
MSISDN              : 8801812300004
UE State            : connected    Failure Reason    : noError
Attach Time         : 2024/06/17 19:02:38
ULI Type            : taiAndEcgi
ULI Time            : N/A
ULI                 : 206-01-4-00015b7
=====

```

**Output example: LI target detailed statistics for a specified MSISDN ID**

```
# show li mobile-gateway target msisdn id 8801812300005 detail
=====
LI Target Information
=====
Target id (msisdn)      : 8801812300005
Intercept type         : iri           Df peer           : 6
Li ID                  : 200
Sec Df Peer           : 0           HA Df peer         : 0
-----
Number of targets : 1
-----
IMSI                   : 206010000000005
IMEI                   : 358505010000050
MSISDN                 : 8801812300005
UE State               : connected      Failure Reason     : noError
Attach Time           : 2024/06/17 20:35:30
ULI Type              : taiAndEcgi
ULI Time              : N/A
ULI                   : 206-01-5-00015b8
=====
```

## 4 mobile-gateway command reference

### 4.1 mobile-gateway hierarchy descriptions

This section provides the following mobile-gateway hierarchy descriptions:

- [admin mobile-gateway command hierarchy](#)
- [clear mobile-gateway command hierarchy](#)
- [configure mobile-gateway pdn command hierarchy](#)
- [configure mobile-gateway profile amf-profile command hierarchy](#)
- [configure mobile-gateway profile authentication-database command hierarchy](#)
- [configure mobile-gateway profile bng command hierarchy](#)
- [configure mobile-gateway profile call-insight command hierarchy](#)
- [configure mobile-gateway profile charging command hierarchy](#)
- [configure mobile-gateway profile cloud-db command hierarchy](#)
- [configure mobile-gateway profile dns-profile command hierarchy](#)
- [configure mobile-gateway profile gtp command hierarchy](#)
- [configure mobile-gateway profile http2 command hierarchy](#)
- [configure mobile-gateway profile list command hierarchy](#)
- [configure mobile-gateway profile n1-profile command hierarchy](#)
- [configure mobile-gateway profile node-selection command hierarchy](#)
- [configure mobile-gateway profile pcf-profile command hierarchy](#)
- [configure mobile-gateway profile pfcf command hierarchy](#)
- [configure mobile-gateway profile policy-options command hierarchy](#)
- [configure mobile-gateway profile priority-mapping command hierarchy](#)
- [configure mobile-gateway profile priority-profile command hierarchy](#)
- [configure mobile-gateway profile qfi-mapping-profile command hierarchy](#)
- [configure mobile-gateway profile qos-5g-profile command hierarchy](#)
- [configure mobile-gateway profile qos-profile command hierarchy](#)
- [configure mobile-gateway profile radius-group command hierarchy](#)
- [configure mobile-gateway profile radius command hierarchy](#)
- [configure mobile-gateway profile sbi-error-mapping-profile command hierarchy](#)
- [configure mobile-gateway profile udm-sdm-profile command hierarchy](#)
- [configure mobile-gateway profile udm-uecm-profile command hierarchy](#)
- [configure mobile-gateway system command hierarchy](#)

- [configure mobile-gateway target command hierarchy](#)
- [debug mobile-gateway command hierarchy](#)
- [show mobile-gateway command hierarchy](#)
- [tools mobile-gateway command hierarchy](#)

### 4.1.1 admin mobile-gateway command hierarchy

```
admin
- mobile-gateway
  - group
  - max-suspend-duration
```

### 4.1.2 clear mobile-gateway command hierarchy

```
clear
- mobile-gateway
  - bng
    - error-history
    - session
    - session-lockout
    - wpp
      - statistics
  - pdn
    - bearer-context
      - apn
      - imei
      - imsi
      - msisdn
      - target-profile
      - ue-location-tac
      - up-peer
    - call-flow-stats
    - charging
    - load-overload-control
    - nrf-client-cache
    - path-mgmt-stats
    - ref-point-stats
    - service-stats
      - nf-type
    - statistics
```

### 4.1.3 configure mobile-gateway pdn command hierarchy

```
configure
- mobile-gateway
  - pdn
    - apn
      - address-assignment-defaults
      - local-dynamic
```



```

    - ipv4-pool
    - ipv6-na-pool
    - ipv6-pd-pool
    - ipv6-slaac-pool
  - unmanaged
    - ipv4-pool
    - ipv6-na-pool
    - ipv6-pd-pool
    - ipv6-slaac-pool
- charging
  - nchf
    - chf-selection
      - nf-id-list
- del-bearer-reactivation-req-cause
- description
- dhcp-profile
- dhcpv4-server-ip
- dhcpv6-profile
- dhcpv6-server-duid
- fixed-wireless-access
  - authentication-flow
    - adb
  - default-ipv4-signaling-method
  - shutdown
- max-pdn-connections
- max-session-attach
- network-realm
- pcf-selection
  - dnn-format
  - exclude-gpsi
  - exclude-snsais
  - exclude-supi
  - nf-id-list
  - pcf-id
  - pcf-profile
- pdn-type
- pdn-type-preferred-ipv6
- pfcf-translate-tx
- qci-policy
- qfi-mapping-profile
- realm-loopback-address
- shutdown
- slices
  - default-slice
  - slice-list
- static-predefined-pcc
  - default-policy-rule-base
- udm-options
  - dnn-format
- bng
  - radius-coa
    - ignore-unknown-attributes
    - interface
    - python-policy
    - secret
  - static-session
    - c-vlan
    - description
    - dot1q-etype
    - l2-access-id
    - mac
    - qinq-etype
    - s-vlan
    - shutdown

```

```

    - up
  - up-group
    - c-tag-range
    - description
    - fsg-profile
    - l2-access-id
    - s-tag-range
    - shutdown
    - up
      - c-tag-range
      - drain
      - l2-access-id
      - preferred
      - s-tag-range
  - wpp
    - interface
  - call-procedure-retry
  - cdbx
    - cloud-db-profile
    - interface
    - mss
  - dns-client
    - dns-interface
    - dns-profile
  - epc-node
  - home-plmn-list
  - instance-type
  - load-control
    - enable-gtp-load-control
    - enable-sbi-load-reporting
    - load-change-trigger
    - nth-message
  - local-address-assignment
    - network-realm
      - description
      - pool
        - dedicated
        - description
        - hold-time
        - ipv4
          - default-gateway
          - dns
            - primary-dns
            - secondary-dns
          - micro-net-length
          - prefix
            - drain
            - exclude-addresses
          - subnet-allocation
            - length
            - variable
        - ipv6
          - dns
            - primary-dns
            - secondary-dns
          - na
            - micro-net-length
            - prefix
              - drain
              - exclude-addresses
          - pd
            - delegated-prefix
            - length
            - variable

```

```

        - micro-net
        - prefix
          - drain
          - exclude-prefixes
      - slaac
        - micro-net-length
        - prefix
          - drain
          - exclude-prefixes
    - minimum-free
- nf-profile-attributes
  - capacity
  - exclude-ip-endpoints
  - fqdn
  - locality
  - nf-instance-id
  - pgw-fqdn
  - priority
  - tai-list
- overload-control
  - enable-gtp-overload-control
  - enable-sbi-overload-control
  - local-throttling
    - critical
      - throttling-percent
    - local-overload-throttling
  - major
    - throttling-percent
  - minor
    - throttling-percent
  - throttling-alarms
- overload-reduction
  - critical
  - major
  - minor
  - sbi-overload-threshold
  - sbi-retry-after-timer
  - thresholds
    - critical
    - major
    - minor
    - validity-time
- pfc-p-load-control
  - enable-pfc-p-load-control
- pfc-p-node-id-type
- priority-service
  - priority-mapping
- qfi-mapping-profile
- radius
  - radius-accounting-on-off
    - messages-sent
- s11
  - interface
    - gtp-c
  - signaling
    - gtp-c
      - ddn-damp-timer
      - ddn-throttling-arp-threshold
      - profile
      - restoration-time
      - ue-inactivity-timer
- s5
  - interface
    - gtp-c

```

```
- signaling
  - gtp-c
    - profile
- sba-client-services
  - addressing-priority
  - amf-client
    - namf-comm
      - amf-profile
      - fqdn
      - http2-profile
      - interface
      - n1-profile
      - nf-id-list
  - chf-client
    - nchf-convergedcharging
      - api-version
      - fqdn
      - http2-profile
      - interface
  - converged-interface-support
    - pdu-session-id-base
  - fqdn
  - http2-profile
  - nrf-client
    - nnrf-disc
      - blacklist-duration
      - chf-selection-options
        - exclude-gpsi
        - exclude-supi
      - exclude-snssais
      - fqdn
      - http2-profile
      - interface
      - nf-id-list
      - nrf-cache-interval
      - suppress-discovery
      - udm-selection-options
        - exclude-supi
      - use-locality
    - nnrf-nfm
      - blacklist-duration
      - fqdn
      - heartbeat-nrf-blocklist
      - http2-profile
      - interface
      - nf-id-list
      - nfm-nrf-blocklist
  - pcf-client
    - npcfsmpolicycontrol
      - fqdn
      - http2-profile
      - interface
      - nf-id-list
      - pcf-profile
  - scp-client
    - scp-service
      - http2-profile
      - interface
      - nf-id-list
      - scp-domain
  - udm-client
    - nudm-sdm
      - fqdn
      - http2-profile
```

```

    - implied-single-stack-pdu-session-types
    - interface
    - mode
    - nf-id-list
    - udm-sdm-profile
    - unsubscribe-mode
  - nudm-uecm
    - fqdn
    - http2-profile
    - interface
    - mode
    - nf-id-list
    - udm-uecm-profile
- sba-server-services
  - fqdn
  - http2-profile
  - nsmf-pdusection
    - allowed-nf-domains-list
    - allowed-plmns
    - allowed-slices
    - api-prefix
    - fqdn
    - http2-profile
    - interface
    - n3-interface-realm
    - s5-ref-point
- sba-service-realm
  - client-service
  - server-service
- serving-node-for-combo-sessions
- session-deletion-rate
- shutdown
- signaling
  - gtp-c
  - profile
- slices
  - slice-instance-list
  - slice-list
- suspend
- sx-n4
  - enforced-pfcp-association-list
  - interface
    - ibcp
    - pfcp
  - pfcp-association-list
  - signaling
    - ibcp
      - bng-entry-point
      - ip-dscp
      - ip-ttl
      - triggers
    - pfcp
      - profile
- up-peer-list
- up-selection
  - pgw-u-client-profile

```

#### 4.1.4 configure mobile-gateway profile amf-profile command hierarchy

```
configure
```

```

- mobile-gateway
  - profile
    - amf-profile
      - fh-session-no-response
      - http-status-code
      - retry-count
      - transaction-timer

```

#### 4.1.5 configure mobile-gateway profile authentication-database command hierarchy

```

configure
- mobile-gateway
  - profile
    - authentication-database
      - description
      - entry
        - access-loop-encapsulation
          - actual-rate-down
        - action
        - address-assignment
          - delegated-prefix-length
          - dhcp-relay
            - ipv4
              - gi-address
              - options
                - request-dhcp-profile
                - response-dhcp-profile
              - pool
              - router
              - server
            - ipv6
              - link-address
              - options
                - request-dhcp6-profile
              - pool
              - router
              - server
              - source-ip-address
          - initial-ip-handling
            - data-trigger
              - ipv6-address-assignment-type
            - source-ip
        - lifetimes
          - dhcpv6-rebind
          - dhcpv6-renew
          - preferred
          - valid
        - local-dynamic
          - ipv4-pool
          - ipv6-na-pool
          - ipv6-pd-pool
          - ipv6-slaac-pool
        - managed-routes
          - route-entry
            - metric
            - preference
            - tag
        - pd-as-framed-route
        - unmanaged
          - ipv4-address

```

```
    - ipv4-pool
    - ipv6-na-address
    - ipv6-na-pool
    - ipv6-pd-pool
    - ipv6-pd-prefix
    - ipv6-slaac-pool
    - ipv6-slaac-prefix
  - unmatched-prefix
- apn
- charging
  - bng-charging-profile
  - cp-volume-tracking
    - downstream
    - total
    - upstream
  - detailed-statistics
  - statistics-collection-interval
- cp-nat-profile
- description
- dhcp-profile
- dhcpv6-profile
- dynamic-policy
- fixed-wireless-access
  - address-hold-time
  - default-qos-profiles
    - authorized-4g
    - authorized-5g
    - subscribed-5g
  - ipv4-signaling-method
- http-redirect
  - url
- interface
  - group-interface-template
  - link-local-address
  - sap-template
- ip-anti-spoof
- l2tp
  - group
- match
  - apn
  - cell-id-list
  - charging-characteristics
  - circuit-id
  - client-id
  - imei-tac
  - imsi-mcc
  - imsi-mnc
  - l2-access-id
  - mac
  - pdn-type
  - remote-id
  - s-nssai
    - sd
    - sst
  - source-ip-prefix
- tai
  - mcc
  - mnc
  - tac
- tai-list
- up-group
- up-ip
- up-node-id
- username
```

```

    - username-domain
    - vendor-class
    - vlan
      - c-vlan
      - s-vlan
  - pfc
    - include-attributes
    - acct-session-id
  - pppoe
    - pado-delay
  - ra-profile
  - server-identifiers
    - pcscf-ipv4-address
    - pcscf-ipv6-address
  - session-timeout
  - shutdown
  - subscriber-mgmt
    - sla-profile
    - sub-profile
  - wpp
    - initial-profiles
      - sla-profile
      - sub-profile
    - portal-group
    - restore-disconnected
    - shutdown
    - wpp-radius-authentication
  - match
    - apn-format
    - optional
    - string-mask
      - prefix
      - suffix
  - shutdown

```

#### 4.1.6 configure mobile-gateway profile bng command hierarchy

```

configure
  - mobile-gateway
    - profile
      - bng
        - cp-nat-profile
          - description
          - nat-access-mode
          - nat-pool
            - description
            - laa-pool
            - mode
              - port-forwarding-range
              - port-limits
                - forwarding
              - port-reservation
              - subscriber-limit
            - up-nat-policy
        - dhcp-profile
          - description
          - options
            - option
            - relay-agent-options
              - action

```



```

        - circuit-id
        - remote-id
- dhcpv6-profile
  - description
  - options
    - option
    - relay-agent-options
      - interface-id
      - remote-id
- entry-point
  - description
  - entry
    - description
    - ipoe
      - allow-data-trigger
      - authentication-flow
        - adb
      - ipoe-profile
    - match
      - l2-access-id
      - up-group
      - up-ip
      - up-node-id
      - vlan
        - c-vlan
        - s-vlan
    - multiple-sessions-per-mac
  - pppoe
    - authentication-flow
      - padi-adb
      - pap-chap-adb
    - pppoe-profile
    - session-id
      - allocation-scope
      - random
  - python-policy
  - session-limits
    - per-l2-access-id
    - per-l2-circuit
    - per-up
  - session-lockout-profile
  - shutdown
  - subscriber-identification
    - multi-session-key
      - c-vlan
      - circuit-id
        - string-mask
          - prefix
          - suffix
      - l2-access-id
      - mac
      - remote-id
        - string-mask
          - prefix
          - suffix
      - s-vlan
    - session-limit
  - match
    - optional
    - string-mask
      - prefix
      - suffix
  - shutdown
- fsg-profile

```

```

- active-standby-selection
  - active-change-without-failure
  - failure-lockout
  - hold-off-on-degradation
  - hold-off-on-recovery
- default-standby-mode
- description
- health-calculation
  - aggregation-mode
  - failure-threshold
  - include-l2-access-ids
  - network-realm
- mac-prefix
- upf-fsg-template
- ipoe-profile
  - description
  - dot1p
  - dscp
  - require-chaddr-same-as-l2
- l2tp-group
  - avp-hiding
  - challenge
  - description
  - destruct-timeout
  - hello-interval
  - idle-timeout
  - local-name
  - max-retries-established
  - max-retries-non-established
  - password
  - receive-window-size
  - selection-algorithm
  - session-limit
  - tunnel
    - avp-hiding
    - challenge
    - description
    - destruct-timeout
    - hello-interval
    - idle-timeout
    - local-address
    - local-name
    - max-retries-established
    - max-retries-non-established
    - password
    - preference
    - receive-window-size
    - remote-address
    - remote-name
    - session-limit
    - shutdown
    - use-df-bit
  - use-df-bit
- pppoe-profile
  - authentication
    - chap-challenge-length
    - method
  - description
  - discovery
    - ac-name
    - generate-ac-cookie
  - dot1p-value
  - lcp
    - keep-alive

```

```

        - ignore-magic-numbers
        - interval
        - tries
    - max-mtu
    - mru
    - renegotiation
    - require-max-payload-tag
    - padi-removes-existing-session
- ra-profile
  - advertisement-interval
    - max
    - min
  - description
  - force-unicast-mac
  - options
    - hop-limit
    - mtu
    - on-link
    - other-configuration
    - reachable-time
    - retransmit-timer
    - router-lifetime
- radius-authentication-profile
  - apn-format
  - description
  - ignore-unknown-attributes
  - include-attribute
    - access-loop-options
    - acct-multi-session-id
    - acct-session-id
    - called-station-id
    - calling-station-id
    - circuit-id
    - dhcp-options
    - dhcp-vendor-class-id
    - dhcp6-options
    - gprs-negotiated-qos-profile
    - imeisv
    - imsi
    - ipoe-hostname
    - mac-address
    - nas-identifier
    - nas-port-id
    - nas-port-type
    - pppoe-service-name
    - rat-type
    - remote-id
    - session-s-nssai
    - supported-features
    - up-group
    - up-info
    - user-location-info
  - password
  - radius-group
  - user-name-format
    - ascii-converted-circuit-remote-id
    - domain-operation
    - fixed-wireless-access
      - format
    - ipoe
      - format
      - mac-format
    - pppoe
      - padi

```

```

        - format
        - mac-format
    - session-lockout-profile
      - attempt-window
      - block
      - description
      - failed-attempts
    - wpp
      - portal
        - ack-auth-retry-count
        - address
        - description
        - ntf-logout-retry-count
        - retry-interval
        - router
        - secret
        - shutdown
        - source-address
        - version
      - portal-group
        - description
        - portal
        - realm
        - shutdown

```

#### 4.1.7 configure mobile-gateway profile call-insight command hierarchy

```

configure
  - mobile-gateway
    - profile
      - call-insight
        - all-ues
          - description
          - events
          - format
          - live-output
          - path-management
          - ref-point
          - sba-service
          - size-limit
          - time-limit
        - ue
          - debug-output
          - description
          - events
          - format
          - live-output
          - ref-point
          - sba-service
          - size-limit
          - time-limit

```

#### 4.1.8 configure mobile-gateway profile charging command hierarchy

```

configure
  - mobile-gateway

```

```
- profile
  - charging
    - bng-charging
      - chf
        - chf-profile
        - chf-selection
          - nf-id-list
        - default-charging-method
        - dnn-format
        - rating-group
          - description
        - session-charging
          - final-unit-policy-rules
          - redirect
          - rating-group
        - shutdown
        - subscriber-identifier-format
    - description
  - radius
    - interim-update-interval
    - radius-group
    - session
      - apn-format
      - include-attribute
        - access-loop-options
        - acct-authentic
        - acct-delay-time
        - acct-triggered-reason
        - address-information
        - aggregate-statistics
        - called-station-id
        - calling-station-id
        - circuit-id
        - detailed-statistics
        - dhcp-vendor-class-id
        - framed-protocol
        - imeisv
        - imsi
        - lac-tunnel-info
        - mac-address
        - nas-identifier
        - nas-ip-address
        - nas-port-id
        - nas-port-type
        - nat-port-range
        - rat-type
        - remote-id
        - service-type
        - session-s-nssai
        - sla-profile
        - static-port-forward
        - subscriber-id
        - subscriber-profile
        - up-group
        - up-info
        - up-subscriber-id
        - user-location-info
        - user-name
      - shutdown
    - update-triggers
      - active-upf-change
      - address-state-change
      - periodic
      - user-location-change
```

- ccfh-profile
  - cc-failure-handling
  - disable-cc-session-failover
  - fh-session-continue-timer
  - fh-volume-limit
  - nchf-cause-code
  - nchf-http-code
  - session-restore-retry-timer
- chf-profile
  - ccfh-profile
  - description
  - sbi-srvc-operation
    - retry-count
    - transaction-timer

#### 4.1.9 configure mobile-gateway profile cloud-db command hierarchy

```

configure
- mobile-gateway
  - profile
    - cloud-db
      - description
      - server
      - shutdown
  
```

#### 4.1.10 configure mobile-gateway profile dns-profile command hierarchy

```

configure
- mobile-gateway
  - profile
    - dns-profile
      - ip-dscp
      - ip-ttl
      - message-retransmit
      - primary-dns
      - secondary-dns
      - tertiary-dns
  
```

#### 4.1.11 configure mobile-gateway profile gtp command hierarchy

```

configure
- mobile-gateway
  - profile
    - gtp
      - description
      - gtpv2-session-rejection-cause
        - apn-shutdown
        - gw-suspend
        - sx-connection-failure
      - ip-dscp
      - ip-ttl
  
```

- keep-alive
- message-retransmit

#### 4.1.12 configure mobile-gateway profile http2 command hierarchy

```
configure
- mobile-gateway
  - profile
    - http2
      - connection-timer
      - fail-num-retries
      - fail-retry-interval
      - ip-dscp
      - ping-period
      - python-policy
      - request-timeout
```

#### 4.1.13 configure mobile-gateway profile list command hierarchy

```
configure
- mobile-gateway
  - profile
    - list
      - cell-id-list
        - description
        - plmn
          - description
          - eci
            - description
        - nci
          - description
      - nf-id-list
        - nf-prof-id
        - api-prefix
        - enable
        - fqdn
        - nf-priority
        - prioritized-address-list
        - uuid
      - plmn
        - mcc
      - prioritized-ip-address-list
        - address
      - slice-instance-list
        - slice-instance
      - slice-list
        - slice
          - slice-instances
      - tai-list
        - tai
```

#### 4.1.14 configure mobile-gateway profile n1-profile command hierarchy

```
configure
- mobile-gateway
  - profile
    - n1-profile
      - cause-code
        - apn-shutdown
          - 5gsm-cause-code
          - application-error-code
          - http-status-code
        - gw-suspend
          - 5gsm-cause-code
          - application-error-code
          - http-status-code
      - n1-t3591
      - n1-t3592
```

#### 4.1.15 configure mobile-gateway profile node-selection command hierarchy

```
configure
- mobile-gateway
  - profile
    - node-selection
      - abort
      - begin
      - client-profile
        - default-action
          - set-target-profile
        - description
        - entry
          - action
            - set-target-profile
          - description
          - match
            - apn
            - cell-id-list
            - tai-list
      - commit
      - diff
      - group-label
        - description
      - target-profile
        - description
        - entry
          - description
          - match
            - apn
            - group-label
      - threshold
```



#### 4.1.16 configure mobile-gateway profile pcf-profile command hierarchy

```
configure
- mobile-gateway
  - profile
    - pcf-profile
      - ap-action
      - fh-session-no-response
      - fh-time-limit
      - fh-volume-limit
      - npcf-error-mapping-profile
      - sbi-srvc-operation
        - http-status-code
        - http-status-code-3xx
        - http-status-code-4xx
        - http-status-code-5xx
        - retry-count
        - transaction-timer
      - supported-features
        - policy-decision-error-handling
        - resp-based-session-rel
        - session-rule-error-handling
        - unlimited-multi-ipv6-prefix
```

#### 4.1.17 configure mobile-gateway profile pfcf command hierarchy

```
configure
- mobile-gateway
  - profile
    - pfcf
      - pfcf-association-peer-list
        - description
        - node-id
          - bfd-enable
      - pfcf-peer
        - bfd-enable
      - pfcf-profile
        - association-retry-timer
        - audit-ip-dscp
        - description
        - heart-beat
        - ip-dscp
        - ip-ttl
        - message-retransmit
        - path-restoration-time
      - pfcf-translate-profile
        - description
        - field
      - up-peer-list
        - description
        - peer
          - apn
          - group-label
          - upf-id
          - upf-selection
```

#### 4.1.18 configure mobile-gateway profile policy-options command hierarchy

```
configure
- mobile-gateway
  - profile
    - policy-options
      - abort
      - action-rule-unit
        - app-profile-name
      - begin
      - commit
      - diff
      - policy-rule
      - policy-rule-base
        - aa-adv-functions
          - app-profile-name
          - policy-rule
      - policy-rule-unit
        - description
        - flow-description
          - direction
          - match
            - local-port
            - protocol
            - remote-ip
            - remote-port
            - tos-tc
        - flow-gate-status
      - qos
        - down-link
        - up-link
    - qci-policy
      - description
      - qci
        - dscp
        - dscp-preserve
```

#### 4.1.19 configure mobile-gateway profile priority-mapping command hierarchy

```
configure
- mobile-gateway
  - profile
    - priority-mapping
      - arp
        - priority
      - description
      - gtp-rx-message-priority
        - priority
```

#### 4.1.20 configure mobile-gateway profile priority-profile command hierarchy

```
configure
```

```
- mobile-gateway
  - profile
    - priority-profile
      - description
      - priority
        - egress
          - gtp-dscp
          - gtp-tx-message-priority
          - pfc-p-dscp
          - pfc-p-priority-level
          - sbi-tx-message-priority
```

#### 4.1.21 configure mobile-gateway profile qfi-mapping-profile command hierarchy

```
configure
  - mobile-gateway
    - profile
      - qfi-mapping-profile
        - 5qi-as-qfi
```

#### 4.1.22 configure mobile-gateway profile qos-5g-profile command hierarchy

```
configure
  - mobile-gateway
    - profile
      - qos-5g-profile
        - 5qi
        - arp
        - dl-ambr
        - ul-ambr
```

#### 4.1.23 configure mobile-gateway profile qos-profile command hierarchy

```
configure
  - mobile-gateway
    - profile
      - qos-profile
        - arp
        - dl-ambr
        - qci
        - ul-ambr
```

#### 4.1.24 configure mobile-gateway profile radius-group command hierarchy

```
configure
  - mobile-gateway
    - profile
```

```

- radius-group
  - accounting-buffer
    - interim-update
    - lifetime
    - start
  - acct-server-port
  - auth-server-port
  - description
  - interface
  - interim-update-interval
  - peer
    - acct-server-port
    - auth-server-port
    - failover-threshold
    - failure-detection-time
    - priority
    - radius-profile
    - secret
    - shutdown
  - python-policy
  - radius-profile
  - secret
  - server-type
  - transaction-based-load-balancing

```

#### 4.1.25 configure mobile-gateway profile radius command hierarchy

```

configure
- mobile-gateway
  - profile
    - radius
      - acct-retry-count
      - acct-retry-timeout
      - auth-probe-interval
      - auth-retry-count
      - auth-retry-timeout
      - deadtime
      - description
      - max-peer-reselections

```

#### 4.1.26 configure mobile-gateway profile sbi-error-mapping-profile command hierarchy

```

configure
- mobile-gateway
  - profile
    - sbi-error-mapping-profile
      - http-to-5gsm
      - http-to-gtp

```

#### 4.1.27 configure mobile-gateway profile udm-sdm-profile command hierarchy

```

configure
- mobile-gateway
  - profile
    - udm-sdm-profile
      - create-subscription
        - fh-session-no-response
        - http-status-code
        - retry-count
        - transaction-timer
      - get-sm-subscription-data
        - fh-session-no-response
        - http-status-code
        - retry-count
        - transaction-timer
      - unsubscribe
        - retry-count
        - transaction-timer

```

#### 4.1.28 configure mobile-gateway profile udm-uecm-profile command hierarchy

```

configure
- mobile-gateway
  - profile
    - udm-uecm-profile
      - deregister-smf
        - retry-count
        - transaction-timer
      - register-smf
        - fh-session-no-response
        - http-status-code
        - retry-count
        - transaction-timer

```

#### 4.1.29 configure mobile-gateway system command hierarchy

```

configure
- mobile-gateway
  - system
    - bng
      - queries
        - session
          - acct-multi-session-id
          - acct-session-id
          - apn
          - c-vlan
          - circuit-id
          - client-user-name
          - client-user-name-domain
          - data-triggered
          - description
          - fate-sharing-group-id
          - imei
          - imsi
          - ip
            - address-stacks
              - ipv4

```

```

        - ipv6-na
        - ipv6-pd
        - ipv6-slaac
    - prefix
- l2-access-id
- mac-address
- msisdn
- nat-profile
- network-realm
- output-options
    - charging
    - count
    - nat
- pfc
    - local-seid
    - remote-seid
- rat-type
- remote-id
- s-nssai
    - sd
    - sst
- s-vlan
- standby-state
- subscriber-name
- up-ip
- user-access-type
- wpp-portal-group
- subscriber
    - acct-session-id
    - apn
    - description
    - fate-sharing-group-id
    - l2-access-id
    - network-realm
    - output-options
        - charging
        - count
        - nat
    - subscriber-id
    - subscriber-name
    - up-ip
- call-insight
    - location
        - disable
        - limit
        - primary
    - max-files-number
- group
    - protect-active-delay
    - shutdown
- resource-pool
    - card
    - protect-active-delay
- thresholds
    - system-mg-ism
        - interval
        - shutdown

```

### 4.1.30 configure mobile-gateway target command hierarchy

```
configure
- mobile-gateway
```

### 4.1.31 debug mobile-gateway command hierarchy

```
debug
- mobile-gateway
  - call-insight
    - all-ues
    - bng
    - ue
    - ue-mask
```

### 4.1.32 show mobile-gateway command hierarchy

```
show
- mobile-gateway
  - bng
    - charging
      - radius
        - buffering
    - nat
      - histogram
        - extended-port-blocks-per-ip
        - port-blocks
    - session
      - charging
        - aggregate-stats
        - detailed-stats
      - nat
        - port-forwarding-entries
      - summary
    - session-lockout
    - subscriber
    - wpp
      - statistics
  - call-insight
    - all-ues
    - bng
    - files
    - ue
    - ue-mask
  - connections
  - mg-vm
    - cpu
    - memory-pools
  - pdn
    - apn
      - pfcf
    - bng
      - fsg
      - static-session
      - up
      - up-group
    - call-flow-stats
    - clear-status
```

```

- load-overload-control
  - gtp-local-load
  - gtp-local-overload
  - gtp-peer-overload
  - sbi-local-overload
  - sbi-local-reporting
  - sbi-peer-congestion
  - summary
- local-address-assignment
  - pool
    - prefix
      - micro-net
      - nat-members
    - micro-nets
      - nat
      - extended-port-blocks
    - prefixes
  - pools
- path-mgmt-stats
- pdn-context
  - cp-seid
  - def-pfcp-u-sessions
  - gpsi
  - pei
  - supi
  - ue-ip
  - up-seid
- pdu-session
- priority-service
- qos-flow
- ref-point-peers
- ref-point-stats
- service-stats
  - nf-type
- static-predefined-pcc
- statistics
- ue-context
  - def-pfcp-u-sessions
- profile
  - amf-profile
  - authentication-database
  - bng
    - cp-nat-profile
    - entry-point
  - call-insight
    - all-ues
    - ue
  - charging
    - bng-charging
    - ccfh-profile
    - chf-profile
  - cloud-db
  - dns-profile
  - gtp
  - http2
  - list
    - cell-id-list
    - nf-id-list
    - plmn-list
    - prioritized-ip-address-list
    - slice-instance-list
    - slice-list
    - tai-list
  - nl-profile

```



```

- node-selection
  - client-profile
  - group-label
  - target-profile
- pcf-profile
- pfcf
  - pfcf-association-peer-list
  - pfcf-profile
  - pfcf-translate-profile
  - up-peer-list
- policy-options
  - action-rule-unit
  - qci-policy
- qfi-mapping-profile
- qos-5g-profile
- qos-profile
- radius
- radius-group
- sbi-error-mapping-profile
- udm-sdm-profile
- udm-uecm-profile
- system

```

### 4.1.33 tools mobile-gateway command hierarchy

```

tools
- dump
  - mobile-gateway
    - bng
      - error-history
      - local-address-assignment
        - address-status
    - nf-profile
    - pfcf-audit

```

## 4.2 mobile-gateway command descriptions

This section provides the following mobile-gateway command descriptions:

- [admin mobile-gateway command descriptions](#)
- [clear mobile-gateway command descriptions](#)
- [configure mobile-gateway pdn command descriptions](#)
- [configure mobile-gateway profile amf-profile command descriptions](#)
- [configure mobile-gateway profile authentication-database command descriptions](#)
- [configure mobile-gateway profile bng command descriptions](#)
- [configure mobile-gateway profile call-insight command descriptions](#)
- [configure mobile-gateway profile charging command descriptions](#)
- [configure mobile-gateway profile cloud-db command descriptions](#)
- [configure mobile-gateway profile dns-profile command descriptions](#)

- [configure mobile-gateway profile gtp command descriptions](#)
- [configure mobile-gateway profile http2 command descriptions](#)
- [configure mobile-gateway profile list command descriptions](#)
- [configure mobile-gateway profile n1-profile command descriptions](#)
- [configure mobile-gateway profile node-selection command descriptions](#)
- [configure mobile-gateway profile pcf-profile command descriptions](#)
- [configure mobile-gateway profile pfcf command descriptions](#)
- [configure mobile-gateway profile policy-options command descriptions](#)
- [configure mobile-gateway profile priority-mapping command descriptions](#)
- [configure mobile-gateway profile priority-profile command descriptions](#)
- [configure mobile-gateway profile qfi-mapping-profile command descriptions](#)
- [configure mobile-gateway profile qos-5g-profile command descriptions](#)
- [configure mobile-gateway profile qos-profile command descriptions](#)
- [configure mobile-gateway profile radius-group command descriptions](#)
- [configure mobile-gateway profile radius command descriptions](#)
- [configure mobile-gateway profile sbi-error-mapping-profile command descriptions](#)
- [configure mobile-gateway profile udm-sdm-profile command descriptions](#)
- [configure mobile-gateway profile udm-uecm-profile command descriptions](#)
- [configure mobile-gateway system command descriptions](#)
- [configure mobile-gateway command descriptions](#)
- [debug mobile-gateway command descriptions](#)
- [show mobile-gateway command descriptions](#)
- [tools mobile-gateway command descriptions](#)

## 4.2.1 admin mobile-gateway command descriptions

### 4.2.1.1 mobile-gateway

#### Syntax

**mobile-gateway**

#### Context

[\[Tree\]](#) admin mobile-gateway

#### Description

Commands in this context configure group suspension.

## 4.2.1.2 group

### Syntax

**group** *group-number* **suspend** [**now**]

### Context

[\[Tree\]](#) admin mobile-gateway group

### Description

This command suspends the specified group.

### Parameters

*group-number*

Specifies the mobile gateway group filter.

Values: 1 to 15

**suspend**

Keyword to administratively suspend this group for mobile gateway.

**now**

Keyword to force the suspend of this group with an active card.

## 4.2.1.3 max-suspend-duration

### Syntax

**max-suspend-duration** *max-suspend-duration*

### Context

[\[Tree\]](#) admin mobile-gateway max-suspend-duration

### Description

This command configures the maximal duration for suspended groups.

### Default

max-suspend-duration 30

### Parameters

*max-suspend-duration*

Specifies the duration in minutes.

Values: 0 | 10 to 120, where 0 disables the duration

Default: 30

## 4.2.2 clear mobile-gateway command descriptions

### 4.2.2.1 mobile-gateway

#### Syntax

**mobile-gateway**

#### Context

[\[Tree\]](#) clear mobile-gateway

#### Description

Commands in this context clear BNG and PDN gateway-related information.

### 4.2.2.2 bng

#### Syntax

**bng**

#### Context

[\[Tree\]](#) clear mobile-gateway bng

#### Description

Commands in this context clear BNG-related information.

### 4.2.2.3 error-history

#### Syntax

**error-history**

#### Context

[\[Tree\]](#) clear mobile-gateway bng error-history

#### Description

This command clears the BNG error history.

## 4.2.2.4 session

### Syntax

```
session [subscriber-name name] [force] [confirm] [l2-access-id string-64] [c-vlan tag] [s-vlan tag]  
[mac ieee-address] [up-ip ipv4-address | ipv6-address] [up-group name] [ppp-username username]  
session [force] [confirm] ip-prefix ip-prefix/ip-prefix-length network-realm realm-name [rate limit]  
session cancel
```

### Context

[\[Tree\]](#) clear mobile-gateway bng session

### Description

This command clears the BNG CUPS sessions that match the specified filters. By default, the user is prompted to confirm the deletion and the sessions are removed gracefully.

This command aborts when the number of sessions to remove exceeds 1000, except when the **ip-prefix** filter or the **force** keyword is specified.

The following applies when the **ip-prefix** filter is specified:

- A session is removed if it is part of the specified network realm and the IP address of the session matches the specified prefix.
- There is no limit on the number of sessions that can be removed.
- Optionally, the **rate** parameter specifies a limit for the rate at which sessions are removed.
- The following session types are not supported:
  - L2TP LAC
  - NAT, where the specified prefix is the NAT outside prefix

The **clear** command initiates an asynchronous process that removes the sessions in the background. The **session cancel** command aborts the running process.

The MAG-c sends the following messages to delete a session gracefully:

- PFCP Session Deletion Request to the BNG-UP
- Accounting Request Stop to the accounting server
- PADT to a PPPoE client
- LCP Terminate Request to a PPPoE client

### Parameters

**subscriber-name** *name*

Specifies the subscriber name filter, up to 128 characters.

**force**

Keyword to specify session deletion without synchronization with any external server or the client.



**Note:** Without the **force** keyword, the number of sessions that can be deleted gracefully is limited to 1000. With the **force** keyword, the number of sessions that can be deleted is unlimited.

### **confirm**

Keyword to skip the CLI prompt for user confirmation.

### **l2-access-id** *string-64*

Specifies the Layer 2 access ID filter, up to 64 characters.

### **c-vlan tag**

Specifies the customer VLAN (inner VLAN) filter.

Values: 1 to 4095

### **s-vlan tag**

Specifies the service VLAN (outer VLAN) filter.

Values: 1 to 4095

### **mac** *ieee-address*

Specifies the MAC address filter.

Values: xx:xx:xx:xx:xx:xx | xx-xx-xx-xx-xx-xx, cannot be all zeros

### **up-ip** *ipv4-address* | *ipv6-address*

Specifies the UP IP address filter.

Values:

- *ipv4-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

### **up-group** *name*

Specifies the UP group name, up to 32 characters.

### **ppp-username** *username*

Specifies the PPP username, up to 253 characters.

### *ip-prefix*

Specifies the IP address prefix.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

### *prefix-length*

Specifies the IP prefix length.

Values:

- IPv4: 0 to 32
- IPv6: 0 to 128

**network-realm** *realm-name*

Specifies the network realm name, up to 80 characters.

**rate** *limit*

Specifies a limit for the rate at which sessions are removed.

Values: 1 to 10000

**cancel**

Keyword to abort the ongoing **clear** command.

## 4.2.2.5 session-lockout

### Syntax

**session-lockout** [**I2-access-id** *string-64*] [**c-vlan tag**] [**s-vlan tag**] [**mac** *ieee-address*] [**up-ip** *ipv4-address | ipv6-address*] [**up-group** *name*]

### Context

[\[Tree\]](#) clear mobile-gateway bng session-lockout

### Description

This command clears the locked-out state of the specified sessions. Add any optional parameter to filter specific sets of sessions.

### Parameters

*string-64*

Specifies the Layer 2 access ID filter, up to 64 characters.

**c-vlan tag**

Specifies the customer VLAN (inner VLAN) filter.

Values: 1 to 4096

**s-vlan tag**

Specifies the service VLAN (outer VLAN) filter.

Values: 1 to 4096

*ieee-address*

Specifies the MAC address filter.

Values: xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx, cannot be all zeros

*ipv4-address | ipv6-address*

specifies the UP IP address filter

Values:

- ipv4-address – a.b.c.d
- ipv6-address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*name*

Specifies the UP group name, up to 32 characters.

#### 4.2.2.6 wpp

##### Syntax

**wpp**

##### Context

[\[Tree\]](#) clear mobile-gateway bng wpp

##### Description

Commands in this context clear WPP statistics.

#### 4.2.2.7 statistics

##### Syntax

**statistics portal *name***

**statistics portal-group *name***

##### Context

[\[Tree\]](#) clear mobile-gateway bng wpp statistics

##### Description

This command clears the statistics of the specified WPP portal or portal group.

##### Parameters

*name*

Specifies the WPP portal name.

**portal-group *name***

Specifies the WPP portal group name.



### 4.2.2.8 pdn

#### Syntax

**pdn** *gw-id*

#### Context

[\[Tree\]](#) clear mobile-gateway pdn

#### Description

This command clears PDN gateway related information.

#### Parameters

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

### 4.2.2.9 bearer-context

#### Syntax

**bearer-context** [**session-deletion-rate** *session-deletion-rate*] [**connectivity-state** *state*] [**up-alternate-profile-in-use**]

**bearer-context** [**session-deletion-rate** *session-deletion-rate*] **connected-time-gt** *connected-time-gt* [**connectivity-state** *state*]

**bearer-context** [**session-deletion-rate** *session-deletion-rate*] **connected-time-leq** *connected-time-leq* [**connectivity-state** *state*]

#### Context

[\[Tree\]](#) clear mobile-gateway pdn bearer-context

#### Description

This command clears FWA sessions.

Commands in this context configure filters that are matched against the whole UE. If they match, all UE sessions are deleted.

A subsequent **clear** command is not accepted while another one is still ongoing, except in the following cases when:

- the intent is to increase or decrease the deletion rate
- the intent is to clear all sessions for the same entity (gateway or APN) specified at the ongoing deletion

Progress of an ongoing **clear** command can be checked using the following command.

```
show mobile-gateway pdn clear-status
```

The following subcommands can be combined with the filters specified in the base command:

```
clear mobile-gateway pdn bearer-context apn
clear mobile-gateway pdn bearer-context imei
clear mobile-gateway pdn bearer-context imsi
clear mobile-gateway pdn bearer-context msisdn
clear mobile-gateway pdn bearer-context ue-location
clear mobile-gateway pdn bearer-context up-peer
```



**Note:**

- The parameters of the base command must be specified before any parameters of the subcommands.
- When this command is used without filters, all FWA sessions on the MAG-c are cleared. Before this, the user must enable the following command to place the MAG-c in a suspend state, which ensures no new sessions are set up while existing sessions are being cleared.

```
configure mobile-gateway pdn suspend
```

## Parameters

### *session-deletion-rate*

Specifies the maximum deletion rate of sessions, per second, for this command execution. When not configured, the MAG-c applies the value that is configured using the following command.

```
configure mobile-gateway pdn session-deletion-rate
```



**Note:** The *session-deletion-rate* parameter is ignored when the **local-only** parameter of specific subcommands is also provisioned.

Values: 2 to 2048

### *state*

Specifies that only sessions in the specified connectivity state are cleared.

Values: active | idle

### **up-alternate-profile-in-use**

Keyword to clear only sessions that use the alternative profiles signaled by the FWA-UP.

### *connected-time-gt*

Specifies that only sessions connected longer than the specified connected time in seconds are cleared.

Values: 1 to 2592000

### *connected-time-leq*

Specifies that only sessions connected for less than or equal to the specified connected time in seconds are cleared.

Values: 1 to 2592000

### 4.2.2.10 apn

#### Syntax

**apn** *name* [**local-only**]

#### Context

[\[Tree\]](#) clear mobile-gateway pdn bearer-context apn

#### Description

This command extends the base `clear mobile-gateway pdn bearer-context` command to clear FWA sessions belonging to a specific APN.



**Note:** The specified APN must be shut down first to prevent new sessions from being set up for this APN while existing sessions are cleared.

#### Parameters

*name*

Specifies the APN name, up to 80 characters.

**local-only**

Keyword to specify internal cleanup only, without signaling the deletion to any peer node, including the UPF.

### 4.2.2.11 imei

#### Syntax

**imei** *imei* [**apn name**] [**local-only**] [**bearer** *bearer-id*]

**imei** *imei* [**apn name**] [**cause-reactivation-req**]

#### Context

[\[Tree\]](#) clear mobile-gateway pdn bearer-context imei

#### Description

This command extends the base `clear mobile-gateway pdn bearer-context` command to clear FWA sessions with the specified IMEI.

#### Parameters

*imei*

Specifies an IMEI, up to 16 digits.

*name*

Specifies the APN name, up to 80 characters.

**local-only**

Keyword to specify internal cleanup only, without signaling the deletion to any peer node, including the UPF.

*bearer-id*

Specifies the EPS bearer ID of the specific UE.

Values: 5 to 15

**cause-reactivation-req**

Keyword to set the Request Cause of the release signaling to 8 (Reactivation Requested) in GTPv2. In a 5G deployment, keyword to make the SMF send the 5GSM cause value #39 (reactivation requested) in the PDU SESSION RELEASE COMMAND message.

## 4.2.2.12 imsi

**Syntax**

**imsi** *imsi* [**apn name**] [**local-only**] [**bearer** *bearer-id*]

**imsi** *imsi* [**apn name**] [**cause-reactivation-req**]

**Context**

[\[Tree\]](#) clear mobile-gateway pdn bearer-context imsi

**Description**

This command extends the base `clear mobile-gateway pdn bearer-context` command to clear FWA sessions with the specified IMSI.

**Parameters***imsi*

Specifies the IMSI, up to 15 digits.

*name*

Specifies the APN name, up to 80 characters.

**local-only**

Keyword to specify internal cleanup only, without signaling the deletion to any peer node, including the UPF.

*bearer-id*

Specifies the EPS bearer ID of the specific UE.

Values: 5 to 15

**cause-reactivation-req**

Keyword to set the Request Cause of the release signaling to 8 (Reactivation Requested) in GTPv2. In a 5G deployment, keyword to make the SMF send the 5GSM cause value #39 (reactivation requested) in the PDU SESSION RELEASE COMMAND message.

### 4.2.2.13 msisdn

#### Syntax

```
msisdn msisdn [apn name] [local-only] [bearer bearer-id]  
msisdn msisdn [apn name] [cause-reactivation-req]
```

#### Context

[\[Tree\]](#) clear mobile-gateway pdn bearer-context msisdn

#### Description

This command extends the base `clear mobile-gateway pdn bearer-context` command to clear FWA sessions with the specified MSISDN.

#### Parameters

*msisdn*

Specifies the MSISDN, up to 15 digits.

*name*

Specifies the APN name, up to 80 characters.

#### **local-only**

Keyword to specify internal cleanup only, without signaling the deletion to any peer node, including the UPF.

*bearer-id*

Specifies the EPS bearer ID of the specific UE.

Values: 5 to 15

#### **cause-reactivation-req**

Keyword to set the Request Cause of the release signaling to 8 (Reactivation Requested) in GTPv2. In a 5G deployment, keyword to make the SMF send the 5GSM cause value #39 (reactivation requested) in the PDU SESSION RELEASE COMMAND message.

### 4.2.2.14 target-profile

#### Syntax

```
target-profile profile-name action action [up-peer ipv4-address | ipv6-address] [percentage  
percentage]
```

#### Context

[\[Tree\]](#) clear mobile-gateway pdn bearer-context target-profile

## Description

This command extends the base `clear mobile-gateway pdn bearer-context` command to clear FWA sessions associated with the specified target profile.

## Parameters

### *profile-name*

Specifies an existing target profile name, up to 32 characters, that is previously configured using the following command.

```
configure mobile-gateway profile node-selection target-profile
```

### *action*

Specifies the action.

Values:

- `rebalance` – keyword to only clear sessions if the UPF is in the primary list of the target profile (highest-priority UPF)
- `revert` – keyword to only clear sessions if the UPF is in the backup list of the target profile (lower-priority UPF)

### *ipv4-address* | *ipv6-address*

Specifies the UPF peer address. If this optional parameter is not specified, the MAG-c clears the relevant sessions on all UPFs in the entries of the target profile.



**Note:** Nokia strongly recommends configuring the IP address of the UPF on which the revert or rebalance action must be performed.

Values:

- `ipv4-address` – a.b.c.d
- `ipv6-address` – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where  
 x – [0..FFFF]H  
 d – [0..255]D

### *percentage*

Specifies the percentage of sessions to clear. If this optional parameter is specified, only the configured percentage of all sessions that match the specified target profile and the optional UPF peer address are cleared.

## 4.2.2.15 ue-location-tac

### Syntax

**ue-location-tac** *tracking-area-code*

**ue-location-tac** *tracking-area-code* **apn** *apn*

## Context

[\[Tree\]](#) clear mobile-gateway pdn bearer-context ue-location-tac

## Description

This command extends the base `clear mobile-gateway pdn bearer-context` command to clear FWA sessions with the specified tracking area code (TAC).

## Parameters

*tracking-area-code*

Specifies the TAC.

Values: 4 or 6 digit hexadecimal number

*apn*

Specifies the APN name, up to 80 characters.

## 4.2.2.16 up-peer

### Syntax

**up-peer** *ipv4-address* | *ipv6-address* **apn** *apn* [**ipv4-prefix** *ipv4-address/mask* | **ipv6-prefix** *ipv6-address/prefix-length*] [**cancel**]

### Context

[\[Tree\]](#) clear mobile-gateway pdn bearer-context up-peer

### Description

This command extends the base `clear mobile-gateway pdn bearer-context` command to clear FWA sessions active on the specified UPF.

### Parameters

*ipv4-address* | *ipv6-address*

Specifies the IP address.

Values:

- *ipv4-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*apn*

Specifies the APN name, up to 80 characters.

*ipv4-address/mask*

Specifies the IPv4 address and mask.

Values:

- `ipv4-address` – a.b.c.d (host bits must be 0)
- `mask` – 9 to 30

*ipv6-address/prefix-length*

Specifies the IPv6 address and prefix length.

Values:

- `ipv6-address` – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D
- `prefix-length` – 41 to 56

**cancel**

Keyword to cancel an ongoing **clear** command.

#### 4.2.2.17 call-flow-stats

##### Syntax

**call-flow-stats** [**group** *group-number* | **card** *slot-number*]

##### Context

[\[Tree\]](#) clear mobile-gateway pdn call-flow-stats

##### Description

This command clears call flow statistics.

##### Parameters

*group-number*

Specifies the group number.

Values: 1 to 8

*slot-number*

Specifies the card slot number.

Values: 1 to 10 | A | B

#### 4.2.2.18 charging

##### Syntax

**charging imsi** *string* **open-partial**



## Context

[\[Tree\]](#) clear mobile-gateway pdn charging

## Description

This command fetches the latest statistics from the UPF and subsequently resets charging statistics on the SMF. If a CHF charging session is enabled, an immediate usage report for these statistics is generated using the MANAGEMENT\_INTERVENTION trigger.

## Parameters

*string*

Specifies the IMSI, up to 15 digits.

**open-partial**

Keyword to send an update to the charging peer.

### 4.2.2.19 load-overload-control

#### Syntax

**load-overload-control gtp-local-overload**

**load-overload-control gtp-peer-overload**

#### Context

[\[Tree\]](#) clear mobile-gateway pdn load-overload-control

#### Description

This command clears the specified overload statistics.

#### Parameters

**gtp-local-overload**

Keyword that clears the local overload control information of the node.

**gtp-peer-overload**

Keyword that clears the GTP-C overload information received from the peering node.

### 4.2.2.20 nrf-client-cache

#### Syntax

**nrf-client-cache [nf-type {pcf | udm | amf | chf}]**

#### Context

[\[Tree\]](#) clear mobile-gateway pdn nrf-client-cache

**Description**

This command clears the NRF cache.

**Parameters****nf-type**

Specifies the discovery target NF type for which the cache entries are cleared.

**4.2.2.21 path-mgmt-stats****Syntax**

```
path-mgmt-stats {s11 | sx-n4} [peer ip-address [port port]]
```

```
path-mgmt-stats { n9} [ref-point ref-point-name] [peer ip-address [port port]]
```

**Context**

[\[Tree\]](#) clear mobile-gateway pdn path-mgmt-stats

**Description**

This command clears path management statistics.

**Parameters****s11 | sx-n4 | n9**

Specifies the reference point type.

*ref-point-name*

Specifies the reference point name.

*ip-address*

Specifies an existing peer IP address.

Values:

- ipv4-address – a.b.c.d
- ipv6-address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x.d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*fqdn*

Specifies the fully qualified domain name, up to 255 characters.

*port*

Specifies a port ID.

Values: 1 to 65535

## 4.2.2.22 ref-point-stats

### Syntax

```

ref-point-stats { s11 | sx-n4 } [peer ip-address [port port]] [group group-number | card slot-number]
ref-point-stats {radius} [radius-group radius-group [peer ip-address]] [group group-number | card
slot-number]
ref-point-stats [ref-point ref-point-name] [peer ip-address [port port]] [group group-number | card
slot-number]
ref-point-stats {ibcp} [card slot-number] [aggregate]

```

### Context

[\[Tree\]](#) clear mobile-gateway pdn ref-point-stats

### Description

This command clears reference point statistics.

### Parameters

#### **s11 sx-n4 n9**

Specifies the reference point type.

#### *ip-address*

Specifies an existing peer IP address or FQDN

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

#### *fqdn*

Specifies the fully qualified domain name, up to 255 characters.

#### *port*

Specifies a port ID.

Values: 1 to 65535

#### *group-number*

Specifies the group number.

Values: 1 to 8

#### *slot-number*

Specifies the card slot number.

1 to 10 | A | B

*ref-point-name*

Specifies the reference point name.

**radius**

Keyword to clear the RADIUS statistics.

*radius-group*

Specifies the RADIUS group.

**ibcp**

Keyword to clear the BNG IBCP statistics.

### 4.2.2.23 service-stats

#### Syntax

**service-stats**

#### Context

[\[Tree\]](#) clear mobile-gateway pdn service-stats

#### Description

This command clears the statistics for Service Based Interfaces (SBIs).

### 4.2.2.24 nf-type

#### Syntax

**nf-type** *nf-type* [**service-realm** *service-realm-name*] [**service-name** *service-name*] [**service-instance** *service-instance*] [**remote-nf-id** *uuid*] [**remote-nf-ip** *ip-address* | *fqdn*] [**group** *group-id*]

#### Context

[\[Tree\]](#) clear mobile-gateway pdn service-stats nf-type

#### Description

This command clears the SBI statistics for the specified NF type.

#### Parameters

*nf-type*

Specifies the NF type. Should match one of the following values.

Values: amf | nrf | pcf | udm | chf | smf | scp

*service-realm-name*

Specifies the service realm name, up to 32 characters.

*service-name*

Specifies the service name. Should match one of the following values.

Values: nsmf-pdusession | namf-comm | nnrf-nfm | nnrf-disc | npc-smpolicycontrol | nudm-sdm | nudm-uecm | nchf-convergedcharging | scp

*service-instance*

Specifies the service instance name, up to 32 characters.

*uuid*

*ip-address*

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*fqdn*

Specifies the fully qualified domain name, up to 255 characters.

*group-id*

Specifies the VM group ID, with 0 specifying the OAM VM.

Values: 0 to 15

## 4.2.2.25 statistics

### Syntax

**statistics attach-failure-statistics group** *group-number*  
**statistics** [**group** *group-number*] **ga-buffered-cdrs**

### Context

[\[Tree\]](#) clear mobile-gateway pdn statistics

### Description

This command clears statistics for each card.

### Parameters

*group-number*

Specifies the group number.

Values: 1 to 15

**attach-failure-statistics**

Keyword to clear attach failure statistics.

**ga-buffered-cdrs**

Keyword to clear Ga buffered CDR files.

## 4.2.3 configure mobile-gateway pdn command descriptions

### 4.2.3.1 pdn

#### Syntax

[no] pdn *gw-id*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn

#### Description

This command configures a generic Packet Data Network (PDN) gateway instance. The **no** form of this command removes the gateway instance from the configuration.

#### Parameters

*gw-id*

Specifies the gateway ID.

Values: 1

### 4.2.3.2 apn

#### Syntax

apn *apn-name*

no apn *apn-name*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn

#### Description

This command configures an Access Point Name (APN). Each APN represents a service provided by a service provider. APNs can be classified as consumer APNs such as Internet, IMS, and Walled Garden and corporate APNs.



**Note:** New APNs can be added without PDN shutdown. To delete an APN from the configuration, follow this procedure:

- shutdown the APN
- clear all sessions from the APN
- delete the APN

## Parameters

*apn-name*

Specifies an APN name, up to 80 characters.

### 4.2.3.3 address-assignment-defaults

#### Syntax

**address-assignment-defaults**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn address-assignment-defaults

#### Description

Commands in this context configure defaults for the APN when using ODSA. ODSA is configured under the following context.

```
configure mobile-gateway pdn local-address-assignment
```

### 4.2.3.4 local-dynamic

#### Syntax

**local-dynamic**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn address-assignment-defaults local-dynamic

#### Description

Commands in this context configure the default pool for locally assigned IP addresses.

### 4.2.3.5 ipv4-pool

#### Syntax

**ipv4-pool** *pool-name*

**no ipv4-pool**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn address-assignment-defaults local-dynamic ipv4-pool

### Description

This command specifies the name of the IPv4 pool to be used for the local address assignment if no address pool is explicitly returned during authentication.

### Default

no ipv4-pool

### Parameters

*pool-name*

Specifies the pool name, up to 32 characters.

## 4.2.3.6 ipv6-na-pool

### Syntax

**ipv6-na-pool** *pool-name*

**no ipv6-na-pool**

### Context

[\[Tree\]](#) configure mobile-gateway pdn apn address-assignment-defaults local-dynamic ipv6-na-pool

### Description

This command configures the IPv6 NA pool name for AAA or local address assignment if no pool is explicitly returned during session authentication.

The **no** form of this command removes the configuration.

### Default

no ipv6-na-pool

### Parameters

*pool-name*

Specifies the pool name, up to 32 characters.

## 4.2.3.7 ipv6-pd-pool

### Syntax

**ipv6-pd-pool** *pool-name*

**no ipv6-pd-pool**

### Context

[\[Tree\]](#) configure mobile-gateway pdn apn address-assignment-defaults local-dynamic ipv6-pd-pool



## Description

This command configures the IPv6 PD pool name for AAA or local address assignment if no pool is explicitly returned during session authentication.

The **no** form of this command removes the configuration.

## Default

no ipv6-pd-pool

## Parameters

*pool-name*

Specifies the pool name, up to 32 characters.

### 4.2.3.8 ipv6-slaac-pool

#### Syntax

**ipv6-slaac-pool** *pool-name*

**no ipv6-slaac-pool**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn address-assignment-defaults local-dynamic ipv6-slaac-pool

#### Description

This command configures the IPv6 SLAAC pool name for AAA or local address assignment if no pool is explicitly returned during session authentication.

The **no** form of this command removes the configuration.

#### Default

no ipv6-slaac-pool

#### Parameters

*pool-name*

Specifies the pool name, up to 32 characters.

### 4.2.3.9 unmanaged

#### Syntax

**unmanaged**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn address-assignment-defaults unmanaged

## Description

Commands in this context configure the default pool for AAA assigned IP addresses.

### 4.2.3.10 ipv4-pool

#### Syntax

```
ipv4-pool pool-name  
no ipv4-pool
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn address-assignment-defaults unmanaged ipv4-pool

#### Description

This command specifies the name of the IPv4 pool to be used for the local address assignment if no address pool is explicitly returned during authentication.

#### Default

no ipv4-pool

#### Parameters

*pool-name*  
Specifies the pool name, up to 32 characters.

### 4.2.3.11 ipv6-na-pool

#### Syntax

```
ipv6-na-pool pool-name  
no ipv6-na-pool
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn address-assignment-defaults unmanaged ipv6-na-pool

#### Description

This command configures the IPv6 NA pool name for AAA or local address assignment if no pool is explicitly returned during session authentication.

The **no** form of this command removes the configuration.

#### Default

no ipv6-na-pool

## Parameters

*pool-name*

Specifies the pool name, up to 32 characters.

### 4.2.3.12 ipv6-pd-pool

#### Syntax

**ipv6-pd-pool** *pool-name*

**no ipv6-pd-pool**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn address-assignment-defaults unmanaged ipv6-pd-pool

#### Description

This command configures the IPv6 PD pool name for AAA or local address assignment if no pool is explicitly returned during session authentication.

The **no** form of this command removes the configuration.

#### Default

no ipv6-pd-pool

#### Parameters

*pool-name*

Specifies the pool name, up to 32 characters.

### 4.2.3.13 ipv6-slaac-pool

#### Syntax

**ipv6-slaac-pool** *pool-name*

**no ipv6-slaac-pool**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn address-assignment-defaults unmanaged ipv6-slaac-pool

#### Description

This command configures the IPv6 SLAAC pool name for AAA or local address assignment if no pool is explicitly returned during session authentication.

The **no** form of this command removes the configuration.

#### Default

no ipv6-slaac-pool

**Parameters***pool-name*

Specifies the pool name, up to 32 characters.

**4.2.3.14 charging****Syntax****charging****Context****[Tree]** configure mobile-gateway pdn apn charging**Description**

Commands in this context configure charging options specific to this APN.

**4.2.3.15 nchf****Syntax****nchf****Context****[Tree]** configure mobile-gateway pdn apn charging nchf**Description**

Commands in this context configure charging control function (CHF) charging options.

**4.2.3.16 chf-selection****Syntax****chf-selection****Context****[Tree]** configure mobile-gateway pdn apn charging nchf chf-selection**Description**

Commands in this context configure CHF selection options.

### 4.2.3.17 nf-id-list

#### Syntax

```
nf-id-list list-name  
no nf-id-list
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn charging nchf chf-selection nf-id-list

#### Description

This command specifies an NF ID list for the CHF selection. This list is only used if the following conditions are met:

- The PCF does not provide the CHF peers.
- No **nf-id-list** is configured in the following context.

```
configure mobile-gateway profile charging bng-charging chf chf-selection
```

In the preceding conditions, this command is only used in the following cases:

- network resource function (NRF) based CHF discovery only returns a list of NF instances without IP/FQDN. In this case, the returned NF instance IDs must be present in the NF ID list.
- NRF-based discovery fails. For example, it returns an empty list or it times out.
- NRF-based discovery is disabled.

The **no** form of this command removes the NF ID list from the configuration. If no other CHF selection methods are provisioned, the CHF selection fails.

#### Default

```
no nf-id-list
```

#### Parameters

*list-name*

Specifies the NF ID list name, up to 32 characters. Refers to a list configured using the following command.

```
configure mobile-gateway profile list nf-id-list
```

### 4.2.3.18 del-bearer-reactivation-req-cause

#### Syntax

```
del-bearer-reactivation-req-cause {[fh-session-continue] [session-timeout] [pdn-connection-clear] [all]}  
no del-bearer-reactivation-req-cause
```

## Context

[\[Tree\]](#) configure mobile-gateway pdn apn del-bearer-reactivation-req-cause

## Description

This command forces the Cause code in Delete Bearer messages to be set to Reactivation Request (value #8) for the specified deletion scenarios.

The **no** form of this command indicates that no Cause code is signaled for these scenarios.

## Default

no del-bearer-reactivation-req-cause

## Parameters

### fh-session-continue

Keyword to include a re-activation request in the Delete Bearer Request that is sent to the UE, when a CCFH session continue timer expires.

### session-timeout

Keyword to trigger a deletion by a session timeout.

### pdn-connection-clear

Keyword to trigger a deletion by executing an explicit clear command, or when removing a session after a session audit.

### all

Keyword to enable the reactivation Cause code for all listed deletion scenarios.

## 4.2.3.19 description

### Syntax

**description** *description-string*

**no description**

### Context

[\[Tree\]](#) configure mobile-gateway pdn apn description

### Description

This command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

### Default

no description

## Parameters

### *description-string*

Specifies the description. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.3.20 dhcp-profile

### Syntax

**dhcp-profile** *name*

**no dhcp-profile**

### Context

[\[Tree\]](#) configure mobile-gateway pdn apn dhcp-profile

### Description

This command configures the DHCPv4 profile for the session.

The **no** form of this command removes the configuration.

### Parameters

#### *name*

Specifies the DHCPv4 profile name, up to 32 characters.

## 4.2.3.21 dhcpv4-server-ip

### Syntax

**dhcpv4-server-ip** *ip-address*

**no dhcpv4-server-ip**

### Context

[\[Tree\]](#) configure mobile-gateway pdn apn dhcpv4-server-ip

### Description

This command configures the DHCP Server IP address when the MAG-c generates DHCP packets. If not configured, the MAG-c uses the default gateway IP of the session as the DHCP Server IP instead.

The **no** form of this command removes the configuration.

### Default

**no dhcpv4-server-ip**

## Parameters

*ip-address*

Specifies the IP address.

Values: a.b.c.d

### 4.2.3.22 dhcpv6-profile

#### Syntax

**dhcpv6-profile** *profile-name*

**no dhcpv6-profile**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn dhcpv6-profile

#### Description

This command configures the DHCPv6 profile to use for DHCPv6 messages sent in the context of this session. This profile is used if no profile is provided during session authentication.

The **no** form of this command removes the configuration.

#### Parameters

*profile-name*

Specifies the DHCPv6 profile name, up to 32 characters.

### 4.2.3.23 dhcpv6-server-duid

#### Syntax

**dhcpv6-server-duid hex** *hex-string*

**dhcpv6-server-duid ascii** *ascii-string*

**dhcpv6-server-duid system-name**

**dhcpv6-server-duid link-local**

**no dhcpv6-server-duid**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn dhcpv6-server-duid

#### Description

This command configures the value included in the server ID option in DHCPv6 messages.

The **no** form of this command reverts to the default.



## Parameters

### *hex-string*

Specifies the hexadecimal value.

Values: 0x0 to 0xFFFFFFFF...(max 116 hex nibbles)

### *ascii-string*

Specifies the ASCII string, up to 58 characters.

### **system-name**

Keyword to use the system name.

### **link-local**

Keyword to use the BNG link-local address of the session.

## 4.2.3.24 fixed-wireless-access

### Syntax

**fixed-wireless-access**

### Context

[\[Tree\]](#) configure mobile-gateway pdn apn fixed-wireless-access

### Description

Commands in this context configure functionality related to FWA sessions.

## 4.2.3.25 authentication-flow

### Syntax

**authentication-flow**

### Context

[\[Tree\]](#) configure mobile-gateway pdn apn fixed-wireless-access authentication-flow

### Description

This command configures the ADB-based authentication flow to set up FWA sessions.

## 4.2.3.26 adb

### Syntax

**adb** *adb-name* [*adb-name*...(up to 3 max)]

**no adb**

## Context

[\[Tree\]](#) configure mobile-gateway pdn apn fixed-wireless-access authentication-flow adb

## Description

This command configures an ordered list of ADBs to authenticate FWA sessions.  
The **no** form of this command removes the configuration.

## Default

no adb

## Parameters

*adb-name*

Specifies the ADB name, up to 32 characters; up to three ADB names can be specified.

### 4.2.3.27 default-ipv4-signaling-method

## Syntax

**default-ipv4-signaling-method** *signaling-method*

## Context

[\[Tree\]](#) configure mobile-gateway pdn apn fixed-wireless-access default-ipv4-signaling-method

## Description

This command configures whether to signal an allocated IPv4 address to the FWA RG using NAS or DHCP (deferred allocation) messaging. This value is used if no other method is provided during session setup; for example, by the ADB, RADIUS, or PCO.

## Default

default-ipv4-signaling-method nas

## Parameters

*signaling-method*

Specifies the method to signal allocated IPv4 addresses.

Values: nas | dhcp

### 4.2.3.28 shutdown

## Syntax

**[no] shutdown**

## Context

[Tree] configure mobile-gateway pdn apn fixed-wireless-access shutdown

## Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

### 4.2.3.29 max-pdn-connections

## Syntax

```
max-pdn-connections max-pdn-connections [alarm | enforce]  
no max-pdn-connections
```

## Context

[Tree] configure mobile-gateway pdn apn max-pdn-connections

## Description

This command configures the maximum number of PDN connections for this APN on the MAG-c, and enables or disables alarms to be sent when the maximum PDN connections are reached or configures send alarms and to not accept any new FWA connections when the *max-pdn-connections* value has been reached. When the configured maximum number is reached, an alarm event is raised at the end of the pulling interval.

The **no** form of this command disables and removes the maximum connection limit and disables sending alarm even when the *max-pdn-connections* value is reached.

## Parameters

*max-pdn-connections*

Specifies the maximum number of FWA connections.

Values: 1 to 20000000

Default: 0

**alarm**

Keyword to send an alarm even when *max-pdn-connections* has been reached.

Default: alarm

**enforce**

Keyword to send an alarm and not accept any new FWA connections when *max-pdn-connections* has been reached.

### 4.2.3.30 max-session-attach

#### Syntax

**max-session-attach** *max-attach-limit* [**alarm**] [**include-emergency**]  
**no max-session-attach**

#### Context

[Tree] configure mobile-gateway pdn apn max-session-attach

#### Description

This command configures the threshold of the maximum number of GTP-based attach requests per second. The limit is applied to the new FWA session attach requests received. When this command is enabled, the **alarm** keyword specifies to raise an alarm when the maximum number of attaches is reached. The **no** form of this command reverts to the default (no limit is applied to the number of attach requests).

#### Parameters

##### *max-attach-limit*

Specifies the maximum number of attach requests per second.

Values: 0 to 100000

Default: 0

##### **alarm**

Keyword to raise an alarm when the maximum number of attach requests per second is reached.

Default: disabled

##### **include-emergency**

Keyword to include the emergency attach requests to the threshold.

Default: disabled

### 4.2.3.31 network-realm

#### Syntax

**network-realm** *name*  
**no network-realm**

#### Context

[Tree] configure mobile-gateway pdn apn network-realm

## Description

This command specifies the network-realm with which address pools used for local address assignment are associated. The **network-realm** command is configured in the following context.

```
configure mobile-gateway pdn local-address-assignment
```

The **network-realm** is also the network identifier that is sent to the UP using the Network Instance IE in PFCP.

## Parameters

*name*

Specifies the name of the associated network realm, up to 80 characters.



**Note:** Only the following characters are permitted:

- alphabetic characters (A-Z and a-z)
- digits (0-9)
- hyphen (-)
- dot (.)

### 4.2.3.32 pcf-selection

#### Syntax

**pcf-selection**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn pcf-selection

#### Description

Commands in this context configure PCF selection options.

### 4.2.3.33 dnn-format

#### Syntax

**dnn-format** *form*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn pcf-selection dnn-format

#### Description

This command configures the DNN format used when sending the DNN to PCF.

## Default

dnn-format selected

## Parameters

*form*

Specifies the DNN format.

Values:

- **real** – specifies use of the real, unmodified DNN as signaled during the FWA session setup, including the OI if it is present
- **real-ni-only** – specifies use of the real DNN as signaled during the FWA session setup, but without the OI if it is present
- **selected** – specifies use of the selected DNN as is (returned after initial authentication); if no selected DNN is available, the system falls back to the real-ni-only option.

### 4.2.3.34 exclude-gpsi

#### Syntax

**exclude-gpsi**

**no exclude-gpsi**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn pcf-selection exclude-gpsi

#### Description

This command configures whether GPSI is used in the query criteria when the MAG-c discovers the PCF using the NRF.

The **no** form of this command configures the use of GPSI in the query criteria.

#### Default

**no exclude-gpsi**

### 4.2.3.35 exclude-snsais

#### Syntax

**exclude-snsais** {**enable** | **disable** | **inherit**}

**no exclude-snsais**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn pcf-selection exclude-snsais

## Description

This command configures whether S-NSSAIs are used in the query criteria when the MAG-c discovers the PCF using the NRF.

The **no** form of this command reverts to the default.

## Default

**exclude-snsais inherit**

## Parameters

### **enable**

Keyword to use S-NSSAIs in the query criteria.

### **disable**

Keyword to not use S-NSSAIs in the query criteria.

### **inherit**

Keyword to inherit the configuration specified under **configure mobile-gateway pdn 1 sba-client-services nrf-client nnrf-disc exclude-snsais**.

## 4.2.3.36 exclude-supi

### Syntax

**exclude-supi**  
**no exclude-supi**

### Context

[\[Tree\]](#) configure mobile-gateway pdn apn pcf-selection exclude-supi

## Description

This command configures whether SUPI is used in the query criteria when the MAG-c discovers the PCF using the NRF.

The **no** form of this command configures that SUPI is used in the query criteria.

## Default

**no exclude-supi**

## 4.2.3.37 nf-id-list

### Syntax

**nf-id-list** *list-name*  
**no nf-id-list**

## Context

[\[Tree\]](#) configure mobile-gateway pdn apn pcf-selection nf-id-list

## Description

This command specifies an NF ID list for PCF selection. This list is used in the following cases:

- NRF-based discovery only returns a list of NF Instances without IP/FQDN, in which case the specified NF Instance IDs must be present in the NF ID list.
- NRF-based discovery fails (for example returns an empty list or times out).
- NRF-based discovery is disabled.

This NF ID list takes precedence over any list configured using the following command.

```
configure mobile-gateway pdn sba-client-services pcf-client npcf-smpolicycontrol nf-id-list
```

The **no** form of this command removes the NF ID list from the configuration.

## Default

**no nf-id-list**

## Parameters

*list-name*

Specifies the NF ID list name, up to 32 characters. Refers to a list configured using the **configure mobile-gateway profile list nf-id-list** command.

### 4.2.3.38 pcf-id

## Syntax

**no pcf-id**

**pcf-id {use-as-target | ignore}**

## Context

[\[Tree\]](#) configure mobile-gateway pdn apn pcf-selection pcf-id

## Description

This command configures whether the PCF NF Instance ID received from the Access and Mobility Management Function (AMF) is used in the target-nf-instance-id query parameter when the MAG-c discovers the PCF using the NRF.

The **no** form of this command reverts to the default

## Default

**pcf-id use-as-target**



## Parameters

### **use-as-target**

Keyword to use the NF Instance ID in the target-nf-instance-id query parameter.

### **ignore**

Keyword to not use the NF Instance ID when generating the query.

## 4.2.3.39 pcf-profile

### Syntax

**no pcf-profile**

**no pcf-profile** *profile-name*

### Context

[\[Tree\]](#) configure mobile-gateway pdn apn pcf-selection pcf-profile

### Description

This command configures the PCF profile that is used to communicate with the PCF.

The **no** form of this command removes the PCF profile from the configuration and default settings are used thereafter.

### Default

no pcf-profile

### Parameters

*profile-name*

Specifies the PCF profile name, up to 32 characters. Refers to a profile configured using the **configure mobile-gateway profile pcf-profile** command.

## 4.2.3.40 pdn-type

### Syntax

**pdn-type** {**ipv4** | **ipv6** | **ipv4v6**} [{**ipv4** | **ipv6** | **ipv4v6**}...(up to 4 max)]

**no pdn-type**

### Context

[\[Tree\]](#) configure mobile-gateway pdn apn pdn-type

### Description

This command specifies the Packet Data Network (PDN) type for 4G sessions and the similar Protocol Data Unit (PDU) type for 5G sessions. If the MAG-c receives a Session Creation Request for an **ipv4** or **ipv6** PDN/PDU type that is not in the specified list, it rejects the session. If the MAG-c receives a request

for an **ipv4v6** PDN/PDU type that is not in the specified list, it is downgraded to IPv4 or IPv6 if either of those is configured. If both **ipv4** and **ipv6** are configured, **ipv4** is chosen unless the **pdn-type-preferred-ipv6** command is configured.

The **no** form of this command reverts to the default.

### Default

```
pdn-type ipv4 ipv6 ipv4v6
```

### Parameters

#### ipv4

Keyword to specify that IPv4 FWA sessions are supported by this APN.

#### ipv6

Keyword to specify that IPv6 FWA sessions are supported by this APN.

#### ipv4v6

Keyword to specify that IPv4v6 FWA sessions are supported by this APN.

## 4.2.3.41 pdn-type-preferred-ipv6

### Syntax

```
[no] pdn-type-preferred-ipv6
```

### Context

[\[Tree\]](#) configure mobile-gateway pdn apn pdn-type-preferred-ipv6

### Description

This command enables to fall back to the **ipv6** PDN/PDU type when the client requested **ipv4v6** but only **ipv4** and **ipv6** PDN/PDU types are allowed. See the following command for more information.

```
configure mobile-gateway pdn apn pdn-type
```

The **no** form of this command enables a fall back to the **ipv4** PDN/PDU type.

### Default

```
no pdn-type-preferred-ipv6
```

## 4.2.3.42 pfcf-translate-tx

### Syntax

```
pfcf-translate-tx profile-name
```

```
no pfcf-translate-tx
```

## Context

[\[Tree\]](#) configure mobile-gateway pdn apn pfcpc-translate-tx

## Description

This command associates a PFCPC message translation function profile with an APN for sending selective subscriber information values in the PFCPC IEs.

The **no** form of this command removes the configuration.

## Parameters

*profile-name*

Specifies an existing PFCPC message translation profile name, up to 32 characters, previously configured using the following command.

```
configure mobile-gateway profile pfcpc pfcpc-translate-profile
```

### 4.2.3.43 qci-policy

## Syntax

**qci-policy** {*qci-policy-name* | **uplink** *qci-policy-name* [**downlink** *qci-policy-name*] | **downlink** *qci-policy-name* [**uplink** *qci-policy-name*]}

**no qci-policy**

## Context

[\[Tree\]](#) configure mobile-gateway pdn apn qci-policy

## Description

This command configures the QCI policy for the uplink or downlink direction, or both. This policy is used to map QCI/5QI and ARP values to other QoS parameters, such as DSCP.

The **no** form of this command removes the policy name from the configuration.



**Note:** This command requires an APN shutdown.

## Default

no qci-policy

## Parameters

*qci-policy-name*

Specifies the QCI policy name, up to 32 characters. The QCI policy is configured using the following command.

```
configure mobile-gateway profile policy-options qci-policy
```

#### 4.2.3.44 qfi-mapping-profile

##### Syntax

```
qfi-mapping-profile profile-name  
no qfi-mapping-profile
```

##### Context

[\[Tree\]](#) configure mobile-gateway pdn apn qfi-mapping-profile

##### Description

This command configures an optional QoS flow binding profile. The QoS parameters specified within the profile are used for QoS flow binding. When this optional profile is not configured here or on PDN level, the QFI is generated dynamically in the range 1 to 64 using 5QI/ARP as key.

The **no** form of this command removes the profile name from the configuration.

##### Default

```
no qfi-mapping-profile
```

##### Parameters

*profile-name*

Specifies the QFI mapping profile name, up to 32 characters. The QFI mapping profile is configured using the following command.

```
configure mobile-gateway profile qfi-mapping-profile
```

#### 4.2.3.45 realm-loopback-address

##### Syntax

```
realm-loopback-address ip-address  
no realm-loopback-address
```

##### Context

[\[Tree\]](#) configure mobile-gateway pdn apn realm-loopback-address

##### Description

This command configures the IPv4 loopback address used as the BNG address in the IPCP negotiation for PPPoE sessions with **unmatching-prefix** enabled. See the following command for more information about enabling **unmatching-prefix**.

```
configure mobile-gateway profile authentication-database entry address-assignment unmatching-prefix
```

## Parameters

*ip-address*

Specifies the IPv4 address.

Values: a.b.c.d

### 4.2.3.46 shutdown

#### Syntax

[no] shutdown

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn shutdown

#### Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.



**Note:** The shutdown command at the APN level only affects new sessions, meaning that operational state of APN related to existing sessions remains up while the administrative state is down.

### 4.2.3.47 slices

#### Syntax

slices

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn slices

#### Description

Commands in this context configure a slice list that the MAG-c supports for this DNN/APN and signals to the NRF when registering itself. Additionally a default slice can be provisioned that is used for sessions that are not associated with a slice.

### 4.2.3.48 default-slice

#### Syntax

default-slice *slice-name*

## no default-slice

### Context

[\[Tree\]](#) configure mobile-gateway pdn apn slices default-slice

### Description

This command configures the default slice of this APN/DNN. When the MAG-c, acting as combined PGW-C/SMF, cannot retrieve the UE subscribed S-NSSAIs from the UDM, the SMF uses the locally configured default S-NSSAI for this APN/DNN. The *slice-name* must also be configured in a slice list that is applied in either of the following contexts:

```
configure mobile-gateway pdn slices slice-list
configure mobile-gateway pdn apn slices slice-list
```

When the default slice is not configured, no fallback is used and session setup fails.

The **no** form of this command removes the default slice.

### Default

no default-slice

### Parameters

*slice-name*

Specifies the name of the slice, up to 32 characters.

## 4.2.3.49 slice-list

### Syntax

**slice-list** *list-name*

**no slice-list**

### Context

[\[Tree\]](#) configure mobile-gateway pdn apn slices slice-list

### Description

This command configures the list of slices or a single slice for this APN/DNN, which marks the APN as specific to this slice list. The APN is included under the configured slices during registration to the NRF.

The **no** form of this command removes the configuration, and the slice-list configured at the PDN level applies to this APN.

### Default

no slice-list

## Parameters

*list-name*

Specifies the name of the slice list, up to 32 characters. The slice list is configured using the following command.

```
configure mobile-gateway profile list slice-list
```

### 4.2.3.50 static-predefined-pcc

#### Syntax

**static-predefined-pcc**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn static-predefined-pcc

#### Description

Commands in this context configure static policy parameters for PDN.

### 4.2.3.51 default-policy-rule-base

#### Syntax

**[no] default-policy-rule-base** *base-policy-name*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn static-predefined-pcc default-policy-rule-base

#### Description

This command configures default policy rule bases for the APN. This configuration is used when the PCRF is not in use or during fallback to assume positive (AP).

The **no** form of this command removes the specified policy rule base from the APN.

#### Parameters

*base-policy-name*

Specifies the name of the policy rule base, up to 64 characters.

### 4.2.3.52 udm-options

#### Syntax

**udm-options**

## Context

[\[Tree\]](#) configure mobile-gateway pdn apn udm-options

## Description

Commands in this context enable APN/DNN-specific behavior when communicating with the UDM. Note that for the get operation of the Nudm\_SubscriberDataManagement, this only uses configuration under the DNN signaled in session setup messages and not configuration under the selected DNN, as this operation is called before an alternative DNN can be selected.

### 4.2.3.53 dnn-format

#### Syntax

**dnn-format** *form*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn apn udm-options dnn-format

#### Description

This command configures the DNN format that is used when sending the DNN to the UDM.

#### Default

dnn-format real

#### Parameters

*form*

Specifies the DNN format.

Values: real | real-ni-only

- real – specifies to use the real, unmodified DNN as signaled during the FWA session setup, including the OI if it is present
- real-ni-only – specifies to use the real DNN as signaled during the FWA session setup, but without the OI if it is present

### 4.2.3.54 bng

#### Syntax

**bng**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn bng



## Description

Commands in this context configure BNG PDN parameters.

### 4.2.3.55 radius-coa

#### Syntax

**radius-coa**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn bng radius-coa

## Description

Commands in this context configure RADIUS COA parameters for BNG.

### 4.2.3.56 ignore-unknown-attributes

#### Syntax

**[no] ignore-unknown-attributes**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn bng radius-coa ignore-unknown-attributes

## Description

This command enables the system to ignore unknown attributes in RADIUS CoA/DM request messages.

The **no** form of this command causes the system to fail RADIUS CoA/DM if the request contains unknown attributes.

### 4.2.3.57 interface

#### Syntax

**[no] interface router *router-instance* name *interface-name***

#### Context

[\[Tree\]](#) configure mobile-gateway pdn bng radius-coa interface

## Description

This command configures a local interface to use for communication with an external database.

The **no** form of this command removes the local interface association.

## Parameters

*router-instance*

Specifies the router instance, up to 32 characters.

*interface-name*

Specifies an interface name, up to 32 characters.

### 4.2.3.58 python-policy

#### Syntax

**python-policy** *name*

**no python-policy**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn bng radius-coa python-policy

#### Description

This command specifies the Python policy used to modify a RADIUS CoA message sent or received by a RADIUS CoA client.

#### Parameters

*name*

Specifies the name of a configured Python policy, up to 32 characters.

### 4.2.3.59 secret

#### Syntax

**secret** *secret* [**hash** | **hash2**]

**no secret**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn bng radius-coa secret

#### Description

This command specifies the RADIUS shared secret for a CoA/DM message

#### Parameters

*secret*

Specifies the hash1 key or the hash2 key, up to 64 characters.

**hash | hash2**

Specifies if the secret key is entered in an encrypted form. If the hash parameter is not used, the key is assumed to be in a non-encrypted, clear text form. For security, all keys are stored in an encrypted format.

**4.2.3.60 static-session****Syntax**

[no] **static-session** *name*

**Context**

[Tree] configure mobile-gateway pdn bng static-session

**Description**

This command configures a static session.

The **no** form of this command removes the specified static session.

**Parameters**

*name*

Specifies the session name, up to 64 characters.

**4.2.3.61 c-vlan****Syntax**

**c-vlan** *tag*

**no c-vlan**

**Context**

[Tree] configure mobile-gateway pdn bng static-session c-vlan

**Description**

This command configures the C-VLAN tag.

**Parameters**

*tag*

Specifies the C-VLAN tag.

Values: 1 to 4094

### 4.2.3.62 description

#### Syntax

**description** *description-string*  
**no description**

#### Context

**[Tree]** configure mobile-gateway pdn bng static-session description

#### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

#### Default

no description

#### Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.3.63 dot1q-etype

#### Syntax

**dot1q-etype** *hex-value*

#### Context

**[Tree]** configure mobile-gateway pdn bng static-session dot1q-etype

#### Description

This command configures the ethertype for dot1q-encapsulated IBCP traffic.

#### Default

dot1q-etype 0x8100

#### Parameters

*hex-value*

Specifies the ethertype.

Values: 0x0600 to 0xffff

Default: 0x8100

#### 4.2.3.64 I2-access-id

##### Syntax

**I2-access-id** *string*  
**no I2-access-id**

##### Context

[\[Tree\]](#) configure mobile-gateway pdn bng static-session I2-access-id

##### Description

This command configures the Layer 2 access ID.

##### Parameters

*string*  
Specifies the Layer 2 access ID, up to 64 characters.

#### 4.2.3.65 mac

##### Syntax

**mac** *ieee-address*  
**no mac**

##### Context

[\[Tree\]](#) configure mobile-gateway pdn bng static-session mac

##### Description

This command configures the MAC address.

##### Parameters

*ieee-address*  
Specifies the MAC address.  
Values: xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

#### 4.2.3.66 qinq-etype

##### Syntax

**qinq-etype** *hex-value*

## Context

[\[Tree\]](#) configure mobile-gateway pdn bng static-session qinq-etype

## Description

This command configures the ethertype for qinq-encapsulated IBCP traffic.

## Default

qinq-etype 0x8100

## Parameters

*hex-value*

Specifies the ethertype.

Values: 0x0600 to 0xffff

Default: 0x8100

### 4.2.3.67 s-vlan

## Syntax

**s-vlan tag**

**no s-vlan**

## Context

[\[Tree\]](#) configure mobile-gateway pdn bng static-session s-vlan

## Description

This command configures the S-VLAN tag.

## Parameters

*tag*

Specifies the S-VLAN tag.

Values: 1 to 4094

### 4.2.3.68 shutdown

## Syntax

**[no] shutdown**

## Context

[\[Tree\]](#) configure mobile-gateway pdn bng static-session shutdown

## Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

### 4.2.3.69 up

#### Syntax

```
up group name
up id ip-addr | fqdn l2-access-id-mac ieee-address
no up
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn bng static-session up

#### Description

This command configures the identification of the UP by UP group or ID.

#### Parameters

*name*

Specifies the UP group name, up to 32 characters.

*ip-addr* | *fqdn*

Specifies the UP ID.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D
- fqdn – fully qualified domain name, up to 255 characters.

*ieee-address*

Specifies the MAC address.

Values: xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

### 4.2.3.70 up-group

#### Syntax

[no] up-group *name*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn bng up-group

#### Description

This command configures a group of BNG-UPs that share a common aggregation network. Sessions can be moved between the BNG-UPs of a UP group; for example, to provide BNG-UP resiliency.

The **no** form of this command removes the specified UP group.

#### Default

no up-group

#### Parameters

*name*

Specifies the name of the UP group, up to 32 characters.

### 4.2.3.71 c-tag-range

#### Syntax

c-tag-range start *from* end *to*

no c-tag-range

#### Context

[\[Tree\]](#) configure mobile-gateway pdn bng up-group c-tag-range

#### Description

This command configures the default C-tag range for the UP group. See "BNG-UP resiliency" in the *MAG-c Control Plane Function Guide* for more information about the use cases for defining a C-tag range.

When a value of 0 is included in the range, sessions without a C-tag are included in the UP group and a per-BNG-UP override of the C-tag range is not possible.

Explicitly configuring a 0 to 4094 range does not make a functional difference. However, if a 0 to 4094 range is configured, a per-BNG-UP override is not allowed. If no range is configured, a per-BNG-UP override is allowed if each configured BNG-UP has an override (there is no default fallback).

The **no** form of this command removes the configuration.

#### Default

no c-tag-range



## Parameters

*from*

Specifies the starting C-tag.

Values: 0 to 4094

*to*

Specifies the ending C-tag, greater than or equal to the starting C-tag.

Values: 0 to 4094

## 4.2.3.72 description

### Syntax

**description** *description-string*

**no description**

### Context

[\[Tree\]](#) configure mobile-gateway pdn bng up-group description

### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

### Default

no description

### Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.3.73 fsg-profile

### Syntax

**fsg-profile** *name*

**no fsg-profile**

### Context

[\[Tree\]](#) configure mobile-gateway pdn bng up-group fsg-profile

## Description

This command references an FSG profile created in the following context.

```
configure mobile-gateway profile bng
```

The **no** form of this command removes the configuration.

## Default

no fsg-profile

## Parameters

*name*

Specifies the FSG profile name, up to 32 characters.

### 4.2.3.74 l2-access-id

## Syntax

**l2-access-id** *id* [*id...*(up to 32 max)]

**no l2-access-id**

## Context

[\[Tree\]](#) configure mobile-gateway pdn bng up-group l2-access-id

## Description

This command configures the Layer 2 access IDs that interconnect the BNG-UPs. More than one Layer 2 access ID can be configured to indicate that all configured Layer 2 access IDs are present on all BNG-UPs. The MAG-c does not assume that the Layer 2 access IDs are interconnected. For example, the MAG-c never moves sessions from Layer 2 access ID "alpha" to Layer 2 access ID "beta" or the other way around; sessions are only moved from "alpha" on one BNG-UP to "alpha" on another BNG-UP if the following is configured.

```
l2-access-id alpha beta
```

This command to configure the Layer 2 access IDs at the UP group level and the following command to configure the Layer 2 access IDs at the BNG-UP level are mutually exclusive.

```
configure mobile-gateway pdn bng up-group up l2-access-id
```

The **no** form of this command removes the configuration.

## Default

no l2-access-id

## Parameters

*id* [*id...*(up to 32 max)]

Specifies the Layer 2 access ID, up to 64 characters, as provisioned on the BNG-UP and learned on the MAG-c through IBCP.

### 4.2.3.75 s-tag-range

#### Syntax

**s-tag-range** *start* *from* *end* *to*

**no s-tag-range**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn bng up-group s-tag-range

#### Description

This command configures the default S-tag range for the UP group. See "BNG-UP resiliency" in the MAG-c Control Plane Function Guide for more information about the use cases for defining an S-tag range.

When a value of 0 is included in the range, sessions without an S-tag are included in the UP group and a per-BNG-UP override of the S-tag range is not possible.

Explicitly configuring a 0 to 4094 range does not make a functional difference. However, if a 0 to 4094 range is configured, a per-BNG-UP override is not allowed. If no range is configured, a per-BNG-UP override is allowed if each configured BNG-UP has an override (there is no default fallback).

The **no** form of this command removes the configuration.

#### Default

no s-tag-range

#### Parameters

*from*

Specifies the starting S-tag.

Values: 0 to 4094

*to*

Specifies the ending S-tag, greater than or equal to the starting S-tag.

Values: 0 to 4094

### 4.2.3.76 shutdown

#### Syntax

**[no] shutdown**

## Context

[\[Tree\]](#) configure mobile-gateway pdn bng up-group shutdown

## Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics.

The operational state of the entity is disabled, as well as the operational state of any entities contained within. Most objects must be shut down before they may be deleted.

The **no** form of this command enables the entity. Most entities must be explicitly enabled using the **no** form of this command.

## Default

shutdown

## 4.2.3.77 up

### Syntax

**[no] up** *ip-addr* | *fqdn*

### Context

[\[Tree\]](#) configure mobile-gateway pdn bng up-group up

### Description

This command configures a UP that is part of the UP group.

### Parameters

*ip-addr*

Specifies the IP address, which must match what is signaled in PFCP as a Node ID.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*fqdn*

Specifies the fully qualified domain name, up to 255 characters, which must match what is signaled in PFCP as a Node ID.

### 4.2.3.78 c-tag-range

#### Syntax

**c-tag-range** *start from end to*  
**no c-tag-range**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn bng up-group up c-tag-range

#### Description

This command configures the C-tag range that connects the BNG-UP with the shared aggregation. See "BNG-UP resiliency" in the *MAG-c Control Plane Function Guide* for more information about the use cases for defining a C-tag range.



**WARNING:** Using a C-tag range at the BNG-UP level is an advanced use case. Unless it is necessary for the deployed aggregation network, Nokia recommends using a C-tag-range only at the UP group level.

When a range at the UP group level is configured, the BNG-UP level must have the same size. If the UP group-level range includes the tag with value 0, configuring a range at the BNG-UP level is not allowed.

When no C-tag range is configured, the UP group-level configuration applies.

The **no** form of this command removes the configuration.

#### Default

no c-tag-range

#### Parameters

*from*

Specifies the starting C-tag.

Values: 1 to 4094

*to*

Specifies the ending C-tag, greater than or equal to the starting C-tag.

Values: 1 to 4094

### 4.2.3.79 drain

#### Syntax

**[no] drain**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn bng up-group up drain

## Description

This command enables sessions to be drained from the BNG-UP. The MAG-c avoids selecting a BNG-UP in drain mode as the active BNG-UP for an FSG. When enabled, this command forces the internal BNG-UP health to -1 (unavailable). Changing the drain configuration acts as an FSG active/standby reselection trigger.

The **no** form of this command disables the drain mode and resets the BNG-UP health to the calculated aggregate value.



**Note:** Drain is a persistent state. The BNG-UP stays drained until the configuration is changed again. It is not a one-time command to force a switchover.

## Default

no drain

### 4.2.3.80 l2-access-id

## Syntax

**l2-access-id** *id*  
**no l2-access-id**

## Context

[\[Tree\]](#) configure mobile-gateway pdn bng up-group up l2-access-id

## Description

This command configures the Layer 2 access ID that connects the BNG-UP with the shared aggregation.

This command to configure the Layer 2 access IDs at the BNG-UP group level and the following command to configure the Layer 2 access IDs at the UP group level are mutually exclusive.

```
configure mobile-gateway pdn bng up-group l2-access-id
```

When no Layer 2 access ID is configured, the UP group level configuration applies.

The **no** form of this command removes the configuration.

## Default

no l2-access-id

## Parameters

*id*

Specifies the Layer 2 access ID, up to 64 characters, as provisioned on the BNG-UP and learned on the MAG-c through IBCP.

### 4.2.3.81 preferred

#### Syntax

[no] preferred

#### Context

[\[Tree\]](#) configure mobile-gateway pdn bng up-group up preferred

#### Description

This command configures the BNG-UP as the preferred active BNG-UP. If all BNG-UP healths are equal, the MAG-c prefers this BNG-UP above others when selecting an active BNG-UP. Only one BNG-UP per UP group can be preferred.

The **no** form of this command removes the configuration.

#### Default

no preferred

### 4.2.3.82 s-tag-range

#### Syntax

s-tag-range start *from* end *to*  
no s-tag-range

#### Context

[\[Tree\]](#) configure mobile-gateway pdn bng up-group up s-tag-range

#### Description

This command configures the S-tag range that connects the BNG-UP with the shared aggregation. See "BNG-UP resiliency" in the *MAG-c Control Plane Function Guide* for more information about the use cases for defining an S-tag range.



**WARNING:** Using an S-tag range at the BNG-UP level is an advanced use case. Unless it is necessary for the deployed aggregation network, Nokia recommends using an S-tag-range only at the UP group level.

When a range at the UP group level is configured, the range at the BNG-UP level must have the same size. If the range at the UP group level includes the tag with value 0, a range at the BNG-UP level is not allowed.

When no S-tag range is configured, the UP group level configuration applies.

The **no** form of this command removes the configuration.

**Default**

no s-tag-range

**Parameters**

*from*

Specifies the starting S-tag.

Values: 1 to 4094

*to*

Specifies the ending S-tag, greater than or equal to the starting S-tag.

Values: 1 to 4094

**4.2.3.83 wpp****Syntax**

**wpp**

**Context**

[\[Tree\]](#) configure mobile-gateway pdn bng wpp

**Description**

Commands in this context configure WPP parameters.

**4.2.3.84 interface****Syntax**

**interface** [**service** *service-id*] **name** *interface-name*

**no interface** [**service** *service-id*] **name** *interface-name*

**Context**

[\[Tree\]](#) configure mobile-gateway pdn bng wpp interface

**Description**

This command configures an interface to send and receive WPP packets. Multiple interfaces can be configured.

The **no** form of this command removes the configuration.

**Parameters**

*service-id*

Specifies the service name or the service ID where the interface resides, up to 64 characters.



Values: 1 to 2148278386 | name

*interface-name*

Specifies the name of the IP interface, up to 32 characters.

### 4.2.3.85 call-procedure-retry

#### Syntax

```
call-procedure-retry retry-time seconds retry-attempts value [retry-delay retry-delay-msec]  
no call-procedure-retry
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn call-procedure-retry

#### Description

This command configures the retry time and the retry attempts for a local retry. This configuration is used instead of a trigger from a peering node (for example, the PCF), on a call-flow failure while a handover or TAU is in progress. The call-procedure retry is supported for procedures initiated by the SMF/GW-C while the handover or TAU is in progress. The retry delay specifies the duration the SMF/GW-C must wait for the next retry attempt after the TAU/HO is completed.

The **no** form of this command reverts to the default settings.

#### Default

no call-procedure-retry

#### Parameters

*seconds*

Specifies the retry time in seconds.

Value: 1 to 20

Default: 1

*value*

Specifies the maximum retry attempts.

Values: 0 to 5

Default: 0

*retry-delay-msec*

Specifies the retry delay in milliseconds.

Values: 0 to 1000

Default: 0

### 4.2.3.86 cdbx

#### Syntax

**cdbx**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn cdbx

#### Description

Commands in this context configure cloud database profile parameters.

### 4.2.3.87 cloud-db-profile

#### Syntax

**cloud-db-profile** *profile-name*

**no cloud-db-profile**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn cdbx cloud-db-profile

#### Description

This command associates a cloud database profile to use as an interface to an external database.

The **no** form of this command removes the association.

#### Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

### 4.2.3.88 interface

#### Syntax

**interface** [**router** *router-instance*] *interface-name*

**no interface**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn cdbx interface

#### Description

This command configures a local interface to use for communication with an external database.

The **no** form of this command removes the local interface association.

### Parameters

#### *router-instance*

Specifies the virtual router name or service ID.

Values: *router-name* | *service-id*

- *router-name* – Base
- *service-id* – 1 to 2147483647

Default: Base

#### *interface-name*

Specifies an interface name, up to 32 characters and must start with a letter.

## 4.2.3.89 mss

### Syntax

**mss** *mss-value*

**no mss**

### Context

[\[Tree\]](#) configure mobile-gateway pdn cdbx mss

### Description

This command configures the MSS size of the packets that the SM-VM forwards to the DB-VM. Nokia recommends increasing the MSS size based on the capabilities of the MTU interface.



**Note:** If no MSS value is specified, the default MSS size (1460) is used (derived from the default MTU-40).

### Parameters

#### *mss-value*

Specifies the MSS size.

Values: 1460 to 8960

Default: 1460 (disabled)

## 4.2.3.90 dns-client

### Syntax

**dns-client**

## Context

[\[Tree\]](#) configure mobile-gateway pdn dns-client

## Description

Commands in this context configure the MAG-c DNS client.

### 4.2.3.91 dns-interface

## Syntax

**no dns-interface**

**dns-interface** *interface-name* [**router** *router-instance*]

## Context

[\[Tree\]](#) configure mobile-gateway pdn dns-client dns-interface

## Description

This command configures the source interface to use with the DNS profile for DNS lookup on the MAG-c.

The **no** form of this command removes the configuration



**Note:** If no interface is configured, no DNS queries are sent.

## Default

no dns-interface

## Parameters

*interface-name*

Specifies an interface name that must start with a letter, up to 32 characters .

*router-instance*

Specifies the virtual router name or service ID.

Values: *router-name* | *vprn-svc-id*

- *router-name* – Base | management
- *vprn-svc-id* – 1 to 2147483647

Default: Base

### 4.2.3.92 dns-profile

## Syntax

**no dns-profile**

**dns-profile** *profile-name*

## Context

[\[Tree\]](#) configure mobile-gateway pdn dns-client dns-profile

## Description

This command configures a DNS profile used for all DNS lookups related to MAG-c session management functionality.

The **no** form of this command removes the DNS-profile.



**Note:** The DNS profile contains the DNS servers to send messages toward, so if no DNS Profile is configured, no DNS lookups are sent.

## Default

no dns-profile

## Parameters

*profile-name*

Specifies the name of the DNS profile, up to 32 characters. Profiles are configured using the **configure mobile-gateway profile dns-profile** command.

### 4.2.3.93 epc-node

## Syntax

**epc-node** *name*

**no epc-node**

## Context

[\[Tree\]](#) configure mobile-gateway pdn epc-node

## Description

This command configures the EPC node name.

The **no** form of this command removes the name from the configuration.



**Note:** This command requires a PDN shutdown.

## Parameters

*name*

Specifies the EPC node name, up to 31 characters.

Syntax: <MCC>.<MNC>.<SGW|PGW|ePDG|TWAG>.<Region String>.<Group Id>.<Node Id>

### 4.2.3.94 home-plmn-list

#### Syntax

**home-plmn-list** *list-name*  
**no home-plmn-list**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn home-plmn-list

#### Description

This command configures the home Public Land Mobile Network (PLMN) list that the SMF covers and registers to the NRF.



**Note:** This command requires a PDN shutdown.

#### Parameters

*list-name*

Specifies the name of the referenced PLMN list, up to 32 characters; the PLMN list names are configured using the **configure mobile-gateway profile list plmn** command.

### 4.2.3.95 instance-type

#### Syntax

**instance-type** *instance-type-value*  
**no instance-type**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn instance-type

#### Description

This command must always be set to control.



**Note:**

- This command must be configured before configuring any reference point interfaces.
- This command requires a PDN shutdown.

#### Parameters

*instance-type-value*

Specifies the role of the PDN.

Values:

- control – Enables MAG-c as control plane.
- user – Not supported for MAG-c.

#### 4.2.3.96 load-control

##### Syntax

**load-control**

##### Context

[\[Tree\]](#) configure mobile-gateway pdn load-control

##### Description

Commands in this context configure MAG-c load-control settings.

#### 4.2.3.97 enable-gtp-load-control

##### Syntax

**[no] enable-gtp-load-control**

##### Context

[\[Tree\]](#) configure mobile-gateway pdn load-control enable-gtp-load-control

##### Description

This command enables the MAG-c load-control functionality.

The **no** form of this command disables the load control functionality.



**Note:** This command enables the load-control functionality using the default configurations. Use the commands in the **load-control** context to change the default configurations, as required.

##### Default

no enable-gtp-load-control

#### 4.2.3.98 enable-sbi-load-reporting

##### Syntax

**[no] enable-sbi-load-reporting**

##### Context

[\[Tree\]](#) configure mobile-gateway pdn load-control enable-sbi-load-reporting

## Description

This command enables service based interface (SBI) load reporting to the network resource function (NRF).

The **no** form of this command disables SBI load reporting to the NRF.

## Default

no enable-sbi-load-reporting

### 4.2.3.99 load-change-trigger

#### Syntax

**load-change-trigger** *percent*  
**no load-change-trigger**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn load-control load-change-trigger

#### Description

This command configures the value of the load change that triggers a load-control update.

The **no** form of this command reverts to the default.



**Note:** Enabling the **enable-gtp-load-control** command or the **enable-sbi-load-reporting** command automatically enables the **load-change-trigger** command in the default mode.

#### Default

load-change-trigger 5

#### Parameters

*percent*

Specifies the value of the load change, as a percentage of the load.

Values: [5 | 10 | 15 | 20]

### 4.2.3.100 nth-message

#### Syntax

**nth-message** *number*  
**no nth-message**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn load-control nth-message



## Description

This command configures the message interval for sending load-control information.

The **no** form of the command reverts to the default.



**Note:** Enabling the **enable-gtp-load-control** command automatically enables this command in the default mode.

## Default

nth-message 50

## Parameters

*number*

Specifies the interval used to include load-control information.

Values: 1 to 1000

### 4.2.3.101 local-address-assignment

#### Syntax

**local-address-assignment**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment

#### Description

Commands in this context configure local address assignment parameters.

#### Default

local-address-assignment

### 4.2.3.102 network-realm

#### Syntax

**[no] network-realm *realm-name***

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm

#### Description

This command specifies the network-realm with which address pools used for local address assignment are associated.

## Parameters

*realm-name*

Specifies the name of the associated network realm, up to 80 characters.



**Note:** Only the following characters are permitted:

- alphabetic characters (A-Z and a-z)
- digits (0-9)
- hyphen (-)
- dot (.)

### 4.2.3.103 description

#### Syntax

**description** *description-string*

**no description**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm description

#### Description

This command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

#### Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.3.104 pool

#### Syntax

**pool** *name* [**tracking** *application*]

**no pool** *name*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool

#### Description

This command configures an address pool associated with the network-realm.

## Parameters

*name*

Specifies the pool name, up to 32 characters.

*application*

Specifies the creation of a local ODSA tracking pool for DHCP relay. Only the following fixed value is allowed.

Values: dhcp-relay

### 4.2.3.105 dedicated

#### Syntax

[no] **dedicated**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool dedicated

#### Description

This command configures the pool as dedicated. In other words, no micro-nets are carved out from the pool prefix but addresses are directly assigned from the pool.

The **no** form of this command disables the dedicated mode and allows micro-nets over multiple user plane devices.

### 4.2.3.106 description

#### Syntax

**description** *description-string*

**no description**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool description

#### Description

This command enables a text description stored in the configuration file for a configuration context.

The **description** command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the string from the configuration.

## Parameters

### *description-string*

The description character string; allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters; if the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.3.107 hold-time

### Syntax

**hold-time** [min *minutes*] [sec *seconds*]

**no hold-time**

### Context

**[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool hold-time

### Description

This command configures the time for which a lease is held for the subscriber session after it has been released, that is, the address is not re-assigned for this duration.

### Default

hold-time min 1

## Parameters

### *minutes*

Specifies the minutes part of the hold time.

Values: 0 to 5

### *seconds*

Specifies the seconds part of the hold time.

Values: 0 to 59

## 4.2.3.108 ipv4

### Syntax

**ipv4**

### Context

**[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv4

### Description

Commands in this context configure IPv4 parameters for the address pool.

**Default**

ipv4

**4.2.3.109 default-gateway****Syntax****default-gateway** *choice***Context****[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv4 default-gateway**Description**

This command configures the option to use the first or last address of the micro-net used for address allocation as the default-gateway IPv4 address for the client.

**Default**

default-gateway last-address

**Parameters***choice*

Specifies the default gateway choice.

Values: first-address | last-address

**4.2.3.110 dns****Syntax****dns****Context****[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv4 dns**Description**

Commands in this context configure the IPv4 DNS server addresses associated with the pool.

**Default**

dns

### 4.2.3.111 primary-dns

#### Syntax

**primary-dns** *ip-address*  
**no primary-dns**

#### Context

**[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv4 dns primary-dns

#### Description

This command specifies the primary DNS server IP address associated with the pool.

#### Default

no primary-dns

#### Parameters

*ip-address*

Specifies the address of the primary DNS for the IPv4 network-realm pool.

Values: a.b.c.d

### 4.2.3.112 secondary-dns

#### Syntax

**secondary-dns** *ip-address*  
**no secondary-dns**

#### Context

**[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv4 dns secondary-dns

#### Description

This command specifies the secondary DNS server IP address associated with the pool.

#### Default

no secondary-dns

#### Parameters

*ip-address*

Specifies the address of the secondary DNS for the IPv4 network-realm pool.

Values: a.b.c.d

### 4.2.3.113 micro-net-length

#### Syntax

**micro-net-length** *length*  
**no micro-net-length**

#### Context

**[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv4 micro-net-length

#### Description

This command specifies the length of IPv4 micro-nets that are used from the pool and assigned on-demand to a specific context (for example, UP) to allocate addresses to subscriber sessions associated with that context.

#### Default

no micro-net-length

#### Parameters

*length*  
Specifies the micro-net length.  
Values: 9 to 28

### 4.2.3.114 prefix

#### Syntax

**[no] prefix** *ip-prefix/length*

#### Context

**[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv4 prefix

#### Description

This command configures the IPv4 prefix from which micro-nets are allocated if the dedicated mode is disabled. Addresses are subsequently allocated from individual micro-nets, or directly from the prefix if dedicated mode is disabled.

#### Parameters

*ip-prefix*  
Specifies the IP address prefix.  
Values: a.b.c.d, host bits must be 0

*length*

Specifies the IP address length.

Values: 9 to 28

### 4.2.3.115 drain

#### Syntax

[no] drain

#### Context

[Tree] configure mobile-gateway pdn local-address-assignment network-realm pool ipv4 prefix drain

#### Description

This command enables the mode where no new micro-nets are allocated from the prefix and existing leases in the associated micro-nets are cleaned up on renew or rebind.

### 4.2.3.116 exclude-addresses

#### Syntax

[no] exclude-addresses start *ip-address* end *ip-address*

#### Context

[Tree] configure mobile-gateway pdn local-address-assignment network-realm pool ipv4 prefix exclude-addresses

#### Description

This command specifies a range of IP addresses that are excluded from allocation to subscriber sessions.

#### Parameters

*ip-address*

Specifies the start of the IP addresses to exclude.

Values: a.b.c.d

end *ip-address*

Specifies the end of the IP addresses to exclude.

Values: a.b.c.d

### 4.2.3.117 subnet-allocation

#### Syntax

[no] subnet-allocation



## Context

[Tree] configure mobile-gateway pdn local-address-assignment network-realm pool ipv4 subnet-allocation

## Description

This command enables the allocation of subnets instead of single /32 addresses.



**Note:** Only supported address allocation protocols, such as PPP IPCP, can use the subnets.

The **no** form of this command disables the subnet allocation, that is, only single /32 addresses are allocated from the pool.

## Default

no subnet-allocation

## 4.2.3.118 length

### Syntax

**length** *bits*

**no length**

### Context

[Tree] configure mobile-gateway pdn local-address-assignment network-realm pool ipv4 subnet-allocation length

### Description

This command configures the subnet length.

If a variable subnet allocation is configured (see the **variable** command in the same context) and no per-session length is provisioned, this command configures the default subnet length. The length must be within the limits configured by the **variable** command.

If variable subnet allocation is disabled, this command configures the only supported subnet length. Any per-session length provisioning must match this value.

The **no** form of this command disables the subnet allocation, irrespective of the values for the variable subnet allocation.



**Note:** The following configurations result in allocating single /32 addresses from the pool:

- **no subnet-allocation**
- **subnet-allocation no length**
- **subnet-allocation length 32** together with **subnet-allocation no variable**

### Default

no length

## Parameters

*bits*

Specifies the length of the subnet to be allocated.

Values: 16 to 32

### 4.2.3.119 variable

#### Syntax

**variable** *minimum bits maximum bits*

[no] **variable**

#### Context

**[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv4 subnet-allocation variable

#### Description

This command configures the minimum and the maximum length of the subnet to be allocated. The session setup fails if a per-session length is outside these limits.

The **length** command must be configured within these limits. It defines the default length if no per-session length is provisioned.

The **no** form of this command disables the variable subnet allocation.

#### Default

no variable

## Parameters

*bits*

Specifies the minimum length of the subnet to be allocated.

Values: 16 to 31

**maximum** *bits*

Specifies the maximum length of the subnet to be allocated.

Values: 17 to 32

### 4.2.3.120 ipv6

#### Syntax

**ipv6**

#### Context

**[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv6

## Description

Commands in this context configure IPv6 address pools.

### 4.2.3.121 dns

#### Syntax

**dns**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 dns

## Description

Commands in this context configure the IPv6 DNS server addresses associated with the pool.

### 4.2.3.122 primary-dns

#### Syntax

**primary-dns** *ipv6-address*

**no primary-dns**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 dns primary-dns

## Description

This command specifies the IP address of the primary IPv6 DNS server associated with the pool.

## Default

no primary-dns

## Parameters

*ipv6-address*

A unicast IPv6 address, up to 64 characters.

### 4.2.3.123 secondary-dns

#### Syntax

**secondary-dns** *ipv6-address*

**no secondary-dns**

## Context

**[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 dns secondary-dns

## Description

This command specifies the IP address of the secondary IPv6 DNS server associated with the pool.

## Default

no secondary-dns

## Parameters

*ipv6-address*

A unicast IPv6 address, up to 64 characters.

### 4.2.3.124 na

## Syntax

na

## Context

**[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 na

## Description

Commands in this context configure NA parameters for the address pool.

### 4.2.3.125 micro-net-length

## Syntax

**micro-net-length** *length*

**no micro-net-length**

## Context

**[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 na micro-net-length

## Description

This command specifies the length of IPv6 NA micro-nets that are used from the pool and assigned on-demand to a specific context (for example, UP) to allocate addresses to subscriber sessions associated with that context.

## Parameters

*length*

Specifies the micro-net length.

Values: 105 to 124

### 4.2.3.126 prefix

#### Syntax

[no] prefix *ip-address/prefix-length*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 na prefix

#### Description

This command configures the IPv6 prefix for the micro-nets if the dedicated mode is disabled. NA addresses are subsequently allocated from the individual micro-nets, or directly from the prefix if the dedicated mode is disabled.

#### Parameters

*ip-address*

Specifies the IPv6 address, up to 64 characters.

*prefix-length*

Specifies the IP address length.

Values: 105 to 124

### 4.2.3.127 drain

#### Syntax

[no] drain

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 na prefix drain

#### Description

This command enables the mode that does not allow to allocate new micro-nets or NA addresses from the prefix. Existing allocations are not automatically removed, only when the session is removed.

#### Default

no drain

### 4.2.3.128 exclude-addresses

#### Syntax

**[no] exclude-addresses start *ipv6-address* end *ipv6-address***

#### Context

**[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 na prefix exclude-addresses

#### Description

This command specifies a range of IPv6 addresses that are excluded from allocation to subscriber sessions.

#### Parameters

*ipv6-address*

Specifies the start of the IPv6 addresses to exclude, up to 64 characters.

**end *ipv6-address***

Specifies the end of the IPv6 addresses to exclude, up to 64 characters.

### 4.2.3.129 pd

#### Syntax

**pd**

#### Context

**[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 pd

#### Description

Commands in this context configure IPv6 PD parameters for the address pool.

### 4.2.3.130 delegated-prefix

#### Syntax

**delegated-prefix**

#### Context

**[Tree]** configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 pd delegated-prefix

## Description

Commands in this context configure IPv6 PD DPL parameters for the address pool.

### 4.2.3.131 length

#### Syntax

**length** *bits*

**no length**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 pd delegated-prefix length

#### Description

This command specifies the fixed length for the delegated prefixes allocated from the pool.

#### Default

length 56

#### Parameters

*bits*

Specifies the DPL.

Values: 48 to 64

### 4.2.3.132 variable

#### Syntax

**variable** *minimum bits maximum bits*

**no variable**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 pd delegated-prefix variable

#### Description

This command enables a variable delegated prefix and specifies the minimum and maximum length for the delegated prefixes allocated from the pool.

#### Default

no variable

## Parameters

*bits*

Specifies the minimum or maximum DPL.

Values: 48 to 64

### 4.2.3.133 micro-net

#### Syntax

**micro-net length** *length*

**micro-net variable minimum** *min* **maximum** *max*

**no micro-net**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 pd micro-net

#### Description

This command specifies the length of IPv6 PD micro-nets that are used from the pool and assigned on-demand to a specific context (for example, UP) to allocate addresses to subscriber sessions associated with that context. The micro-net length can be fixed or variable. A variable micro-net length is only possible when a variable delegated prefix length is used. In this case, the micro-net length automatically adapts to the delegated prefix length.

#### Default

no micro-net

#### Parameters

*length*

Specifies the fixed micro-net length.

Values: 37 to 60

*min*

Specifies the minimum micro-net length.

Values: 37 to 60

*max*

Specifies the maximum micro-net length.

Values: 37 to 60

### 4.2.3.134 prefix

#### Syntax

**[no] prefix** *ip-address/prefix-length*



## Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 pd prefix

## Description

This command configures the IPv6 prefix for the micro-nets if the dedicated mode is disabled. PD prefixes are subsequently allocated from the individual micro-nets, or directly from the prefix if the dedicated mode is disabled.

## Parameters

*ip-address*

Specifies the IPv6 address, up to 64 characters.

*prefix-length*

Specifies the prefix length.

Values: 37 to 60

### 4.2.3.135 drain

## Syntax

**[no] drain**

## Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 pd prefix drain

## Description

This command enables the mode that does not allow to allocate new micro-nets or PD addresses from the prefix. Existing allocations are not automatically removed, only when the session is removed.

## Default

no drain

### 4.2.3.136 exclude-prefixes

## Syntax

**[no] exclude-prefixes start *ip-address/prefix-length* end *ip-address/prefix-length***

## Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 pd prefix  
exclude-prefixes

## Description

This command specifies a range of IPv6 prefixes that are excluded from allocation to subscriber sessions.

## Parameters

*ip-address/prefix-length*

Specifies the start of the IPv6 prefixes to exclude; the host bits of *ip-address* must be zero; *prefix-length* must equal the DPL (see the **length** command).

**end** *ip-address/prefix-length*

Specifies the end of the IPv6 prefixes to exclude; the host bits of *ip-address* must be zero; *prefix-length* must equal the DPL (see the **length** command).

### 4.2.3.137 slaac

#### Syntax

**slaac**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 slaac

#### Description

Commands in this context configure IPv6 SLAAC parameters for the address pool.

### 4.2.3.138 micro-net-length

#### Syntax

**micro-net-length** *length*

**no micro-net-length**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 slaac micro-net-length

#### Description

This command specifies the length of IPv6 SLAAC micro-nets that are used from the pool and assigned on-demand to a specific context (for example, UP) to allocate addresses to subscriber sessions associated with that context.

#### Parameters

*length*

Specifies the micro-net length.

Values: 41 to 60

### 4.2.3.139 prefix

#### Syntax

[no] prefix *ip-address/prefix-length*

#### Context

[Tree] configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 slaac prefix

#### Description

This command configures the IPv6 prefix for the micro-nets if the dedicated mode is disabled. SLAAC prefixes are subsequently allocated from the individual micro-nets, or directly from the prefix if the dedicated mode is disabled.

#### Parameters

*ip-address*

Specifies the IPv6 address, up to 64 characters.

*prefix-length*

Specifies the prefix length.

Values: 41 to 60

### 4.2.3.140 drain

#### Syntax

[no] drain

#### Context

[Tree] configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 slaac prefix  
drain

#### Description

This command enables the mode that does not allow to allocate new micro-nets or SLAAC addresses from the prefix. Existing allocations are not automatically removed, only when the session is removed.

### 4.2.3.141 exclude-prefixes

#### Syntax

[no] exclude-prefixes start *ip-address/prefix-length* end *ip-address/prefix-length*

## Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool ipv6 slaac prefix exclude-prefixes

## Description

This command specifies a range of IPv6 prefixes that are excluded from allocation to subscriber sessions.

## Parameters

*ip-address/prefix-length*

Specifies the start of the IPv6 prefixes to exclude; the host bits of *ip-address* must be zero; *prefix-length* must equal to 64.

**end** *ip-address/prefix-length*

Specifies the end of the IPv6 prefixes to exclude; the host bits of *ip-address* must be zero; *prefix-length* must equal to 64.

## 4.2.3.142 minimum-free

### Syntax

**minimum-free** *number* [**rising-threshold** *value*] [**percent**]

**no minimum-free**

### Context

[\[Tree\]](#) configure mobile-gateway pdn local-address-assignment network-realm pool minimum-free

### Description

This command configures a threshold for free micro-nets within the prefix. An event is generated when the number of free micro-nets in the pool becomes smaller than the **minimum-free** threshold or exceeds the sum of the **minimum-free** threshold and the **rising-threshold** value.

The **no** form of this command removes the configuration.

### Default

minimum-free 1 rising-threshold 2

### Parameters

*number*

Specifies the minimum number of free micro-nets.

Values: 1 to 255

*value*

Specifies the value for the rising threshold.

Values: 1 to 50

**percent**

Keyword to specify the *number* and *value* parameters in percent.

### 4.2.3.143 nf-profile-attributes

**Syntax**

**nf-profile-attributes**

**Context**

[\[Tree\]](#) configure mobile-gateway pdn nf-profile-attributes

**Description**

Commands in this context configure attributes that define properties of the MAG-c as a 5G core Network Function.

### 4.2.3.144 capacity

**Syntax**

**capacity** {**factor** | **total**} *capacity-value*

**no capacity**

**Context**

[\[Tree\]](#) configure mobile-gateway pdn nf-profile-attributes capacity

**Description**

This command configures the capacity value that is used in the NF profile during NF registration and in the NF update to the NRF. When the keyword **factor** is specified, the signaled capacity is multiplied by the number of configured SM-VMs.

The **no** form of this command removes the configuration, and the capacity value is not populated during NF registration and update procedures.

**Default**

no capacity

**Parameters****factor**

Keyword to specify that the capacity value is the capacity of a single SM-VM, which is calculated by multiplying the specified value with the number of active SM-VMs.

**total**

Keyword to specify that the capacity value is the total capacity of the NF instance.

*capacity-value*

Specifies the capacity value.

Values: 0 to 65535

### 4.2.3.145 exclude-ip-endpoints

#### Syntax

**exclude-ip-endpoints**

**no exclude-ip-endpoints**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn nf-profile-attributes exclude-ip-endpoints

#### Description

This command excludes the local IP address when registering the MAG-c with the NRF. This typically results in peer functions discovering the MAG-c with DNS. Therefore, it is required to either configure an **fqdn** in this profile or in the following context.

```
configure mobile-gateway pdn sba-server-services
```

The **no** form of this command indicates that the local IP addresses is registered with the NRF.

#### Default

no exclude-ip-endpoints

### 4.2.3.146 fqdn

#### Syntax

**fqdn fqdn**

**no fqdn**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn nf-profile-attributes fqdn

#### Description

This command configures the FQDN of the MAG-c that is used in the NF profile during NF registration and in the NF update to the NRF.

The **no** form of this command removes the configuration, and the FQDN attribute is not populated during NF registration and update procedures.

#### Default

no fqdn

## Parameters

*fqdn*

Specifies the FQDN string, up to 255 characters.

### 4.2.3.147 locality

#### Syntax

**locality** *string*

**no locality**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn nf-profile-attributes locality

#### Description

This command configures the locality that the SMF registers to the NRF. The locality can be a geographical description, data-center location, and so on.

The **no** form of this command removes the configuration, and the locality attribute is not populated during NF registration and update procedures.

#### Default

no locality

#### Parameters

**locality**

Specifies the arbitrarily-defined location string, such as the data center location or geographic location, up to 64 characters.

### 4.2.3.148 nf-instance-id

#### Syntax

**nf-instance-id** *uuid*

**no nf-instance-id**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn nf-profile-attributes nf-instance-id

#### Description

This command registers the UUID to the NRF in the NFProfile as the NFInstanceId. The UUID cannot be changed for an active registration.

The **no** form of this command specifies that an auto-generated value is used.

**Default**

no nf-instance-id

**Parameters**

*uuid*

Specifies the NFInstanceId in UUIDv4 canonical textual representation.

Values: xxxxxxxx-xxxx-4xxx-xxxx-xxxxxxxxxxxx

x: [0..F]H

**4.2.3.149 pgw-fqdn****Syntax**

**pgw-fqdn** *fqdn*

**no pgw-fqdn**

**Context**

[\[Tree\]](#) configure mobile-gateway pdn nf-profile-attributes pgw-fqdn

**Description**

This command configures the PGW FQDN for the MAG-c that is used in the NF profile during NF registration and in the NF update to the NRF. This allows discovery of the MAG-c for sessions that require 4G interworking support.

The **no** form of this command removes the configuration.

**Default**

no fqdn

**Parameters**

*fqdn*

Specifies the FQDN, up to 255 characters.

**4.2.3.150 priority****Syntax**

**priority** *priority-value*

**no priority**

**Context**

[\[Tree\]](#) configure mobile-gateway pdn nf-profile-attributes priority



## Description

This command configures the priority value that is used in the NF profile during NF registration and in the NF update to the NRF.

The **no** form of this command removes the configuration, and the priority attribute is not populated during NF registration and update procedures.

## Default

no priority

## Parameters

*priority-value*

Specifies the priority as an integer, where a lower value means higher priority.

Values: 0 to 65535

## 4.2.3.151 tai-list

### Syntax

**tai-list** *list-name*

**no tai-list**

### Context

[\[Tree\]](#) configure mobile-gateway pdn nf-profile-attributes tai-list

### Description

This command configures the TAI list or TAI range list that the SMF covers and registers to the NRF.

The **no** form of this command removes the configuration, and the TAI range list is not signaled during NF registration and update procedures, indicating that all TAIs are supported.

### Default

no tai-list

### Parameters

*list-name*

Specifies the name of the referenced TAI list, up to 32 characters. The TAI list names are configured using the following command.

```
configure mobile-gateway profile list tai-list
```

### 4.2.3.152 overload-control

#### Syntax

**overload-control**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn overload-control

#### Description

Commands in this context configure the overload settings used in overload conditions.

### 4.2.3.153 enable-gtp-overload-control

#### Syntax

**[no] enable-gtp-overload-control**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn overload-control enable-gtp-overload-control

#### Description

This command enables the MAG-c overload control functionality.

The **no** form of this command disables the overload control functionality.



**Note:** This command enables the overload-control functionality using the default configurations. Use the commands in the **overload-control** context to change the default configurations, as required.

#### Default

no enable-gtp-overload-control

### 4.2.3.154 enable-sbi-overload-control

#### Syntax

**[no] enable-sbi-overload-control**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn overload-control enable-sbi-overload-control

#### Description

This command configures the handling of the node-level overload control toward the AMF. When the node-level overload threshold (configured by the **sbi-overload-threshold** command) is reached, an SNMP

alarm is triggered, and any subsequent (non-emergency) Nsmf\_PDUSession\_CreateSMContext messages with a PDU Session Establishment Create Request are rejected. An HTTP 503 response is sent with the error attribute and ProblemDetails set to NF\_CONGESTION and, if configured, the Retry-After HTTP header field set (in seconds).

The **no** form of this command disables the handling of the Network Slicing Management Function (NSMF) NF overload control toward the AMF.

### Default

no enable-sbi-overload-control

## 4.2.3.155 local-throttling

### Syntax

local-throttling

### Context

[\[Tree\]](#) configure mobile-gateway pdn overload-control local-throttling

### Description

Commands in this context configure local throttling during overload.

## 4.2.3.156 critical

### Syntax

critical

### Context

[\[Tree\]](#) configure mobile-gateway pdn overload-control local-throttling critical

### Description

Commands in this context configure the critical overload level for local throttling.

## 4.2.3.157 throttling-percent

### Syntax

throttling-percent *percent-value*

no throttling-percent

### Context

[\[Tree\]](#) configure mobile-gateway pdn overload-control local-throttling critical throttling-percent

## Description

This command configures the percentage of traffic that is throttled (rejected) because of the call flows that add further load on the gateway, when the gateway is in critical overload. For example, if the gateway is in critical overload and the critical throttling percent is set to 90%, the gateway rejects nine out of ten call flows.

**no**



**Note:** Enabling the **enable-gtp-overload-control** command automatically enables this command in the default mode.

## Default

throttling-percent 90

## Parameters

*percent-value*

Specifies the percentage of traffic that should be throttled when the gateway is in the configured overload level.

Values: 0 to 100

## 4.2.3.158 local-overload-throttling

### Syntax

**local-overload-throttling** {**enable** | **disable**}

**no local-overload-throttling**

### Context

[Tree] configure mobile-gateway pdn overload-control local-throttling local-overload-throttling

### Description

This command configures the throttling (rejection) of call flows that add extra load on the gateway, when the gateway is in an overload state. When enabled, the gateway throttles (rejects) more signaling loads based on the configured percentage of the minor, major, and critical reduction values.

The **no** form of this command disables local overload throttling.



**Note:**

- To enable this command, you must enable the MAG-c overload control using the **enable-gtp-overload-control** command.
- This command enables the local-throttling functionality using the default configuration. Use the commands in the **local-throttling** context to change the default configuration, as required.

### Default

no local-overload-throttling

## Parameters

### enable

Keyword to enable local overload throttling.

### disable

Keyword to disable local overload throttling.

Default: **enable**

## 4.2.3.159 major

### Syntax

major

### Context

[\[Tree\]](#) configure mobile-gateway pdn overload-control local-throttling major

### Description

Commands in this context configure the settings for the major overload state.

## 4.2.3.160 throttling-percent

### Syntax

throttling-percent *percent-value*

no throttling-percent

### Context

[\[Tree\]](#) configure mobile-gateway pdn overload-control local-throttling major throttling-percent

### Description

This command configures the percentage of traffic that is throttled (rejected) because of the call flows that add further load on the gateway, when the gateway is in major overload. For example, if the gateway is in major overload and the throttling value is set to 60%, the gateway rejects six out of ten call flows.

no



**Note:** Enabling the **local-overload-throttling** command automatically enables this command in the default mode.

### Default

throttling-percent 60

## Parameters

*percent-value*

Specifies the percentage of traffic that is throttled when the gateway is in the configured overload level.

Values: 0 to 100

### 4.2.3.161 minor

#### Syntax

**minor**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn overload-control local-throttling minor

#### Description

Commands in this context configure the settings for the minor overload state.

### 4.2.3.162 throttling-percent

#### Syntax

**throttling-percent** *percent-value*

**no throttling-percent**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn overload-control local-throttling minor throttling-percent

#### Description

This command configures the percentage of traffic that is throttled (rejected) because of the call flows that add further load on the gateway, when the gateway is in minor overload. For example, if the gateway is in minor overload and the throttling value is set to 30%, the gateway rejects three out of ten call flows.

The **no** form of this command reverts to the default.



**Note:** Enabling the **local-overload-throttling** command automatically enables this command in the default mode.

#### Default

throttling-percent 0

#### Parameters

*percent-value*

Specifies the percentage of traffic that should be throttled when the gateway is in the configured overload level.

Values: 0 to 100

### 4.2.3.163 throttling-alarms

#### Syntax

```
throttling-alarms {enable | disable}  
no throttling-alarms
```

#### Context

[Tree] configure mobile-gateway pdn overload-control local-throttling throttling-alarms

#### Description

This command configures the throttling alarms that the system raises when the first message is throttled (rejected) because of the call flows that add extra load on the gateway when the gateway is in an overload state. The alarms are cleared 30 seconds after the throttling (rejection) of the last message.

The **no** form of this command reverts to the default.

#### Default

throttling-alarms disable

#### Parameters

##### enable

Keyword to enable throttling alarms.

##### disable

Keyword to disable throttling alarms.

### 4.2.3.164 overload-reduction

#### Syntax

```
overload-reduction
```

#### Context

[Tree] configure mobile-gateway pdn overload-control overload-reduction

#### Description

Commands in this context configure overload reduction.



**Note:** Enabling the **enable-gtp-overload-control** command automatically enables this command in the default mode.

### 4.2.3.165 critical

#### Syntax

**critical** *reduction-value*  
**no critical**

#### Context

[Tree] configure mobile-gateway pdn overload-control overload-reduction critical

#### Description

This command configures the percentage of traffic reduction requested for a critical overload.  
The **no** form of this command reverts to the default.



**Note:** Enabling the **enable-gtp-overload-control** command automatically enables this command in the default mode.

#### Default

critical 90

#### Parameters

*reduction-value*

Specifies the traffic reduction percentage for critical overload.

Values: 20 to 100

### 4.2.3.166 major

#### Syntax

**major** *reduction value*  
**no major**

#### Context

[Tree] configure mobile-gateway pdn overload-control overload-reduction major

#### Description

This command configures the percentage of traffic reduction requested for a major overload.  
The **no** form of this command reverts to the default.



**Note:** Enabling the **enable-gtp-overload-control** command automatically enables this command in the default mode.



**Default**

major 60

**Parameters**

*reduction-value*

Specifies the traffic reduction percentage for major overload.

Values: 20 to 100

**4.2.3.167 minor****Syntax**

**minor** *reduction value*

**no minor**

**Context**

[\[Tree\]](#) configure mobile-gateway pdn overload-control overload-reduction minor

**Description**

This command configures the percentage of traffic reduction requested for a minor overload.

The **no** form of this command reverts to the default.



**Note:** Enabling the **enable-gtp-overload-control** command automatically enables this command in the default mode.

**Default**

minor 30

**Parameters**

*reduction-value*

Specifies the traffic reduction percentage for minor overload.

Values: 20 to 100

**4.2.3.168 sbi-overload-threshold****Syntax**

**sbi-overload-threshold** *percent*

**no sbi-overload-threshold**

**Context**

[\[Tree\]](#) configure mobile-gateway pdn overload-control sbi-overload-threshold

## Description

This command configures the overload threshold that triggers an NSMF overload.

The **no** form of this command reverts to the default.

## Default

sbi-overload-threshold 92

## Parameters

*percent*

Specifies the overload threshold as a percent.

Values: 50 to 97

### 4.2.3.169 sbi-retry-after-timer

#### Syntax

**sbi-retry-after-timer** *seconds*

**no sbi-retry-after-timer**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn overload-control sbi-retry-after-timer

#### Description

This command configures the Retry-After field in the HTTP header of the 503 error response when the node-level overload threshold is reached.

The **no** form of this command reverts to the default (disabled).

#### Default

sbi-retry-after-timer 0

#### Parameters

*seconds*

Specifies the retry timer in seconds.

Values: 2 to 36000

### 4.2.3.170 thresholds

#### Syntax

**thresholds**

## Context

[Tree] configure mobile-gateway pdn overload-control thresholds

## Description

Commands in this context configure the critical, major, and minor overload thresholds.

### 4.2.3.171 critical

## Syntax

**critical** *threshold-value*

**no critical**

## Context

[Tree] configure mobile-gateway pdn overload-control thresholds critical

## Description

This command configures the threshold for the critical overload level. For example, when the critical threshold is configured with the value 97, the gateway reaches the critical overload level when its performance is between the configured major threshold and 97.

The **no** form of this command reverts to the default.



**Note:** Enabling the **enable-gtp-overload-control** command automatically enables this command in the default mode.

## Default

critical 97

## Parameters

*threshold-value*

Specifies the threshold for a critical overload.

Values: 50 to 97

### 4.2.3.172 major

## Syntax

**major** *threshold-value*

**no major**

## Context

[Tree] configure mobile-gateway pdn overload-control thresholds major

## Description

This command configures the threshold for the major overload level. For example, when the major threshold is configured with value 92, the gateway reaches the overload level when its performance is between the configured minor threshold value and 92.

The **no** form of this command reverts to the default.



**Note:** Enabling the **enable-gtp-overload-control** command automatically enables this command in the default mode.

## Default

major 92

## Parameters

*threshold-value*

Specifies the threshold for a critical overload.

Values: 50 to 97

### 4.2.3.173 minor

## Syntax

**minor** *threshold-value*

**no minor**

## Context

[Tree] configure mobile-gateway pdn overload-control thresholds minor

## Description

This command configures the threshold for the minor overload level. For example, when the minor threshold is configured with value 89, the gateway reaches the minor overload level when its performance is between 89 and the configured major threshold.

The **no** form of this command reverts to the default.



**Note:** Enabling the **enable-gtp-overload-control** command automatically enables this command in the default mode.

## Default

minor 89

## Parameters

*threshold-value*

Specifies the threshold for a minor overload.

Values: 50 to 97

### 4.2.3.174 validity-time

#### Syntax

**validity-time** value  
**no validity-time**

#### Context

**[Tree]** configure mobile-gateway pdn overload-control validity-time

#### Description

This command configures the length of time for the reported overload to be in effect.  
The **no** form of this command reverts to the default.



**Note:** Enabling the **enable-gtp-overload-control** command automatically enables this command in the default mode.

#### Default

validity-time 600

#### Parameters

*value*

Specifies the length of time, in seconds, for the overload to be in effect.

Values: 10 to 86400

### 4.2.3.175 pfcf-load-control

#### Syntax

**pfcf-load-control**

#### Context

**[Tree]** configure mobile-gateway pdn pfcf-load-control

#### Description

Commands in this context configure PFCF load control.

### 4.2.3.176 enable-pfcf-load-control

#### Syntax

**[no] enable-pfcf-load-control**

## Context

[Tree] configure mobile-gateway pdn pfcpc-load-control enable-pfcpc-load-control

## Description

This command enables PFCP load control support indication in the PFCP association messaging toward the UPF.

The **no** form of this command disables PFCP load control.

## Default

no enable-pfcpc-load-control

### 4.2.3.177 pfcpc-node-id-type

## Syntax

**pfcpc-node-id-type** {fqdn | ip} [ip-type {ipv4 | ipv6}]  
**no pfcpc-node-id-type**

## Context

[Tree] configure mobile-gateway pdn pfcpc-node-id-type

## Description

This command configures the PFCP node ID as an FQDN or IPv4/IPv6 address type.

The **no** form of this command specifies to use the default node ID type for the PFCP interface.



**Note:** This command requires a PDN shutdown.

## Parameters

### fqdn

Specifies the PFCP node ID as an FQDN type and the FQDN to be sent is the one configured under the **configure mobile-gateway pdn epc-node** command.

### ip

Specifies the PFCP node ID as an IP address type and the IP address to be sent is the one configured for the Sx/N4 interface.

Default: fqdn

### ipv4

Specifies to use the IPv4 address for the PFCP node ID when dual stack is configured on the Sx-N4 reference point interface.

### ipv6

Specifies to use the IPv6 address for the PFCP node ID when dual stack is configured on the Sx-N4 reference point interface.

Default: ipv4



**Note:** If dual stack is configured on the Sx-N4 reference point interface and the **pfcp-node-id-type** is set with IP address, then the IPv4 or IPv6 address must also be configured.



**Caution:**

- The **pfcp-node-id-type** command must not be changed on a live system.
- Use the **shutdown** command in the **configure mobile-gateway pdn** context before changing the node ID type for the Sx/N4 interface. Use the **no shutdown** command under the same context to apply the change.

### 4.2.3.178 priority-service

#### Syntax

**priority-service**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn priority-service

#### Description

This command enters the context to configure a mapping profile of priority services.

### 4.2.3.179 priority-mapping

#### Syntax

**priority-mapping** *mapping-name* **priority-profile** *profile-name*

**no priority-mapping**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn priority-service priority-mapping

#### Description

This command configures a priority mapping with a priority profile. This creates a mapping for handling priority of signaling messages based on the ARP or GTP message priority values.

The **no** form of this command removes the priority mapping and reverts to the default priority mapping.

#### Default

**no priority-mapping**

## Parameters

### *mapping-name*

Specifies a priority-mapping name, up to 32 characters, configured in the following context.

```
configure mobile-gateway profile priority-mapping
```

### *profile-name*

Specifies a priority profile name, up to 32 characters, configured in the following context.

```
configure mobile-gateway profile priority-profile
```

## 4.2.3.180 qfi-mapping-profile

### Syntax

**qfi-mapping-profile** *profile-name*

**no qfi-mapping-profile**

### Context

[\[Tree\]](#) configure mobile-gateway pdn qfi-mapping-profile

### Description

This command configures an optional QoS flow binding profile. The QoS parameters specified within the profile are used for QoS flow binding. When this optional profile is not configured here or at the APN level, the QFI is generated dynamically in the range 1 to 64 using 5QI/ARP as key.

The **no** form of this command removes the profile name from the configuration.

### Default

no qfi-mapping-profile

### Parameters

#### *profile-name*

Specifies the QFI mapping profile name, up to 32 characters. The QFI mapping profile is configured using the following command.

```
configure mobile-gateway profile qfi-mapping-profile
```

## 4.2.3.181 radius

### Syntax

**radius**



## Context

[Tree] configure mobile-gateway pdn radius

## Description

Commands in this context configure parameters for communication to RADIUS servers.

### 4.2.3.182 radius-accounting-on-off

## Syntax

**radius-accounting-on-off**

## Context

[Tree] configure mobile-gateway pdn radius radius-accounting-on-off

## Description

This command enables the context to control RADIUS accounting ON and OFF messaging.

### 4.2.3.183 messages-sent

## Syntax

**messages-sent** {none | on | on-off}

**no messages-sent**

## Context

[Tree] configure mobile-gateway pdn radius radius-accounting-on-off messages-sent

## Description

This command specifies whether the MAG-c sends both RADIUS accounting ON and OFF messages, only RADIUS accounting ON messages, or no RADIUS accounting ON/OFF messages.

The **no** form of this command reverts to the default.

## Default

messages-sent on-off

## Parameters

**{none | on | on-off}**

Specifies which RADIUS accounting messages are sent.

- none – no radius accounting on or off messages are sent
- on – only radius accounting on messages are sent
- on-off – both radius accounting on or off messages are sent

### 4.2.3.184 s11

#### Syntax

```
s11 [sig-ref-point-name]
no s11 [sig-ref-point-name]
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn s11

#### Description

This command configures the s11 reference point name.



**Note:** This command requires a PDN shutdown.

#### Default

s11 "default"

#### Parameters

*sig-ref-point-name*

Specifies a signaling reference point name up to 32 characters. At least one S11 interface must be configured on the MAG-c to allow peering with MME. A single S11 interface configured on the gateway can form peering with multiple MME nodes.

### 4.2.3.185 interface

#### Syntax

```
interface
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn s11 interface

#### Description

Commands in this context configure the s11 interface.



**Note:** This command requires a PDN shutdown.

### 4.2.3.186 gtp-c

#### Syntax

```
gtp-c [router router-instance] interface-name [interface-realm s1-u-realm-name]
```

## no gtp-c

### Context

[\[Tree\]](#) configure mobile-gateway pdn s11 interface gtp-c

### Description

This command configures the GTP-C profile parameters for the S11 interface.



**Note:** This command requires a PDN shutdown.

### Parameters

#### *router-instance*

Specifies the virtual router name or service ID.

Values: *router-name* | *service-id*

- *router-name* – Base
- *service-id* – 1 to 2147483647

Default: Base

#### *interface-name*

Specifies an interface name up to 32 characters, which must start with a letter.

#### *s1-u-realm-name*

Specifies the associated realm name for the GTP-U interface on the user plane function, up to 32 characters.



**Note:** Only the following characters are permitted:

- alphabetic characters (A-Z and a-z)
- digits (0-9)
- hyphen (-)
- dot (.)

The realm name must be unique for a specific routing instance on the user plane and is communicated in the Network-Instance IE part of the PFCP interface session establishment/modification process.

## 4.2.3.187 signaling

### Syntax

**signaling**

### Context

[\[Tree\]](#) configure mobile-gateway pdn s11 signaling

## Description

Commands in this context configure signaling for the S11 interface.



**Note:** This command requires a PDN shutdown.

### 4.2.3.188 gtp-c

#### Syntax

**gtp-c**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn s11 signaling gtp-c

#### Description

Commands in this context configure GTP-C signaling for the S11 signaling interface.

### 4.2.3.189 ddn-damp-timer

#### Syntax

**ddn-damp-timer** *ddn-damp-timer*

**no ddn-damp-timer**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn s11 signaling gtp-c ddn-damp-timer

#### Description

This command configures the Downlink Data Notification (DDN) dampening timer. After a failed DDN request to the MME or AMF, no further DDNs are sent for the duration of the dampening timer.

The **no** form of this command reverts to the default, that is, no dampening.

#### Default

ddn-damp-timer 0

#### Parameters

*ddn-damp-timer*

Specifies the duration, in seconds, of the DDN dampening timer . A value of 0 indicates the timer is disabled and no dampening is applied.

Values: 0 | 10 to 3600

### 4.2.3.190 ddn-throttling-arp-threshold

#### Syntax

```
ddn-throttling-arp-threshold ddn-throttling-arp-threshold  
no ddn-throttling-arp-threshold
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn s11 signaling gtp-c ddn-throttling-arp-threshold

#### Description

This command configures the DDN ARP threshold. DDN throttling is activated when a "DL low priority traffic throttling" IE is received in a DDN acknowledgment message from an MME, for the duration signaled in that IE. While throttling is active, all DDNs for traffic received above the ARP threshold are dropped.



**Note:** DDN throttling is not applicable to 5G sessions.

The **no** form of this command removes the ARP threshold from the configuration.



**Note:** This command requires a PDN shutdown.

#### Default

```
ddn-throttling-arp-threshold 0
```

#### Parameters

```
ddn-throttling-arp-threshold  
Specifies a DDN ARP threshold.  
Values: 0 to 15
```

### 4.2.3.191 profile

#### Syntax

```
profile profile-name  
no profile
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn s11 signaling gtp-c profile

## Description

This command configures the GTP-C signaling profile name for the S11 signaling interface. GTP-c signaling profiles are created using the following command.

```
configure mobile-gateway profile gtp
```

The **no** form of this command removes the profile name from the configuration.



**Note:** This command requires a PDN shutdown.

## Default

no profile

## Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

## 4.2.3.192 restoration-time

### Syntax

**restoration-time** *restoration-time*

**no restoration-time**

### Context

[\[Tree\]](#) configure mobile-gateway pdn s11 signaling gtp-c restoration-time

## Description

This command specifies the MAG-c wait duration before it deletes the UE context after detecting an MME failure. If a non-zero value is specified, the MME restoration procedures are enabled and the MAG-c maintains the session state of the affected UEs until the timer expires after a path failure. Upon expiry, the MAG-c cleans up the control plane and data plane sources of any remaining UEs.

The **no** form of this command reverts to the default.

## Default

restoration-time 0

## Parameters

*restoration-time*

Specifies the restoration time in seconds.

Values: 0 to 3600

Default: 0

### 4.2.3.193 ue-inactivity-timer

#### Syntax

```
ue-inactivity-timer ue-inactivity-timer  
no ue-inactivity-timer
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn s11 signaling gtp-c ue-inactivity-timer

#### Description

This command configures an inactivity timer to clean up hanging sessions after a path failure between the MME and the MAG-c.

If the path is temporarily down, for example, because of routing glitches, but neither the MME nor the MAG-c restarts, the MAG-c can have lingering idle sessions if path restoration is enabled using the following command.

```
configure mobile-gateway pdn s11 signaling gtp-c restoration-time
```

The **ue-inactivity-timer** command removes any idle sessions that are not reactivated after the specified time. The assumption is that these sessions are stale and that the MME has moved these sessions to another MAG-c.

A value of zero disables the UE inactivity timer, meaning that idle sessions are only subject to the **restoration-time** configuration, similar to active sessions.

The **no** form of this command reverts to the default.

#### Default

ue-inactivity-timer 0

#### Parameters

*ue-inactivity-timer*

Specifies the UE inactivity timer in minutes.

Values: 0 | 30 to 2880; 0 means disabled

Default: 0

### 4.2.3.194 s5

#### Syntax

```
s5 [sig-ref-point-name]  
no s5 [sig-ref-point-name]
```

## Context

[Tree] configure mobile-gateway pdn s5

## Description

Commands in this context configure the S5 interface. This interface is not used externally by the MAG-c, but the configured interface IP must match the "PGW S5/S8 Address for Control Plane or PMIP" address that is signaled in the GTP Create Session Request.



**Note:** This command requires a PDN shutdown.

## Parameters

*sig-ref-point-name*

Specifies the S5 interface name, up to 32 characters.

### 4.2.3.195 interface

#### Syntax

**interface**

#### Context

[Tree] configure mobile-gateway pdn s5 interface

#### Description

Commands in this context configure interface parameters.



**Note:** This command requires a PDN shutdown.

### 4.2.3.196 gtp-c

#### Syntax

**gtp-c** [**router** *router-instance*] *interface-name* [**interface-realm** *s5-u-realm-name*]

**no gtp-c**

#### Context

[Tree] configure mobile-gateway pdn s5 interface gtp-c

#### Description

This command configures the GTP-C profile parameters for an S5 interface.

The **no** form of this command removes the parameter from the configuration.





**Note:** This command requires a PDN shutdown.

## Parameters

### *router-instance*

Specifies the virtual router name or service ID.

Values: *router-name* | *service-id*

- *router-name* – Base
- *service-id* – 1 to 2147483647

Default: Base

### *interface-name*

Specifies an interface name, up to 32 characters. The first character must be a letter.

### *s5-u-realm-name*

Specifies the associated realm name for the S5 GTP-U interface on the user plane function, up to 32 characters.



**Note:** Only the following characters are permitted:

- alphabetic characters (A-Z and a-z)
- digits (0-9)
- hyphen (-)
- dot (.)

The realm name must be set the same as the S1-u GTP-u realm configured under the **s11** context. and is communicated in the Network-Instance IE part of the PFCP interface session establishment/modification process.



**Note:**

## 4.2.3.197 signaling

### Syntax

**signaling**

### Context

[\[Tree\]](#) configure mobile-gateway pdn s5 signaling

### Description

Commands in this context configure signaling for the S5 interface.

### 4.2.3.198 gtp-c

#### Syntax

**gtp-c**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn s5 signaling gtp-c

#### Description

Commands in this context configure GTP-C signaling for the S5 signaling interface.

### 4.2.3.199 profile

#### Syntax

**profile** *profile-name*

**no profile**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn s5 signaling gtp-c profile

#### Description

This command configures a GTP-C profile for S5 signaling.

The **no** form of this command removes the configuration.

#### Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

### 4.2.3.200 sba-client-services

#### Syntax

**sba-client-services**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services

#### Description

Commands in this context provide configuration options for MAG-c SBA services acting as the NF consumer.

### 4.2.3.201 addressing-priority

#### Syntax

**no addressing-priority**  
**addressing-priority** *addressing-priority*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services addressing-priority

#### Description

This command configures the addressing method priority used for accessing the discovered services of peer NF producers when the discovered NF profiles contain both FQDN and IP endpoints.

The **no** form of this command reverts to the default.

#### Default

addressing-priority ip-endpoint

#### Parameters

*addressing-priority*

Values:

- fqdn – keyword to use the FQDN if present. If not present, the IP endpoint is used.
- ip-endpoint – keyword to always use the IP endpoint.
- ip-endpoint-fallback – keyword to use the FQDN if present. If not present, the IP endpoint is used. If the FQDN is used and IP resolution fails, the IP endpoint is used as a fallback.

### 4.2.3.202 amf-client

#### Syntax

**amf-client**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services amf-client

#### Description

Commands in this context configure the MAG-c client-side options when the MAG-c consumes AMF services.

### 4.2.3.203 namf-comm

#### Syntax

**namf-comm** *service-instance*

**no namf-comm** *service-instance*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services amf-client namf-comm

#### Description

This command configures an instance of the Namf\_Communication service. At least one service instance must be configured to allow peering with the AMF.

The **no** form of this command removes the service instance from the configuration.



**Note:** This command requires a PDN shutdown

#### Parameters

*service-instance*

Specifies the service instance name, up to 32 characters.

### 4.2.3.204 amf-profile

#### Syntax

**amf-profile** *profile-name*

**no amf-profile**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services amf-client namf-comm amf-profile

#### Description

This command associates an AMF profile with the service instance. This profile specifies transmission and error-handling behavior.

The **no** form of this command removes the AMF profile and reverts all behavior to default values.

#### Default

amf-profile "default"

## Parameters

*profile-name*

Specifies the name of the AMF profile, up to 32 characters. AMF profiles are configured using the following command.

```
configure mobile-gateway profile amf-profile
```

### 4.2.3.205 fqdn

#### Syntax

**fqdn** *fqdn-sni-string*

**no fqdn**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services amf-client namf-comm fqdn

#### Description

This command configures the FQDN which is used by the MAG-c when it needs to construct a hostname for this client, for example for creating a callback URI.

A single FQDN can be configured for all client services in the **configure mobile-gateway pdn sba-client-services** context or per client service instance.

The **no** form of this command removes the FQDN from the configuration.

#### Default

no fqdn

#### Parameters

*fqdn-sni-string*

Specifies the FQDN name string, up to 255 characters.

### 4.2.3.206 http2-profile

#### Syntax

**http2-profile** *http2-profile-name*

**no http2-profile**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services amf-client namf-comm http2-profile

## Description

This command configures an HTTP/2 profile, using the **configure mobile-gateway profile http2** command, to the client service. A single HTTP/2 profile can be configured for all client services in the **configure mobile-gateway pdn sba-client-services** context or per client service instance.

The **no** form of this command removes the HTTP/2 profile from the configuration.

## Default

no http2-profile

## Parameters

*http2-profile-name*

Specifies the name of the HTTP/2 profile, up to 32 characters.

## 4.2.3.207 interface

### Syntax

**interface** *interface-name* [**router** *router-instance*]

**no interface**

### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services amf-client namf-comm interface

### Description

This command configures the interface in which the HTTP/2 connections are established.

The **no** form of this command removes the interface from the configuration.



**Note:** This command requires a PDN shutdown

### Default

no interface

### Parameters

*interface-name*

Specifies an existing interface name up to 32 characters, which must start with a letter.

*router-instance*

Specifies the router instance.

Values: *router-name* | *service-id*

- *router-name* – Base
- *service-id* – 1 to 2147483647

Default: Base

### 4.2.3.208 n1-profile

#### Syntax

**n1-profile** *profile-name*  
**no n1-profile**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services amf-client namf-comm n1-profile

#### Description

This command configures an N1 profile with the service instance. This profile specifies N1 messaging parameters when sending N1 messages via the Namf\_Communication service.

The **no** form of this command removes the N1 profile from the service instance and reverts all behavior to default values.

#### Default

n1-profile "default"

#### Parameters

*profile-name*

Specifies the name of the N1 profile, up to 32 characters. N1 profiles are configured using the **configure mobile-gateway profile n1-profile** command.

### 4.2.3.209 nf-id-list

#### Syntax

**nf-id-list** *list-name*  
**no nf-id-list**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services amf-client namf-comm nf-id-list

#### Description

This command configures an NF ID list for peer discovery of this client service instance. This list is used in the following cases:

- NRF-based discovery only returns a list of NF Instances without IP/FQDN, in which case the specified NF Instance IDs must be present in the NF ID list.
- NRF-based discovery fails (for example, returns an empty list or times out).
- NRF-based discovery is disabled.

The **no** form of this command removes the NF ID list from the configuration.

**Default**

no nf-id-list

**Parameters**

*list-name*

Specifies the NF ID list name, up to 32 characters. NF ID lists are configured using the **configure mobile-gateway profile list nf-id-list** command.

**4.2.3.210 chf-client****Syntax**

**chf-client**

**Context**

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services chf-client

**Description**

Commands in this context configure the MAG-c client-side options when the MAG-c consumes CHF services.

**4.2.3.211 nchf-convergedcharging****Syntax**

**nchf-convergedcharging** *instance-name*  
**no nchf-convergedcharging** *instance-name*

**Context**

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services chf-client nchf-convergedcharging

**Description**

This command configures an instance of the Nchf\_ConvergedCharging service. At least one service instance must be configured to allow the MAG-c to perform charging functionality toward the CHF.

The **no** form of this command removes the service instance from the configuration.

**Parameters**

*instance-name*

Specifies the service instance name, up to 32 characters.



### 4.2.3.212 api-version

#### Syntax

**api-version** *version* [**minor** *minor*] [**patch** *patch*]  
**no api-version**

#### Context

**[Tree]** configure mobile-gateway pdn sba-client-services chf-client nchf-convergedcharging api-version

#### Description

This command overrides the API version used in the API URI endpoint. This only changes the signaled URI to help compatibility with the remote system, it does not change how the CHF signals any other attributes.

The **no** form of this command removes the API version override. The MAG-c signals the latest version it supports.

#### Default

no api-version

#### Parameters

##### *version*

Specifies the major value of the version.

Values: 0 to 255

Default: 0

##### *minor*

Specifies the minor value of the version.

Values: 0 to 255

Default: 0

##### *patch*

Specifies the patch value of the version.

Values: 0 to 255

Default: 0

### 4.2.3.213 fqdn

#### Syntax

**fqdn** *fqdn-sni-string*  
**no fqdn**

## Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services chf-client nchf-convergedcharging fqdn

## Description

This command configures the FQDN that the MAG-c uses to construct a hostname for this client; for example, for creating a callback URI.

A single FQDN can be configured for all client services in the following context or per client service instance.

```
configure mobile-gateway pdn sba-client-services
```

The **no** form of this command removes the FQDN from the configuration.

## Default

no fqdn

## Parameters

*fqdn-sni-string*

Specifies the FQDN name string, up to 255 characters.

### 4.2.3.214 http2-profile

## Syntax

**http2-profile** *http2-profile-name*

**no http2-profile**

## Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services chf-client nchf-convergedcharging http2-profile

## Description

This command configures an HTTP/2 profile for the client service. A single HTTP/2 profile can be configured for all client services in the following context or per client service instance.

```
configure mobile-gateway pdn sba-client-services
```

The **no** form of this command removes the HTTP/2 profile from the configuration.

## Default

no http2-profile

## Parameters

*http2-profile-name*

Specifies the name of the HTTP/2 profile, up to 32 characters. Refers to a profile configured using the following command.

```
configure mobile-gateway profile http
```

## 4.2.3.215 interface

### Syntax

**interface** *interface-name* [**router** *router-instance*]

**no interface**

### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services chf-client nchf-convergedcharging interface

### Description

This command configures the interface in which the HTTP/2 connections are established.

The **no** form of this command removes the interface from the configuration.



**Note:** This command requires a PDN shutdown

### Default

no interface

### Parameters

*interface-name*

Specifies an existing interface name, up to 32 characters, which must start with a letter.

*router-instance*

Specifies the router instance.

Values: *router-name* | *service-id*

- *router-name* – Base
  - Default: Base
- *service-id* – 1 to 2147483647

## 4.2.3.216 converged-interface-support

### Syntax

**converged-interface-support**

## Context

[Tree] configure mobile-gateway pdn sba-client-services converged-interface-support

## Description

Commands in this context configure 5G SBI interface support for UEs without 5GS NAS support.

### 4.2.3.217 pdu-session-id-base

## Syntax

**pdu-session-id-base** *value*

**no pdu-session-id-base**

## Context

[Tree] configure mobile-gateway pdn sba-client-services converged-interface-support pdu-session-id-base

## Description

This command configures the base value used for the PDU session ID generated by the PGW-C or SMF when using the 5G Service Based Interfaces (SBI) for UEs without 5GS NAS support.

The **no** form of this command reverts to the default.

## Default

pdu-session-id-base 0

## Parameters

*value*

Specifies the PDU session ID base. When set to 0, the system defines the PDU session ID base value.

Values: 0 to 95

Default: 0

### 4.2.3.218 fqdn

## Syntax

**fqdn** *fqdn-sni-string*

**no fqdn**

## Context

[Tree] configure mobile-gateway pdn sba-client-services fqdn

## Description

This command configures the FQDN, which is used by the MAG-c to construct a hostname for this client when required; for example, to create a callback URI. A single FQDN can be configured for all client services in the **configure mobile-gateway pdn sba-client-services** context or the FQDN can be configured per client service instance.

The **no** form of this command removes the FQDN from the configuration

## Default

no fqdn

## Parameters

*fqdn-sni-string*

Specifies the FQDN name string, up to 255 characters.

### 4.2.3.219 http2-profile

## Syntax

**http2-profile***http2-profile*

**no http2-profile**

## Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services http2-profile

## Description

This command configures an HTTP/2 profile, using the **configure mobile-gateway profile http2** command, to the client service. A single HTTP/2 profile can be configured for all client services in the **configure mobile-gateway pdn sba-client-services** context or per client service instance.

The **no** form of this command removes the HTTP/2 profile from the configuration.

## Default

no http2-profile

## Parameters

*http2-profile-name*

Specifies the name of the HTTP/2 profile, up to 32 characters.

### 4.2.3.220 nrf-client

## Syntax

**nrf-client**

## Context

[Tree] configure mobile-gateway pdn sba-client-services nrf-client

## Description

Commands in this context configure the MAG-c client-side options when the MAG-c consumes NRF services.

### 4.2.3.221 nrf-disc

## Syntax

**nrf-disc** *service-instance*  
**no nrf-disc** *service-instance*

## Context

[Tree] configure mobile-gateway pdn sba-client-services nrf-client nrf-disc

## Description

This command configures an instance of the Nrf\_Discovery client service. At least one service instance must be configured to allow the MAG-c to discover other service provides via the NRF.

The **no** form of this command removes the service instance from the configuration.

## Parameters

*service-instance*  
Specifies the service instance name, up to 32 characters.

### 4.2.3.222 blocklist-duration

## Syntax

**blocklist-duration** *seconds*  
**no blocklist-duration**

## Context

[Tree] configure mobile-gateway pdn sba-client-services nrf-client nrf-disc blocklist-duration

## Description

This command configures the blocklist duration for NRF peers. When an NRF peer is blocklisted, the MAG-c attempts to reconnect to this NRF peer only after the configured time has expired.



**Note:** When the duration of the blocklist timer is configured with high values and all NRF peers are blocklisted, for example as a result of a short connectivity outage, all peers are unavailable

until the blacklist timer expires. To avoid this, Nokia recommends that you should configure low values for the blacklist timer.

The **no** form of this command reverts to the default value.

### Default

blocklist-duration 5

### Parameters

*seconds*

Specifies the blacklist duration in seconds.

Values: 0 to 300

## 4.2.3.223 chf-selection-options

### Syntax

**chf-selection-options**

### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nrf-disc chf-selection-options

### Description

Commands in this context configure CHF-specific discovery and selection options.

## 4.2.3.224 exclude-gpsi

### Syntax

**[no] exclude-gpsi**

### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nrf-disc chf-selection-options  
exclude-gpsi

### Description

This command excludes GPSI from the from the query parameter lists in the CHF discovery request.

The **no** form of this command includes GPSI in the CHF discovery request.

### Default

no exclude-gpsi

### 4.2.3.225 exclude-supi

#### Syntax

**[no] exclude-supi**

#### Context

**[Tree]** configure mobile-gateway pdn sba-client-services nrf-client nrf-disc chf-selection-options  
exclude-supi

#### Description

This command excludes SUPI from the query parameter lists in the CHF discovery request.

The **no** form of this command includes SUPI in the CHF discovery request.

#### Default

no exclude-supi

### 4.2.3.226 exclude-snsais

#### Syntax

**exclude-snsais**  
**no exclude-snsais**

#### Context

**[Tree]** configure mobile-gateway pdn sba-client-services nrf-client nrf-disc exclude-snsais

#### Description

This command configures the exclusion of the SNSSAI list from the query parameter lists in the NF discovery request.

The **no** form of this command includes the SNSSAI list in the NF discovery request.

#### Default

no exclude-snsais

### 4.2.3.227 fqdn

#### Syntax

**fqdn fqdn-sni-string**  
**no fqdn**



## Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nrf-disc fqdn

## Description

This command configures the FQDN which is used by the MAG-c when it needs to construct a hostname for this client, for example for creating a callback URI. A single FQDN can be configured for all client services in the **configure mobile-gateway pdn sba-client-services** context or per client service instance.

The **no** form of this command removes the FQDN from the configuration.

## Default

no fqdn

## Parameters

*fqdn-sni-string*

Specifies the FQDN name string, up to 255 characters.

### 4.2.3.228 http2-profile

## Syntax

**http2-profile** *http2-profile-name*

**no http2-profile**

## Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nrf-disc http2-profile

## Description

This command configures an HTTP/2 profile, using the **configure mobile-gateway profile http2** command, to the client service. A single HTTP/2 profile can be configured for all client services in the **configure mobile-gateway pdn sba-client-services** context or per client service instance.

The **no** form of this command removes the HTTP/2 profile from the configuration.

## Default

no http2-profile

## Parameters

*http2-profile-name*

Specifies the name of the HTTP/2 profile, up to 32 characters.

### 4.2.3.229 interface

#### Syntax

```
interface interface-name [router router-name]  
no interface
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nrf-disc interface

#### Description

This command configures the interface in which the HTTP/2 connections are established. The **no** form of this command removes the interface from the configuration.



**Note:** This command requires a PDN shutdown.

#### Default

no interface

#### Parameters

*interface-name*

Specifies an existing interface name up to 32 characters, which must start with a letter.

*router-instance*

Specifies the router instance.

Values: *router-name* | *service-id*

- *router-name* – Base
  - Default: Base
- *service-id* – 1 to 2147483647

### 4.2.3.230 nf-id-list

#### Syntax

```
no nf-id-list  
nf-id-list list-name
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nrf-disc nf-id-list

## Description

This command configures an NF ID list for peer discovery of this client service instance. Because the NRF itself cannot be discovered, you must configure this to enable the Nnrf\_Discovery service

The **no** form of this command removes the NF ID list from the configuration.

## Default

no nf-id-list

## Parameters

*list-name*

Specifies the NF ID list name, up to 32 characters. NF ID lists are configured using the **configure mobile-gateway profile list nf-id-list** command.

### 4.2.3.231 nrf-cache-interval

## Syntax

**nrf-cache-interval** {*value* | **use-nrf-validity-period**}

**no nrf-cache-interval**

## Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nnrf-disc nrf-cache-interval

## Description

This command configures the NRF discovery results validity period.

The **no** form of this command reverts to the default.



**Note:** Configuring this value higher than the Validity period signaled by the NRF may lead to the MAG-c using stale peer lists. Nokia recommends to keep this configuration to its default, and otherwise to check if the configured validity period is equal or less than the validity period used by the NRF.

## Default

nrf-cache-interval use-nrf-validity-period

## Parameters

*value*

Specifies the validity period in hours.

Value: 0 to 24

**use-nrf-validity-period**

Keyword to use the validity period provided in the NRF discovery response.

### 4.2.3.232 suppress-discovery

#### Syntax

[no] suppress-discovery [amf | chf | pcf | udm]

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nrf-disc suppress-discovery

#### Description

This command configures an NF type to use the locally-configured NF ID lists for selecting a peer instead of using the NRF.

The **no** form of this command configures that discovery via the NRF is used for all NF types.

#### Default

no suppress-discovery

#### Parameters

##### amf

Keyword to suppress NRF discovery when selecting an AMF peer.

##### chf

Keyword to suppress NRF discovery when selecting a CHF peer.

##### pcf

Keyword to suppress NRF discovery when selecting a PCF peer.

##### udm

Keyword to suppress NRF discovery when selecting an UDM peer.

### 4.2.3.233 udm-selection-options

#### Syntax

udm-selection-options

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nrf-disc udm-selection-options

#### Description

Commands in this context configure UDM-specific discovery and selection options.

### 4.2.3.234 exclude-supi

#### Syntax

**exclude-supi**  
**no exclude-supi**

#### Context

**[Tree]** configure mobile-gateway pdn sba-client-services nrf-client nrf-disc udm-selection-options  
exclude-supi

#### Description

This command configures the exclusion of the SUPI from the query parameter lists in the UDM discovery request.

The **no** form of this command includes the SUPI in the UDM discovery request.

#### Default

no exclude-supi

### 4.2.3.235 use-locality

#### Syntax

**use-locality**  
**no use-locality**

#### Context

**[Tree]** configure mobile-gateway pdn sba-client-services nrf-client nrf-disc use-locality

#### Description

This command configures the discovery requests for PCF, UDM, and CHF peers to use the preferred-locality query parameter. This also requires configuring **locality** parameter in the **configure mobile-gateway pdn nf-profile-attributes** context.

The **no** form of this command excludes the preferred-locality query parameter from discovery requests.

#### Default

no use-locality

### 4.2.3.236 nrf-nfm

#### Syntax

**nrf-nfm** *service-instance*

**no nrf-nfm** *service-instance*

### Context

[Tree] configure mobile-gateway pdn sba-client-services nrf-client nrf-nfm

### Description

This command configures an instance of the Nrf\_NFManagement client service. At least one service instance must be configured to allow the MAG-c to register its own server services with the NRF.

The **no** form of this command removes the service instance from the configuration.

### Parameters

*service-instance*

Specifies the service instance name, up to 32 characters.

## 4.2.3.237 blocklist-duration

### Syntax

**blocklist-duration** *seconds*

**no blocklist-duration**

### Context

[Tree] configure mobile-gateway pdn sba-client-services nrf-client nrf-nfm blocklist-duration

### Description

This command configures the blocklist duration of NRF peers. When an NRF peer is blocklisted, the MAG-c only attempts to reconnect to this NRF peer after the configured time expires.



**Note:** When the duration of the block list timer is configured with high values and all NRF peers are blocklisted; for example, as a result of a short connectivity outage, there are not any peers available until the blocklist timer expires. Nokia recommends to configure low values for the blocklist timer.

The **no** form of this command reverts to the default value.

### Default

blocklist-duration 60

### Parameters

*seconds*

Specifies the blocklist duration in seconds.

Values: 0 to 300

### 4.2.3.238 fqdn

#### Syntax

```
fqdn fqdn-sni-string
no fqdn
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nnrf-nfm fqdn

#### Description

This command configures the FQDN which is used by the MAG-c when it needs to construct a hostname for this client, for example for creating a callback URI.

A single FQDN can be configured for all client services in the **configure mobile-gateway pdn sba-client-services** context or per client service instance.

The **no** form of this command removes the FQDN from the configuration.

#### Default

no fqdn

#### Parameters

*fqdn-sni-string*

Specifies the FQDN name string, up to 255 characters.

### 4.2.3.239 heartbeat-nrf-blocklist

#### Syntax

```
heartbeat-nrf-blocklist retry retry-count wait-timer seconds
no heartbeat-nrf-blocklist
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nnrf-nfm heartbeat-nrf-blocklist

#### Description

This command configures the heartbeat NUpdate operation blocklist algorithm of NRF peers. The **retry** keyword specifies the number of times a heartbeat is resent, when there is no response from the peer, after the timer configured using the **wait-timer** keyword expires.

The **retry** counter is also applied when specific HTTP error status codes are received in the heartbeat response from the NRF. In this case, the new heartbeat is sent immediately after the response is received. This does not apply to HTTP status codes 400 and 501 which immediately block the peer, or to HTTP status code 404 which triggers a new NRegister operation.



**Note:** See "NRF Failure handling" in the *MAG-c Control Plane Function Guide* for more information about blocklisting.

The **no** form of this command reverts to the default values.

## Default

heartbeat-nrf-blocklist retry 3 wait-timer 2

## Parameters

*retry-count*

Specifies the number of retries before the peer is blocked.

Values: 0 to 10

*seconds*

Species the time to wait between retries after a timeout, in seconds.

Values: 1 to 10

## 4.2.3.240 http2-profile

### Syntax

**http2-profile** *http2-profile-name*

**no http2-profile**

### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nnrf-nfm http2-profile

### Description

This command configures an HTTP/2 profile, using the **configure mobile-gateway profile http2** command, to the client service. A single HTTP/2 profile can be configured for all client services in the **configure mobile-gateway pdn sba-client-services** context or per client service instance.

The **no** form of this command removes the HTTP/2 profile from the configuration.

### Default

no http2-profile

### Parameters

*http2-profile-name*

Specifies the name of the HTTP/2 profile, up to 32 characters.



### 4.2.3.241 interface

#### Syntax

```
interface interface-name [router router-instance]  
no interface
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nrf-nfm interface

#### Description

This command configures the interface in which the HTTP/2 connections are established. The **no** form of this command removes the interface from the configuration.



**Note:** This command requires a PDN shutdown

#### Default

no interface

#### Parameters

*interface-name*

Specifies an existing interface name up to 32 characters, which must start with a letter.

*router-instance*

Specifies the router instance.

Values: *router-name* | *service-id*

- *router-name* – Base
  - Default: Base
- *service-id* – 1 to 2147483647

### 4.2.3.242 nf-id-list

#### Syntax

```
no nf-id-list  
nf-id-list list-name
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nrf-nfm nf-id-list

## Description

This command configures an NF ID list for peer discovery of this client service instance. Because the NRF itself cannot be discovered, you must configure this to enable the Nnrf\_NFManagement service.

The **no** form of this command removes the NF ID list from the configuration.

## Default

no nf-id-list

## Parameters

*list-name*

Specifies the NF ID list name, up to 32 characters. NF ID lists are configured using the **configure mobile-gateway profile list nf-id-list** command.

### 4.2.3.243 nfm-nrf-blocklist

## Syntax

**nfm-nrf-blocklist** *retry* *retry-count* **wait-timer** *seconds*

**no nfm-nrf-blocklist**

## Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services nrf-client nnrf-nfm nfm-nrf-blocklist

## Description

This command configures the blocklist algorithm of NRF peers for any operation except the heartbeat NFUpdate. This includes regular NFUpdate operations. The *retry* keyword specifies the number of times a heartbeat is resent, when there is no response from the peer, after the timer configured using the *wait-timer* keyword expires.

The *retry* counter is also applied when specific HTTP error status codes are received in the heartbeat response from the NRF. In this case, the new heartbeat is sent immediately after the response is received. For NFRegister operations this does not apply to HTTP status codes 400 to 499, and 501 which immediately block the peer. For NFUpdate operations this does not apply to HTTP status codes 400 and 501 which immediately block the peer, or to HTTP status code 404 which triggers a new NFRegister operation.



**Note:** See "NRF Failure handling" in the *MAG-c Control Plane Function Guide* for more information about blocklisting.

The **no** form of this command reverts to the default value.

## Default

nfm-nrf-blocklist *retry* 3 *wait-timer* 2

## Parameters

*retry-count*

Specifies the number of retries before the peer is blocked.

Values: 0 to 10

*seconds*

Species the time to wait between retries after a timeout, in seconds.

Values: 1 to 10

### 4.2.3.244 pcf-client

#### Syntax

**pcf-client**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services pcf-client

#### Description

Commands in this context configure the MAG-c client-side options when the MAG-c consumes PCF services.

### 4.2.3.245 npcf-smpolicycontrol

#### Syntax

**no npcf-smpolicycontrol** *service-instance*

**npcf-smpolicycontrol** *service-instance*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services pcf-client npcf-smpolicycontrol

#### Description

This command configures an instance of the Npcf\_SMPolicyControl client service. At least one service instance must be configured to allow the MAG-c to perform policy management with a PCF.

The **no** form of this command removes the service instance from the configuration.

#### Parameters

*service-instance*

Specifies the service instance name, up to 32 characters.

### 4.2.3.246 fqdn

#### Syntax

**fqdn** *fqdn-sni-string*  
**no fqdn**

#### Context

**[Tree]** configure mobile-gateway pdn sba-client-services pcf-client npcf-smpolicycontrol fqdn

#### Description

This command configures the FQDN which is used by the MAG-c when it needs to construct a hostname for this client, for example for creating a callback URI.

A single FQDN can be configured for all client services in the **configure mobile-gateway pdn sba-client-services** context or per client service instance.

The **no** form of this command removes the FQDN from the configuration.

#### Default

no fqdn

#### Parameters

*fqdn-sni-string*

Specifies the FQDN name string, up to 255 characters.

### 4.2.3.247 http2-profile

#### Syntax

**http2-profile** *http2-profile-name*  
**no http2-profile**

#### Context

**[Tree]** configure mobile-gateway pdn sba-client-services pcf-client npcf-smpolicycontrol http2-profile

#### Description

This command configures an HTTP/2 profile, using the **configure mobile-gateway profile http2** command, to the client service. A single HTTP/2 profile can be configured for all client services in the **configure mobile-gateway pdn sba-client-services** context or per client service instance.

The **no** form of this command removes the HTTP/2 profile from the configuration.

#### Default

no http2-profile

## Parameters

*http2-profile-name*

Specifies the name of the HTTP/2 profile, up to 32 characters.

### 4.2.3.248 interface

#### Syntax

**interface** *interface-name* [**router** *router-instance*]

**no interface**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services pcf-client npc-smpolicycontrol interface

#### Description

This command configures the interface in which the HTTP/2 connections are established.

The **no** form of this command removes the interface from the configuration.



**Note:** This command requires a PDN shutdown

#### Default

no interface

#### Parameters

*interface-name*

Specifies an existing interface name up to 32 characters, which must start with a letter.

*router-instance*

Specifies the router instance.

Values: *router-name* | *service-id*

- *router-name* – Base
  - Default: Base
- *service-id* – 1 to 2147483647

### 4.2.3.249 nf-id-list

#### Syntax

**nf-id-list** *list-name*

**no nf-id-list**

## Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services pcf-client npcf-smpolicycontrol nf-id-list

## Description

This command configures an NF ID list for peer discovery of this client service instance. This list is used in the following cases:

- NRF based discovery only returns a list of NF Instances without IP/FQDN, in which case the specified NF Instance IDs must be present in the NF ID list.
- NRF based discovery fails (for example, returns an empty list or times out).
- NRF based discovery is disabled.
- No NF ID list is configured with the following command for the APN instance associated with the session for which discovery is done.

```
configure mobile-gateway pdn apn pcf-selection nf-id-list
```

The **no** form of this command removes the NF ID list from the configuration.

## Default

no nf-id-list

## Parameters

*list-name*

Specifies the NF ID list name, up to 32 characters. NF ID lists are configured using the **configure mobile-gateway profile list nf-id-list** command.

### 4.2.3.250 pcf-profile

## Syntax

**no pcf-profile**

**pcf-profile** *profile-name*

## Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services pcf-client npcf-smpolicycontrol pcf-profile

## Description

This command associates a PCF profile with the service instance. This profile specifies transmission, error handling, and attribute manipulation behavior.

The **no** form of this command removes the PCF profile and reverts all behavior to default values.

## Default

no pcf-profile

## Parameters

*profile-name*

Specifies the name of the PCF profile, up to 32 characters. PCF profiles are configured using the **configure mobile-gateway profile pcf-profile** command.

### 4.2.3.251 scp-client

#### Syntax

**scp-client**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services scp-client

#### Description

Commands in this context configure the SCP options for SCP client services.

### 4.2.3.252 scp-service

#### Syntax

**scp-service** *service-instance*

**no scp-service** *service-instance*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services scp-client scp-service

#### Description

This command configures an instance of the SCP client service. At least one service instance must be configured to allow peering with the SCP.

The **no** form of this command removes the specified service instance.

#### Parameters

*service-instance*

Specifies the name of the service instance, up to 32 characters.

### 4.2.3.253 http2-profile

#### Syntax

**http2-profile** *http2-profile-name*

**no http2-profile**

## Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services scp-client scp-service http2-profile

## Description

This command associates an HTTP/2 profile (configured using the **configure mobile-gateway profile http2** command) to the SCP client service.

The **no** form of this command removes the HTTP/2 profile from the configuration.

## Default

no http2-profile

## Parameters

*http2-profile-name*

Specifies the name of the HTTP/2 profile, up to 32 characters.

## 4.2.3.254 interface

### Syntax

**interface** *interface-name* [**router** *router-instance*]

**no interface**

### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services scp-client scp-service interface

### Description

This command configures the interface for the SCP client service instance.

The **no** form of this command removes the interface from the configuration.

### Default

no interface

### Parameters

*interface-name*

Specifies an existing interface name, up to 32 characters. The name must start with a letter.

*router-instance*

Specifies the router instance.

Values: *router-name* | *service-id*

- *router-name* – Base
  - Default: Base



- *service-id* – 1 to 2147483647

### 4.2.3.255 nf-id-list

#### Syntax

**nf-id-list** *list-name*  
**no nf-id-list**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services scp-client scp-service nf-id-list

#### Description

This command configures an NF ID list name for the SCP client service instance.  
The **no** form of this command removes the NF ID list configuration.

#### Default

no nf-id-list

#### Parameters

*list-name*

Specifies the name of an NF ID list, up to 32 characters.

### 4.2.3.256 scp-domain

#### Syntax

**scp-domain** *domain-name*  
**no scp-domain**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services scp-client scp-service scp-domain

#### Description

This command configures an SCP domain for the SCP client service.  
The **no** form of this command removes the SCP domain configuration.

#### Parameters

*domain-name*

Specifies the name of the SCP client service instance domain, up to 32 characters.

### 4.2.3.257 udm-client

#### Syntax

**udm-client** *service-instance*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services udm-client

#### Description

Commands in this context configure the MAG-c client-side options when the MAG-c consumes UDM services.

The **no** form of this command removes the specified configuration.

#### Parameters

*service-instance*

Specifies the service instance name, up to 32 characters.

### 4.2.3.258 nudm-sdm

#### Syntax

**no nudm-sdm** *service-instance*

**nudm-sdm** *service-instance*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services udm-client nudm-sdm

#### Description

This command configures an instance of the Nudm\_SubscriberDataManagement service. At least one service instance must be configured to allow the MAG-c to get session management subscription data from the UDM.

The **no** form of this command removes the service instance from the configuration.

#### Parameters

*service-instance*

Specifies the service instance name, up to 32 characters.

### 4.2.3.259 fqdn

#### Syntax

**fqdn** *fqdn-sni-string*

## no fqdn

### Context

[Tree] configure mobile-gateway pdn sba-client-services udm-client nudm-sdm fqdn

### Description

This command configures the FQDN which is used by the MAG-c when it needs to construct a hostname for this client, for example for creating a callback URI.

A single FQDN can be configured for all client services in the **configure mobile-gateway pdn sba-client-services** context or per client service instance.

The **no** form of this command removes the FQDN from the configuration.

### Default

no fqdn

### Parameters

*fqdn-sni-string*

Specifies the FQDN name string, up to 255 characters.

## 4.2.3.260 http2-profile

### Syntax

**http2-profile** *http2-profile-name*

**no http2-profile**

### Context

[Tree] configure mobile-gateway pdn sba-client-services udm-client nudm-sdm http2-profile

### Description

This command configures an HTTP/2 profile, using the **configure mobile-gateway profile http2** command, to the client service. A single HTTP/2 profile can be configured for all client services in the **configure mobile-gateway pdn sba-client-services** context or per client service instance.

The **no** form of this command removes the HTTP/2 profile from the configuration.

### Default

no http2-profile

### Parameters

*http2-profile-name*

Specifies the name of the HTTP/2 profile, up to 32 characters.

### 4.2.3.261 implied-single-stack-pdu-session-types

#### Syntax

[no] implied-single-stack-pdu-session-types

#### Context

[Tree] configure mobile-gateway pdn sba-client-services udm-client nudm-sdm implied-single-stack-pdu-session-types

#### Description

When this command is enabled, the MAG-c adds IPv4 and IPv6 to the allow list when the UDM signals **IPV4V6** in the defaultSessionType or allowedSessionTypes IE of the Nudm\_SDM Get Response, even when the UDM does not explicitly signal **IPV4** or **IPV6** in those IEs.

The **no** form of this command disables the functionality and causes the MAG-c to strictly enforce the allow list based on the content of the defaultSessionType and allowedSessionTypes IEs in the Nudm\_SDM Get Response. An IPv4 or IPv6 PDU session type cannot be set up if it is not present in those IEs.

#### Default

no implied-single-stack-pdu-session-types

### 4.2.3.262 interface

#### Syntax

interface *interface-name* [router *router-instance*]  
no interface

#### Context

[Tree] configure mobile-gateway pdn sba-client-services udm-client nudm-sdm interface

#### Description

This command configures the interface in which the HTTP/2 connections are established.

The **no** form of this command removes the interface from the configuration.



**Note:** This command requires a PDN shutdown

#### Default

no interface

#### Parameters

*interface-name*

Specifies an existing interface name up to 32 characters, which must start with a letter.

*router-instance*

Specifies the router instance.

Values: *router-name* | *service-id*

- *router-name* – Base
  - Default: Base
- *service-id* – 1 to 2147483647

### 4.2.3.263 mode

#### Syntax

**mode** {**direct** | **delegated**} [**fallback** {**none** | **direct**}]

**no mode**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services udm-client nudm-sdm mode

#### Description

This command configures the NUDM-SDM communication mode used by the UDM client.

The **no** form of this command reverts to the default.

#### Default

mode direct

#### Parameters

##### **direct**

Keyword to enable direct communication.

##### **delegated**

Keyword to enable indirect communication with delegated discovery.

Default: direct

##### *fallback-mode*

Specifies the fallback mode.

Values: **none** | **direct**



**Note:** The fallback mode cannot be the same as the primary mode of communication configured via this command.

### 4.2.3.264 nf-id-list

#### Syntax

**nf-id-list** *list-name*

## no nf-id-list

### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services udm-client nudm-sdm nf-id-list

### Description

This command configures an NF ID list for peer discovery of this client service instance. This list is used in the following cases:

- NRF based discovery only returns a list of NF Instances without IP/FQDN, in which case the specified NF Instance IDs must be present in the NF ID list.
- NRF based discovery fails (for example, returns an empty list or times out).
- NRF based discovery is disabled.

The **no** form of this command removes the NF ID list from the configuration.

### Default

no nf-id-list

### Parameters

*list-name*

Specifies the NF ID list name, up to 32 characters. NF ID lists are configured using the **configure mobile-gateway profile list nf-id-list** command.

## 4.2.3.265 udm-sdm-profile

### Syntax

```
no udm-sdm-profile
udm-sdm-profile profile-name
```

### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services udm-client nudm-sdm udm-sdm-profile

### Description

This command configures an Nudm\_SDM profile with the service instance. This profile specifies transmission and error handling behavior.

The **no** form of this command removes the Nudm\_SDM profile and reverts all behavior to default values.

### Default

no udm-sdm-profile

## Parameters

*profile-name*

Specifies the name of the Nudm\_SDM profile, up to 32 characters. Nudm\_SDM profiles are configured using the **configure mobile-gateway profile udm-sdm-profile** command.

### 4.2.3.266 unsubscribe-mode

#### Syntax

```
unsubscribe-mode mode [expiry-time seconds]
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services udm-client nudm-sdm unsubscribe-mode

#### Description

This command configures the subscription mode. When the *mode* parameter is set to **implicit**, the MAG-c sets the **implicitUnsubscribe IE** to true when creating a subscription in the UDM, else to false.

The **expiry-time** parameter is optional and specifies as follows how the **expires IE** is signaled to the UDM:

- If the **expiry-time** parameter is not specified, the **expires IE** depends on the value of the *mode* parameter:
  - When *mode* equals **implicit**, the **expires IE** is not included.
  - When *mode* equals **explicit**, the **expires IE** is included with a time stamp of 24 h in the future.
- If the **expiry-time** parameter is specified, the **expires IE** is included with a time stamp matching the expiration time value.

#### Default

```
unsubscribe-mode implicit
```

#### Parameters

*mode*

Specifies the mode.

Values: explicit | implicit

*seconds*

Specifies the expiration time in seconds.

Values: 1800 to 604800

### 4.2.3.267 nudm-uecm

#### Syntax

```
no nudm-uecm service-instance
```

```
nudm-uecm service-instance
```

## Context

**[Tree]** configure mobile-gateway pdn sba-client-services udm-client nudm-uecm

## Description

This command configures an instance of the Nudm\_UEContextManagement service. At least one service instance must be configured to allow the MAG-c to register PDU sessions in the UDM.

The **no** form of this command removes the service instance from the configuration.

## Parameters

*service-instance*

Specifies the service instance name, up to 32 characters.

### 4.2.3.268 fqdn

## Syntax

**fqdn** *fqdn-sni-string*

**no fqdn**

## Context

**[Tree]** configure mobile-gateway pdn sba-client-services udm-client nudm-uecm fqdn

## Description

This command configures the FQDN which is used by the MAG-c when it needs to construct a hostname for this client, for example for creating a callback URI.

A single FQDN can be configured for all client services in the **configure mobile-gateway pdn sba-client-services** context or per client service instance.

The **no** form of this command removes the FQDN from the configuration.

## Default

no fqdn

## Parameters

*fqdn-sni-string*

Specifies the FQDN name string, up to 255 characters.

### 4.2.3.269 http2-profile

## Syntax

**http2-profile** *http2-profile-name*

**no http2-profile**



## Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services udm-client nudm-uecm http2-profile

## Description

This command configures an HTTP/2 profile, using the **configure mobile-gateway profile http2** command, to the client service. A single HTTP/2 profile can be configured for all client services in the **configure mobile-gateway pdn sba-client-services** context or per client service instance.

The **no** form of this command removes the HTTP/2 profile from the configuration.

## Default

no http2-profile

## Parameters

*http2-profile-name*

Specifies the name of the HTTP/2 profile, up to 32 characters.

## 4.2.3.270 interface

### Syntax

**interface** *interface-name* [**router** *router-instance*]

**no interface**

### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services udm-client nudm-uecm interface

### Description

This command configures the interface in which the HTTP/2 connections are established.

The **no** form of this command removes the interface from the configuration.



**Note:** This command requires a PDN shutdown

### Default

no interface

### Parameters

*interface-name*

Specifies an existing interface name, up to 32 characters. The name must start with a letter.

*router-instance*

Specifies the router instance.

Values: *router-name* | *service-id*

- *router-name* – Base
  - Default: Base
- *service-id* – 1 to 2147483647

### 4.2.3.271 mode

#### Syntax

```
mode {direct | delegated} [fallback fallback-mode]
no mode
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services udm-client nudm-uecm mode

#### Description

This command configures the NUDM-UECM communication used by the UDM client. The **no** form of this command removes the configured mode.

#### Default

mode direct

#### Parameters

##### direct

Keyword to enable direct communication.

##### delegated

Keyword to enable indirect communication with delegated discovery.

Default: direct

##### fallback-mode

Specifies the fallback mode.

Values: **none** | **direct**



**Note:** The fallback mode cannot be the same as the primary mode of communication configured via this command.

### 4.2.3.272 nf-id-list

#### Syntax

```
no nf-id-list
nf-id-list list-name
```

## Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services udm-client nudm-uecm nf-id-list

## Description

This command configures an NF ID list for peer discovery of this client service instance. This list is used in the following cases:

- NRF based discovery only returns a list of NF Instances without IP/FQDN, in which case the specified NF Instance IDs must be present in the NF ID list.
- NRF based discovery fails (for example, returns an empty list or times out).
- NRF based discovery is disabled.

The **no** form of this command removes the NF ID list from the configuration.

## Default

no nf-id-list

## Parameters

*list-name*

Specifies the NF ID list name, up to 32 characters. NF ID lists are configured using the **configure mobile-gateway profile list nf-id-list** command.

## 4.2.3.273 udm-uecm-profile

### Syntax

**no udm-uecm-profile**  
**udm-uecm-profile** *profile-name*

### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-client-services udm-client nudm-uecm udm-uecm-profile

### Description

This command configures an Nudm\_UECM profile with the service instance. This profile specifies transmission and error handling behavior.

The **no** form of this command removes the Nudm\_UECM profile and reverts all behavior to default values.

### Default

no udm-uecm-profile

### Parameters

*profile-name*

Specifies the name of the Nudm\_UECM profile, up to 32 characters. Nudm\_UECM profiles are configured using the **configure mobile-gateway profile udm-uecm-profile** command.

### 4.2.3.274 sba-server-services

#### Syntax

**sba-server-services**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-server-services

#### Description

Commands in this context configure the server-side options provided by MAG-c as an NF producer.

### 4.2.3.275 fqdn

#### Syntax

**fqdn** *fqdn-sni-string*

**no fqdn**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-server-services fqdn

#### Description

This command configures an FQDN that is used by all SBA server services. Each server service may also override this with a more service-specific FQDN.

The **no** form of this command removes the FQDN from the configuration.

#### Default

no fqdn

#### Parameters

*fqdn-sni-string*

Specifies the FQDN name string, up to 255 characters.

### 4.2.3.276 http2-profile

#### Syntax

**http2-profile** *http2-profile-name*

**no http2-profile**

## Context

[\[Tree\]](#) configure mobile-gateway pdn sba-server-services http2-profile

## Description

This command configures an HTTP/2 profile, using the **configure mobile-gateway profile http2** command, to all SBA server services.

The **no** form of this command removes the HTTP/2 profile from the configuration.

## Default

no http2-profile

## Parameters

*fqdn-sni-string*

Specifies the name of the HTTP/2 profile, up to 32 characters.

### 4.2.3.277 nsmf-pdusession

## Syntax

**no nsmf-pdusession** *service-name*

**nsmf-pdusession** *service-name*

## Context

[\[Tree\]](#) configure mobile-gateway pdn sba-server-services nsmf-pdusession

## Description

This command configures a service instance of the Nsmf\_PDUSession service. At least one service instance must be configured to allow peering with AMF. The service also must be provisioned as a **server-service** in the **configure mobile-gateway pdn sba-service-realm** context.

The **no** form of this command removes the service instance from the configuration.



**Note:** This command requires a PDN shutdown.

## Parameters

*service-name*

Specifies the service instance name, up to 32 characters.

### 4.2.3.278 allowed-nf-domains-list

## Syntax

**allowed-nf-domains-list** *list-name*

## no allowed-nf-domains-list

### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-server-services nsmf-pdusession allowed-nf-domains-list

### Description

This command configures the allowed NF domains for the NF service instance. The allowed NF domain list is configured using the **configure mobile-gateway profile list allowed-nf-domains-list** command. These domains are used in the NFProfile field during registration to the NRF. The configured values of the list are also used for static authorization that manages (allows or disallows), serving requests from the indicated NF domains.

The **no** form of this command removes the configuration.

### Default

no allowed-nf-domains-list

### Parameters

*list-name*

Specifies the allowed NF domain list name, up to 32 characters.

## 4.2.3.279 allowed-plmns

### Syntax

**allowed-plmns** *list-name*

**no allowed-plmns**

### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-server-services nsmf-pdusession allowed-plmns

### Description

This command configures the allowed PLMN list for the NF Service Instance. This list is configured using the **configure mobile-gateway profile list plmn** command. These PLMNs are used in the NFProfile field during registration to the NRF. If the PLMN list is not defined, the service applies to any PLMN.

The **no** form of this command removes the association of the PLMN list.

### Default

no allowed-plmns

### Parameters

*list-name*

Specifies the PLMN list name, up to 32 characters.

### 4.2.3.280 allowed-slices

#### Syntax

**allowed-slices** *list-name*  
**no allowed-slices** *list-name*

#### Context

**[Tree]** configure mobile-gateway pdn sba-server-services nsmf-pdusession allowed-slices

#### Description

This command configures the allowed S-NSSAI list for the NF Service Instance. The allowed slice list is configured using the **configure mobile-gateway profile list slice-list** command. These slices are used in the NFProfile field during registration to the NRF. If the slice list is not configured, nothing is sent to NRF and all slices are allowed.

The **no** form of this command removes the allowed slice list from the configuration.

#### Default

no allowed-slices

#### Parameters

*list-name*  
Specifies the slice list name, up to 32 characters.

### 4.2.3.281 api-prefix

#### Syntax

**api-prefix** *api-prefix*  
**no api-prefix**

#### Context

**[Tree]** configure mobile-gateway pdn sba-server-services nsmf-pdusession api-prefix

#### Description

This command configures the API prefix for the service that defines the optional path segment in the API root.

The **no** form of this command removes the API prefix from configuration.

#### Default

no api-prefix

## Parameters

*api-prefix*

Specifies the API prefix, up to 32 characters.

### 4.2.3.282 fqdn

#### Syntax

**fqdn** *fqdn-sni-string*

**no fqdn**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-server-services nsmf-pdusession fqdn

#### Description

This command configures an FQDN for the Nsmf\_pdusession server service. This overrides any **fqdn** configuration under **configure mobile-gateway pdn sba-server-services**.

The **no** form of this command removes the FQDN from the configuration.

#### Default

no fqdn

#### Parameters

*fqdn-sni-string*

Specifies the FQDN name string, up to 255 characters.

### 4.2.3.283 http2-profile

#### Syntax

**http2-profile** *http2-profile*

**no http2-profile**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-server-services nsmf-pdusession http2-profile

#### Description

This command configures an HTTP/2 profile, using the **configure mobile-gateway profile http2** command, to the Nsmf\_pdusession server service. This overrides any **http2-profile** configuration under **configure mobile-gateway pdn sba-server-services**.

The **no** form of this command removes the HTTP/2 profile from configuration. If another HTTP/2 profile is present under **configure mobile-gateway pdn sba-server-services**, it is used instead. If not, no HTTP/2 profile is applied and default HTTP/2 parameters are used.



**Default**

no http2-profile

**Parameters**

*http2-profile-name*

Specifies the name of the HTTP/2 profile, up to 32 characters.

**4.2.3.284 interface****Syntax**

**interface** *interface-name*[**router** *router-instance*] [**port** *port-number*]

**no interface**

**Context**

[\[Tree\]](#) configure mobile-gateway pdn sba-server-services nsmf-pdusession interface

**Description**

This command configures the interface on which the NF service listens for incoming HTTP/2 connections. By default the service listens on port 80, but an alternative port can be specified.

The **no** form of this command removes the interface from the configuration.



**Note:** This command requires a PDN shutdown.

**Default**

no interface

**Parameters**

*interface-name*

Specifies an existing interface name, up to 32 characters. The name must start with a letter.

*router-instance*

Specifies the router instance.

Values: *router-name* | *service-id*

- *router-name* – Base
- *service-id* – 1 to 2147483647

Default: Base

*port-number*

Specifies the port number.

Values: 1 to 65535

Default: 80

### 4.2.3.285 n3-interface-realm

#### Syntax

```
n3-interface-realm realm-name  
no n3-interface-realm
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-server-services nsmf-pdusession n3-interface-realm

#### Description

This command configures the network instance of the N3 reference point that is sent to the FWA UP in PFCP messaging. In case interworking with 4G is required, this realm must be configured the same as the *interface-realm* parameter of the **configure mobile-gateway pdn s11 interface gtp-c** command.

The **no** form of this command removes the N3 interface realm.

#### Default

```
no n3-interface-realm
```

#### Parameters

*realm-name*

Specifies the realm name, up to 32 characters.

### 4.2.3.286 s5-ref-point

#### Syntax

```
s5-ref-point sig-ref-point-name  
no s5-ref-point
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-server-services nsmf-pdusession s5-ref-point

#### Description

This command configures the S5 reference point associated with this Nsmf\_PDUSession service instance.

The configuration is required for EPS interworking to define the S5 reference point used when there is handover from 5GS to EPS.

The **no** form of this command removes the S5 reference point associated with the Nsmf\_PDUSession service instance.

#### Parameters

*sig-ref-point-name*

Specifies the reference point name, up to 32 characters.

### 4.2.3.287 sba-service-realm

#### Syntax

**[no]** **sba-service-realm** *service-realm*

#### Context

**[Tree]** configure mobile-gateway pdn sba-service-realm

#### Description

This command configures an SBA service realm on the MAG-c. The service realm binds the server and client service instances together.

The **no** form of this command removes the specified service realm from the configuration

#### Parameters

*service-realm*

Specifies the SBA service realm name, up to 32 characters.

### 4.2.3.288 client-service

#### Syntax

**[no]** **client-service** *service-name* **service-instance** *service-instance*

#### Context

**[Tree]** configure mobile-gateway pdn sba-service-realm client-service

#### Description

This command configures a client-side service instance on the MAG-c under the service realm.

The **no** form of this command removes the specified client-side service instance from the configuration.

#### Parameters

*service-name*

Specifies the service name.

Values: namf-comm | npcf-smpolicycontrol | nudm-sdm | nudm-uecm | nrf-nfm | nrf-disc | nchf-convergedcharging

*service-instance*

Specifies the service instance, up to 32 characters.

### 4.2.3.289 server-service

#### Syntax

**[no] server-service** *service-name* **service-instance** *service-instance*

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sba-service-realm server-service

#### Description

This command configures a server-side service instance on the MAG-c under the service realm.

The **no** form of this command removes the specified server-side service instance from the configuration.



**Note:** The command requires a PDN shutdown when the service-name parameter is set to nsmf-pdusession.

#### Parameters

*service-name*

Specifies the service name.

Values: nsmf-pdusession

*service-instance*

Specifies the service instance, up to 32 characters.

### 4.2.3.290 serving-node-for-combo-sessions

#### Syntax

**serving-node-for-combo-sessions** {mme | sgw}

**no serving-node-for-combo-sessions**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn serving-node-for-combo-sessions

#### Description

This command configures the IP address that the PGW sends as the serving node IP address to various interfaces for combined SGW/PGW sessions. You can reconfigure this command at any time; when the IP address changes, the next message sent to the peer reflects the changed address.

The **no** form of this command reverts to the default, that is, using the existing behavior of sending the MME IP address as the serving node.

#### Default

serving-node-for-combo-sessions mme

## Parameters

### mme

Keyword to enable the MME as the serving node for combined sessions.

### sgw

Keyword to enable the SGW as the serving node for combined sessions.

Default: mme

## 4.2.3.291 session-deletion-rate

### Syntax

**session-deletion-rate** *session-deletion-rate*

**no session-deletion-rate**

### Context

[\[Tree\]](#) configure mobile-gateway pdn session-deletion-rate

### Description

This command configures the session deletion rate for bulk deletes, for example, deletes triggered by the following command.

```
clear mobile-gateway pdn bearer-context
```

The **no** form of this command reverts to the default.

### Default

session-deletion-rate 512

### Parameters

#### *session-deletion-rate*

Specifies the session deletion rate in sessions per second.

Values: 2 to 2048

Default: 512

## 4.2.3.292 shutdown

### Syntax

**[no] shutdown**

### Context

[\[Tree\]](#) configure mobile-gateway pdn shutdown

## Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.



**Caution:** The use of the **configure mobile-gateway pdn shutdown** command on the mobile gateway and in the operational active role in geographical redundancy deployments affects the service. When the command is issued a warning informs the administrator that the execution of the command affects the service.

### 4.2.3.293 signaling

#### Syntax

**signaling**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn signaling

#### Description

Commands in this context configure signaling.

### 4.2.3.294 gtp-c

#### Syntax

**gtp-c**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn signaling gtp-c

#### Description

This command specifies the GPRS Tunneling Protocol-Control plane (GTP-C) profile name. The GTP-C profile provides GTP-C signaling related configuration.



**Note:** This command requires a PDN shutdown.

### 4.2.3.295 profile

#### Syntax

**profile** *profile-name*

**no profile****Context**

[\[Tree\]](#) configure mobile-gateway pdn signaling gtp-c profile

**Description**

This command specifies the GTP-C profile name.

The **no** form of this command removes the profile name from the configuration.



**Note:** This command requires a PDN shutdown.

**Default**

no profile

**Parameters**

*profile-name*

Specifies the GTP-C profile name.

**4.2.3.296 slices****Syntax**

**slices**

**Context**

[\[Tree\]](#) configure mobile-gateway pdn slices

**Description**

This command enables the context to configure a slice list or a slice instance list that the MAG-c supports and signals to the NRF when registering itself.

**4.2.3.297 slice-instance-list****Syntax**

**slice-instance-list** *list-name*

**no slice-instance-list**

**Context**

[\[Tree\]](#) configure mobile-gateway pdn slices slice-instance-list

## Description

This command configures the slice instances that the MAG-c supports and signals during NF registration and in the NF update to the NRF.

The **no** form of this command removes the configuration.

## Default

no slice-instance-list

## Parameters

*list-name*

Specifies the name of the slice instance list, up to 32 characters. The slice instance list is configured using the following command.

```
configure mobile-gateway profile list slice-instance-list
```

## 4.2.3.298 slice-list

### Syntax

**slice-list** *list-name*

**no slice-list**

### Context

[\[Tree\]](#) configure mobile-gateway pdn slices slice-list

### Description

This command configures the slices that the MAG-c supports and signals during NF registration and in the NF update to the NRF.

The **no** form of this command removes the configuration.

### Default

no slice-list

### Parameters

*list-name*

Specifies the name of the slice list, up to 32 characters. The slice list is configured using the following command.

```
configure mobile-gateway profile list slice-list
```



### 4.2.3.299 suspend

#### Syntax

[no] suspend

#### Context

[\[Tree\]](#) configure mobile-gateway pdn suspend

#### Description

This command puts the gateway instance in suspend state. While in suspend state, no new sessions can be connected to the gateway, but existing sessions are not automatically removed.

The **no** form of this command removes the suspend state. New sessions can connect again.

#### Default

no suspend

### 4.2.3.300 sx-n4

#### Syntax

[no] sx-n4 [*ref-point-name*]

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sx-n4

#### Description

Commands in this context configure the Sx/N4 interface parameters.



**Note:** This command requires a PDN shutdown.

#### Default

sx-n4 "default"

#### Parameters

*ref-point-name*

Specifies a name to associate with this reference point, up to 32 characters.

### 4.2.3.301 enforced-pfcp-association-list

#### Syntax

[no] enforced-pfcp-association-list

## Context

[\[Tree\]](#) configure mobile-gateway pdn sx-n4 enforced-pfcp-association-list

## Description

This command enables the PFCP to accept only PFCP association setup from a peer that is configured in the PFCP association list (using the [pfcp-association-list](#) command).

The **no** form of this command reverts to the default, which accepts and dynamically adds PFCP association requests from a peer that is not configured in the PFCP association list.

## 4.2.3.302 interface

### Syntax

**interface**

### Context

[\[Tree\]](#) configure mobile-gateway pdn sx-n4 interface

### Description

Commands in this context configure GTP-U and Packet Forwarding Control Protocol (PFCP) parameters for the Sx/N4 interface.



**Note:** This command requires a PDN shutdown.

## 4.2.3.303 ibcp

### Syntax

**ibcp** [**router** *router-name*] *interface-name*

**no ibcp**

### Context

[\[Tree\]](#) configure mobile-gateway pdn sx-n4 interface ibcp

### Description

This command configures the binding Sx-N4 binding interface for In-Band Control Protocol (IBCP).

The **no** form of this command removes the configuration.



**Note:** This command requires a PDN shutdown.

## Parameters

*router-name*

Specifies the router instance, up to 32 characters.

*interface-name*

Specifies the interface name, up to 32 characters.

### 4.2.3.304 pfc

#### Syntax

**pfc** [**router** *router-instance*] *interface-name*

**no pfc**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sx-n4 interface pfc

#### Description

This command configures the Packet Forwarding Control Plane (PFCP) profile parameters for the Sx/N4 interface.

The **no** form of this command removes the parameter from the configuration.



**Note:** This command requires a PDN shutdown.

## Parameters

*router-instance*

Specifies the router instance, up to 32 characters.

*interface-name*

Specifies an interface name, up to 32 characters.

### 4.2.3.305 pfc-association-list

#### Syntax

**pfc-association-list** *list-name*

**no pfc-association-list**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sx-n4 pfc-association-list

## Description

This command links the PFCP association peer list to the PDN that is configured as the CP or UP function using the following command.

```
configure mobile-gateway pdn instance-type
```

If the gateway is configured as a CP function, the command links the PFCP association peer list of the UP function peers that are to be associated with this Sx/N4 interface.

If the gateway is configured as a UP function, the command links the PFCP association peer list of the CP function peers that are to be associated with this Sx/N4 interface.



### Note:

- If sessions exist on any peers in the specified PFCP association peer list, you must shutdown the PDN before removing or replacing the list.
- You can modify an existing PFCP association peer list on the fly (without a shutdown), to add or remove peers that do not have any sessions.

## Parameters

*list-name*

Specifies the name of the PFCP association peer list defined in the **configure mobile-gateway profile pfc** context, up to 32 characters.

## 4.2.3.306 signaling

### Syntax

**signaling**

### Context

[\[Tree\]](#) configure mobile-gateway pdn sx-n4 signaling

### Description

Commands in this context configure the signaling parameters of the Sx/N4 interface.



**Note:** This command requires a PDN shutdown.

## 4.2.3.307 ibcp

### Syntax

**ibcp**

### Context

[\[Tree\]](#) configure mobile-gateway pdn sx-n4 signaling ibcp

## Description

Commands in this context configure IBCP signaling parameters.



**Note:** This command requires a PDN shutdown.

### 4.2.3.308 bng-entry-point

#### Syntax

```
bng-entry-point name  
no bng-entry-point
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sx-n4 signaling ibcp bng-entry-point

## Description

This command configures the BNG entry point name, which are used to start authenticating control plane packets received over the default IBCP tunnel.



**Note:** This command requires a PDN shutdown.

#### Parameters

*name*

Specifies the BNG entry point name, up to 32 characters.

### 4.2.3.309 ip-dscp

#### Syntax

```
ip-dscp ip-dscp-value  
no ip-dscp
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn sx-n4 signaling ibcp ip-dscp

## Description

This command configures the IPv4 DSCP or IPv6 Traffic Class DS value that is used in the outer IP header of outgoing IBCP messages.



**Note:** This command requires a PDN shutdown.

**Default**

ip-dscp 56

**Parameters**

*ip-dscp-value*

Specifies the value of the IPv4 DSCP or IPv6 Traffic Class DS.

Values: 0 to 63

### 4.2.3.310 ip-ttl

**Syntax**

**ip-ttl** *ip-ttl-value*

**no ip-ttl**

**Context**

[\[Tree\]](#) configure mobile-gateway pdn sx-n4 signaling ibcp ip-ttl

**Description**

This command configures the TTL value that is used in the outer IP header of outgoing IBCP messages.



**Note:** This command requires a PDN shutdown.

**Default**

ip-ttl 254

**Parameters**

*ip-ttl-value*

Specifies the value of the TTL used in the outer IP header.

Values: 0 to 255

### 4.2.3.311 triggers

**Syntax**

**triggers** [pppoe-discover] [ipoe-dhcp] [ipoe-dhcpv6] [ipoe-router-solicit] [ipoe-data]

**no triggers**

**Context**

[\[Tree\]](#) configure mobile-gateway pdn sx-n4 signaling ibcp triggers

## Description

This command specifies the type of control packets that are sent over the default IBCP tunnel. The **no** form of this command disables the default IBCP tunnel.



**Note:** This command requires a PDN shutdown.

## Parameters

### **pppoe-discovery**

Enables the PPPoE discover trigger.

### **ipoe-dhcp**

Enables the DHCP IPoE trigger.

### **ipoe-dhcpv6**

Enables the DHCPv6 IPoE trigger.

### **ipoe-router-solicit**

Enables the RS IPoE trigger.

### **ipoe-data**

Enables the IPoE data trigger.

## 4.2.3.312 pfcf

### Syntax

**pfcf**

### Context

[\[Tree\]](#) configure mobile-gateway pdn sx-n4 signaling pfcf

### Description

Commands in this context configure PFCF signaling parameters.



**Note:** This command requires a PDN shutdown.

## 4.2.3.313 profile

### Syntax

**profile** *profile-name*

**no profile**

### Context

[\[Tree\]](#) configure mobile-gateway pdn sx-n4 signaling pfcf profile

## Description

This command configures the PFCP profile for use in the Sx/N4 interface.

The **no** form of this command removes the association.



**Note:** This command requires a PDN shutdown.

## Parameters

*profile-name*

Specifies a policy base profile name, up to 32 characters.

### 4.2.3.314 up-peer-list

#### Syntax

**up-peer-list** *list-name*

**no up-peer-list**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn up-peer-list

#### Description

This command associates a UP peer list with the MAG-c. For FWA sessions, this list must be populated to select an FWA UP. For fixed BNG sessions, the entries in this list are ignored and the list may be empty.

The **no** form of this command removes the UP peer list association.



**Note:** This command requires a PDN shutdown.

#### Default

no up-peer-list

#### Parameters

*list-name*

Specifies the UP peer list name, up to 32 characters.

### 4.2.3.315 up-selection

#### Syntax

**up-selection**

#### Context

[\[Tree\]](#) configure mobile-gateway pdn up-selection



## Description

Commands in this context configure the UP selection.

### 4.2.3.316 pgw-u-client-profile

#### Syntax

```
pgw-u-client-profile client-profile-name  
no pgw-u-client-profile
```

#### Context

[\[Tree\]](#) configure mobile-gateway pdn up-selection pgw-u-client-profile

#### Description

This command configures the PGW-U selection policy. The MAG-c applies the specified client profile for PGW-U node selection on the control plane.

The **no** form of this command removes the configuration.

#### Parameters

*client-profile-name*

Specifies the client profile name, up to 32 characters.

## 4.2.4 configure mobile-gateway profile amf-profile command descriptions

### 4.2.4.1 amf-profile

#### Syntax

```
[no] amf-profile profile-name
```

#### Context

[\[Tree\]](#) configure mobile-gateway profile amf-profile

#### Description

This command configures an AMF profile that defines the failure-handling policy when the AMF services are used.

The **no** form of this command removes the AMF profile from the configuration.

#### Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

## 4.2.4.2 fh-session-no-response

### Syntax

**fh-session-no-response** *action*

### Context

[\[Tree\]](#) configure mobile-gateway profile amf-profile fh-session-no-response

### Description

This command configures the failure handling behavior when no response from the AMF is received.

### Default

**fh-session-no-response attempt-continue**

### Parameters

*action*

Specifies the failure handling action.

Values:

- terminate – keyword to terminate the session
- attempt-continue – keyword to continue the triggering procedure. This may fail the procedure or terminate the session, depending on whether the procedure can continue without AMF interaction.

## 4.2.4.3 http-status-code

### Syntax

**http-status-code** *status-code-value* [**application-error** *app-error-code*] {**attempt-continue** | **terminate**}

**no http-status-code** *status-code-value* [**application-error** *app-error-code*]

### Context

[\[Tree\]](#) configure mobile-gateway profile amf-profile http-status-code

### Description

This command configures the failure-handling behavior for a specific HTTP status code. Optionally, you can specify a more granular failure handling behavior per status code and per application error. When an error is received, the following priority determines the failure handling behavior in the order listed:

1. If the error matches a specific HTTP status code and application error, use that behavior.
2. If the error matches a specific HTTP status code without an application error, use that behavior.
3. If the two previous priorities do not apply, use the **attempt-continue** option.

RFC 9110 section 15 defines HTTP status codes. 3GPP TS 29.518 table 6.1.7.3-1 defines application error codes for Namf\_Communication, and 3GPP TS 29.500 table 5.2.7.2-1 defines common application error values.

The **no** form of this command removes the code-specific failure handling for that HTTP status code and optional application error code.

### Parameters

#### *status-code-value*

Specifies the three-digit HTTP status code value.

Values: 300 to 599

#### *app-error-code*

Specifies the application error, up to 64 characters.

#### **attempt-continue**

Keyword to continue the triggering procedure. This may fail the procedure or terminate the session, depending on whether the procedure can continue without AMF interaction.

#### **terminate**

Keyword to terminate the session.

## 4.2.4.4 retry-count

### Syntax

**retry-count** *max*

**no retry-count**

### Context

[\[Tree\]](#) configure mobile-gateway profile amf-profile retry-count

### Description

This command configures the maximum number of times a message is retransmitted if there is no reply when the message is sent. The message is resent after the time configured by the **transaction-timer** command elapses and until the maximum number of retries is reached. If the message times out after the last retry, failure handling is triggered.

The **no** form of this command configures that no retries are attempted.

### Default

no retry-count

### Parameters

#### *max*

Specifies the maximum number of retries to resend the message.

Values: 1 to 10

### 4.2.4.5 transaction-timer

#### Syntax

**transaction-timer** *value*  
**no transaction-timer**

#### Context

**[Tree]** configure mobile-gateway profile amf-profile transaction-timer

#### Description

This command configures the transaction time used to send messages. If there is no reply during the transaction time, the message is resent until the retry count is reached, as configured by the **retry-count** command. If the message times out again, the connection to the AMF is considered down and failure handling is triggered.

The **no** form of this command reverts to the default.

#### Default

transaction-timer 5000

#### Parameters

*value*

Specifies the transaction timer value, in milliseconds.

Values: 1000 to 20000

## 4.2.5 configure mobile-gateway profile authentication-database command descriptions

### 4.2.5.1 authentication-database

#### Syntax

**[no] authentication-database** *db-name*

#### Context

**[Tree]** configure mobile-gateway profile authentication-database

#### Description

This command configures a new authentication database or enables the context to configure an existing **authentication-database**.

The **no** form of this command removes the authentication database name.

## Parameters

*db-name*

Specifies the name of the authentication database, up to 32 characters.

### 4.2.5.2 description

#### Syntax

**description** *description-string*

**no description**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database description

#### Description

This command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

#### Parameters

*description-string*

Specifies the description string composed of printable, 7-bit ASCII characters, up to 80 characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.5.3 entry

#### Syntax

**[no]** entry *name*

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry

#### Description

This command configures a new authentication database entry or enables the context to configure an existing **authentication-database entry**.

The **no** form of this command removes the selected entry from the authentication database.

#### Parameters

*name*

Specifies the entry name, up to 32 characters.

#### 4.2.5.4 access-loop-encapsulation

##### Syntax

**access-loop-encapsulation**

##### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry access-loop-encapsulation

##### Description

Commands in this context configure parameters for access loop encapsulation.

#### 4.2.5.5 actual-rate-down

##### Syntax

**actual-rate-down discard**

**actual-rate-down** *rate*

**no actual-rate-down**

##### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry access-loop-encapsulation  
actual-rate-down

##### Description

This command configures the actual downstream rate for the last link mile in the access loop. For LAC, the rate overrides the actual downstream rate received in the PPPoE tags to send to the BNG-UP. The BNG-UP reflects this configuration in the L2TP signaling.

The **no** form of this command removes the configuration.

##### Default

no actual-rate-down

##### Parameters

###### **discard**

Keyword to discard the actual downstream rates from previous ADB lookups.

###### *rate*

Specifies the actual downstream rate.

Values: 1 to 2147483647

## 4.2.5.6 action

### Syntax

```
action action-type  
action local-auth password password [hash | hash2]  
action radius radius-authentication-profile profile-name  
no action
```

### Context

[Tree] configure mobile-gateway profile authentication-database entry action

### Description

This command configures the action to apply to a match of the authentication database entry. The **no** form of this command reverts to the default.

### Default

action accept

### Parameters

*action-type*

Specifies the action that is applied to a match.

Values:

- accept – the system uses the configurations in the entry to create the session
- reject – the system fails the session authentication
- local-auth – the system uses the specified password and configured username for authentication
- radius – the system does a RADIUS authentication with the specified radius-authentication-profile; if RADIUS authentication succeeds, the system uses what the RADIUS server returns and the configurations in the entry to create the session; if RADIUS authentication fails, the system fails the session authentication

*password*

Specifies the password, up to 64 characters

**hash | hash2**

Specifies the version of the hash algorithm used for the encryption of the password. If the **hash** or **hash2** keyword is not used, the secret is assumed to be in an unencrypted clear text form.



**Note:** For security purposes, all keys are automatically stored in an encrypted hash form in the configuration. The configuration in the following

context defines the hash form when the password is configured in clear text format (that is, **hash** or **hash2** is not specified).

```
system security hash-control
```

*profile-name*

Specifies the RADIUS authentication profile name, up to 32 characters (required if *action-type* is **radius**).

#### 4.2.5.7 address-assignment

##### Syntax

**address-assignment**

##### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment

##### Description

This command enables the context for configuring a session address assignment.

##### Default

address-assignment

#### 4.2.5.8 delegated-prefix-length

##### Syntax

**delegated-prefix-length** *length*

**no delegated-prefix-length**

##### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment delegated-prefix-length

##### Description

This command configures the length of the delegated prefix requested from ODSA.

The **no** form of this command removes the configuration.

##### Default

no delegated-prefix-length



## Parameters

*length*

Specifies the length.

Values: 48 to 64

### 4.2.5.9 dhcp-relay

#### Syntax

**dhcp-relay**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay

#### Description

Commands in this context configure DHCP relay.

### 4.2.5.10 ipv4

#### Syntax

**ipv4**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay  
ipv4

#### Description

Commands in this context configure DHCPv4 relay.

### 4.2.5.11 gi-address

#### Syntax

**gi-address** *ip-address*

no gi-address

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay  
ipv4 gi-address

## Description

This command configures the gateway IP address (giaddr) for DHCPv4 relay. The specified address must be configured on a MAG-c IP interface that is reachable by the DHCPv4 server. Typically, this is a /32 address configured on a loopback interface.

The **no** form of this command removes the configuration.

## Parameters

*ip-address*

Specifies the gateway IP interface address.

Values: a.b.c.d

## 4.2.5.12 options

### Syntax

**options**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay ipv4 options

### Description

Commands in this context configure the options for DHCPv4 relay.

## 4.2.5.13 request-dhcp-profile

### Syntax

**request-dhcp-profile discard**

**request-dhcp-profile *name***

**no request-dhcp-profile**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay ipv4 options request-dhcp-profile

### Description

This command configures the DHCP profile for the DHCPv4 request messages relayed toward the server. The **no** form of this command removes the configuration.

### Parameters

**discard**

Keyword to discard the DHCP profile from previous ADB lookups.

*name*

Specifies the DHCP profile name, up to 32 characters.

#### 4.2.5.14 response-dhcp-profile

##### Syntax

**response-dhcp-profile discard**

**response-dhcp-profile** *name*

**no response-dhcp-profile**

##### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay ipv4 options response-dhcp-profile

##### Description

This command configures the DHCP profile for the DHCPv4 response messages relayed toward the client. The **no** form of this command removes the configuration.

##### Parameters

**discard**

Keyword to discard the DHCP profile from previous ADB lookups.

*name*

Specifies the DHCP profile name, up to 32 characters.

#### 4.2.5.15 pool

##### Syntax

**pool** *pool-name*

**no pool**

##### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay ipv4 pool

##### Description

This command configures the IP address pool to track the addresses assigned by the DHCP server. The **no** form of this command removes the configuration.

## Parameters

*name*

Specifies the pool name, up to 32 characters.

### 4.2.5.16 router

#### Syntax

**router** *router-instance*

**no router**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay  
ipv4 router

#### Description

This command configures the router instance to reach the DHCP server.

The **no** form of this command removes the configuration.

#### Parameters

*router-instance*

Specifies the router instance.

Values: *router-name* | *vprn-svc-id*  
where

*router-name* – "Base" | "management"

*vprn-svc-id* – 1 to 2147483647

### 4.2.5.17 server

#### Syntax

**server** *ip-address* [*ip-address...*(up to 8 max)]

**no server**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay  
ipv4 server

#### Description

This command configures the IP addresses of the DHCP servers.

The **no** form of this command removes the configuration.

## Parameters

*ip-address*

Specifies the IP address of the DHCP server.

Values: a.b.c.d

### 4.2.5.18 ipv6

#### Syntax

**ipv6**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay  
ipv6

#### Description

Commands in this context configure DHCPv6 relay.

### 4.2.5.19 link-address

#### Syntax

**link-address** *ipv6-address*

**no link-address**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay  
ipv6 link-address

#### Description

This command configures the link-address for DHCPv6 relay.

The **no** form of this command removes the configuration.

#### Parameters

*ipv6-address*

Specifies the link-address.

Values: x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d  
where

x – [0..FFFF]H

d – [0..255]D

## 4.2.5.20 options

### Syntax

**options**

### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay  
ipv6 options

### Description

Commands in this context configure the DHCPv6 relay options.

## 4.2.5.21 request-dhcp6-profile

### Syntax

**request-dhcp6-profile discard**  
**request-dhcp6-profile discard** *name*  
**no request-dhcp6-profile discard**

### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay  
ipv6 options request-dhcp6-profile

### Description

This command configures the DHCP profile for the DHCPv6 request messages relayed toward the server.  
The **no** form of this command removes the configuration.

### Parameters

#### **discard**

Keyword to discard the DHCP profile from previous ADB lookups.

#### *name*

Specifies the DHCP profile name, up to 32 characters.

## 4.2.5.22 pool

### Syntax

**pool** *name*  
**no pool**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay  
ipv6 pool

## Description

This command configures the IP address pool to track the addresses assigned by the DHCPv6 server.  
The **no** form of this command removes the configuration.

## Parameters

*name*

Specifies the pool name, up to 32 characters.

### 4.2.5.23 router

## Syntax

**router** *router-instance*

**no router**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay  
ipv6 router

## Description

This command configures the router instance to reach DHCPv6 server.  
The **no** form of this command removes the configuration.

## Parameters

*router-instance*

Specifies the router instance.

Values: *router-name* | *vprn-svc-id*

where

*router-name* – "Base" | "management"

*vprn-svc-id* – 1 to 2147483647

### 4.2.5.24 server

## Syntax

**server** *ipv6-address* [*ipv6-address*...(up to 8 max)]

**no server**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay ipv6 server

## Description

This command configures the IP addresses of the DHCPv6 servers.

The **no** form of this command removes the configuration.

## Parameters

*ipv6-address*

Specifies the IPv6 address of the DHCP server.

Values: x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where

x – [0..FFFF]H

d – [0..255]D

### 4.2.5.25 source-ip-address

## Syntax

**source-ip-address** *ipv6-address*

**no source-ip-address**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment dhcp-relay ipv6 source-ip-address

## Description

This command configures the source IPv6 address of the relayed DHCPv6 message toward the server. It must be a local IP interface address.

The **no** form of this command removes the configuration.

## Parameters

*ipv6-address*

Specifies the source IPv6 address.

Values: x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where

x – [0..FFFF]H

d – [0..255]D



### 4.2.5.26 initial-ip-handling

#### Syntax

**initial-ip-handling**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment initial-ip-handling

#### Description

Commands in this context configure how the IP address is handled in address assignment.

### 4.2.5.27 data-trigger

#### Syntax

**data-trigger**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment initial-ip-handling data-trigger

#### Description

Commands in this context configure how the source IP address of a data-trigger packet is handled in address assignment.

### 4.2.5.28 ipv6-address-assignment-type

#### Syntax

**ipv6-address-assignment-type** *type* [**pd-prefix-length** *length*]

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment initial-ip-handling data-trigger ipv6-address-assignment-type

#### Description

This command configures the IPv6 address and prefix type created by the IPoE data-trigger when the **unmanaged-default** option is specified for the **source-ip** command.

The **no** form of this command removes the configuration.

#### Default

no ipv6-address-assignment-type

## Parameters

### *type*

Specifies the IPv6 address and prefix type created by IPoE data-trigger.

Values:

- na – IPv6 NA
- pd – IPv6 PD prefix
- slaac – IPv6 SLAAC prefix

### *length*

Specifies the prefix length.

Values: 48 to 64

## 4.2.5.29 source-ip

### Syntax

```
source-ip {ignore | unmanaged-default}
```

```
no source-ip
```

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment initial-ip-handling data-trigger source-ip

### Description

This command configures the method to handle the source IP address of a data-trigger packet in address assignment.

The **no** form of this command removes the configuration.

### Default

```
no source-ip
```

### Parameters

#### **ignore**

Keyword to force address assignment in the ADB entry or from AAA.

#### **unmanaged-default**

Keyword to use an unmanaged address and prefix based on the source IP address. You can use the **ipv6-address-assignment-type** command in conjunction with this option to define the source IPv6 address modeling in the IPoE session.

### 4.2.5.30 lifetimes

#### Syntax

**lifetimes**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment lifetimes

#### Description

This command enables the context for configuring lifetime timers for the session.

### 4.2.5.31 dhcpv6-rebind

#### Syntax

**no dhcpv6-rebind**

**dhcpv6-rebind** *seconds*

**dhcpv6-rebind** [*days days*] [*hrs hours*] [*min mins*] [*sec secs*]

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment lifetimes  
dhcpv6-rebind

#### Description

This command configures the DHCPv6 rebind (T2) timer. If the timer expires and renew failed, the client must send a rebind message. If unspecified, the default value of the rebind timer is 80% of the preferred lifetime. A value equal to zero means that the timer is unspecified and that the client can choose the value.



**Note:** At session setup, DHCPv6 renew, DHCPv6 rebind, preferred lifetime, and valid lifetime must all be smaller than or equal to the next in the list. Otherwise, all timers fall back to their defaults.

The **no** form of this command removes the configuration.

#### Default

**no dhcpv6-rebind**

#### Parameters

*seconds*

Specifies the lifetime in seconds.

Values: 0 | 240 to 5184000

*days*

Specifies the number of days.

	Values: 0 to 60
<i>hours</i>	Specifies the number of hours.
	Values: 0 to 23
<i>mins</i>	Specifies the number of minutes.
	Values: 0 to 59
<i>secs</i>	Specifies the number of seconds.
	Values: 0 to 59

### 4.2.5.32 dhcpv6-renew

#### Syntax

```
no dhcpv6-renew
dhcpv6-renew seconds
dhcpv6-renew [days days] [hrs hours] [min mins] [sec secs]
```

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment lifetimes  
dhcpv6-renew

#### Description

This command configures the DHCPv6 renew (T1) timer. If the timer expires, the client must send a renew message. If unspecified, the default value of the renew timer is half of the preferred lifetime. A value equal to zero means that the timer is unspecified and that the client can choose the value.



**Note:** At session setup, DHCPv6 renew, DHCPv6 rebind, preferred lifetime, and valid lifetime must all be smaller than or equal to the next in the list. Otherwise, all timers fall back to their defaults.

The **no** form of this command removes the configuration.

#### Default

```
no dhcpv6-renew
```

#### Parameters

<i>seconds</i>	Specifies the lifetime in seconds.
	Values: 0   150 to 5184000
<i>days</i>	Specifies the number of days.

	Values: 0 to 60
<i>hours</i>	Specifies the number of hours.
	Values: 0 to 23
<i>mins</i>	Specifies the number of minutes.
	Values: 0 to 59
<i>secs</i>	Specifies the number of seconds.
	Values: 0 to 59

### 4.2.5.33 preferred

#### Syntax

**no preferred**  
**preferred** *seconds*  
**preferred** [*days days*] [*hrs hours*] [*min mins*] [*sec secs*]

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment lifetimes preferred

#### Description

This command configures the lifetime for an IPv6 address to be preferred. The preferred address can be used to forward traffic for existing flows and to set up new flows. If unspecified, the default value of the preferred lifetime is seven days.



**Note:** At session setup, DHCPv6 renew, DHCPv6 rebind, preferred lifetime, and valid lifetime must all be smaller than or equal to the next in the list. Otherwise, all timers fall back to their defaults.

The **no** form of this command removes the configuration.

#### Default

no preferred

#### Parameters

<i>seconds</i>	Specifies the lifetime in seconds.
	Values: 300 to 214748364
<i>days</i>	Specifies the number of days.

	Values: 0 to 2485
<i>hours</i>	Specifies the number of hours.
	Values: 0 to 23
<i>mins</i>	Specifies the number of minutes.
	Values: 0 to 59
<i>secs</i>	Specifies the number of seconds.
	Values: 0 to 59

### 4.2.5.34 valid

#### Syntax

**no valid**  
**valid** *seconds*  
**valid** [*days days*] [*hrs hours*] [*min mins*] [*sec secs*]

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment lifetimes  
 valid

#### Description

This command configures the lifetime for an IPv6 address to remain valid. The valid address can be used to forward traffic for existing flows. If unspecified, the default valid lifetime is 30 days.



**Note:** At session setup, DHCPv6 renew, DHCPv6 rebind, preferred lifetime, and valid lifetime must all be smaller than or equal to the next in the list. Otherwise, all timers fall back to their defaults.

The **no** form of this command removes the configuration.

#### Default

no valid

#### Parameters

<i>seconds</i>	Specifies the lifetime in seconds.
	Values: 300 to 214748364
<i>days</i>	Specifies the number of days.
	Values: 0 to 2485

*hours*

Specifies the number of hours.

Values: 0 to 23

*mins*

Specifies the number of minutes.

Values: 0 to 59

*secs*

Specifies the number of seconds.

Values: 0 to 59

### 4.2.5.35 local-dynamic

#### Syntax

**local-dynamic**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment local-dynamic

#### Description

This command enables the context for configuring local IP address pool assignment for the session.

### 4.2.5.36 ipv4-pool

#### Syntax

**ipv4-pool discard**

**ipv4-pool** *pool-name*

**no ipv4-pool**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment local-dynamic ipv4-pool

#### Description

This command configures the pool name for the local IPv4 address assignment or specifies the pool name previously returned by the AAA server or an ADB in the flow to be discarded.

The **no** form of this command removes the configuration.

#### Default

no ipv4-pool

## Parameters

### **discard**

Keyword to discard the previous pool.

### *pool-name*

Specifies the pool name for the local IPv4 address, up to 32 characters.

## 4.2.5.37 ipv6-na-pool

### Syntax

**ipv6-na-pool discard**

**ipv6-na-pool** *pool-name*

**no ipv6-na-pool**

### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment local-dynamic ipv6-na-pool

### Description

This command configures the IPv6 NA pool name for local address assignment or specifies that the previous pool is discarded.

The **no** form of this command removes the configuration.

### Default

no ipv6-na-pool

## Parameters

### **discard**

Keyword to discard the previous pool.

### *pool-name*

Specifies the pool name, up to 32 characters.

## 4.2.5.38 ipv6-pd-pool

### Syntax

**ipv6-pd-pool discard**

**ipv6-pd-pool** *pool-name*

**no ipv6-pd-pool**



## Context

[Tree] configure mobile-gateway profile authentication-database entry address-assignment local-dynamic ipv6-pd-pool

## Description

This command configures the IPv6 PD pool name for local address assignment or specifies that the previous pool is discarded.

The **no** form of this command removes the configuration.

## Default

no ipv6-pd-pool

## Parameters

### discard

Keyword to discard the previous pool.

### *pool-name*

Specifies the pool name, up to 32 characters.

## 4.2.5.39 ipv6-slaac-pool

## Syntax

**ipv6-slaac-pool discard**

**ipv6-slaac-pool** *pool-name*

**no ipv6-slaac-pool**

## Context

[Tree] configure mobile-gateway profile authentication-database entry address-assignment local-dynamic ipv6-slaac-pool

## Description

This command configures the IPv6 SLAAC pool name for local address assignment or specifies if the previous pool is discarded.

The **no** form of this command removes the configuration.

## Default

no ipv6-slaac-pool

## Parameters

### discard

Keyword to discard the previous pool.

*pool-name*

Specifies the pool name, up to 32 characters.

#### 4.2.5.40 managed-routes

##### Syntax

**managed-routes**

##### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment managed-routes

##### Description

Commands in this context configure managed routes.

#### 4.2.5.41 route-entry

##### Syntax

**[no] route-entry** *ip-prefix/ip-prefix-length*

##### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment managed-routes route-entry

##### Description

This command assigns a managed route to a BNG session and installs a static route on the UPF that points to the subscriber-host IP address as a next hop. By default, there are no managed routes configured.

The **no** form of this command removes the specified route.

##### Parameters

*ip-prefix/length*

Specifies the IP prefix and length.

Values:

- IPv4-prefix – a.b.c.d with host bits set to 0
- IPv4-prefix length – 0 to 32
- IPv6-prefix – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

- IPv6-prefix length – 0 to 128

#### 4.2.5.42 metric

##### Syntax

**metric** *value*

**no metric**

##### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment managed-routes route-entry metric

##### Description

This command associates a metric value with the provisioned managed route.

The **no** form of this command returns the metric to its default value.

##### Default

no metric

##### Parameters

*value*

Specifies the metric value.

Value: 1 to 4294967295

#### 4.2.5.43 preference

##### Syntax

**preference** *value*

##### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment managed-routes route-entry preference

##### Description

This command associates a preference value with the provisioned managed route.

##### Parameters

*value*

Specifies the preference value.

Value: 0 to 255

Default: 0

#### 4.2.5.44 tag

##### Syntax

**tag** *value*  
**no tag**

##### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment managed-routes route-entry tag

##### Description

This command associates a route tag with the provisioned managed route.  
The **no** form of this command reverts to the default.

##### Default

no tag

##### Parameters

*value*

Specifies the route tag value.

Value: 1 to 4294967295

#### 4.2.5.45 pd-as-framed-route

##### Syntax

**pd-as-framed-route** *boolean-value*  
**no pd-as-framed-route**

##### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment pd-as-framed-route

##### Description

This command specifies whether to signal an allocated PD prefix to the UPF as a framed route or as a direct session prefix in the UE IP address IE. By default, a PD is sent as a direct session prefix.

The **no** form of this command removes the configuration.

##### Default

no pd-as-framed-route

## Parameters

*boolean-value*

Specifies whether to enable (true) or disable (false) the sending of a PD prefix as framed route.

Values: false | true

## 4.2.5.46 unmanaged

### Syntax

**unmanaged**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment unmanaged

### Description

Commands in this context configure IP address pool information that is not managed by ODSA or external DHCP; for example, IP address pool information for AAA address assignment or static address assignment.

## 4.2.5.47 ipv4-address

### Syntax

**ipv4-address discard**

**ipv4-address** *ip-address*

**no ipv4-address**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment unmanaged  
ipv4-address

### Description

This command configures the static assigned IPv4 address.

The **no** form of this command removes the configuration.

### Default

no ipv4-address

### Parameters

*ip-address*

Specifies the IPv4 address.

Values: a.b.c.d

**discard**

Keyword to discard the previous IPv4 address.

#### 4.2.5.48 ipv4-pool

**Syntax**

```
ipv4-pool discard
ipv4-pool pool-name
no ipv4-pool
```

**Context**

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment unmanaged  
ipv4-pool

**Description**

This command configures the name of the ODSA pool that contains the assigned IPv4 address, If not specified, the assigned address is treated as a non-provisioned address assignment.

The **no** form of this command removes the configuration.

**Default**

no ipv4-pool

**Parameters**

*pool-name*  
Specifies the pool name, up to 32 characters.

**discard**

Keyword to discard the previous pool name.

#### 4.2.5.49 ipv6-na-address

**Syntax**

```
ipv6-na-address discard
ipv6-na-address ipv6-address
no ipv6-na-address
```

**Context**

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment unmanaged  
ipv6-na-address

## Description

This command specifies the static assigned IPv6 IANA address.

The **no** form of this command removes the configuration.

## Default

no ipv6-na-address

## Parameters

*ipv6-address*

Specifies the IPv6 NA address.

Values: x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where

x – [0..FFFF]H

d – [0..255]D

**discard**

Keyword that discards the previous IPv6 NA address.

### 4.2.5.50 ipv6-na-pool

## Syntax

**ipv6-na-pool discard**

**ipv6-na-pool** *pool-name*

**no ipv6-na-pool**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment unmanaged  
ipv6-na-pool

## Description

This command configures the ODSA pool name that contains the assigned IPv6 NA address. If not specified, the assigned address is treated as a non-provisioned address assignment.

The **no** form of this command removes the configuration.

## Default

no ipv6-na-pool

## Parameters

*pool-name*

Specifies the pool name, up to 32 characters.

**discard**

Keyword to discard the previous pool name.

### 4.2.5.51 ipv6-pd-pool

#### Syntax

```
ipv6-pd-pool discard
ipv6-pd-pool pool-name
no ipv6-pd-pool
```

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment unmanaged  
ipv6-pd-pool

#### Description

This command configures the name of the ODSA pool that contains the assigned IPv6 PD prefix. If not specified, the assigned prefix is treated as a non-provisioned address assignment.

The **no** form of this command removes the configuration.

#### Default

no ipv6-pd-pool

#### Parameters

*pool-name*

Specifies the pool name, up to 32 characters.

**discard**

Keyword to discard the previous pool name.

### 4.2.5.52 ipv6-pd-prefix

#### Syntax

```
ipv6-pd-prefix discard
ipv6-pd-prefix ipv6-prefix/length
no ipv6-pd-prefix
```

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment unmanaged  
ipv6-pd-prefix

#### Description

This command specifies the static assigned IPv6 prefix for prefix-delegation.

The **no** form of this command removes the configuration.



**Default**

no ipv6-pd-prefix

**Parameters**

*ipv6-prefix/length*

Specifies the IPv6 prefix length.

Values: x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:d.d.d.d where

x – [0..FFFF]H

d – [0..255]D

*prefix-length*

Specifies the prefix length.

Value: 48 to 64

**discard**

Keyword that discards the previous IPv6 PD prefix.

### 4.2.5.53 ipv6-slaac-pool

**Syntax**

**ipv6-slaac-pool discard**

**ipv6-slaac-pool** *name*

**no ipv6-slaac-pool**

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment unmanaged  
ipv6-slaac-pool

**Description**

This command configures the ODSA pool name that contains the assigned SLAAC prefix. If not specified, the assigned prefix is treated as a non-provisioned address assignment.

The **no** form of this command removes the configuration.

**Default**

no ipv6-slaac-pool

**Parameters**

*name*

Specifies the pool name, up to 32 characters.

**discard**

Keyword to discard the previous pool name.

#### 4.2.5.54 ipv6-slaac-prefix

##### Syntax

```
ipv6-slaac-prefix discard
ipv6-slaac-prefix ipv6-prefix/length
no ipv6-slaac-prefix
```

##### Context

**[Tree]** configure mobile-gateway profile authentication-database entry address-assignment unmanaged  
ipv6-slaac-prefix

##### Description

This command specifies the static assigned IPv6 prefix for SLAAC.

The **no** form of this command removes the configuration.

##### Default

no ipv6-slaac-prefix

##### Parameters

*ipv6-prefix/length*

Specifies the IPv6 prefix length.

Values: x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:d.d.d.d  
where

x – [0..FFFF]H

d – [0..255]D

*prefix-length*

Specifies the prefix length.

Value: 64

**discard**

Keyword that discards the previous IPv6 SLAAC prefix.

#### 4.2.5.55 unmatching-prefix

##### Syntax

```
unmatching-prefix allow [ipv4] [ipv6-na] [ipv6-pd] [ipv6-slaac]
unmatching-prefix disallow
unmatching-prefix discard
no unmatching-prefix
```

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry address-assignment unmatching-prefix

## Description

This command configures the support for unmatching prefixes. It allows an external source (for example, a RADIUS server) to assign an address to a BNG session without pre-provisioning the prefix on the MAG-c or the UPF.

The **no** form of this command removes the configuration but does not change the configuration that is returned by the previous ADB.

## Default

no unmatching-prefix

## Parameters

**allow [ipv4] [ipv6-na] [ipv6-pd] [ipv6-slaac]**

Keyword to enable the support for unmatching prefixes with one or multiple allowed address types.

**disallow**

Keyword to disable the support for unmatching prefixes.

**discard**

Keyword to discard the configuration that is returned by the previous ADB.

## 4.2.5.56 apn

### Syntax

**apn discard**  
**apn** *apn-name*  
**no apn**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry apn

### Description

This command configures the APN name for the session and specifies if the previous APN is discarded.

The **no** form of this command removes the configuration.

### Default

no apn

## Parameters

### **discard**

Keyword to discard the previous APN.

### *apn-name*

Specifies the APN name, up to 80 characters.

## 4.2.5.57 charging

### Syntax

**charging**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry charging

### Description

This command enables the context for configuring charging information for the session.

### Default

charging

## 4.2.5.58 bng-charging-profile

### Syntax

**bng-charging-profile** *profile-name* [*profile-name* ...(up to 5 max)]

**bng-charging-profile discard**

**no bng-charging-profile**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry charging bng-charging-profile

### Description

This command configures BNG charging profiles for the session or specifies that the previously returned BNG charging profile in the authentication flow is discarded.

The **no** form of this command removes the configuration.

### Default

no bng-charging-profile

## Parameters

*profile-name*

Specifies the BNG profile name, up to 32 characters; more than one profile name, with a maximum of five, can be entered for the same ADB entry.

**discard**

Keyword to discard the previously returned BNG charging profile in the authentication flow; for more information, see *Authentication database* section, in the *MAG-c Control Plane Function Guide*.

### 4.2.5.59 cp-volume-tracking

#### Syntax

**cp-volume-tracking**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry charging cp-volume-tracking

#### Description

This command enables the context for configuring CPF-based traffic volume tracking.

#### Default

cp-volume-tracking

### 4.2.5.60 downstream

#### Syntax

**downstream discard**

**downstream** *megabytes*

**no downstream**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry charging cp-volume-tracking downstream

#### Description

This command configures the downstream traffic volume limit for the session and specifies if the previous downstream traffic limit is discarded.

The **no** form of this command removes the configuration.

#### Default

no downstream

## Parameters

### **discard**

Keyword to specify a force removal of volume tracking.

### *megabytes*

Specifies the downstream traffic volume limit, in megabytes.

Values: 1 to 1000000000

## 4.2.5.61 total

### Syntax

**total discard**

**total *megabytes***

**no total**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry charging cp-volume-tracking total

### Description

This command configures the total traffic volume limit that contains both upstream and downstream and specifies if the previous total traffic volume limit is discarded.

The **no** form of this command removes the configuration.

### Default

no total

## Parameters

### **discard**

Keyword to specify a force removal of volume tracking.

### *megabytes*

Specifies the total traffic volume limit, in megabytes.

Values: 1 to 1000000000

## 4.2.5.62 upstream

### Syntax

**upstream discard**

**upstream *megabytes***

**no upstream**

## Context

**[Tree]** configure mobile-gateway profile authentication-database entry charging cp-volume-tracking upstream

## Description

This command configures the upstream traffic volume limit for the session.

The **no** form of this command removes the configuration.

## Default

no upstream

## Parameters

### discard

Keyword to specify a force removal of volume tracking.

### megabytes

Specifies the upstream traffic volume limit, in megabytes.

Values: 1 to 1000000000

## 4.2.5.63 detailed-statistics

### Syntax

**detailed-statistics** *boolean-value*

**no detailed-statistics**

### Context

**[Tree]** configure mobile-gateway profile authentication-database entry charging detailed-statistics

### Description

This command enables the collection of detailed statistics. When enabled, a Nokia BNG UPF sends detailed per queue and per policer statistics. The content of the statistics depends on the BNG UPF QoS **stat-mode** configuration.

The **no** form of this command keeps the previous value of **detailed-statistics**.

To explicitly disable the collection of detailed statistics, this command must be set to false. The initial value for **detailed-statistics** is false.



**Note:** By default, the detailed statistics collection is disabled because of the potentially large amount of data to be transmitted in the Nokia BNG UPF statistics reports.

### Default

no detailed-statistics

## Parameters

*boolean-value*

Specifies to enable or disable the detailed statistics collection.

Values: false | true

### 4.2.5.64 statistics-collection-interval

#### Syntax

**statistics-collection-interval** *seconds*

**no statistics-collection-interval**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry charging statistics-collection-interval

#### Description

This command enables a BNG UPF to periodically send unsolicited statistics to the BNG CPF using the configured time interval (accounting push mode).

The **no** form of this command disables the unsolicited periodic BNG UPF statistics reporting.

#### Default

no statistics-collection-interval

#### Parameters

*seconds*

Specifies the interval in seconds.

Values: 30 to 3600

### 4.2.5.65 cp-nat-profile

#### Syntax

**cp-nat-profile** **discard**

**cp-nat-profile** *name*

**no cp-nat-profile**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry cp-nat-profile



## Description

This command configures a BNG CUPS CP NAT profile. A CP NAT profile is a container for NAT specific parameters and is used to associate IPoE and PPPoE sessions with NAT.

The **no** form of this command removes the configuration.

## Default

no cp-nat-profile

## Parameters

### discard

Keyword to remove the previous cp-nat-profile.

### name

Specifies the CP NAT profile name, up to 32 characters.

## 4.2.5.66 description

### Syntax

**description** *description-string*

**no description**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry description

## Description

This command enables a text description stored in the configuration file for a configuration context.

The **description** command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the string from the configuration.

## Parameters

### *description-string*

Specifies the description character string. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.5.67 dhcp-profile

### Syntax

**dhcp-profile discard**

**dhcp-profile** *name*

## no dhcp-profile

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry dhcp-profile

### Description

This command configures the DHCP profile for the session.  
The **no** form of this command removes the configuration.

### Default

no dhcp-profile

### Parameters

#### discard

Keyword to discard the previous DHCP profile.

#### *name*

Specifies the DHCP profile name, up to 32 characters.

## 4.2.5.68 dhcpv6-profile

### Syntax

**dhcpv6-profile discard**

**dhcpv6-profile** *name*

**no dhcpv6-profile**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry dhcpv6-profile

### Description

This command specifies the DHCPv6 profile for the DHCPv6 messages sent in the context of this session.  
The DHCPv6 profiles are configured using the **dhcpv6-profile** command in the following context.

```
configure mobile-gateway profile bng
```

The **no** form of this command removes the configuration.

### Default

no dhcpv6-profile

### Parameters

#### discard

Keyword to discard the DHCPv6 profile from previous ADB lookups.

*name*

Specifies the DHCPv6 profile name, up to 32 characters.

#### 4.2.5.69 dynamic-policy

##### Syntax

**no dynamic-policy**

**dynamic-policy** {**bypass** | **required** | **discard**}

##### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry dynamic-policy

##### Description

This command overrides interactions with a dynamic policy function such as the PCF.

The **no** form of this command indicates this ADB entry does not update the dynamic-policy value. To explicitly reset it to the default, use the **discard** option.

By default, a dynamic policy function is contacted if one is provisioned, but it is not a setup error if **none** is provisioned.

##### Parameters

###### **bypass**

Keyword to specify that the MAG-c must not contact a dynamic policy function, even if one is configured.

###### **required**

Keyword to specify the session requires a dynamic policy function to be provisioned. If none is provisioned, the setup fails. If such a function is provisioned but communication fails, the failure handling specified for that function determines whether the setup succeeds.

###### **discard**

Keyword to discard the dynamic policy functions from previous ADB lookups.

#### 4.2.5.70 fixed-wireless-access

##### Syntax

**fixed-wireless-access**

##### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry fixed-wireless-access

##### Description

Commands in this context configure parameters specific to fixed wireless access (FWA) sessions.

### 4.2.5.71 address-hold-time

#### Syntax

**address-hold-time max-lifetime**  
**address-hold-time** *minutes*  
**no address-hold-time**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry fixed-wireless-access address-hold-time

#### Description

This command holds the allocated addresses after session deletion for the configured amount of time or for the maximum remaining session lifetime after deletion. The maximum remaining session lifetime is based on the longest running session timer; for example, the DHCP or DHCPv6 lease time. The hold time cannot exceed the maximum configurable value. If the maximum remaining session lifetime exceeds the maximum configurable value, the hold time equals the maximum configurable value.

All allocated addresses use the same hold time, independent of the origin of allocation (for example, ODSA versus AAA), or the individual stack lifetimes. If the value configured with the per-session **address-hold-time** command is greater than the per-pool configured ODSA hold time, the per-session hold time is used also in ODSA.

The **no** form of this command removes the configuration.

#### Default

no address-hold-time

#### Parameters

##### **max-lifetime**

Keyword to base the hold time on the maximum remaining session lifetime at the moment of deletion.

##### *minutes*

Specifies the hold time in minutes.

Values: 0 to 14400

### 4.2.5.72 default-qos-profiles

#### Syntax

**default-qos-profiles**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry fixed-wireless-access default-qos-profiles

## Description

Commands in this context configure the default QoS profiles.

### 4.2.5.73 authorized-4g

## Syntax

```
authorized-4g discard
authorized-4g name
no authorized-4g
```

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry fixed-wireless-access default-qos-profiles authorized-4g

## Description

This command configures the default 4G/5G NSA authorized QoS profile for the session. This profile is used when no authorized QoS parameters are provided, for example, during PCF interaction. The profile overrides any subscribed QoS parameters provisioned via HSS or RADIUS.

The **no** form of this command indicates that the ADB entry does not change the authorized 4G QoS profile.

## Default

no authorized-4g

## Parameters

*name*

Specifies the name of a QoS profile, up to 32 characters, that is configured using the following command.

```
configure mobile-gateway profile qos-profile
```

**discard**

Keyword to discard the authorized 4G QoS profile from previous ADB lookups.

### 4.2.5.74 authorized-5g

## Syntax

```
authorized-5g discard
authorized-5g name
```

## no authorized-5g

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry fixed-wireless-access default-qos-profiles authorized-5g

### Description

This command configures the authorized 5G SA QoS profile for the session. This profile is used when no authorized QoS parameters are provided, for example, during PCF interaction. The profile overrides any subscribed QoS parameters provisioned via UDM or RADIUS.

The **no** form of this command indicates that the ADB entry does not change the authorized 5G QoS profile.

### Default

no authorized-5g

### Parameters

*name*

Specifies the name of a QoS 5G profile, up to 32 characters, that is configured using the following command.

```
configure mobile-gateway profile qos-5g-profile
```

### discard

Keyword to discard the authorized 5G QoS profile from previous ADB lookups.

## 4.2.5.75 subscribed-5g

### Syntax

**subscribed-5g discard**

**subscribed-5g** *name*

**no subscribed-5g**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry fixed-wireless-access default-qos-profiles subscribed-5g

### Description

This command configures the subscribed 5G SA QoS profile for the session. This profile is used when no subscribed QoS parameters are provided, for example, during UDM or RADIUS interaction. If authorized QoS parameters are also provisioned, for example, via PCF or ADB, those parameters take precedence over the subscribed QoS profile.

The **no** form of this command indicates that the ADB entry does not change the subscribed 5G QoS profile.

**Default**

no subscribed-5g

**Parameters**

*name*

Specifies the name of a QoS 5G profile, up to 32 characters, that is configured using the following command.

```
configure mobile-gateway profile qos-5g-profile
```

**discard**

Keyword to discard the subscribed 5G QoS profile from previous ADB lookups.

### 4.2.5.76 ipv4-signaling-method

**Syntax**

**ipv4-signaling-method** *signaling-method*

**no ipv4-signaling-method**

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry fixed-wireless-access ipv4-signaling-method

**Description**

This command configures the method to signal an allocated IPv4 address to the FWA RG. The options are NAS or DHCP (deferred allocation) messaging. This value overrides any preference signaled via PCO IEs.

The **no** form of this command removes the configuration.

**Default**

no ipv4-signaling-method

**Parameters**

*signaling-method*

Specifies the method to signal allocated IPv4 addresses.

Values: nas | dhcp

### 4.2.5.77 http-redirect

**Syntax**

**http-redirect**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry http-redirect

## Description

This command enables the context for configuring the HTTP redirect parameters for the WPP authentication.

## Default

http-redirect

### 4.2.5.78 url

## Syntax

**url** *url-string*

**no url**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry http-redirect url

## Description

This command configures the HTTP redirection URL of this session.

The **no** form of this command removes the configuration.

## Default

no url

## Parameters

*url-string*

Specifies the URL, up to 255 characters.

### 4.2.5.79 interface

## Syntax

**interface**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry interface

## Description

This command enables the context for configuring interface-related parameters for the session.



**Default**

interface

### 4.2.5.80 group-interface-template

**Syntax**

**group-interface-template** *name*

**no group-interface-template**

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry interface group-interface-template

**Description**

This command configures the group interface template that is used on the UPF for the session. The **no** form of this command removes the configuration.

**Default**

no group-interface-template

**Parameters**

*name*

Specifies the group interface template name, up to 32 characters.

### 4.2.5.81 link-local-address

**Syntax**

**link-local-address** *ipv6-address*

**no link-local-address**

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry interface link-local-address

**Description**

This command configures the IPv6 LLA to be used as a source address when sending control plane messages such as ICMPv6 or DHCPv6. Additionally, the LLA is installed on the BNG UPF to answer neighbor discovery messages.

The **no** form of this command removes the configuration.

**Default**

no link-local-address

## Parameters

### *ipv6-address*

Specifies a valid IPv6 link local address.

Values: x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where

x – [0..FFFF]H

d – [0..255]D

## 4.2.5.82 sap-template

### Syntax

**sap-template** *name*

**no sap-template**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry interface sap-template

### Description

This command configures the subscriber SAP template that is used on the UPF for the session.

The **no** form of this command removes the configuration.

### Default

no sap-template

### Parameters

#### *name*

Specifies the SAP template name, up to 32 characters.

## 4.2.5.83 ip-anti-spoof

### Syntax

**ip-anti-spoof** *boolean-value*

**no ip-anti-spoof**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry ip-anti-spoof

### Description

This command enables IP address-based anti-spoofing functionality.

The **no** form of this command keeps the previous value of ip-anti-spoofing.

To explicitly disable ip-anti-spoofing, this command must be set to false. The initial value of ip-anti-spoofing is true.

**Default**

no ip-anti-spoof

**Parameters**

*boolean-value*

Specifies a true or false value.

Values: true | false

**4.2.5.84 l2tp****Syntax**

**l2tp**

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry l2tp

**Description**

Commands in this context configure L2TP parameters.

**4.2.5.85 group****Syntax**

**group discard**

**group** *name*

**no group**

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry l2tp group

**Description**

This command configures the L2TP tunnel group to use when setting up a LAC session.

The **no** form of this command removes the configuration.

**Parameters**

**discard**

Keyword to discard the L2TP groups from the previous ADB lookups.

*name*

References the name of an L2TP tunnel group that is configured in the following context, up to 32 characters.

```
configure mobile-gateway profile bng l2tp-group
```

#### 4.2.5.86 match

##### Syntax

**match**

##### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match

##### Description

Commands in this context configure the match criteria of the authentication database entry. If there is no match, the entry is considered as a default entry.

##### Default

match

#### 4.2.5.87 apn

##### Syntax

**apn** *apn-name*

**no apn**

##### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match apn

##### Description

This command configures the APN name that the system uses to match the session to the entry. This is either the APN name as returned by a previous auth-flow step, or for FWA sessions, the APN or DNN as signaled during session setup.

The **no** form of this command removes the configuration.

##### Default

no apn

##### Parameters

*apn-name*

Specifies the APN name, up to 80 characters.

### 4.2.5.88 cell-id-list

#### Syntax

**cell-id-list** *list-name*  
**no cell-id-list**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match cell-id-list

#### Description

This command configures the list of e-UTRAN cell global identification (ECGI) and NR cell global identification (NCGI) values that the MAG-c uses to match the session to the entry. The MAG-c matches the values in the list to the ECGI (4G) or NCGI (5G) value received during FWA setup.

The **no** form of this command removes the configuration.

#### Default

no cell-id-list

#### Parameters

*list-name*

References the name of a list of ECGI and NCGI values that is configured using the following command, up to 32 characters.

```
configure mobile-gateway profile list cell-id-list
```

### 4.2.5.89 charging-characteristics

#### Syntax

**charging-characteristics** *charging-characteristics*  
**no charging-characteristics**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match charging-characteristics

#### Description

This command configures charging characteristics (CC) value as signaled by the HSS or UDM that the system uses to match the session to the entry.

The **no** form of this command removes the configuration.

#### Default

no charging-characteristics

## Parameters

*charging-characteristics*

Specifies the CC value.

Values: 0 to 65535

### 4.2.5.90 circuit-id

#### Syntax

**circuit-id string** *cid-string*

**circuit-id hex** *binary cid*

**no circuit-id**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match circuit-id

#### Description

This command configures the value of the circuit ID (CID) that the system uses to match the session to the entry.

The **no** form of this command removes the configuration.

#### Default

no circuit-id

#### Parameters

*cid-string*

Specifies the CID name, up to 255 characters.

*binary cid*

Specifies the binary CID value.

Values: 0x0 to 0xFFFFFFFF... (maximum of 510 hex nibbles)

### 4.2.5.91 client-id

#### Syntax

**client-id string** *id-string*

**client-id hex** *binary id*

**no client-id**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match client-id

## Description

This command configures the value of the client ID that the system uses to match the session to the entry. For DHCPv4, the matching uses the option 61 and excludes the byte of the type field. For DHCPv6, the matching uses the option 1 and excludes the 2 bytes of the UUID type field.

The **no** form of this command removes the configuration.

## Default

no client-id

## Parameters

*id-string*

Specifies the client ID name, up to 255 characters.

*binary id*

Specifies the binary client ID value.

Values: 0x0 to 0xFFFFFFFF... (maximum of 510 hex nibbles)

## 4.2.5.92 imei-tac

### Syntax

**imei-tac** *tac value*

**no imei-tac**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match imei-tac

## Description

This command configures the value of the IMEI-based TAC value that the system uses to match the session to the entry.

The **no** form of this command removes the configuration.

## Default

no imei-tac

## Parameters

*tac value*

Specifies the IMEI-based TAC value.

Values: eight-digit number

### 4.2.5.93 imsi-mcc

#### Syntax

**imsi-mcc** *mcc value*  
**no imsi-mcc**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry match imsi-mcc

#### Description

This command configures the IMSI-based MCC value that the system uses to match the session to the entry.

The **no** form of this command removes the configuration.

#### Default

no imsi-mcc

#### Parameters

*mcc value*

Specifies the IMSI-based MCC value.

Values: 000 to 999 (three-digit number)

### 4.2.5.94 imsi-mnc

#### Syntax

**imsi-mnc** *mnc value*  
**no imsi-mnc**

#### Context

**[Tree]** configure mobile-gateway profile authentication-database entry match imsi-mnc

#### Description

This command configures the IMSI-based MNC value that the system uses to match the session to the entry.

The **no** form of this command removes the configuration.

#### Default

no imsi-mnc



## Parameters

*mnc value*

Specifies the IMSI-based MNC value.

Values: 00 to 999 (two- or three-digit number)

### 4.2.5.95 l2-access-id

#### Syntax

**l2-access-id** *string*

**no l2-access-id**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match l2-access-id

#### Description

This command configures the Layer 2 access ID value that the system uses to match the session to the entry.

The **no** form of this command removes the configuration.

#### Default

no l2-access-id

#### Parameters

*string*

Specifies the Layer 2 access ID name, up to 64 characters.

### 4.2.5.96 mac

#### Syntax

**mac** *ieee-address*

**no mac**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match mac

#### Description

This command configures the value of the MAC address that the system uses to match the session to the entry.

The **no** form of this command removes the configuration.

**Default**

no mac

**Parameters**

*ieee-address*

Specifies the MAC address.

Values: xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

**4.2.5.97 pdn-type****Syntax**

**pdn-type** *pdn-type*

**no pdn-type**

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match pdn-type

**Description**

This command configures the value of the PDN type that the system uses to match the session to the entry. For a 4G session, match on the PDN Type as signaled in the GTP Create Session Request. For a 5G session, match on the PDU Session Type as signaled in an N1 PDU Session Establishment Request, or if that is missing, the defaultSessionType as received from UDM.

The **no** form of this command removes the configuration.

**Default**

no pdn-type

**Parameters**

*pdn-type*

Specifies the PDN type.

Values:

- ipv4 – Keyword to match sessions that signal PDN Type/PDU Session Type ipv4.
- ipv6 – Keyword to match sessions that signal PDN Type/PDU Session Type ipv6.
- ipv4v6 – Keyword to match sessions that signal PDN Type/PDU Session Type ipv4v6.

**4.2.5.98 remote-id****Syntax**

**remote-id string** *rid-string*

**remote-id hex** *binary rid*

## **no remote-id**

### **Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match remote-id

### **Description**

This command configures the value of the remote ID that the system uses to match the session to the entry.

The **no** form of this command removes the configuration.

### **Default**

no remote-id

### **Parameters**

*rid-string*

Specifies the remote ID name, up to 255 characters.

*binary rid*

Specifies the binary remote ID.

Values: 0x0 to 0xFFFFFFFF... (maximum of 510 hex nibbles)

## **4.2.5.99 s-nssai**

### **Syntax**

**s-nssai**

### **Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match s-nssai

### **Description**

Commands in this context configure S-NSSAI based match criteria.

## **4.2.5.100 sd**

### **Syntax**

**no sd**

**sd** *sd hex string*

### **Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match s-nssai sd

## Description

This command configures the value of the SD part of the S-NSSAI that the system uses to match the session to the entry after UDM interaction.

The **no** form of this command removes the configuration.

## Default

no sd

## Parameters

*sd hex string*

Specifies the SD value.

Values: 000000 to FFFFFFFF

### 4.2.5.101 sst

## Syntax

**sst** *sst value*

**no sst**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match s-nssai sst

## Description

This command configures the value of the SST part of the S-NSSAI that the system uses to match the session to the entry after UDM interaction.

The **no** form of this command removes the configuration.

## Default

no sst

## Parameters

*sst value*

Specifies the SST value.

Values: 0 to 255

### 4.2.5.102 source-ip-prefix

## Syntax

**source-ip-prefix** *prefix/prefix-length* [*prefix/prefix-length...*(up to 4 max)]

**no source-ip-prefix**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match source-ip-prefix

## Description

This command configures the IP prefix entries that the system uses to match to the source address in the trigger packet of data-triggered IPoE sessions.

The **no** form of this command removes the configuration.

## Default

no source-ip-prefix

## Parameters

*prefix/prefix-length*

Specifies the IP prefix and length, up to 4 maximum.

Values:

- ipv4-prefix – a.b.c.d (host bits must be 0)
- ipv4-prefix-length – [1..32]
- ipv6-prefix – x:x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d  
where  
x – [0..FFFF]H  
d – [0..255]D
- ipv6-prefix-length – [4..128]

### 4.2.5.103 tai

## Syntax

**tai**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match tai

## Description

Commands in this context configure match criteria based on tracking area identity (TAI).

### 4.2.5.104 mcc

## Syntax

**mcc** *mcc value*

**no** **mcc**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match tai mcc

## Description

This command configures the value of the mobile country code (MCC) part of the TAI that the system uses to match the session to the entry.

The **no** form of this command removes the configuration.

## Default

no mcc

## Parameters

*mcc value*

Specifies the MCC value.

Values: 000 to 999 (three digit number)

### 4.2.5.105 mnc

## Syntax

**mnc** *mnc value*

**no mnc**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match tai mnc

## Description

This command configures the value of the mobile network code (MNC) part of the TAI that the system uses to match the session to the entry.

The **no** form of this command removes the configuration.

## Default

no mnc

## Parameters

*mnc value*

Specifies the MNC value.

Values: 000 to 999 (two or three digit number)

### 4.2.5.106 tac

#### Syntax

**tac** *tac hex string*  
**no tac**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match tai tac

#### Description

This command configures the tracking area code (TAC) part of the TAI that the system uses to match the session to the entry.

The **no** form of this command removes the configuration.

#### Default

no tac

#### Parameters

*tac hex string*  
Specifies the TAC value.  
Values: 000000 to FFFFFFFF

### 4.2.5.107 tai-list

#### Syntax

**tai-list** *list-name*  
**no tai-list**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match tai-list

#### Description

This command configures the list of tracking area identity (TAI) values that the MAG-c uses to match the session to the entry. The MAG-c matches the values in the list to the TAI value received during FWA setup.

The **no** form of this command removes the configuration.

#### Default

no tai-list

## Parameters

*list-name*

References the name of a TAI list that is configured using the following command, up to 32 characters.

```
configure mobile-gateway profile list tai-list
```

## 4.2.5.108 up-group

### Syntax

**up-group** *name*

**no up-group**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match up-group

### Description

This command configures the name of the UP group to match the session to the entry. The matching value can be either an exact match or a partial match if the following command is configured in the match configuration for the UP group.

```
configure mobile-gateway profile authentication-database match string-mask
```

The MAG-c derives the UP group by comparing the incoming packet's Layer 2 access ID, S-tag, and C-tag to the UP group configuration in the following context.

```
configure mobile-gateway pdn bng up-group
```

The **no** form of this command removes the configuration.

### Default

no up-group

### Parameters

*name*

Specifies the UP group name, up to 32 characters.

## 4.2.5.109 up-ip

### Syntax

**up-ip** *ip-address*

**no up-ip**



## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match up-ip

## Description

This command configures the UPF IP address that the system uses to match the session to the entry. The **no** form of this command removes the configuration.

## Default

no up-ip

## Parameters

*ip-address*

Specifies the UP IP address.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

### 4.2.5.110 up-node-id

## Syntax

**up-node-id** *node-id*

**no up-node-id**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match up-node-id

## Description

This command configures the value of the UP node ID to match the session to the entry. The matching value can be either an exact match or a partial match if the following command is configured in the match configuration for the UP node ID.

```
configure mobile-gateway profile bng entry-point match string-mask
```

The UP node ID is not explicitly present in incoming IBCP packets. The MAG-c derives the UP node ID from the PFCP association to which the IBCP tunnel is tied. If this command configures an IP address, it only matches the packet if the PFCP signaled node ID equals the configured IP address, even if the configuration matches the incoming IBCP source IP address.

The **no** form of this command removes the configuration.

**Default**

no up-node-id

**Parameters**

*node-id*

Specifies the UP node ID as an IP address or a name, up to 255 characters.

### 4.2.5.111 username

**Syntax**

**username** *name*

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match username

**Description**

This command configures the PPPoE username that the system uses to match the session to the entry.

The value specified can be either an exact match or a partial match, if the **string-mask** is configured in the authentication database match configuration.

The **no** form of this command removes the configuration.

**Default**

no username

**Parameters**

*name*

Specifies the username, up to 253 characters.

### 4.2.5.112 username-domain

**Syntax**

**username-domain** *domain*

**no username-domain**

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match username-domain

**Description**

This command configures the domain name of the PPPoE username that the system uses to match the session to the entry.

The **no** form of this command removes the configuration.

**Default**

no username-domain

**Parameters**

*domain*

Specifies the domain name, up to 253 characters.

**4.2.5.113 vendor-class****Syntax**

**vendor-class string** *vendor-class-string*

**vendor-class hex** *binary vendor-class*

**no vendor-class**

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match vendor-class

**Description**

This command configures the vendor class that the system uses to match the session to the entry.

The **no** form of this command removes the configuration.

**Parameters**

*vendor-class-string*

Specifies the vendor class value as an ASCII string, up to 255 characters.

*binary vendor-class*

Specifies the vendor class value as a hexadecimal string.

Values: 0x0 to 0xFFFFFFFF...(max 510 hex nibbles)

**4.2.5.114 vlan****Syntax**

[no] vlan

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match vlan

**Description**

This command enables the VLAN configuration context that the system uses to match the session to the entry. The **no** form of this command disables the VLAN configuration context.

## Default

vlan

### 4.2.5.115 c-vlan

#### Syntax

**c-vlan start tag end tag**

**no c-vlan**

#### Context

[Tree] configure mobile-gateway profile authentication-database entry match vlan c-vlan

#### Description

This command configures a customer VLAN (inner VLAN) range for matching the entry. If the customer VLAN of a trigger packet falls within the specified range, a match occurs. The interaction between the **c-vlan** and **s-vlan** configuration, in combination with the three possible values that come in the trigger packets are:

- **q-in-q**  
The trigger packet contains two VLANs that are called service VLAN (s-vlan) and customer VLAN (c-vlan).
- **dot1q**  
The trigger packet contains one VLAN. In this case, this is matched to the s-vlan range, if configured. However, if the **c-vlan** range is configured, the packet does not match because it has no customer VLAN values.
- **no vlans**  
The trigger packet contains no VLANs. In this case, the packet only matches entries that have neither service VLAN or customer VLAN range values configured.

The **no** form of this command removes the configuration.

#### Default

no c-vlan

#### Parameters

##### **start tag**

Specifies the start of the inner VLAN range.

Values: 1 to 4094

##### **end tag**

Specifies the end of the inner VLAN range.

Values: 1 to 4094

## 4.2.5.116 s-vlan

### Syntax

```
s-vlan start tag end tag  
no s-vlan
```

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry match vlan s-vlan

### Description

This command configures a service VLAN (outer VLAN) range for matching the entry. If the service VLAN of a trigger packet falls within the specified range, a match occurs.

The **no** form of this command removes the configuration.

### Default

no s-vlan

### Parameters

#### start *tag*

Specifies the start of the outer VLAN range.

Values: 1 to 4094

#### end *tag*

Specifies the end of the outer VLAN range.

Values: 1 to 4094

## 4.2.5.117 pfcpc

### Syntax

```
pfcpc
```

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry pfcpc

### Description

Commands in this context configure PFCP parameters.

### 4.2.5.118 include-attributes

#### Syntax

**include-attributes**  
**no include-attributes**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry pfcf include-attributes

#### Description

This command enables the inclusion of information elements (IEs) in the PFCP messages.  
The **no** form of this command disables the inclusion of IEs in the PFCP messages.

#### Default

no include-attributes

### 4.2.5.119 acct-session-id

#### Syntax

**acct-session-id** *origin*  
**no acct-session-id**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry pfcf include-attributes acct-session-id

#### Description

This command includes the Accounting Session ID IE in PFCP messages.  
The **no** form of this command removes the configuration.

#### Default

no acct-session-id

#### Parameters

*origin*

Specifies the origin.

Values: session | subscriber

## 4.2.5.120 pppoe

### Syntax

**pppoe**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry pppoe

### Description

This command enables the context for configuring PPPoE session parameters.

### Default

pppoe

## 4.2.5.121 pado-delay

### Syntax

**pado-delay** *deci-seconds*

**no pado-delay**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry pppoe pado-delay

### Description

This command configures the delay before the system returns a PPPoE Active Discovery Offer (PADO) packet, in deciseconds.

The **no** form of this command keeps the previous value of **pado-delay**.

To explicitly disable this command, the *deci-seconds* value must be set to zero. The initial value for pado-delay is zero.

### Default

no pado-delay

### Parameters

*deci-seconds*

Specifies the delay, in deciseconds.

Values: 0 to 30

## 4.2.5.122 ra-profile

### Syntax

**ra-profile discard**  
**ra-profile** *name*  
**no ra-profile**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry ra-profile

### Description

This command specifies the RA profile for DHCPv6 messages sent in the session. The RA profiles are configured using the **ra-profile** command in the **configure mobile-gateway profile bng** context.

The **no** form of this command removes the configuration.

### Default

no ra-profile

### Parameters

#### **discard**

Keyword to discard the RA profile from previous ADB lookups.

#### *name*

Specifies the RA profile name, up to 32 characters.

## 4.2.5.123 server-identifiers

### Syntax

**server-identifiers**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry server-identifiers

### Description

Commands in this context configure IP addresses or DNS names of servers typically contacted by end-users, for example P-CSCF server addresses. These are reflected during setup in for example DHCP, DHCPv6, PCO, or IPCP messages



#### 4.2.5.124 pcscf-ipv4-address

##### Syntax

```
pcscf-ipv4-address discard
pcscf-ipv4-address ip-address
no pcscf-ipv4-address
```

##### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry server-identifiers pcscf-ipv4-address

##### Description

This command configures the IPv4 address of the PCSCF server.  
The **no** form of this command removes the configuration.

##### Default

no pcscf-ipv4-address

##### Parameters

*ip-address*

Specifies the IPv4 address of the primary PCSCF server.

Values: a.b.c.d

**discard**

Keyword to discard previous IPv4 address.

#### 4.2.5.125 pcscf-ipv6-address

##### Syntax

```
pcscf-ipv6-address discard
pcscf-ipv6-address ipv6-address
no pcscf-ipv6-address
```

##### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry server-identifiers pcscf-ipv6-address

##### Description

This command configures the IPv6 address of the PCSCF server.  
The **no** form of this command removes the configuration.

**Default**

no pcscf-ipv6-address

**Parameters**

*ipv6-address*

Specifies the IPv6 address of the primary PCSCF server.

Values: x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where

x – [0..FFFF]H

d – [0..255]D

**discard**

Keyword to discard previous IPv6 address.

**4.2.5.126 session-timeout****Syntax**

**session-timeout** *seconds*

**session-timeout infinite**

**no session-timeout**

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry session-timeout

**Description**

This command configures the amount of time before the system removes a session.

The **no** form of this command disables this capability.

**Default**

no session-timeout

**Parameters**

*seconds*

Specifies the session timeout interval, in seconds.

Values: 1 to 31104000

**infinite**

Keyword to never remove the session based on timeout.

### 4.2.5.127 shutdown

#### Syntax

[no] shutdown

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry shutdown

#### Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

### 4.2.5.128 subscriber-mgmt

#### Syntax

subscriber-mgmt

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry subscriber-mgmt

#### Description

This command enables the context for configuring subscriber management.

#### Default

subscriber-mgmt

### 4.2.5.129 sla-profile

#### Syntax

sla-profile *name*

no sla-profile

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry subscriber-mgmt sla-profile

#### Description

This command configures the UPF SLA profile that is used for the session.

The **no** form of this command removes the configuration.

**Default**

no sla-profile

**Parameters**

*name*

Specifies the SLA profile name, up to 32 characters.

### 4.2.5.130 sub-profile

**Syntax**

**sub-profile** *name*

**no sub-profile**

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry subscriber-mgmt sub-profile

**Description**

This command configures the UPF subscriber profile that is used for the session.

The **no** form of this command removes the configuration.

**Default**

no sub-profile

**Parameters**

*name*

Specifies the subscriber profile name, up to 32 characters.

### 4.2.5.131 wpp

**Syntax**

**wpp**

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry wpp

**Description**

Commands in this context configure WPP.

### 4.2.5.132 initial-profiles

#### Syntax

**initial-profiles**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry wpp initial-profiles

#### Description

Commands in this context configure the initial profiles. The initial profiles are used for a WPP session before WPP authentication.

### 4.2.5.133 sla-profile

#### Syntax

**sla-profile** *name*

**no sla-profile**

#### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry wpp initial-profiles sla-profile

#### Description

This command configures the initial SLA profile for a WPP session.

The **no** form of this command removes the configuration.

#### Default

no sla-profile

#### Parameters

*name*

Specifies the SLA profile name, up to 32 characters.

### 4.2.5.134 sub-profile

#### Syntax

**sub-profile** *name*

**no sub-profile**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry wpp initial-profiles sub-profile

## Description

This command configures the initial subscriber profile for a WPP session.

The **no** form of this command removes the configuration.

## Default

no sub-profile

## Parameters

*name*

Specifies the subscriber profile name, up to 32 characters.

### 4.2.5.135 portal-group

## Syntax

**portal-group** *name*

**no portal-group**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry wpp portal-group

## Description

This command configures a reference to the portal group that authenticates the WPP session. The portal group is defined using the **portal-group** command in the **configure mobile-gateway profile bng wpp** context (see [portal-group](#)).

The **no** form of this command removes the configuration.

## Default

no portal-group

## Parameters

*name*

Specifies the portal group name, up to 32 characters.

### 4.2.5.136 restore-disconnected

## Syntax

**[no] restore-disconnected**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry wpp restore-disconnected

## Description

This command restores the initial profiles (initial SLA profile and initial subscriber profile) when a WPP session disconnects.

The **no** form of this command specifies that a disconnected session is removed.

## Default

no restore-disconnected

### 4.2.5.137 shutdown

## Syntax

**shutdown**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry wpp shutdown

## Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

### 4.2.5.138 wpp-radius-authentication

## Syntax

**wpp-radius-authentication** *name*

**no wpp-radius-authentication**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database entry wpp wpp-radius-authentication

## Description

This command configures a reference to the RADIUS authentication profile that is used for the RADIUS authentication triggered by the WPP portal. The RADIUS authentication profile is defined using the **radius-authentication-profile** command in the **configure mobile-gateway profile bng** context (see [radius-authentication-profile](#)).

The **no** form of this command removes the configuration.

**Default**

no wpp-radius-authentication

**Parameters**

*name*

Specifies the RADIUS authentication profile name, up to 32 characters.

**4.2.5.139 match****Syntax**

**match** *match-id* [**attribute** *attr*]

**no match** *match-id*

**Context**

[\[Tree\]](#) configure mobile-gateway profile authentication-database match

**Description**

This command configures one or more match attributes in the authentication database match configuration. An entry configuration must contain configurations for all non-optional match attributes to be a matched entry. Match attributes that are optional may be included or not in the matched entry configuration.

The MAG-c performs a lookup in all authentication database entries. To authenticate and create a session, the MAG-c uses a session's corresponding match attribute values to match against the entry configurations. If there are multiple matched entries, the system chooses the entry that has the highest number of configured match values. If the number of match values is the same, the system chooses the entry based on the match criteria order.

Example:

In the following match configuration, c1, c2, and c3 can be any supported match attribute:

- match 1 attribute c1 (optional)
- match 2 attribute c2 (optional)
- match 3 attribute c3 (optional)

When there are multiple matches, the system chooses the following entries in preference order:

1. entry e1 with match criteria "c1 v1; c2 v2; c3 v3"
2. entry e2 with match criteria "c1 v1; c2 v2"
3. entry e3 with match criteria "c2 v2; c3 v3"
4. entry e4 with match criteria "c3 v3"

Some match attributes specify a list instead of a direct attribute. When the received session setup message contains attributes that are part of a list, the MAG-c looks up to which list the received attribute belongs and uses the name of the matching list in the ADB match criteria.

The **no** form of this command removes the specified match configuration.



## Parameters

### *match-id*

Specifies the match ID.

Values: 1 to 7

### *attr*

Specifies a matching attribute.

Values:

- *apn* – specifies the APN as a match attribute; MAG-c obtains its value from a previous authentication step, or receives it directly for FWA sessions
- *charging-characteristics* – specifies the charging characteristics (CC) as a match attribute; MAG-c uses the CC value as signaled from HSS or UDM
- *circuit-id* – specifies the circuit ID as a match attribute; MAG-c obtains its value from the following sources:
  - DHCPv4: option 82 sub-option 1
  - DHCPv6: option 18
  - PPPoE: BBF vendor-specific tag 1
- *client-id* – specifies the client ID as a match attribute
- *c-vlan* – specifies the operator VLAN tag as a match attribute
- *derived-id* – specifies the derived ID as a match attribute
- *l2-access-id* – specifies the Layer 2 access ID as a match attribute
- *imsi-mcc* – specifies the IMSI MCC as a match attribute; MAG-c derives the MCC value from the IMSI for FWA sessions
- *imsi-mnc* – specifies the IMSI MNC value as a match attribute; MAG-c derives the MNC value from the IMSI for FWA sessions
- *imei-tac* – specifies the IMEI TAC value as a match attribute; MAG-c derives the TAC value, used to identify specific device vendors or models, from the IMEI for FWA sessions
- *pdn-type* – specifies the PDN/PDU Session type as signaled during FWA session setup as a match attribute
- *mac* – specifies the MAC address of the session as a match attribute
- *remote-id* – specifies the remote ID as a match attribute; MAG-c obtains its value from the following sources:
  - DHCPv4: option 82 sub-option 2
  - DHCPv6: option 37
  - PPPoE: BBF vendor-specific tag 2
- *s-nssai-sd* – specifies the S-NSSAI Slice Differentiator (SD) as a match attribute
- *s-nssai-sst* – specifies the S-NSSAI Slice/Service Type (SST) as a match attribute
- *source-ip-prefix* – specifies the source IP address prefix as a match attribute
- *s-vlan* – specifies the service VLAN tag as a match attribute

- up-ip – specifies the BNG-UP IP address as a match attribute
- username-domain – specifies the username domain as a match attribute
- username – specifies the PPPoE PAP/CHAP username as a match attribute
- up-group – specifies the UP group as a match attribute
- up-node-id – specifies the UP node ID as a match attribute
- vendor-class – specifies the vendor class as a match attribute; MAG-c obtains its value from the following sources:
  - DHCPv4: option 60
  - DHCPv6: option 16
- tai-mcc – specifies the TAI MCC value as a match attribute
- tai-mnc – specifies the TAI MNC value as a match attribute
- tai-tac – specifies the TAI TAC value as a match attribute
- tai-list – specifies the TAI value as a match attribute via a list match
- cell-id-list – specifies the ECGI (4G) or NCGI (5G) value as a match attribute via a list match

#### 4.2.5.140 apn-format

##### Syntax

**apn-format** *form*

**no apn-format**

##### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database match apn-format

##### Description

This command specifies the format to match APNs.

The **no** form of this command reverts to the default.

##### Default

apn-format selected

##### Parameters

*form*

Specifies the APN format.

Values:

- real – specifies to use the real, unmodified APN as signaled during the FWA session setup, including the OI if it is present
- real-ni-only – specifies to use the real APN as signaled during the FWA session setup, but without the OI if it is present

- **selected** – specifies to use the selected APN as is (returned after initial authentication); if no selected APN is available, the system falls back to the real-ni-only option

#### 4.2.5.141 optional

##### Syntax

[no] optional

##### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database match optional

##### Description

This command enables the match criteria as optional, so that entries are not required to specify it as a match criterion.

The **no** form of this command removes the optional match configuration.

##### Default

no optional

#### 4.2.5.142 string-mask

##### Syntax

[no] string-mask

##### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database match string-mask

##### Description

This command enables an optional string mask for masking the Layer 2 access ID.

The **no** form of this command disables the string-mask configuration for the match.

##### Default

string-mask

#### 4.2.5.143 prefix

##### Syntax

**prefix length** *mask-length*

**prefix string** *mask-string*

**no prefix**

## Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database match string-mask prefix

## Description

This command configures a prefix mask for the Layer 2 access ID.

The **no** form of this command removes the configuration.

## Default

no prefix

## Parameters

### *mask-length*

Specifies to remove the specified number of bytes from beginning of the session's Layer 2 access ID.

Values: 1 to 127

### *mask-string*

Specifies to remove the specified string if the beginning of the session's Layer 2 access ID matches, up to 127 characters.



**Note:** For a string match, the wildcard character "\*" can be used as a match criteria.

## 4.2.5.144 suffix

### Syntax

**suffix length** *mask-length*

**suffix string** *mask-string*

**no suffix**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database match string-mask suffix

### Description

This command configures a suffix mask for the Layer 2 access ID.

The **no** form of this command removes the configuration.

### Default

no suffix

## Parameters

### *mask-length*

Specifies to remove the specified number of bytes from end of the session's Layer 2 access ID.

Values: 1 to 127

### *mask-string*

Specifies to remove the specified string if the end of the session's Layer 2 access ID matches, up to 127 characters.



**Note:** For a string match, the wildcard character "\*" can be used as a match criteria.

## 4.2.5.145 shutdown

### Syntax

**shutdown**

### Context

[\[Tree\]](#) configure mobile-gateway profile authentication-database shutdown

### Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

## 4.2.6 configure mobile-gateway profile bng command descriptions

### 4.2.6.1 bng

#### Syntax

**bng**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng

#### Description

This command enables the context for configuring BNG parameters.

**Default**

bng

**4.2.6.2 cp-nat-profile****Syntax****[no] cp-nat-profile** *name***Context****[Tree]** configure mobile-gateway profile bng cp-nat-profile**Description**

This command configures a BNG CUPS CP NAT profile. A CP NAT profile is a container for NAT specific parameters and is used to associate IPoE and PPPoE sessions with NAT.

The **no** form of this command removes the configuration.

**Parameters***name*

Specifies the CP NAT profile name, up to 32 characters.

**4.2.6.3 description****Syntax****description** *description-string***no description****Context****[Tree]** configure mobile-gateway profile bng cp-nat-profile description**Description**

This command enables a text description stored in the configuration file for a configuration context. The **description** command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

**Default**

no description

## Parameters

### *description-string*

Specifies the description character string. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.6.4 nat-access-mode

### Syntax

**nat-access-mode** *access-mode*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng cp-nat-profile nat-access-mode

### Description

This command configures the NAT access mode.

### Parameters

#### *access-mode*

Specifies the NAT access mode.

Values: auto | bridged

## 4.2.6.5 nat-pool

### Syntax

**[no] nat-pool** *pool-name*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng cp-nat-profile nat-pool

### Description

This command configures a NAT pool. A NAT pool is container that holds NAT parameters primarily concerned with outside IP addresses, port ranges, NAT mode of operation within the pool (1:1 or NAPT) and location (routing context) of the pool.

The **no** form of this command removes the configuration.

### Parameters

#### *pool-name*

Specifies the NAT pool name, up to 32 characters.

## 4.2.6.6 description

### Syntax

**description** *description-string*  
**no description**

### Context

**[Tree]** configure mobile-gateway profile bng cp-nat-profile nat-pool description

### Description

This command enables a text description stored in the configuration file for a configuration context. The **description** command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

### Default

no description

### Parameters

*description-string*

Specifies the description character string. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.6.7 laa-pool

### Syntax

**laa-pool** *network-realm reference name pool-name*  
**no laa-pool**

### Context

**[Tree]** configure mobile-gateway profile bng cp-nat-profile nat-pool laa-pool

### Description

This command configures the local address assignment (LAA) pool for the NAT pool. The LAA pool determines the NAT prefixes from which an outside IP address and port block are selected in the configured NAT pool. The outside NAT prefix is installed in the outside routing context specified by the *network-realm*.

The **no** form of this command removes the configuration.



## Parameters

### *reference*

Specifies the outside routing context for NAT; points to an existing network-realm; up to 80 characters.

### *pool-name*

Specifies the name of an existing LAA pool; the NAT outside prefixes are defined in the following context.

```
configure mobile-gateway pdn local-address-assignment
```

## 4.2.6.8 mode

### Syntax

**mode** *nat-mode*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng cp-nat-profile nat-pool mode

### Description

This command configures the NAT mode of operation. The two modes are mutually exclusive in the same NAT pool.

### Default

mode napt

### Parameters

#### *nat-mode*

Specifies the NAT mode.

Values: one-to-one | napt

- one-to-one – inside and outside IP addresses are translated in 1:1 fashion; no port translation
- napt – each inside IP address is translated into an outside IP address and a port block range; allows sharing of the same outside IP address by multiple subscribers

## 4.2.6.9 port-forwarding-range

### Syntax

**port-forwarding-range** *range-end*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng cp-nat-profile nat-pool mode port-forwarding-range

**Description**

This command configures the end port of the shared port forwarding range.

**Default**

port-forwarding-range 1023

**Parameters**

*range-end*

Specifies the end port of the port forwarding range.

Values: 1023 to 65535

**4.2.6.10 port-limits****Syntax**

**port-limits**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng cp-nat-profile nat-pool mode port-limits

**Description**

Commands in this context configure the forwarding of ports for a NAT session.

**4.2.6.11 forwarding****Syntax**

**forwarding** *limit*

**no forwarding**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng cp-nat-profile nat-pool mode port-limits forwarding

**Description**

This command configures the maximum number of ports that can be forwarded for a NAT session.

The no form of this command removes the configuration.

**Default**

no forwarding

**Parameters**

*limit*

Specifies the maximum number of ports that can be forwarded for a NAT session.

Values: 1 to 64

#### 4.2.6.12 port-reservation

##### Syntax

```
port-reservation ports ports-per-block
port-reservation blocks num-blocks
no port-reservation
```

##### Context

[\[Tree\]](#) configure mobile-gateway profile bng cp-nat-profile nat-pool mode port-reservation

##### Description

This command configures the size of the port block. The port block size can be configured explicitly by specifying the number of ports in each port block, or implicitly by specifying the number of port ranges per outside IP address. This command can be configured only when the NAT mode equals NAPT.

The **no** form of this command reverts to the default.

##### Default

port-reservation blocks 128

##### Parameters

*ports-per-block*

Specifies the number of ports per port block.

Values: 1 to 32256

*num-block*

Specifies the number of port blocks per outside IP address.

Values: 1 to 64512

#### 4.2.6.13 subscriber-limit

##### Syntax

```
subscriber-limit subscriber-limit
no subscriber-limit
```

##### Context

[\[Tree\]](#) configure mobile-gateway profile bng cp-nat-profile nat-pool mode subscriber-limit

## Description

This command specifies the maximum number of subscribers permitted per outside IP address. When the port-block extensions for a NAT subscriber are enabled, the port space for an outside IP address is divided in the following partitions, from the start to the end of the port space, in the specified order:

- 1. well-known port range**

- 2. static port forwarding range**

The static port forwarding range is enabled by configuration.

- 3. port range reserved for the first (initial) port blocks of each subscriber**

The configured number of NAT subscribers per an outside IP address multiplied by the configured size of the first (initial) port-block determines the size of the port partition reserved for initial port-blocks.

- 4. port range reserved for extended port blocks**

This port range includes whatever is left after the previous three port ranges. The port partition reserved for extended port blocks begins at the end of the port partition reserved for the initial port blocks and continues until the end of the ports space (port 65535).

The **no** form of this command removes the configuration.

## Default

no subscriber-limit

## Parameters

*subscriber-limit*

Specifies the maximum number of subscribers per outside IP address.

Values: 2 to 2000

### 4.2.6.14 up-nat-policy

## Syntax

**up-nat-policy** *name*

**no up-nat-policy**

## Context

[\[Tree\]](#) configure mobile-gateway profile bng cp-nat-profile nat-pool up-nat-policy

## Description

This command references an existing up-nat-policy which is configured on the BNG-UP. The up-nat-policy defines NAT parameters associated with the subscribers, such as ALGs and protocol timers.

The **no** form of this command removes the configuration.

## Default

no up-nat-policy

## Parameters

*name*

Specifies the name of the up-nat-policy defined on the BNG-UP; up to 32 characters.

### 4.2.6.15 dhcp-profile

#### Syntax

[no] dhcp-profile *name*

#### Context

[Tree] configure mobile-gateway profile bng dhcp-profile

#### Description

This command configures a DHCP protocol profile.

The **no** form of this command removes the configuration.

#### Parameters

*name*

Specifies the DHCP profile name, up to 32 characters.

### 4.2.6.16 description

#### Syntax

description *description-string*

no description

#### Context

[Tree] configure mobile-gateway profile bng dhcp-profile description

#### Description

This command enables a text description stored in the configuration file for a configuration context. The **description** command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

#### Default

no description

## Parameters

### *description-string*

Specifies the description character string. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.6.17 options

### Syntax

**options**

### Context

**[Tree]** configure mobile-gateway profile bng dhcp-profile options

### Description

This command enables the context for configuring options to include in DHCP messages that are sent toward a DHCP client.

### Default

options

## 4.2.6.18 option

### Syntax

**option** *option-number* **address** *ip-address* [*ip-address*]

**option** *option-number* **string** *ascii-string*

**option** *option-number* **hex** *hex-string*

**[no]** **option** *option-number*

### Context

**[Tree]** configure mobile-gateway profile bng dhcp-profile options option

### Description

This command configures the specified option. Specific option numbers cannot be set because they are controlled by the application. If for specific options (for example, DNS) specific per-session overrides exist, those overrides are signaled, and only the remaining DHCP profile options are signaled.

The **no** form of this command removes the configuration.

## Parameters

### *option-number*

Specifies the action that is applied to a match.

Values: 2 | 4 to 52 | 55 to 254

### *ip-address*

Specifies the IPv4 address, up to four IPv4 addresses can be specified.

Values: a.b.c.d

### *ascii-string*

Specifies the ASCII string, up to 127 characters.

### *hex-string*

Specifies the hex value.

Values: 0x0 to 0xFFFFFFFF (maximum of 254 hex nibbles)

## 4.2.6.19 relay-agent-options

### Syntax

**[no] relay-agent-options**

### Context

**[Tree]** configure mobile-gateway profile bng dhcp-profile options relay-agent-options

### Description

Commands in this context configure DHCP relay-agent-information (option 82) options.

The **no** form of this command removes the configuration.

## 4.2.6.20 action

### Syntax

**action drop**

**action keep**

**action replace**

**no action**

### Context

**[Tree]** configure mobile-gateway profile bng dhcp-profile options relay-agent-options action

### Description

This command configures the action for the DHCP relay packet concerning the relay-agent-information option (option 82).

**Default**

action keep

**Parameters****drop**

Keyword to drop the received DHCP packet if it contains option 82, and to forward it otherwise.

**keep**

Keyword to keep the existing option 82 in the received packet without change.

**replace**

Keyword to replace the options in the received packet with the options configured in the context. If an option is not configured in the context, the corresponding option in the received packet is removed.

## 4.2.6.21 circuit-id

**Syntax**

**circuit-id access-identifier**

**circuit-id string** *ascii string*

**circuit-id hex** *hex string*

**circuit-id mac**

**circuit-id upf-identifier**

**no circuit-id**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng dhcp-profile options relay-agent-options circuit-id

**Description**

This command enables sending the circuit-id option in the DHCP relay packet.

The **no** form of this command disables sending the circuit-id option in the DHCP relay packet.

**Default**

no circuit-id

**Parameters****access-identifier**

Keyword to use the access identifier of the session as the circuit ID. The format is "*up-id*|*2-access-id*|*vlan-tag*", where *up-id* is the UP node ID or in case of UP redundancy, the UP group name. For example, in case UP redundancy is not enabled, for a session on BNG-UP "UPF-1", port 1/2/3, with QinQ tag 300:400, the circuit ID is "UPF-1|1/2/3|300:400".



**ascii string**

Specifies the circuit ID as an ASCII string, up to 80 characters.

**hex string**

Specifies the circuit ID as a hexadecimal string.

Values: 0x0 to 0xFFFFFFFF...(max 254 hex nibbles)

**upf-identifier**

Keyword to use the session BNG-UP identifier as the circuit ID. In case of BNG-UP redundancy enabled sessions, the used value is the UP group.

**mac**

Keyword to use the MAC address of the session as the circuit ID.

## 4.2.6.22 remote-id

### Syntax

**remote-id access-identifier**

**remote-id string** *ascii string*

**remote-id hex** *hex string*

**remote-id mac**

**remote-id upf-identifier**

**no remote-id**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng dhcp-profile options relay-agent-options remote-id

### Description

This command enables sending the remote-id option in the DHCP relay packet.

The **no** form of this command disables sending the remote-id option in the DHCP relay packet.

### Default

no remote-id

### Parameters

**access-identifier**

Keyword to use the access identifier of the session as the remote ID. The format is "*up-id*|*l2-access-id*|*vlan-tag*", where *up-id* is the UP node ID or in case of UP redundancy, the UP group name. For example, in case UP redundancy is not enabled, for a session on BNG-UP "UPF-1", port 1/2/3, with QinQ tag 300:400, the remote ID is "UPF-1|1/2/3|300:400".

**ascii string**

Specifies the remote ID as an ASCII string, up to 80 characters.

*hex string*

Specifies the remote ID as a hexadecimal string.

Values: 0x0 to 0xFFFFFFFF...(max 254 hex nibbles)

**mac**

Keyword to use the MAC address of the session as the remote ID.

**upf-identifier**

Keyword to use the session BNG-UP identifier as the remote ID. In case of BNG-UP redundancy enabled sessions, the used value is the UP group.

### 4.2.6.23 dhcpv6-profile

**Syntax**

[no] dhcpv6-profile *name*

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng dhcpv6-profile

**Description**

This command configures a DHCPv6 protocol profile.

The **no** form of this command removes the profile.

**Parameters**

*name*

Specifies the DHCPv6 profile name, up to 32 characters.

### 4.2.6.24 description

**Syntax**

**description** *description-string*

**no description**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng dhcpv6-profile description

**Description**

This command enables a text description stored in the configuration file for a configuration context. The **description** command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

**Default**

no description

**Parameters**

*description-string*

Specifies the description character string. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

**4.2.6.25 options****Syntax**

**options**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng dhcpv6-profile options

**Description**

Commands in this context configure the options to be included in the DHCPv6 messages that are sent to a DHCPv6 client.

**Default**

options

**4.2.6.26 option****Syntax**

**[no] option** *option-number*

**option** *option-number* **address** *ipv6-address* [*ipv6-address...*(up to 4 max)]

**option** *option-number* **hex** *hex-string*

**option** *option-number* **number** *number*

**option** *option-number* **string** *ascii-string*

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng dhcpv6-profile options option

**Description**

This command configures a specific DHCPv6 option to be included in the DHCPv6 message with the specified content. If no content is provided the option is included as an empty option. This can be used to signal a flag to the client.

The **no** form of this command removes the option from the profile.

### Parameters

#### *option-number*

Identifies the number of the option.

Values: 6 to 8 | 10 to 11 | 14 to 17 | 19 to 43 | 49 to 65535

#### *ipv6-address*

Specifies the IPv6 address to be included in the option; up to four IPv6 addresses can be specified; addresses are sent in the order they are specified.

Values: up to 64 characters

#### *ascii-string*

Specifies the ASCII string.

Values: up to 127 characters

#### *hex-string*

Specifies the exact byte contents of the option as a hexadecimal string.

Values: 0x0 to 0xFFFFFFFF... (maximum of 254 hex nibbles)

## 4.2.6.27 relay-agent-options

### Syntax

**[no] relay-agent-options**

### Context

**[Tree]** configure mobile-gateway profile bng dhcpv6-profile options relay-agent-options

### Description

This command configures DHCPv6 relay options.

The **no** form of this command removes the configuration.

## 4.2.6.28 interface-id

### Syntax

**interface-id access-identifier**

**interface-id string** *ascii string*

**interface-id copy**

**interface-id hex** *hex string*

**interface-id mac**

**interface-id upf-identifier**

**no interface-id**

## Context

[Tree] configure mobile-gateway profile bng dhcpv6-profile options relay-agent-options interface-id

## Description

This command enables sending the interface-id option in the DHCPv6 relay packet.

The **no** form of this command disables sending the interface-id option in the DHCPv6 relay packet.

## Default

no interface-id

## Parameters

### access-identifier

Keyword to use the access identifier of the session as the interface ID. The format is "*up-id*|*2-access-id*|*vlan-tag*", where *up-id* is the UP node ID or in case of UP redundancy, the UP group name. For example, in case UP redundancy is not enabled, for a session on BNG-UP "UPF-1", port 1/2/3, with QinQ tag 300:400, the interface ID is "UPF-1|1/2/3|300:400".

### ascii string

Specifies the interface ID as an ASCII string, up to 80 characters.

### copy

Keyword to copy the interface ID in the received DHCPv6 relay message to the outbound DHCPv6 message.

### hex string

Specifies the interface ID as a hexadecimal string.

Values: 0x0 to 0xFFFFFFFF...(max 254 hex nibbles)

### mac

Keyword to use the MAC address of the session as the interface ID.

### upf-identifier

Keyword to use the session BNG-UP identifier as the interface ID. In case of BNG-UP redundancy enabled sessions, the used value is the UP group.

## 4.2.6.29 remote-id

### Syntax

**remote-id access-identifier**

**remote-id string** *ascii string*

**remote-id client-id**

**remote-id copy**

**remote-id hex** *hex string*

**remote-id mac**

## no remote-id

### Context

[\[Tree\]](#) configure mobile-gateway profile bng dhcpv6-profile options relay-agent-options remote-id

### Description

This command enables sending the remote-id option in the DHCPv6 relay packet.

The **no** form of this command disables sending the remote-id option in the DHCPv6 relay packet.

### Parameters

#### access-identifier

Keyword to use the access identifier of the session as the remote ID. The format is "*up-id*|*2-access-id*|*vlan-tag*", where *up-id* is the UP node ID or in case of UP redundancy, the UP group name. For example, in case UP redundancy is not enabled, for a session on BNG-UP "UPF-1", port 1/2/3, with QinQ tag 300:400, the remote ID is "UPF-1|1/2/3|300:400".

#### ascii string

Specifies the remote ID as an ASCII string, up to 80 characters.

#### client-id

Keyword to use the client-id option in the received DHCPv6 message from the client as the remote ID toward the server.

#### copy

Keyword to copy the remote ID in the received DHCPv6 relay message to the outbound DHCPv6 message.

#### hex string

Specifies the remote ID as a hexadecimal string.

Values: 0x0 to 0xFFFFFFFF...(max 254 hex nibbles)

#### mac

Keyword to use the MAC address of the session as the remote ID.

## 4.2.6.30 entry-point

### Syntax

[no] **entry-point** *name*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point

### Description

This command configures a BNG entry point or enters an existing BNG entry point. The entry point is the starting point of authentication process.

The **no** form of this command removes the configuration.

### Parameters

*name*

Specifies the BNG entry point name, up to 32 characters.

## 4.2.6.31 description

### Syntax

**description** *description-string*

**no description**

### Context

**[Tree]** configure mobile-gateway profile bng entry-point description

### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

### Default

no description

### Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.6.32 entry

### Syntax

**[no] entry** *name*

### Context

**[Tree]** configure mobile-gateway profile bng entry-point entry

### Description

This command configures a BNG entry or enters an existing BNG entry. Each entry consists of two parts.

- match configuration — the system uses attributes of the triggering packet to match the configured criteria

- session attributes — the system uses session attributes, such as **authentication-flow** in the most matched entry, to authenticate and create the session

The **no** form of this command removes the configuration.

### Parameters

*name*

Specifies the BNG entry name, up to 32 characters.

## 4.2.6.33 description

### Syntax

**description** *description-string*

**no description**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry description

### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

### Default

no description

### Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.6.34 ipoe

### Syntax

**ipoe**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry ipoe

### Description

This command enables the context for configuring IPoE parameters of the entry point entry.



**Default**

ipoe

**4.2.6.35 allow-data-trigger****Syntax****[no] allow-data-trigger****Context****[Tree]** configure mobile-gateway profile bng entry-point entry ipoe allow-data-trigger**Description**

This command configures IPoE session creation from data-trigger packets sent over the default IBCP tunnel. If not configured, data-trigger packets are not processed and log messages are generated to the error history.

The **no** form of this command disables the IPoE session creation.

**Default**

no allow-data-trigger

**4.2.6.36 authentication-flow****Syntax****authentication-flow****Context****[Tree]** configure mobile-gateway profile bng entry-point entry ipoe authentication-flow**Description**

This command enables the IPoE authentication flow context of the entry point entry.

**Default**

authentication-flow

**4.2.6.37 adb****Syntax****adb** *adb-name* [*adb-name*]**no adb**

## Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry ipoe authentication-flow adb

## Description

This command configures the IPoE authentication flow that the system looks up in the specified authentication-databases; using the specified order for authenticating the IPoE session.

The **no** form of this command removes the configuration.

## Parameters

*adb-name*

Specifies from one to three ADB names, up to 32 characters each.

### 4.2.6.38 ipoe-profile

## Syntax

**ipoe-profile** *name*

**no ipoe-profile**

## Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry ipoe ipoe-profile

## Description

This command configures the IPoE profile that is used for creating new IPoE session.

The **no** form of this command removes the configuration.

## Default

no ipoe-profile

## Parameters

*name*

Specifies the IPoE name, up to 32 characters.

### 4.2.6.39 match

## Syntax

**match**

## Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry match

## Description

Commands in this context configure the match attribute values for the entry.

### 4.2.6.40 l2-access-id

#### Syntax

**l2-access-id** *string*  
**no l2-access-id**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry match l2-access-id

#### Description

This command configures the value of the Layer 2 access ID that the entry-point entry expects to match when system matches the session to the entry. The value specified can be either an exact match or a partial match if the **string-mask** is configured in the entry-point match configuration.

The **no** form of this command removes the configuration.

#### Default

no l2-access-id

#### Parameters

*string*

Specifies the Layer 2 access ID name, up to 64 characters.

### 4.2.6.41 up-group

#### Syntax

**up-group** *name*  
**no up-group**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry match up-group

#### Description

This command configures the name of the UP group to match the session to the entry. The matching value can be either an exact match or a partial match if the following command is configured in the entry-point match configuration for the UP group.

```
configure mobile-gateway profile bng entry-point match string-mask
```

The MAG-c derives the UP group by comparing the incoming packet's Layer 2 access ID, S-tag, and C-tag to the UP group configuration in the following context.

```
configure mobile-gateway pdn bng up-group
```

The **no** form of this command removes the configuration.

### Default

no up-group

### Parameters

*name*

Specifies the UP group name, up to 32 characters.

## 4.2.6.42 up-ip

### Syntax

**up-ip** *ip-address*

**no up-ip**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry match up-ip

### Description

This command configures the value of the UP IP address that the entry-point entry expects to match when system matches the session to the entry.

The **no** form of this command removes the configuration.

### Default

no up-ip

### Parameters

*ip-address*

Specifies the UP IP address.

Values:

- ipv4-address – a.b.c.d
- ipv6-address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

### 4.2.6.43 up-node-id

#### Syntax

**up-node-id** *node-id*  
**no up-node-id**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry match up-node-id

#### Description

This command configures the value of the UP node ID to match the session to the entry. The matching value can be either an exact match or a partial match if the following command is configured in the entry-point match configuration for the UP node ID.

```
configure mobile-gateway profile bng entry-point match string-mask
```

The UP node ID is not explicitly present in incoming IBCP packets. The MAG-c derives the UP node ID from the PFCP association to which the IBCP tunnel is tied. If this command configures an IP address, it only matches the packet if the PFCP signaled node ID equals the configured IP address, even if the configuration matches the incoming IBCP source IP address.

The **no** form of this command removes the configuration.

#### Default

no up-node-id

#### Parameters

*node-id*

Specifies the UP node ID as an IP address or a name, up to 255 characters.

### 4.2.6.44 vlan

#### Syntax

**[no] vlan**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry match vlan

#### Description

This command enables the VLAN configuration context that the entry-point entry expects to match when system matches the session to the entry.

The **no** form of this command disables the VLAN configuration context.

**Default**

vlan

**4.2.6.45 c-vlan****Syntax****c-vlan start tag end tag****no c-vlan****Context****[Tree]** configure mobile-gateway profile bng entry-point entry match vlan c-vlan**Description**

This command configures a customer VLAN (inner VLAN) range for matching the entry-point entry. If the customer VLAN of a trigger packet falls within the specified range, a match occurs.

The **no** form of this command removes the configuration.

**Default**

no c-vlan

**Parameters****start tag**

Specifies the start of the inner VLAN range.

Values: 1 to 4096

**end tag**

Specifies the end of the inner VLAN range.

Values: 1 to 4096

**4.2.6.46 s-vlan****Syntax****s-vlan start tag end tag****no s-vlan****Context****[Tree]** configure mobile-gateway profile bng entry-point entry match vlan s-vlan**Description**

This command configures a service VLAN (outer VLAN) range for matching the entry-point entry. If the customer VLAN of a trigger packet falls within the specified range, a match occurs.

The **no** form of this command removes the configuration.

### Default

no s-vlan

### Parameters

#### **start tag**

Specifies the start of the outer VLAN range.

Values: 1 to 4096

#### **end tag**

Specifies the end of the outer VLAN range.

Values: 1 to 4096

## 4.2.6.47 multiple-sessions-per-mac

### Syntax

**multiple-sessions-per-mac limit** *number* **discriminator** *attribute*

**no multiple-sessions-per-mac**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry multiple-sessions-per-mac

### Description

This command configures a maximum limit for the number of session per MAC address and a discriminator to differentiate between different sessions from same MAC address.

The **no** form of this command removes the configuration and disallows multiple sessions per MAC address.

### Default

no multiple-sessions-per-mac

### Parameters

#### *number*

Specifies the maximum number of sessions per MAC address.

Values: 2 to 8191

#### *attribute*

Specifies a discriminator for distinguishing between different sessions on the same MAC address.

Values: circuit-id | remote-id

#### 4.2.6.48 pppoe

##### Syntax

**pppoe**

##### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry pppoe

##### Description

This command enables the context for configuring a PPPoE related configuration for the entry-point entry.

##### Default

pppoe

#### 4.2.6.49 authentication-flow

##### Syntax

**authentication-flow**

##### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry pppoe authentication-flow

##### Description

This command enables the context for configuring PPPoE authentication flow for the entry-point entry.

##### Default

authentication-flow

#### 4.2.6.50 padi-adb

##### Syntax

**padi-adb** *adb-name* [*adb-name*]

**no padi-adb**

##### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry pppoe authentication-flow padi-adb

##### Description

This command configures the PPPoE PADI authentication flow that the system looks up in the specified authentication-databases; using the specified order upon receiving a PPPoE PADI packet.



The **no** form of this command removes the configuration.

**Default**

no padi-adb

**Parameters**

*adb-name*

Specifies the ADB name, up to 32 characters, up to three ADB names can be specified.

### 4.2.6.51 pap-chap-adb

**Syntax**

**pap-chap-adb** *adb-name* [*adb-name*]

**no pap-chap-adb**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry pppoe authentication-flow pap-chap-adb

**Description**

This command configures the PPPoE PAP/CHAP authentication flow that the system looks up in the specified authentication-databases; using the specified order for PPPoE PAP/CHAP authentication.

The **no** form of this command removes the configuration.

**Default**

no pap-chap-adb

**Parameters**

*adb-name*

Specifies the ADB name, up to 32 characters; up to three ADB names can be specified.

### 4.2.6.52 pppoe-profile

**Syntax**

**pppoe-profile** *name*

**no pppoe-profile**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry pppoe pppoe-profile

**Description**

This command configures the PPPoE profile.

The **no** form of this command removes the configuration.

**Default**

no pppoe-profile

**Parameters**

*name*

Specifies the PPPOE profile name, up to 32 characters.

### 4.2.6.53 session-id

**Syntax**

**session-id**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry pppoe session-id

**Description**

This command enables the context for configuring a PPPoE session ID for the entry-point entry.

**Default**

session-id

### 4.2.6.54 allocation-scope

**Syntax**

**allocation-scope** *scope*

**no allocation-scope**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry pppoe session-id allocation-scope

**Description**

This command configures the PPPoE session ID allocation scope. The allocated PPPoE session ID is unique within the specified scope.

The **no** form of this command removes the configuration.

**Default**

allocation-scope l2-circuit-mac

## Parameters

*scope*

Specifies the PPPoE session ID allocation scope type.

Values: I2-circuit | I2-circuit-mac

### 4.2.6.55 random

#### Syntax

[no] random

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry pppoe session-id random

#### Description

This command configures the system to allocate PPPoE session IDs randomly within the specified scope.

The **no** form of this command configures the system to allocate PPPoE session IDs incrementally.

#### Default

no random

### 4.2.6.56 python-policy

#### Syntax

**python-policy** *policy-name*

**no python-policy**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry python-policy

#### Description

This command configures a Python policy for access protocols like PPPoE.

#### Default

no python-policy

#### Parameters

*policy-name*

Specifies the policy name, up to 32 characters.

### 4.2.6.57 session-limits

#### Syntax

**session-limits**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry session-limits

#### Description

Commands in this context configure the maximum number of sessions within a specific scope.



**Note:** Limits can be changed at any time but are only applied to new sessions. Existing sessions are not removed when the session limits decrease.

### 4.2.6.58 per-l2-access-id

#### Syntax

**per-l2-access-id** *number*

**per-l2-access-id** **infinite**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry session-limits per-l2-access-id

#### Description

This command configures the maximum number of sessions for each learned Layer 2 access ID.

#### Default

per-l2-access-id infinite

#### Parameters

*number*

Specifies the maximum number of sessions.

Values: 1 to 1048576

**infinite**

Keyword to specify that there is no limit for the number of sessions.

### 4.2.6.59 per-l2-circuit

#### Syntax

**per-l2-circuit** *number*

## per-l2-circuit infinite

### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry session-limits per-l2-circuit

### Description

This command configures the maximum number of sessions for each learned Layer 2 circuit.



**Note:** A Layer 2 circuit (l2-circuit) is the combination of a Layer 2 access ID (l2-access-id; for example, a port) and any VLANs learned on the Layer 2 access ID.

### Default

per-l2-circuit infinite

### Parameters

*number*

Specifies the maximum number of sessions.

Values: 1 to 1048576

**infinite**

Keyword to specify that there is no limit for the number of sessions.

## 4.2.6.60 per-up

### Syntax

**per-up** *number*

**per-up** **infinite**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry session-limits per-up

### Description

This command configures the maximum number of sessions for each learned BNG-UP.

### Default

per-up infinite

### Parameters

*number*

Specifies the maximum number of sessions.

Values: 1 to 1048576

**infinite**

Keyword to specify that there is no limit for the number of sessions.

### 4.2.6.61 session-lockout-profile

#### Syntax

```
session-lockout-profile profile-name  
[no] session-lockout-profile
```

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry session-lockout-profile

#### Description

This command references a session lockout profile. Session lockout is enabled for the sessions that match this BNG EP entry. The **session-lockout-profile** command in the following context specifies the session lockout profile.

```
configure mobile-gateway profile bng
```

The **no** form of this command removes the session lockout profile from the BNG EP entry. Session lockout is disabled for the sessions that match this BNG EP entry.

#### Default

no session-lockout-profile

#### Parameters

*profile-name*

Specifies the name of the session lockout profile, up to 32 characters.

### 4.2.6.62 shutdown

#### Syntax

```
[no] shutdown
```

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry shutdown

#### Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

### 4.2.6.63 subscriber-identification

#### Syntax

**subscriber-identification** {**per-session** | **multi-session**}

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry subscriber-identification

#### Description

This command configures how to identify a subscriber.

#### Default

subscriber-identification per-session

#### Parameters

##### **per-session**

Keyword to specify that every session is a different subscriber.

##### **multi-session**

Keyword to specify that a subscriber can contain multiple sessions, according to the **multi-session-key** configuration.

### 4.2.6.64 multi-session-key

#### Syntax

[**no**] **multi-session-key**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry subscriber-identification multi-session-key

#### Description

This command configures the information that is included in the multi-session key. This information is used to group sessions into a subscriber.

The **no** form of this command removes the configuration.

#### Default

no multi-session-key

#### 4.2.6.65 c-vlan

##### Syntax

[no] c-vlan

##### Context

**[Tree]** configure mobile-gateway profile bng entry-point entry subscriber-identification multi-session-key c-vlan

##### Description

This command configures the **multi-session-key** to include the customer VLAN (inner VLAN).  
The **no** form of this command removes the customer VLAN from the **multi-session-key**.

##### Default

no c-vlan

#### 4.2.6.66 circuit-id

##### Syntax

[no] circuit-id

##### Context

**[Tree]** configure mobile-gateway profile bng entry-point entry subscriber-identification multi-session-key circuit-id

##### Description

This command configures the **multi-session-key** to include the circuit ID.  
The **no** form of this command removes the circuit ID from the **multi-session-key**.

##### Default

no circuit-id

#### 4.2.6.67 string-mask

##### Syntax

[no] string-mask

##### Context

**[Tree]** configure mobile-gateway profile bng entry-point entry subscriber-identification multi-session-key circuit-id string-mask



## Description

This command enables the context for configuring an optional string mask for masking the circuit ID.  
The **no** form of this command disables the context.

## Default

no string-mask

## 4.2.6.68 prefix

### Syntax

**prefix length** *mask-length*

**prefix string** *mask-string*

**no prefix**

### Context

**[Tree]** configure mobile-gateway profile bng entry-point entry subscriber-identification multi-session-key  
circuit-id string-mask prefix

## Description

This command configures a prefix mask for the circuit ID.  
The **no** form of this command removes the configuration.

## Default

no prefix

## Parameters

*mask-length*

Specifies to remove the specified amount of bytes from beginning of the session's circuit ID.

Values: 1 to 127

*mask-string*

Specifies to remove the specified string if the beginning of the session's circuit ID matches, up to 127 characters.



**Note:** For a string match, the wildcard character "\*" can be used as a match criteria.

## 4.2.6.69 suffix

### Syntax

**suffix length** *mask-length*

**suffix string** *mask-string*  
**no suffix**

### Context

**[Tree]** configure mobile-gateway profile bng entry-point entry subscriber-identification multi-session-key  
circuit-id string-mask suffix

### Description

This command configures a prefix mask for circuit ID.  
The **no** form of this command removes the configuration.

### Default

no suffix

### Parameters

*mask-length*

Specifies to remove the specified amount of bytes from end of the session's circuit ID.  
Values: 1 to 127

*mask-string*

Specifies to remove the specified string if the end of the session's circuit ID matches, up to 127 characters.



**Note:** For a string match, the wildcard character "\*" can be used as a match criteria.

## 4.2.6.70 I2-access-id

### Syntax

[no] I2-access-id

### Context

**[Tree]** configure mobile-gateway profile bng entry-point entry subscriber-identification multi-session-key  
I2-access-id

### Description

This command configures the **multi-session-key** to include the Layer 2 access ID.  
The **no** form of this command removes the Layer 2 access ID from the **multi-session-key**.

### Default

no I2-access-id

### 4.2.6.71 mac

#### Syntax

[no] mac

#### Context

**[Tree]** configure mobile-gateway profile bng entry-point entry subscriber-identification multi-session-key  
mac

#### Description

This command configures the **multi-session-key** to include the MAC address.

The **no** form of this command removes the MAC address from the **multi-session-key**.

#### Default

no mac

### 4.2.6.72 remote-id

#### Syntax

[no] remote-id

#### Context

**[Tree]** configure mobile-gateway profile bng entry-point entry subscriber-identification multi-session-key  
remote-id

#### Description

This command configures the **multi-session-key** to include the remote ID.

The **no** form of this command removes the remote ID from the **multi-session-key**.

#### Default

no remote-id

### 4.2.6.73 string-mask

#### Syntax

[no] string-mask

#### Context

**[Tree]** configure mobile-gateway profile bng entry-point entry subscriber-identification multi-session-key  
remote-id string-mask

## Description

This command enables the context for configuring an optional string mask for masking the remote ID.

The **no** form of this command disables the context.

## Default

no string-mask

## 4.2.6.74 prefix

### Syntax

**prefix length** *mask-length*

**prefix string** *mask-string*

**no prefix**

### Context

**[Tree]** configure mobile-gateway profile bng entry-point entry subscriber-identification multi-session-key remote-id string-mask prefix

## Description

This command configures a prefix mask for the remote ID.

The **no** form of this command removes the configuration.

## Default

no prefix

## Parameters

*mask-length*

Specifies to remove the specified amount of bytes from beginning of the session's remote ID.

Values: 1 to 127

*mask-string*

Specifies to remove the specified string if the beginning of the session's remote ID matches, up to 127 characters.



**Note:** For a string match, the wildcard character "\*" can be used as a match criteria.

## 4.2.6.75 suffix

### Syntax

**suffix length** *mask-length*

**suffix string** *mask-string*  
**no suffix**

### Context

**[Tree]** configure mobile-gateway profile bng entry-point entry subscriber-identification multi-session-key remote-id string-mask suffix

### Description

This command configures a prefix mask for remote ID.  
The **no** form of this command removes the configuration.

### Default

no suffix

### Parameters

*mask-length*

Specifies to remove the specified amount of bytes from end of the session's remote ID.  
Values: 1 to 127

*mask-string*

Specifies to remove the specified string if the end of the session's remote ID matches, up to 127 characters.



**Note:** For a string match, the wildcard character "\*" can be used as a match criteria.

## 4.2.6.76 s-vlan

### Syntax

[no] s-vlan

### Context

**[Tree]** configure mobile-gateway profile bng entry-point entry subscriber-identification multi-session-key s-vlan

### Description

This command configures the **multi-session-key** to include the subscriber VLAN (outer VLAN).  
The **no** form of this command removes the subscriber VLAN from the **multi-session-key**.

### Default

no s-vlan

## 4.2.6.77 session-limit

### Syntax

**session-limit** *limit*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point entry subscriber-identification session-limit

### Description

This command configures the maximum number of sessions per subscriber.



**Note:** To change the session limit, you must first administratively disable the BNG entry point using the **shutdown** command in the following context.

```
configure mobile-gateway profile bng entry-point
```

The changed limit is applied only to new sessions. Existing sessions are not removed when the session limit decreases.

### Default

session-limit 256

### Parameters

*limit*

Specifies the maximum number of sessions.

Values: 2 to 256

## 4.2.6.78 match

### Syntax

**match** *match-id* [**attribute** *attr*]

**no match** *match-id*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point match

### Description

This command configures one or more match attributes in the entry-point match configuration. An entry configuration must contain configurations for all non-optional match attributes to be a matched entry. Match attributes that are optional may be included or not in the matched entry configuration.

The **no** form of this command removes the specified match configuration.

## Parameters

### *match-id*

Specifies the match ID.

Values: 1 to 4

### *attr*

Specifies a matching attribute.

Values:

- *c-vlan* – specifies the operator VLAN tag as a match attribute
- *l2-access-id* – specifies the Layer 2 access ID as a match attribute
- *s-vlan* – specifies the service VLAN tag as a match attribute
- *up-ip* – specifies the BNG-UP IP address as a match attribute
- *up-group* – specifies the UP group as a match attribute
- *up-node-id* – specifies the UP node ID as a match attribute

## 4.2.6.79 optional

### Syntax

[no] optional

### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point match optional

### Description

This command configures the match attribute as optional. Match attributes that are optional may be included or not in a matched entry configuration.

The **no** form of this command removes the configuration.

### Default

no optional

## 4.2.6.80 string-mask

### Syntax

[no] string-mask

### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point match string-mask

## Description

This command enables an optional string mask for masking the match attribute.

The **no** form of this command disables the string-mask configuration for the match attribute.

## Default

no string-mask

### 4.2.6.81 prefix

## Syntax

**prefix length** *mask-length*

**prefix string** *mask-string*

**no prefix**

## Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point match string-mask prefix

## Description

This command configures a prefix mask for the match attribute.

The **no** form of this command removes the configuration.

## Default

no prefix

## Parameters

*mask-length*

Specifies to remove the specified number of bytes from the start of the value before comparing it with the end of the match attribute's value.

Values: 1 to 127

*mask-string*

Specifies to remove the specified string from the start of the value before comparing it with the end of the match attribute's value, up to 127 characters.



**Note:** The wildcard character "\*" can be used in the mask string.

### 4.2.6.82 suffix

## Syntax

**suffix length** *mask-length*

**suffix string** *mask-string*



## no suffix

### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point match string-mask suffix

### Description

This command configures a suffix mask for the match attribute.

The **no** form of this command removes the configuration.

### Default

no suffix

### Parameters

#### *mask-length*

Specifies to remove the specified number of bytes from the end of the session value before comparing the session value with the start of the match attribute's value.

Values: 1 to 127

#### *mask-string*

Specifies to remove the specified string from the end of the session value before comparing the session value with the start of the match attribute's value, up to 127 characters.



**Note:** The wildcard character "\*" can be used in the mask string.

## 4.2.6.83 shutdown

### Syntax

[no] shutdown

### Context

[\[Tree\]](#) configure mobile-gateway profile bng entry-point shutdown

### Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

#### 4.2.6.84 fsg-profile

##### Syntax

[no] **fsg-profile** *name*

##### Context

**[Tree]** configure mobile-gateway profile bng fsg-profile

##### Description

This command creates a specific FSG profile. Commands in the specific FSG context configure the FSG behavior for the specified FSG profile name.

The **no** form of this command removes the specified FSG profile.

##### Parameters

*name*

Specifies the name, up to 32 characters. The first character in the name cannot be an underscore (\_) or a number.

#### 4.2.6.85 active-standby-selection

##### Syntax

**active-standby-selection**

##### Context

**[Tree]** configure mobile-gateway profile bng fsg-profile active-standby-selection

##### Description

Commands in this context configure the selection method for the active and standby BNG-UPs.

#### 4.2.6.86 active-change-without-failure

##### Syntax

**active-change-without-failure** **always**  
**active-change-without-failure** **initial-only** [*60..900*]  
**active-change-without-failure** **never**  
**no active-change-without-failure**

##### Context

**[Tree]** configure mobile-gateway profile bng fsg-profile active-standby-selection active-change-without-failure

## Description

This command configures whether the active BNG-UP can be changed if it did not fail.



**Note:** The health and the failure health threshold that is configured in the following context determine the failure of the BNG-UP.

```
configure mobile-gateway profile bng fsg-profile health-calculation failure-threshold
```

The **no** form of this command reverts to the default.

## Default

active-change-without-failure always

## Parameters

### always

Keyword to specify that the standby BNG-UP can always become active, even if the current active BNG-UP did not fail. This is known as the revertive mode, and is often combined with the following command.

```
configure mobile-gateway pdn bng up-group up preferred
```

### initial-only [60..900]

Keyword followed by a time-value in seconds during which the **always** mode applies. The timer starts after the PFCP association for the first BNG-UP is set up. When the timer expires, the **never** mode applies.

Values: 60 to 900

### never

Keyword to specify that the current active BNG-UP remains active until it fails. This is known as the non-revertive mode.

## 4.2.6.87 failure-lockout

### Syntax

**failure-lockout** *seconds*

**no failure-lockout**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng fsg-profile active-standby-selection failure-lockout

### Description

This command configures how long a BNG-UP is locked out after an FSG failure; for example, an explicit FSG create or modify error response or receiving an FSG oper down notification from the BNG-UP.

During lockout, a BNG-UP cannot become active or standby. If the BNG-UP has an active or standby role, the MAG-c removes that role from the BNG-UP. When the lockout time expires, the MAG-c removes the lockout state, which acts as a recovery trigger for FSG reselection.

The **no** form of this command reverts to the default.

### Default

failure-lockout 60

### Parameters

*seconds*

Specifies the lockout timer in seconds.

Values: 30 to 3600

## 4.2.6.88 hold-off-on-degradation

### Syntax

**hold-off-on-degradation** *milliseconds*

**no hold-off-on-degradation**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng fsg-profile active-standby-selection hold-off-on-degradation

### Description

This command configures the hold timer before reselecting a BNG-UP after a degradation event. By default, the hold timer is disabled to immediately execute potential switchovers because of failure.

When a degradation event occurs while a hold timer is running because of another degradation or recovery event, the new hold timer is only applied if it is shorter than the already running one.

See "Active/standby selection triggers" in the MAG-c Control Plane Function Guide for more information about the timer and the degradation events that trigger an active/standby selection.

The **no** form of this command reverts to the default, which is disabled.

### Default

hold-off-on-degradation 0

### Parameters

*milliseconds*

Specifies the hold timer for degradation events in milliseconds.

Values: 0 to 100000

## 4.2.6.89 hold-off-on-recovery

### Syntax

**hold-off-on-recovery** *milliseconds*  
**no hold-off-on-recovery**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng fsg-profile active-standby-selection hold-off-on-recovery

### Description

This command configures the hold timer before reselecting a BNG-UP after a recovery event.

When a degradation event occurs while a hold timer is running because of another degradation or recovery event, the new hold timer is only applied if it is shorter than the already running one.

The **no** form of this command reverts to the default.

See "Active/standby selection triggers" in the MAG-c Control Plane Function Guide for more information about the timer and the recovery events that trigger an active/standby selection.

### Default

hold-off-on-recovery 5000

### Parameters

*milliseconds*

Specifies the hold timer for recovery events in milliseconds.

Values: 5000 to 300000

## 4.2.6.90 default-standby-mode

### Syntax

**default-standby-mode** {warm | hot}  
**no default-standby-mode**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng fsg-profile default-standby-mode

### Description

This command configures the default standby mode for the sessions in the FSG.

The **no** form of this command reverts to the default.

### Default

default-standby-mode hot

## Parameters

**warm | hot**

Keyword to specify the standby mode.

Values:

- **warm** – specifies that the MAG-c creates the sessions on the standby BNG-UP only after a switch-over happens
- **hot** – specifies that the MAG-c pre-creates the sessions on the standby BNG-UP

Default: hot

### 4.2.6.91 description

#### Syntax

**description** *description-string*

**no description**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng fsg-profile description

#### Description

This command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

#### Default

no description

#### Parameters

*description-string*

Specifies the description. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.6.92 health-calculation

#### Syntax

**health-calculation**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng fsg-profile health-calculation

## Description

Commands in this context configure the calculation of per-BNG-UP and -FSG aggregate health.

### 4.2.6.93 aggregation-mode

#### Syntax

```
aggregation-mode mode  
no aggregation-mode
```

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng fsg-profile health-calculation aggregation-mode

#### Description

This command configures how to aggregate the Layer 2 access ID and network realm health values.



**Note:** The MAG-c takes all Layer 2 access IDs and network realms that are configured to be monitored into consideration. For BNG-UPs that did not send a health value, the MAG-c assumes a health value of 0%.

The **no** form of this command reverts to the default.

#### Default

aggregation-mode lowest

#### Parameters

*mode*

Specifies the aggregation mode.

Values:

- lowest – specifies to use the lowest monitored health value
- average – specifies to use the arithmetic mean of all monitored health values

### 4.2.6.94 failure-threshold

#### Syntax

```
failure-threshold [1..100]  
no failure-threshold
```

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng fsg-profile health-calculation failure-threshold

## Description

This command configures the threshold to declare a BNG-UP failed. If the health of an active BNG-UP is below the threshold, the MAG-c tries to make another BNG-UP active even if non-revertive settings are applied.

The **no** form of this command reverts to the default.

## Default

failure-threshold 1

## Parameters

[1..100]

Specifies the minimal health value to consider a BNG-UP not failed.

Values: 1 to 100

### 4.2.6.95 include-l2-access-ids

#### Syntax

[no] **include-l2-access-ids**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng fsg-profile health-calculation include-l2-access-ids

#### Description

This command includes the Layer 2 access IDs in the aggregate health calculation. By default, the MAG-c includes all Layer 2 access IDs defined for the BNG-UP in the UP group from which the FSG is created.

The **no** form of this command excludes the Layer 2 access IDs from the aggregate health calculation.

#### Default

include-l2-access-ids

### 4.2.6.96 network-realm

#### Syntax

[no] **network-realm** *realm*

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng fsg-profile health-calculation network-realm

#### Description

This command configures to monitor the specified network realm. A network realm is also called a network instance and corresponds usually to a service name on a BNG-UP.



The **no** form of this command disables the monitoring of the specified network realm.

### Parameters

*realm*

Specifies the name of the network realm to be monitored, up to 80 characters.

## 4.2.6.97 mac-prefix

### Syntax

**mac-prefix** *mac-prefix*

**no mac-prefix**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng fsg-profile mac-prefix

### Description

This command configures the MAC prefix from which a per-FSG MAC is derived.

The **no** form of this command reverts to the default.

### Default

mac-prefix 02:00:5e:00

### Parameters

*mac-prefix*

Specifies the MAC prefix.

Values: aa:bb:cc:dd (32 bits)

## 4.2.6.98 upf-fsg-template

### Syntax

**upf-fsg-template** *name*

**no upf-fsg-template**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng fsg-profile upf-fsg-template

### Description

This command configures the FSG template to apply on the BNG-UP.

The **no** form of this command removes the configuration.

**Default**

no upf-fsg-template

**Parameters**

*name*

Specifies the name of the BNG-UP FSG template, up to 32 characters.

### 4.2.6.99 ipoe-profile

**Syntax**

[no] ipoe-profile *name*

**Context**

**[Tree]** configure mobile-gateway profile bng ipoe-profile

**Description**

This command configures a profile for IPoE sessions.

The **no** form of this command removes the IPoE profile name from the configuration.

**Parameters**

*name*

Specifies the IPoE profile name, up to 32 characters.

### 4.2.6.100 description

**Syntax**

**description** *description-string*

no description

**Context**

**[Tree]** configure mobile-gateway profile bng ipoe-profile description

**Description**

This command enables a text description stored in the configuration file for a configuration context. The **description** command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

**Default**

no description

## Parameters

### *description-string*

Specifies the description character string. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.6.101 dot1p

### Syntax

**dot1p** *dot1p-priority*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng ipoe-profile dot1p

### Description

This command configures the IEEE 802.1p priority value assigned to the control packets sent to the IPoE session.

### Default

dot1p 7

### Parameters

#### *dot1p-priority*

Specifies the dot1p priority value.

Values: 0 to 7

## 4.2.6.102 dscp

### Syntax

**dscp** *dscp-name*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng ipoe-profile dscp

### Description

This command configures the Ethernet dot1p value for any IPoE control plane messages sent by the BNG CPF, independent of the protocol.

### Default

dscp nc2

## Parameters

*dscp-name*

Specifies a DSCP name.

Values: be | ef | cp1 | cp2 | cp3 | cp4 | cp5 | cp6 | cp7 | cp9 | cs1 | cs2 | cs3 | cs4 | cs5 | nc1 | nc2 | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cp11 | cp13 | cp15 | cp17 | cp19 | cp21 | cp23 | cp25 | cp27 | cp29 | cp31 | cp33 | cp35 | cp37 | cp39 | cp41 | cp42 | cp43 | cp44 | cp45 | cp47 | cp49 | cp50 | cp51 | cp52 | cp53 | cp54 | cp55 | cp57 | cp58 | cp59 | cp60 | cp61 | cp62 | cp63

### 4.2.6.103 require-chaddr-same-as-l2

#### Syntax

[no] **require-chaddr-same-as-l2**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng ipoe-profile require-chaddr-same-as-l2

#### Description

This command enables the verification of the client MAC address in the DHCP chaddr field. The chaddr field is equal to the source Ethernet MAC address. This is only checked if the triggering packet for the session is DHCPv4, and it is not checked for any subsequent messages.

The **no** form of this command disables the verification of the client MAC address in the DHCP chaddr field.

#### Default

require-chaddr-same-as-l2

### 4.2.6.104 l2tp-group

#### Syntax

**l2tp-group** *name*

**no l2tp-group** *name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group

#### Description

This command configures a group of L2TP tunnels for PPPoE LAC connectivity.

The **no** form of this command removes the group from the configuration.

## Parameters

*name*

Specifies the L2TP group name, up to 32 characters.

### 4.2.6.105 avp-hiding

#### Syntax

**avp-hiding** {**never** | **sensitive** | **always**}

**no avp-hiding**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group avp-hiding

#### Description

This command configures whether the H bit in the header of L2TP AVPs must be set. If this is not configured, the BNG-UP chooses the hiding level.

The **no** form of this command removes the configuration.



**Note:** This command only applies to AVPs which may have the H bit set, that is, some AVPs can never have the H bit set, regardless of the configuration set with this command.

#### Parameters

**never**

Keyword to never set the H bit.

**sensitive**

Keyword to set the H bit only for AVPs that contain sensitive information.

**always**

Keyword to set the H bit for all AVPs.

### 4.2.6.106 challenge

#### Syntax

**challenge** {**never** | **always**}

**no challenge**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group challenge

#### Description

This command configures whether the tunnel authentication (challenge-response) must be performed. If this is not configured, the BNG-UP chooses whether to perform the tunnel authentication.

The **no** form of this command removes the configuration.

### Parameters

#### **never**

Keyword to never perform tunnel authentication.

#### **always**

Keyword to always perform tunnel authentication.

## 4.2.6.107 description

### Syntax

**description** *description-string*

**no description**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group description

### Description

This command enables a text description stored in the configuration file for a configuration context. The **description** command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

### Default

no description

### Parameters

*description-string*

Specifies the description character string. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.6.108 destruct-timeout

### Syntax

**destruct-timeout** *seconds*

**no destruct-timeout**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group destruct-timeout

## Description

This command configures the time in seconds that operational data of a disconnected tunnel persists on the BNG-UP. If this is not configured, the BNG-UP chooses the time to keep operational data.

The **no** form of this command removes the configuration.

## Parameters

*seconds*

Specifies the timeout in seconds.

Values: 60 to 86400

## 4.2.6.109 hello-interval

### Syntax

**hello-interval infinite**

**hello-interval *seconds***

**no hello-interval**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group hello-interval

## Description

This command configures the interval for sending Hello messages to the L2TP peer. If this is not configured, the BNG-UP chooses the interval.

The **no** form of this command removes the configuration.

## Parameters

**infinite**

Keyword to specify an infinite interval; that is, Hello messages are not sent.

*seconds*

Specifies the interval in seconds.

Values: 10 to 3600

## 4.2.6.110 idle-timeout

### Syntax

**idle-timeout infinite**

**idle-timeout *seconds***

**no idle-timeout**

## Context

[Tree] configure mobile-gateway profile bng l2tp-group idle-timeout

## Description

This command configures the time in seconds before an established tunnel without active sessions is disconnected. If this is not configured, the BNG-UP chooses the timeout.

The **no** form of this command removes the configuration.

## Parameters

### **infinite**

Keyword to specify an infinite timeout; that is, an established tunnel is held up and never disconnected.

### *seconds*

Specifies the timeout in seconds.

Values: 0 to 3600

## 4.2.6.111 local-name

### Syntax

**local-name** *name*

**no local-name**

### Context

[Tree] configure mobile-gateway profile bng l2tp-group local-name

### Description

This command configures the LAC hostname that the BNG-UP sends in L2TP messages. If this is not configured, the BNG-UP chooses the hostname.

The **no** form of this command removes the name from the configuration.

### Parameters

#### *name*

Specifies the LAC hostname, up to 64 characters.

## 4.2.6.112 max-retries-established

### Syntax

**max-retries-established** *max*

**no max-retries-established**



## Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group max-retries-established

## Description

This command configures the number of retries allowed for established tunnels before their control connection goes down. If this is not configured, the BNG-UP chooses the number of retries.

The **no** form of this command removes the configuration.

## Parameters

*max*

Specifies the number of retries.

Values: 2 to 7

### 4.2.6.113 max-retries-non-established

## Syntax

**max-retries-non-established** *max*

**no max-retries-non-established**

## Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group max-retries-non-established

## Description

This command configures the number of retries allowed before a non-established tunnel is considered unreachable. If this is not configured, the BNG-UP chooses the number of retries.

The **no** form of this command removes the configuration.

## Parameters

*max*

Specifies the number of retries.

Values: 2 to 7

### 4.2.6.114 password

## Syntax

**password** *password* [**hash** | **hash2**]

**no password**

## Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group password

## Description

This command configures a shared, salt-encrypted secret for the tunnel authentication and the AVP hiding. If this is not configured, the BNG-UP chooses the password.

The **no** form of this command removes the configuration.

## Parameters

*password*

Specifies the password, up to 64 characters.

**hash | hash2**

Specifies the version of the hash algorithm used for the encryption of the secret. If the **hash** or **hash2** keyword is not used, the secret is assumed to be in an unencrypted clear text form.



**Note:** For security purposes, all keys are automatically stored in an encrypted hash form in the configuration. The configuration in the `system>security>hash-control` context defines the hash form when the password is configured in clear text format (that is, **hash** or **hash2** is not specified).

## 4.2.6.115 receive-window-size

### Syntax

**receive-window-size** *window*

**no receive-window-size**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group receive-window-size

### Description

This command configures the receive window size that is offered to the remote peer. The remote peer can send the specified number of control messages before waiting for an acknowledgment. If this is not configured, the BNG-UP chooses the window size.

The **no** form of this command removes the configuration.

### Parameters

*window*

Specifies the receive window size.

Values: 4 to 1024

## 4.2.6.116 selection-algorithm

### Syntax

**selection-algorithm** *type*  
**no selection-algorithm**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group selection-algorithm

### Description

This command configures how sessions are assigned within a set of tunnels with the same preference level. If this is not configured, the BNG-UP chooses the algorithm.

For more information about the preference level, see the following command.

```
configure mobile-gateway profile bng l2tp-group tunnel preference
```

The **no** form of this command removes the configuration.

### Parameters

*type*

Specifies the type of the selection algorithm.

Values:

- existing-first — keyword to first attempt using an existing tunnel
- weighted — keyword to equally distribute sessions using a fixed order; that is, when two tunnels have an equal number of sessions, a round-robin algorithm with a fixed internal order is used
- weighted-random — keyword to equally distribute sessions in a random fashion; that is, when two tunnels have an equal number of sessions, a random tunnel is chosen

## 4.2.6.117 session-limit

### Syntax

**session-limit unlimited**  
**session-limit** *limit*  
**no session-limit**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group session-limit

## Description

This command configures the maximum number of sessions that can be set up within the group. The limit is enforced on the BNG-UP. If this is not configured, the BNG-UP chooses the session limit.

The **no** form of this command removes the configuration.

## Parameters

### **unlimited**

Keyword to specify that there is no explicit limit; the system level L2TP limits on the BNG-UP restrict the number of sessions.

### *limit*

Specifies the session limit.

Values: 1 to 250000

## 4.2.6.118 tunnel

### Syntax

**tunnel** *name*

**no tunnel** *name*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel

## Description

This command configures an L2TP tunnel.

The **no** form of this command removes the tunnel from the configuration.

## Parameters

### *name*

Specifies the L2TP tunnel name, up to 32 characters.

## 4.2.6.119 avp-hiding

### Syntax

**avp-hiding** {**never** | **sensitive** | **always**}

**no avp-hiding**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel avp-hiding

## Description

This command configures whether the H bit in the header of L2TP AVPs must be set. If this is not configured, the BNG-UP chooses the hiding level.

The **no** form of this command removes the configuration.



**Note:** This command only applies to AVPs which may have the H bit set, that is, some AVPs can never have the H bit set, regardless of the configuration set with this command.

## Parameters

### **never**

Keyword to never set the H bit.

### **sensitive**

Keyword to set the H bit only for AVPs that contain sensitive information.

### **always**

Keyword to set the H bit for all AVPs.

## 4.2.6.120 challenge

### Syntax

**challenge** {**never** | **always**}

**no challenge**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel challenge

## Description

This command configures whether the tunnel authentication (challenge-response) must be performed. If this is not configured, the BNG-UP chooses whether to perform the tunnel authentication.

The **no** form of this command removes the configuration.

## Parameters

### **never**

Keyword to never perform tunnel authentication.

### **always**

Keyword to always perform tunnel authentication.

## 4.2.6.121 description

### Syntax

**description** *description-string*

**no description**

## Context

[Tree] configure mobile-gateway profile bng l2tp-group tunnel description

## Description

This command enables a text description stored in the configuration file for a configuration context. The **description** command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

## Default

no description

## Parameters

*description-string*

Specifies the description character string. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.6.122 destruct-timeout

## Syntax

**destruct-timeout** *seconds*

**no destruct-timeout**

## Context

[Tree] configure mobile-gateway profile bng l2tp-group tunnel destruct-timeout

## Description

This command configures the time in seconds that operational data of a disconnected tunnel persists on the BNG-UP. If this is not configured, the BNG-UP chooses the time to keep operational data.

The **no** form of this command removes the configuration.

## Parameters

*seconds*

Specifies the timeout in seconds.

Values: 60 to 86400

### 4.2.6.123 hello-interval

#### Syntax

**hello-interval infinite**  
**hello-interval** *seconds*  
**no hello-interval**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel hello-interval

#### Description

This command configures the interval for sending Hello messages to the L2TP peer. If this is not configured, the BNG-UP chooses the interval.

The **no** form of this command removes the configuration.

#### Parameters

##### **infinite**

Keyword to specify an infinite interval; that is, Hello messages are not sent.

##### *seconds*

Specifies the interval in seconds.

Values: 10 to 3600

### 4.2.6.124 idle-timeout

#### Syntax

**idle-timeout infinite**  
**idle-timeout** *seconds*  
**no idle-timeout**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel idle-timeout

#### Description

This command configures the time in seconds before an established tunnel without active sessions is disconnected. If this is not configured, the BNG-UP chooses the timeout.

The **no** form of this command removes the configuration.

## Parameters

### **infinite**

Keyword to specify an infinite timeout; that is, an established tunnel is held up and never disconnected.

### *seconds*

Specifies the timeout in seconds.

Values: 0 to 3600

## 4.2.6.125 local-address

### Syntax

**local-address** *ip-address*

**no local-address**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel local-address

### Description

This command configures the local IP address to initiate the tunnel.

The **no** form of this command removes the local address.

### Parameters

#### *ip-address*

Specifies an IPv4 address.

Values: a.b.c.d

## 4.2.6.126 local-name

### Syntax

**local-name** *name*

**no local-name**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel local-name

### Description

This command configures the LAC hostname that the BNG-UP sends in L2TP messages. If this is not configured, the BNG-UP chooses the hostname.

The **no** form of this command removes the name from the configuration.



## Parameters

*name*

Specifies the LAC hostname, up to 64 characters.

### 4.2.6.127 max-retries-established

#### Syntax

**max-retries-established** *max*

**no max-retries-established**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel max-retries-established

#### Description

This command configures the number of retries allowed for established tunnels before their control connection goes down. If this is not configured, the BNG-UP chooses the number of retries.

The **no** form of this command removes the configuration.

#### Parameters

*max*

Specifies the number of retries.

Values: 2 to 7

### 4.2.6.128 max-retries-non-established

#### Syntax

**max-retries-non-established** *max*

**no max-retries-non-established**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel max-retries-non-established

#### Description

This command configures the number of retries allowed before a non-established tunnel is considered unreachable. If this is not configured, the BNG-UP chooses the number of retries.

The **no** form of this command removes the configuration.

#### Parameters

*max*

Specifies the number of retries.

Values: 2 to 7

## 4.2.6.129 password

### Syntax

**password** *password* [**hash** | **hash2**]  
**no password**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel password

### Description

This command configures a shared, salt-encrypted secret for the tunnel authentication and the AVP hiding. If this is not configured, the BNG-UP chooses the password.

The **no** form of this command removes the configuration.

### Parameters

*password*

Specifies the password, up to 64 characters.

**hash** | **hash2**

Specifies the version of the hash algorithm used for the encryption of the secret. If the **hash** or **hash2** keyword is not used, the secret is assumed to be in an unencrypted clear text form.



**Note:** For security purposes, all keys are automatically stored in an encrypted hash form in the configuration. The configuration in the `system>security>hash-control` context defines the hash form when the password is configured in clear text format (that is, **hash** or **hash2** is not specified).

## 4.2.6.130 preference

### Syntax

**preference** *value*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel preference

### Description

This command configures the relative preference of the tunnel for selection purposes. The selection algorithm defines how to select tunnels with the same preference.

## Parameters

*value*

Specifies the preference, with 0 indicating the highest preference.

Values: 0 to 16777215

### 4.2.6.131 receive-window-size

#### Syntax

**receive-window-size** *window*

**no receive-window-size**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel receive-window-size

#### Description

This command configures the receive window size that is offered to the remote peer. The remote peer can send the specified number of control messages before waiting for an acknowledgment. If this is not configured, the BNG-UP chooses the window size.

The **no** form of this command removes the configuration.

## Parameters

*window*

Specifies the receive window size.

Values: 4 to 1024

### 4.2.6.132 remote-address

#### Syntax

**remote-address** *ip-address*

**no remote-address**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel remote-address

#### Description

This command configures the remote IP address of the peer. The tunnel is initiated toward the configured peer.

The **no** form of this command removes the remote address.

## Parameters

*ip-address*

Specifies an IPv4 address.

Values: a.b.c.d

### 4.2.6.133 remote-name

#### Syntax

**remote-name** *name*

**no remote-name**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel remote-name

#### Description

This command configures the expected hostname of the L2TP peer. If the L2TP signaled value does not match the expected value, the setup fails. If this is not configured, the BNG-UP determines whether to perform a hostname check.

The **no** form of this command removes the name from the configuration.

#### Parameters

*name*

Specifies the peer hostname, up to 64 characters.

### 4.2.6.134 session-limit

#### Syntax

**session-limit unlimited**

**session-limit** *limit*

**no session-limit**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel session-limit

#### Description

This command configures the maximum number of sessions that can be set up within the tunnel. The limit is applied on the BNG-UP. If this is not configured, the BNG-UP chooses the session limit.

The **no** form of this command removes the configuration.

## Parameters

### **unlimited**

Keyword to specify that there is no explicit limit; the system level L2TP limits on the BNG-UP restrict the number of sessions.

### *limit*

Specifies the session limit.

Values: 1 to 65535

## 4.2.6.135 shutdown

### Syntax

**shutdown**

**no shutdown**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel shutdown

### Description

This command administratively disables the tunnel. Shutting down an L2TP tunnel excludes the tunnel from the grouped tunnels signaled in PFCP when setting up a LAC session (for example, the tunnel is excluded from the BNG-UP tunnel selection).

The **no** form of this command enables the tunnel.

## 4.2.6.136 use-df-bit

### Syntax

**use-df-bit set**

**no use-df-bit**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group tunnel use-df-bit

### Description

This command configures whether the DF bit in the L2TP IP header is set. If this is not configured, the BNG-UP chooses whether to set the DF bit.

The *no* form of this command removes the configuration.

### Parameters

#### *set*

Specifies whether to set the DF bit.

Values:

- true – keyword to specify that the DF bit is set
- false – keyword to specify that the DF bit is not set

#### 4.2.6.137 use-df-bit

##### Syntax

**use-df-bit** *set*  
**no use-df-bit**

##### Context

[\[Tree\]](#) configure mobile-gateway profile bng l2tp-group use-df-bit

##### Description

This command configures whether the DF bit in the L2TP IP header is set. If this is not configured, the BNG-UP chooses whether to set the DF bit.

The *no* form of this command removes the configuration.

##### Parameters

*set*

Specifies whether to set the DF bit.

Values:

- true – keyword to specify that the DF bit is set
- false – keyword to specify that the DF bit is not set

#### 4.2.6.138 pppoe-profile

##### Syntax

**[no] pppoe-profile** *pppoe-profile-name*

##### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile

##### Description

This command configures a BNG PPPoE profile.

The **no** form of this command removes the profile name from the configuration.

##### Default

no pppoe-profile

## Parameters

*pppoe-profile-name*

Specifies the PPPoE profile name, up to 32 characters.

### 4.2.6.139 authentication

#### Syntax

**authentication**

#### Context

**[Tree]** configure mobile-gateway profile bng pppoe-profile authentication

#### Description

Commands in this context configure authentication for the PPP profile.

### 4.2.6.140 chap-challenge-length

#### Syntax

**chap-challenge-length min *minimum-length* max *maximum-length***

**no chap-challenge-length**

#### Context

**[Tree]** configure mobile-gateway profile bng pppoe-profile authentication chap-challenge-length

#### Description

The command configures the length of the CHAP challenge that is sent to the PPPoE client which is chosen randomly between the configured minimum and maximum length.

#### Default

chap-challenge-length min 32 max 64

#### Parameters

*minimum-length*

Specifies the minimum length of the CHAP challenge generated by the system.

Values: 8 to 64

*maximum-length*

Specifies the maximum length of the CHAP challenge generated by the system.

Values: 8 to 64

### 4.2.6.141 method

#### Syntax

```
method {pap | chap | pref-chap | pref-pap}  
no method
```

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile authentication method

#### Description

This command configures the authentication protocol to use to authenticate the session.  
The **no** form of this command reverts to the default value.

#### Default

method pref-chap

#### Parameters

##### **pap**

Keyword to only attempt authentication with PAP.

##### **chap**

Keyword to only attempt authentication with CHAP.

##### **pref-chap**

Keyword to negotiate the first CHAP followed by PAP upon failure.

##### **pref-pap**

Keyword to negotiate the first PAP followed by CHAP upon failure.

### 4.2.6.142 description

#### Syntax

```
description description-string  
no description
```

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile description

#### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.



**Default**

no description

**Parameters**

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

**4.2.6.143 discovery****Syntax**

**discovery**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile discovery

**Description**

Commands in this context configure PPPoE discovery signaling.

**Default**

discovery

**4.2.6.144 ac-name****Syntax**

**ac-name** *name*

**no ac-name**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile discovery ac-name

**Description**

This command configures the Access Concentrator (AC) name that is sent in PPPoE Active Discovery Offer (PADO) messages.

The **no** form of this command removes the name from the configuration.

**Default**

no ac-name

## Parameters

*name*

Specifies the AC name, up to 128 characters.

### 4.2.6.145 generate-ac-cookie

#### Syntax

[no] generate-ac-cookie

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile discovery generate-ac-cookie

#### Description

This command enables the use of AC-Cookie tags during the PPPoE discovery phase that is included in PADO messages.

The **no** form of this command disables the generation of AC-Cookie tags.

#### Default

generate-ac-cookie

### 4.2.6.146 dot1p-value

#### Syntax

dot1p-value *dot1p-value*

no dot1p-value

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile dot1p-value

#### Description

This command configures the Ethernet dot1p value for any PPPoE control plane messages sent by the CPF. The **no** form of this command reverts to the default value.

#### Default

dot1p-value 7

#### Parameters

*dot1p-value*

Specifies the Ethernet dot1p value for any PPPoE control plane messages.

Values: 0 to 7

#### 4.2.6.147 lcp

##### Syntax

lcp

##### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile lcp

##### Description

Commands in this context configure PPPoE LCP signaling.

#### 4.2.6.148 keep-alive

##### Syntax

keep-alive

##### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile lcp keep-alive

##### Description

Commands in this context handle LCP keepalive parameters. These parameters are sent to the UP in case LCP Keepalive Offload is enabled.

#### 4.2.6.149 ignore-magic-numbers

##### Syntax

[no] ignore-magic-numbers

##### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile lcp keep-alive ignore-magic-numbers

##### Description

This command disables checking the Magic-Number field in the LCP Echo-Request and skips Echo-Reply messages.

The **no** form of this command enables checking the Magic-Number field.

##### Default

no ignore-magic-numbers

## 4.2.6.150 interval

### Syntax

**interval** *seconds*  
**no interval**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile lcp keep-alive interval

### Description

This command configures the interval at which keepalive messages are sent to the PPPoE client. The **no** form of this command disables the interval, that is, the BNG receives periodic LCP keepalives.

### Default

interval 30

### Parameters

*seconds*

Specifies the time interval, in seconds, at which keepalives are transmitted.

Values: 4 to 300

## 4.2.6.151 tries

### Syntax

**tries** *tries*  
**no tries**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile lcp keep-alive tries

### Description

This command configures the number LCP keepalive messages that are tried before the client is considered down.

The **no** form of this command reverts to the default value.

### Default

tries 3

## Parameters

*tries*

Specifies the number of keepalive messages that are tried before the related client is considered down.

Values: 1 to 5

### 4.2.6.152 max-mtu

#### Syntax

**max-mtu** *mtu-bytes*

**no max-mtu**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile lcp max-mtu

#### Description

This command configures the maximum MTU that to be installed on the BNG-UP. This is combined with the Maximum Receive Unit (MRU) received from the PPPoE Client. If the Client's MRU is smaller than or equal to the MTU bytes then that value is installed as the UP MTU. If the value is larger, the configured value is installed as the UP MTU.

The **no** form of this command reverts to the default value.

#### Default

max-mtu 1492

#### Parameters

*mtu-bytes*

Specifies the maximum MTU size, in bytes.

Values: 512 to 9154

### 4.2.6.153 mru

#### Syntax

**mru** *mru-bytes*

**no mru**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile lcp mru

#### Description

This command configures the MRU that is signaled toward the PPPoE client.

The **no** form of this command reverts to the default value.

### Default

mru 1492

### Parameters

*mru-bytes*

Specifies the MRU, in bytes.

Values: 512 to 9154

## 4.2.6.154 renegotiation

### Syntax

**renegotiation** {**ignore** | **terminate-pppoe-session**}

**no renegotiation**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile lcp renegotiation

### Description

This command specifies whether LCP renegotiation messages are silently ignored or terminate the PPPoE session. The **no** form of this command reverts to the default value.

### Default

renegotiation terminate-pppoe-session

### Parameters

**ignore**

Keyword to ignore LCP renegotiation messages.

**terminate-pppoe-session**

Keyword to specify that LCP renegotiation messages terminate the PPPoE session.

## 4.2.6.155 require-max-payload-tag

### Syntax

[**no**] **require-max-payload-tag**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile lcp require-max-payload-tag

### Description

This command enables the max-payload-tag as a requirement to send or accept MRUs larger than 1492. The **no** form of this command disables the requirement.

### Default

require-max-payload-tag

## 4.2.6.156 padi-removes-existing-session

### Syntax

[no] padi-removes-existing-session

### Context

[\[Tree\]](#) configure mobile-gateway profile bng pppoe-profile padi-removes-existing-session

### Description

This command enables an incoming PADI to remove an existing conflicting PPPoE session. The **no** form of this command does not remove the existing session.

### Default

no padi-removes-existing-session

## 4.2.6.157 ra-profile

### Syntax

[no] ra-profile *name*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng ra-profile

### Description

This command enables the specified RA profile. The **no** form of this command removes the profile name.

### Parameters

*name*

Specifies the RA profile name, up to 32 characters.

## 4.2.6.158 advertisement-interval

### Syntax

**advertisement-interval**

### Context

**[Tree]** configure mobile-gateway profile bng ra-profile advertisement-interval

### Description

This command enables the context for configuring the minimum and maximum advertisement interval for RA messages. Messages are periodically sent with an interval chosen randomly between the minimum and maximum.

## 4.2.6.159 max

### Syntax

**max** *seconds*

### Context

**[Tree]** configure mobile-gateway profile bng ra-profile advertisement-interval max

### Description

This command sets the maximum advertisement interval.

### Default

max 600

### Parameters

*seconds*

Specifies the interval in seconds.

Values: 4 to 1800

## 4.2.6.160 min

### Syntax

**min** *auto*

**min** *seconds*

### Context

**[Tree]** configure mobile-gateway profile bng ra-profile advertisement-interval min



## Description

This command sets the minimum advertisement interval either to a fixed value or to a percentage of the maximum advertisement interval.

## Default

min auto

## Parameters

### auto

Keyword to set the minimum interval to 33% of the maximum interval.

### seconds

Specifies the interval in seconds.

Values: 4 to 1800

## 4.2.6.161 description

### Syntax

**description** *description-string*

**no description**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng ra-profile description

### Description

This command enables a text description stored in the configuration file for a configuration context. The **description** command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

### Default

no description

### Parameters

#### *description-string*

Specifies the description character string. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.6.162 force-unicast-mac

#### Syntax

[no] force-unicast-mac

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng ra-profile force-unicast-mac

#### Description

This command enables sending of RA messages to the unicast MAC address of the session.

The **no** form of this command disables sending of RA messages to the unicast MAC address of the session. In this case, RA messages are sent to the all-nodes multicast MAC address (33:33:00:00:00:01).

#### Default

force-unicast-mac

### 4.2.6.163 options

#### Syntax

options

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng ra-profile options

#### Description

This command enables the context for configuring options to include in RA messages to the IPv6 client.

### 4.2.6.164 hop-limit

#### Syntax

hop-limit *limit*

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng ra-profile options hop-limit

#### Description

This command specifies the value of the Hop Limit field of the IPv6 header of the outgoing RA message.

#### Default

hop-limit 255

## Parameters

*limit*

Specifies the value of the hop limit.

Values: 1 to 255

### 4.2.6.165 mtu

#### Syntax

**mtu** *bytes*

**mtu not-included**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng ra-profile options mtu

#### Description

This command specifies whether to include the MTU option in the RA message, and if included, what value it contains.

#### Default

mtu not-included

#### Parameters

*bytes*

Specifies the MTU value in bytes.

Values: 1280 to 9212

**not-included**

Keyword to not include the MTU option in the RA message.

### 4.2.6.166 on-link

#### Syntax

**[no] on-link**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng ra-profile options on-link

#### Description

This command specifies whether to set the on-link flag in any SLAAC prefix included in the RA message.

**Default**

on-link

**4.2.6.167 other-configuration****Syntax**`[no] other-configuration`**Context**[\[Tree\]](#) configure mobile-gateway profile bng ra-profile options other-configuration**Description**

This command specifies whether to set the other-configuration flag in the RA message.

**Default**

no other-configuration

**4.2.6.168 reachable-time****Syntax**`reachable-time milliseconds`**Context**[\[Tree\]](#) configure mobile-gateway profile bng ra-profile options reachable-time**Description**

This command specifies the reachable time included in the RA message. A zero value means that the router does not specify a value, and that the client can choose a value based on local configurations.

**Default**

reachable-time 0

**Parameters***milliseconds*

The time in milliseconds for a node to assume that a neighbor is reachable, after receiving a reachability confirmation.

Values: 0 to 3600000

## 4.2.6.169 retransmit-timer

### Syntax

**retransmit-timer** *milliseconds*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng ra-profile options retransmit-timer

### Description

This command specifies the retransmit timer included in the RA message. A zero value means that the router does not specify a value, and that the client can choose a value based on local configurations.

### Default

retransmit-timer 0

### Parameters

*milliseconds*

Retransmission time between NS messages.

Values: 0 to 1800000

## 4.2.6.170 router-lifetime

### Syntax

**router-lifetime auto**

**router-lifetime** *seconds*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng ra-profile options router-lifetime

### Description

This command specifies the router lifetime to include in the RA message. The router lifetime defines the validity period of the default router after receiving the RA message. It can be set either to a fixed value in seconds, or automatically to three times the maximum router advertisement interval.

### Default

router-lifetime auto

### Parameters

*seconds*

Specifies the router lifetime in seconds.

Values: 4 to 9000

## 4.2.6.171 radius-authentication-profile

### Syntax

[no] radius-authentication-profile *name*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile

### Description

This command enables the specified RADIUS authentication profile. The RADIUS authentication profile defines system behavior when using the RADIUS server to authenticate BNG sessions.

The **no** form of this command removes the profile name.

### Parameters

*name*

Specifies the RADIUS authentication profile name, up to 32 characters.

## 4.2.6.172 apn-format

### Syntax

apn-format *form*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile apn-format

### Description

This command specifies the APN format in RADIUS messages. The format applies to all attributes that reflect the APN; for example, Called-Station-Id and User-Name.

### Default

apn-format selected

### Parameters

*form*

Specifies the APN format.

Values:

- **real** – specifies to use the real, unmodified APN as signaled during the FWA session setup, including the OI if it is present
- **real-ni-only** – specifies to use the real APN as signaled during the FWA session setup, but without the OI if it is present

- selected – specifies to use the selected APN as is (returned after initial authentication); if no selected APN is available, the system falls back to the real-ni-only option

### 4.2.6.173 description

#### Syntax

**description** *description-string*

**no description**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile description

#### Description

This command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the string from the configuration.

#### Default

no description

#### Parameters

*description-string*

Specifies the description. Allowed values are any string up to 80 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.6.174 ignore-unknown-attributes

#### Syntax

**ignore-unknown-attributes**

**no ignore-unknown-attributes**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile ignore-unknown-attributes

#### Description

This command ignores unknown RADIUS attributes in a received RADIUS message.

The **no** form of this command rejects a message with unknown RADIUS attributes.

#### Default

no ignore-unknown-attributes

### 4.2.6.175 include-attribute

#### Syntax

[no] include-attribute

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute

#### Description

This command enables RADIUS attributes to be included in the RADIUS Access-Request message. The **no** form of this command reverts to the default.

#### Default

no include-attribute

### 4.2.6.176 access-loop-options

#### Syntax

[no] access-loop-options

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute access-loop-options

#### Description

This command includes access loop information such as BBF access loop characteristics, DSL line state, and DSL type. The BBF access loop characteristics are returned as BBF-specific RADIUS attributes, where DSL line state and DSL type are returned as Nokia-specific RADIUS VSAs.

The **no** form of this command reverts to the default.

#### Default

no access-loop-options

### 4.2.6.177 acct-multi-session-id

#### Syntax

[no] acct-multi-session-id

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute acct-multi-session-id



**Description**

This command includes the Acct-Multi-Session-Id in the Access-Request message.

The **no** form of this command reverts to the default.

**Default**

no acct-multi-session-id

**4.2.6.178 acct-session-id****Syntax**

[no] acct-session-id

**Context**

**[Tree]** configure mobile-gateway profile bng radius-authentication-profile include-attribute acct-session-id

**Description**

This command includes the Acct-Session-Id in the Access-Request message.

The **no** form of this command reverts to the default value.

**Default**

no acct-session-id

**4.2.6.179 called-station-id****Syntax**

[no] called-station-id

**Context**

**[Tree]** configure mobile-gateway profile bng radius-authentication-profile include-attribute called-station-id

**Description**

This command includes the APN as the Called-Station-Id attribute in the Access Request message for FWA sessions.

The **no** form of this command reverts to the default.

**Default**

no called-station-id

### 4.2.6.180 calling-station-id

#### Syntax

**calling-station-id** [*type*]  
**no calling-station-id**

#### Context

**[Tree]** configure mobile-gateway profile bng radius-authentication-profile include-attribute calling-station-id

#### Description

This command includes the Calling-Station-Id in the Access-Request message.  
The **no** form of this command reverts to the default.

#### Default

no calling-station-id

#### Parameters

*type*

Specifies to include the string that is put in the RADIUS Calling-Station-Id attribute, if included in RADIUS authentication request messages.

Values: I2-circuit | mac-address | remote-id

### 4.2.6.181 circuit-id

#### Syntax

**[no] circuit-id**

#### Context

**[Tree]** configure mobile-gateway profile bng radius-authentication-profile include-attribute circuit-id

#### Description

This command includes the Agent-Circuit-Id in the Access-Request message.  
The **no** form of this command reverts to the default.

#### Default

no circuit-id

## 4.2.6.182 dhcp-options

### Syntax

[no] dhcp-options

### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute dhcp-options

### Description

This command passes DHCPv4 options from the received DHCPv4 messages on the access ingress to the RADIUS server in the Access-Request message. The DHCPv4 options are carried in the ALU VSA Alc-ToServer-Dhcp-Options.

The **no** form of this command reverts to the default.

### Default

no dhcp-options

## 4.2.6.183 dhcp-vendor-class-id

### Syntax

[no] dhcp-vendor-class-id

### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute dhcp-vendor-class-id

### Description

This command includes the DHCP Vendor Class Identification option in the received DHCP packet, as Alc-DHCP-Vendor-Class-Id in the Access-Request message.

The **no** form of this command reverts to the default.

### Default

no dhcp-vendor-class-id

## 4.2.6.184 dhcp6-options

### Syntax

[no] dhcp6-options

## Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute dhcp6-options

## Description

This command passes DHCPv6 options from the received DHCPv6 messages on the access ingress, to the RADIUS server in the Access-Request message. The DHCPv6 options are carried in the ALU VSA Alc-ToServer-Dhcp6-Options.

The **no** form of this command reverts to the default.

## Default

no dhcp6-options

### 4.2.6.185 gprs-negotiated-qos-profile

## Syntax

**[no] gprs-negotiated-qos-profile**

## Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute gprs-negotiated-qos-profile

## Description

This command includes the HSS/UDM QoS values received in FWA setup messages as the 3GPP-GPRS-Negotiated-QoS-Profile attribute in the Access-Request message.

The **no** form of this command reverts to the default.

## Default

no gprs-negotiated-qos-profile

### 4.2.6.186 imeisv

## Syntax

**[no] imeisv**

## Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute imeisv

## Description

This command includes the IMEI value received in FWA setup messages as the 3GPP-IMEISV attribute in the Access-Request message.

The **no** form of this command reverts to the default.

**Default**

no imeisv

**4.2.6.187 imsi****Syntax**

[no] imsi

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute imsi

**Description**

This command includes the IMSI received in FWA setup messages as the 3GPP-IMSI attribute in the Access-Request message.

The **no** form of this command reverts to the default.

**Default**

no imsi

**4.2.6.188 ipoe-hostname****Syntax**

[no] ipoe-hostname

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute ipoe-hostname

**Description**

This command includes the DHCPv4 option Host Name as Alc-IPoE-Hostname in the Access-Request message.

The **no** form of this command reverts to the default.

**Default**

no ipoe-hostname

**4.2.6.189 mac-address****Syntax**

[no] mac-address

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute mac-address

**Description**

This command includes the session MAC address as the Alc-Client-Hardware-Addr in the Access-Request message.

The **no** form of this command reverts to the default.

**Default**

no mac-address

**4.2.6.190 nas-identifier****Syntax**

**[no] nas-identifier**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute nas-identifier

**Description**

This command includes the Nas-Identifier in the Access-Request message.

The **no** form of this command reverts to the default.

**Default**

no nas-identifier

**4.2.6.191 nas-port-id****Syntax**

**nas-port-id [ prefix-string *string*] [suffix *suffix-option*] [suffix-string *suffix*]**

**no nas-port-id**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute nas-port-id

**Description**

This command includes the Nas-Port-Id in the Access-Request message.

The **no** form of this command reverts to the default.

**Default**

no nas-port-id

## Parameters

### *string*

Specifies that a user configurable string is added to the RADIUS NAS port attribute, up to eight characters.

### *suffix-option*

Specifies the suffix type to be added to the RADIUS NAS port attribute.

Values: circuit-id | remote-id

### *suffix*

Specifies the string, up to 64 characters, added as a suffix.

## 4.2.6.192 nas-port-type

### Syntax

**nas-port-type** [*value*]

**no nas-port-type**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute nas-port-type

### Description

This command includes the Nas-Port-Type in the Access-Request message. The **no** form of this command reverts to the default.

### Default

no nas-port-type

### Parameters

#### *value*

Specifies the integer value for the Nas-Port-Type AVP.

Values: 0 to 255

## 4.2.6.193 pppoe-service-name

### Syntax

**[no] pppoe-service-name**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute pppoe-service-name

### Description

This command includes the PPPoE session's service name as the Alc-PPPoE- Service-Name in the Access-Request message.

The **no** form of this command reverts to the default.

### Default

no pppoe-service-name

## 4.2.6.194 rat-type

### Syntax

[no] rat-type

### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute rat-type

### Description

This command includes the RAT value received in FWA setup messages as the 3GPP-RAT-Type attribute in the Access-Request message.

The **no** form of this command reverts to the default.

### Default

no rat-type

## 4.2.6.195 remote-id

### Syntax

[no] remote-id

### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute remote-id

### Description

This command includes the Agent-Remote-Id in the Access-Request message. The **no** form of this command reverts to the default.

### Default

no remote-id



#### 4.2.6.196 session-s-nssai

##### Syntax

[no] session-s-nssai

##### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute session-s-nssai

##### Description

This command enables the inclusion of the 3GPP-Session-S-NSSAI attribute.

The **no** form of this command reverts to the default.

##### Default

no session-s-nssai

#### 4.2.6.197 supported-features

##### Syntax

[no] supported-features

##### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute supported-features

##### Description

This command enables the inclusion of the 3GPP-Supported-Features Attribute.

The **no** form of this command reverts to the default.

##### Default

no supported-features

#### 4.2.6.198 up-group

##### Syntax

[no] up-group

##### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute up-group

**Description**

This command includes the UP group in the authentication message.

The **no** form of this command reverts to the default.

**Default**

no up-group

**4.2.6.199 up-info****Syntax**

[no] up-info

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute up-info

**Description**

This command includes various UP informational attributes such as source IP and Node ID in the authentication message.

The **no** form of this command reverts to the default.

**Default**

no up-info

**4.2.6.200 user-location-info****Syntax**

[no] user-location-info

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile include-attribute user-location-info

**Description**

This command includes the user location information received in FWA setup messages as the 3GPP-User-Location-Info attribute in the Access-Request message.

The **no** form of this command reverts to the default.

**Default**

no user-location-info

## 4.2.6.201 password

### Syntax

**password** *secret* [**hash** | **hash2**]  
**no password**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile password

### Description

This command includes the specified password as the User-Password in the access-request message. The **no** form of this command removes reverts to the default.

### Default

no password

### Parameters

*secret*

Specifies a text string, up to 64 characters, containing the password.

**hash**

Specifies that the key is entered in an encrypted form. If the **hash** or **hash2** parameter is not used, the key is assumed to be in an unencrypted, clear text form. For security, all keys are stored in encrypted form in the configuration file with the **hash** or **hash2** parameter specified.

**hash2**

Specifies that the key is entered in a more complex encrypted form that involves more variables than the key value alone, meaning that the **hash2** encrypted variable cannot be copied and pasted. If the **hash** or **hash2** parameter is not used, the key is assumed to be in an unencrypted, clear text form. For security, all keys are stored in encrypted form in the configuration file with the **hash** or **hash2** parameter specified.

## 4.2.6.202 radius-group

### Syntax

**radius-group** *radius-group*  
**no radius-group**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile radius-group

**Description**

This command configures the RADIUS group to use for the radius-authentication-profile.

The **no** form of this command removes the RADIUS group configuration.

**Default**

no radius-group

**Parameters**

*radius-group*

Specifies the RADIUS group name, up to 32 characters.

**4.2.6.203 user-name-format****Syntax**

**user-name-format**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile user-name-format

**Description**

Commands in this context configure how a user is represented to the RADIUS server.

**4.2.6.204 ascii-converted-circuit-remote-id****Syntax**

**[no] ascii-converted-circuit-remote-id**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile user-name-format ascii-converted-circuit-remote-id

**Description**

This command converts the Agent-Circuit-Id and Agent-Remote-Id contained in the User-Name to an ASCII format as hex digits for transmission to the RADIUS server.

The **no** form of this command disables the conversion.

**Default**

no ascii-converted-circuit-remote-id

## 4.2.6.205 domain-operation

### Syntax

**domain-operation** *operation* [**domain** *domain-string*]  
**no domain-operation**

### Context

**[Tree]** configure mobile-gateway profile bng radius-authentication-profile user-name-format domain-operation

### Description

This command configures an optional domain name action for the User-Name format.  
The **no** form of this command disables the domain operation.

### Default

no domain-operation

### Parameters

*operation*

Specifies a domain name action.

Values:

- **append** – keyword to append the specified domain name to the User-Name
- **default** – keyword to append the specified domain name to the User-Name if there is no existing one
- **replace** – keyword to replace the existing domain name in User-Name with the specified one
- **strip** – keyword to remove the existing domain-name in User-Name

*domain-string*

Specifies the domain string, up to 128 characters.

## 4.2.6.206 fixed-wireless-access

### Syntax

**fixed-wireless-access**

### Context

**[Tree]** configure mobile-gateway profile bng radius-authentication-profile user-name-format fixed-wireless-access

## Description

Commands in this context configure the username formatting for FWA users.

### 4.2.6.207 format

#### Syntax

`format form`

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile user-name-format fixed-wireless-access format

#### Description

This command specifies the username format for the FWA sessions. If a PAP/CHAP username is signaled during setup, this configuration is ignored and the signaled username is used.

#### Default

`format imsi-apn`

#### Parameters

*form*

Specifies the username format for FWA users.

Values:

- `imsi` – keyword to use a text representation of the IMSI as username
- `imsi-apn` – keyword to use a text representation of the IMSI and APN as username, separated by an `@` character
- `msisdn` – keyword to use a text representation of the MSISDN as username
- `msisdn-apn` – keyword to use a text representation of the MSISDN and APN as username, separated by an `@` character

### 4.2.6.208 ipoe

#### Syntax

`ipoe`

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile user-name-format ipoe

#### Description

Commands in this context configure username formatting for IPoE users.

## 4.2.6.209 format

### Syntax

**format** *form*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile user-name-format ipoe format

### Description

This command specifies the User-Name format for the IPoE session.

### Default

format mac-address

### Parameters

*form*

Specifies the username format for IPoE users.

Values:

- circuit-id – keyword to use the Circuit-Id as User-Name
- client-vendor-options – keyword to use the <Client-Id option>@<Vendor-Class option> combination as User-Name
- mac-address – keyword to use the session MAC address as User-Name
- mac-circuit-id – keyword to use the <MAC-Address>::<Circuit-id> combination as User-Name
- remote-id – keyword to use the Remote-Id as User-Name
- data-trigger-source-ip

## 4.2.6.210 mac-format

### Syntax

**mac-format** *mac-format*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile user-name-format ipoe mac-format

### Description

This command specifies the format of the MAC address in User-Name of IPoE session.

**Default**

mac-format "aa:"

**Parameters**

*mac-format*

Specifies the expected MAC address format.

Values: Only when the match is equal to, for example:

- ab for 00:0c:f1:99:85:b8
- XY- for 00-0C-F1-99-85-B8
- mmmm. for 0002.03aa.abff
- xx for 000cf19985b8

**4.2.6.211 pppoe****Syntax**

pppoe

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile user-name-format pppoe

**Description**

Commands in this context configure username formatting for PPPoE users.

**4.2.6.212 padi****Syntax**

padi

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile user-name-format pppoe padi

**Description**

Commands in this context configure PPPoE PADI authentication User-Name formats.

**4.2.6.213 format****Syntax**

format *form*



## Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile user-name-format pppoe padi  
format

## Description

This command specifies the User-Name format for the PPPoE session.

## Default

format mac-address

## Parameters

*form*

Specifies the User-Name format for PPPoE users.

Values:

- circuit-id – keyword to use the Circuit-Id as User-Name
- mac-address – keyword to use the session MAC address as User-Name
- remote-id – keyword to use the Remote-Id as User-Name

## 4.2.6.214 mac-format

### Syntax

**mac-format** *mac-format*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng radius-authentication-profile user-name-format pppoe padi  
mac-format

### Description

This command specifies the format of the MAC address in User-Name of PPPoE PADI session.

### Default

mac-format "aa:"

### Parameters

*mac-format*

Specifies the MAC address format.

Values: Only when match is equal to, for example:

- ab for 00:0c:f1:99:85:b8
- XY- for 00-0C-F1-99-85-B8
- mmmm. for 0002.03aa.abff
- xx for 000cf19985b8

## 4.2.6.215 session-lockout-profile

### Syntax

[no] **session-lockout-profile** *profile-name*

### Context

[Tree] configure mobile-gateway profile bng session-lockout-profile

### Description

This command specifies a session lockout profile that can be used to block a client after a specified number of session setup failures and established session disconnections (**failed-attempts**) within a specified time window (**attempt-window**). If a client is in the locked-out state, the BNG CPF drops all packets coming from the client. A locked-out client is unblocked when the specified block timer (**block**) expires or by using the **session-lockout** command in the **clear mobile-gateway bng** context.

The **no** form of this command removes the specified session lockout profile.

### Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

## 4.2.6.216 attempt-window

### Syntax

**attempt-window** *seconds*

### Context

[Tree] configure mobile-gateway profile bng session-lockout-profile attempt-window

### Description

This command specifies the time window in which the BNG CPF monitors the number of session setup failures and established session disconnections for a client. The client is blocked if that number exceeds the threshold (**failed-attempts**) within this time window.

### Default

attempt-window 300

### Parameters

*seconds*

Specifies the time window in seconds.

Values: 30 to 3600

## 4.2.6.217 block

### Syntax

**block** *seconds*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng session-lockout-profile block

### Description

This command defines the time during which a locked-out client stays in locked-out state. The BNG CPF drops all packets coming from the client during this time.

### Default

block 600

### Parameters

*seconds*

Specifies the time in seconds.

Values: 60 to 86400

## 4.2.6.218 description

### Syntax

**description** *description-string*

**no description**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng session-lockout-profile description

### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

### Default

no description

## Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.6.219 failed-attempts

#### Syntax

**failed-attempts** *number*

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng session-lockout-profile failed-attempts

#### Description

This command defines the number of session setup failures and established session disconnections within a specified time window (**attempt-window**) before the client is blocked.

#### Default

failed-attempts 3

#### Parameters

*number*

Specifies the number of session setup failures.

Values: 2 to 16

### 4.2.6.220 wpp

#### Syntax

**wpp**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng wpp

#### Description

Commands in this context configure interface-related WPP parameters.

## 4.2.6.221 portal

### Syntax

[no] portal *name*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng wpp portal

### Description

This command configures a WPP portal.

The **no** form of this command removes the configuration.

### Parameters

*name*

Specifies the name of the WPP portal, up to 32 characters.

## 4.2.6.222 ack-auth-retry-count

### Syntax

ack-auth-retry-count *number*

no ack-auth-retry-count

### Context

[\[Tree\]](#) configure mobile-gateway profile bng wpp portal ack-auth-retry-count

### Description

This command configures the number of retransmissions of an ACK\_AUTH message.

The **no** form of this command reverts to the default.

### Default

ack-auth-retry-count 5

### Parameters

*number*

Specifies the number of ACK\_AUTH retransmissions.

Values: 0 to 5

## 4.2.6.223 address

### Syntax

**address** *ip-address* | *ipv6-address*  
**no address**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng wpp portal address

### Description

This command configures the IP address of the portal.  
The **no** form of this command removes the configuration.

### Default

no address

### Parameters

*ip-address* | *ipv6-address*

Specifies an IPv4 or IPv6 unicast address.

Values:

- *ip-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

## 4.2.6.224 description

### Syntax

**description** *description-string*  
**no description**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng wpp portal description

### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

**Default**

no description

**Parameters**

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

#### 4.2.6.225 ntf-logout-retry-count

**Syntax**

**ntf-logout-retry-count** *number*

**no ntf-logout-retry-count**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng wpp portal ntf-logout-retry-count

**Description**

This command configures the number of retransmissions of an NTF\_LOGOUT message.

The **no** form of this command reverts to the default.

**Default**

ntf-logout-retry-count 5

**Parameters**

*number*

Specifies the number of NTF\_LOGOUT retransmissions.

Values: 0 to 5

#### 4.2.6.226 retry-interval

**Syntax**

**retry-interval** *seconds*

**no retry-interval**

**Context**

[\[Tree\]](#) configure mobile-gateway profile bng wpp portal retry-interval

### Description

This command configures the time interval, in number of seconds, between two consecutive retransmissions.

The **no** form of this command reverts to the default.

### Default

retry-interval 2

### Parameters

*seconds*

Specifies the time interval in seconds.

Values: 1 to 20

## 4.2.6.227 router

### Syntax

**router** *router-instance*

**no router**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng wpp portal router

### Description

This command configures the routing instance through which the portal is reachable. This is a mandatory configuration for the portal.

The **no** form of this command removes the configuration.

### Default

no router

### Parameters

*router-instance*

Specifies the routing instance, up to 32 characters.

## 4.2.6.228 secret

### Syntax

**secret** *password* [*hash* | *hash2*]

**no secret**



## Context

[\[Tree\]](#) configure mobile-gateway profile bng wpp portal secret

## Description

This command configures the secret that is used by WPPv2 to authenticate the messages between the portal and the BRAS.

The **no** form of this command removes the secret from the configuration.

## Default

no secret

## Parameters

*password*

Specifies the secret, up to 64 characters.

**hash** | **hash2**

Specifies the version of the hash algorithm used for the encryption of the secret. If the **hash** or **hash2** keyword is not used, the secret is assumed to be in an unencrypted clear text form.

### 4.2.6.229 shutdown

#### Syntax

**[no] shutdown**

#### Context

[\[Tree\]](#) configure mobile-gateway profile bng wpp portal shutdown

#### Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

### 4.2.6.230 source-address

#### Syntax

**source-address** *ip-address* | *ipv6-address*

**no source-address**

## Context

[\[Tree\]](#) configure mobile-gateway profile bng wpp portal source-address

## Description

This command configures the source IP address for sending WPP messages to the portal. The specified IP address must be an interface IP address in the routing instance (see [router](#)). This is a mandatory configuration for the portal.

The **no** form of this command removes the configuration.

## Default

no source-address

## Parameters

*ip-address* | *ipv6-address*

Specifies an IPv4 or IPv6 address.

Values:

- *ip-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

### 4.2.6.231 version

## Syntax

**version** *version*

**no version**

## Context

[\[Tree\]](#) configure mobile-gateway profile bng wpp portal version

## Description

This command configures the WPP protocol version that the portal uses.

The **no** form of this command reverts to the default.

## Default

version 2

## Parameters

*version*

Specifies the WPP protocol version.

---

Values: 1 to 2

### 4.2.6.232 portal-group

#### Syntax

**[no] portal-group** *name*

#### Context

**[Tree]** configure mobile-gateway profile bng wpp portal-group

#### Description

This command configures a WPP portal group.

The **no** form of this command removes the configuration.

#### Parameters

*name*

Specifies the name of the portal group, up to 32 characters.

### 4.2.6.233 description

#### Syntax

**description** *description-string*

**no description**

#### Context

**[Tree]** configure mobile-gateway profile bng wpp portal-group description

#### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

#### Default

no description

#### Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (**#**, **\$**, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.6.234 portal

### Syntax

[no] **portal** *name*

### Context

[\[Tree\]](#) configure mobile-gateway profile bng wpp portal-group portal

### Description

This command adds a WPP portal to the portal group. The portal is defined using the **portal** command in the following context (see [portal](#)).

```
configure mobile-gateway profile bng wpp
```

Multiple instances of this command are allowed.

The **no** form of this command removes the specified portal from the portal group.

### Parameters

*name*

Specifies the name of the portal, up to 32 characters.

## 4.2.6.235 realm

### Syntax

**realm** *realm*

**no realm**

### Context

[\[Tree\]](#) configure mobile-gateway profile bng wpp portal-group realm

### Description

This command specifies the network realm on the BNG-UP. BNG sessions within the realm are authenticated by the portals in the portal group. This is a mandatory configuration.

The **no** form of this command removes the configuration.

### Parameters

*realm*

Specifies the name of the network realm on the BNG-UP, up to 80 characters.

## 4.2.6.236 shutdown

### Syntax

[no] shutdown

### Context

[\[Tree\]](#) configure mobile-gateway profile bng wpp portal-group shutdown

### Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

## 4.2.7 configure mobile-gateway profile call-insight command descriptions

### 4.2.7.1 call-insight

#### Syntax

[no] call-insight

#### Context

[\[Tree\]](#) configure mobile-gateway profile call-insight

#### Description

Commands in this context configure call trace profile parameters.

### 4.2.7.2 all-ues

#### Syntax

[no] all-ues profile *profile-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile call-insight all-ues

#### Description

This command configures a call trace profile to use when tracing all UEs. The profile includes configuration to support tracing of specified events, reference point interfaces to capture control messages related to the traced UE user traffic, data volume control, output file size, time limit, and output file format.

The **no** form of this command removes the profile.

### Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

## 4.2.7.3 description

### Syntax

**description** *description-string*

**no description**

### Context

**[Tree]** configure mobile-gateway profile call-insight all-ues description

### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

### Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.7.4 events

### Syntax

**[no] events** *events*

### Context

**[Tree]** configure mobile-gateway profile call-insight all-ues events

### Description

This command configures events capturing for advanced debugging capabilities. Only use events configuration if needed and as instructed by Nokia technical support.

The **no** form of this command disables the specified event or, if no event is provided disables all events.

### Default

no events

## Parameters

*events*

Specifies the events.

Values: all | acctmgr | apm | bmc | dcm | dhcp | dth | slaac | ga | gal | gtp | gtpv2 | gxc | gxl | ike | lrdm | mip | msngr | p mip | rfl | rol | s6b | sctp | sd | sessmgr | sigmgr | swm | sww | sta | rpy | dpy | pfcg | nserv

### 4.2.7.5 format

#### Syntax

**format** *format*

**no format**

#### Context

[\[Tree\]](#) configure mobile-gateway profile call-insight all-ues format

#### Description

This command configures the format for live output and for output toward locally stored PCAP files. The **pcap** format outputs packets as a close replica of the input packets, and are accompanied with additional metadata to help debugging. This format requires a plugin for most packet inspection tools. The **simulated-pcap** format does not generate additional metadata and changes some packet fields to produce a PCAP file that can be read by packet inspection tools without an additional plugin.

#### Default

format simulated-pcap

#### Parameters

*format*

Specifies the output format.

Values:

- pcap – pcap requiring plugin
- simulated-pcap – pcap without plugin need

Default: simulated-pcap

### 4.2.7.6 live-output

#### Syntax

**live-output** *ip-addr* | *fqdn* [**port** *port*] [**router** *router-instance*]

**no live-output**

## Context

**[Tree]** configure mobile-gateway profile call-insight all-ues live-output

## Description

This command specifies to stream captured packets and events to the specified peer address. This automatically disables generating a locally stored PCAP file.

The **no** form of this command disables streaming of captured packets and events, and falls back to generating a locally stored PCAP file.

## Default

no live-output

## Parameters

### *ip-address*

Specifies the address.

Values:

- ipv4-address – a.b.c.d
- ipv6-address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

### *fqdn*

Specifies the fully qualified domain name, up to 255 characters (per label max 63).

### *port*

Specifies the port.

Values: 1 to 65535

Default: 29770

### *router-instance*

Specifies the router.

Values:

- router-name – "Base"
- service-id – 1 to 2147483647

Default: Base

## 4.2.7.7 path-management

### Syntax

**[no] path-management [ref-point *ref-point* | sba-service *sba-service*]**



## Context

[\[Tree\]](#) configure mobile-gateway profile call-insight all-ues path-management

## Description

This command enables capturing of path management messages on a per reference point or SBI service basis. The special reference point or service **all** enables tracing of all ref-points or services respectively.



**Note:** the **sx-n4** ref-point includes any messages sent over IBCP, such as DHCP and PPPoE.

The **no** version of this command disables path-management capture for the specified reference point interfaces or SBI services. If no reference point or service is specified, all path management is disabled. If the special reference point or service **all** is specified, tracing is disabled for all ref-points or services respectively.

## Default

no path-management ref-point all

no path-management sba-service all

## Parameters

*ref-point*

Specifies the reference point.

Values: all | s11 | s5 | sx-n4

*sba-service*

Specifies the SBI service.

Values: all | nnrf-disc | nnrf-nfm

### 4.2.7.8 ref-point

## Syntax

**ref-point** *ref-point*

**no ref-point** [*ref-point*]

## Context

[\[Tree\]](#) configure mobile-gateway profile call-insight all-ues ref-point

## Description

This command configures on which interfaces to capture control messages related to the traced UE.

The **no** version of this command disables tracing the specified ref-point, or, if no ref-point is specified, disables tracing on all ref-points.

## Default

no ref-point

## Parameters

*ref-point*

Specifies the interface.

Values: all | radius | s11 | s5 | sx-n4

### 4.2.7.9 sba-service

#### Syntax

**sba-service** *sba-service*

**no sba-service** [*sba-service*]

#### Context

[\[Tree\]](#) configure mobile-gateway profile call-insight all-ues sba-service

#### Description

This command configures to trace a single SBI service when call-trace is started for a specific FWA UE.

The **no** form of this command falls back to the default to trace all services when executed without any parameters. When executed on a specific service, it removes tracing for that service.

#### Default

no sba-service

#### Parameters

*sba-service*

Specifies the SBI service.

Values: all | namf-comm | nchf-convergedcharging | npcfsmpolicycontrol | nsmf-pdusession | nudm-sdm | nudm-uecm

### 4.2.7.10 size-limit

#### Syntax

**size-limit** *size-limit*

**no size-limit**

#### Context

[\[Tree\]](#) configure mobile-gateway profile call-insight all-ues size-limit

#### Description

This command configures the maximum data volume in output.

The **no** form of this command reverts to the default.

**Default**

size-limit 1000

**Parameters**

*size-limit*

Specifies the size limit in MB.

Values: 0 to 1000, 0 means unlimited

Default: 1000

### 4.2.7.11 time-limit

**Syntax**

**time-limit** *time-limit*

**no time-limit**

**Context**

[\[Tree\]](#) configure mobile-gateway profile call-insight all-ues time-limit

**Description**

This command configures the maximum time limit for output.

**Default**

size-limit 86400

**Parameters**

*time-limit*

Specifies the time limit in seconds.

Values: 0 to 604800; 0 means unlimited

Default: 86400

### 4.2.7.12 ue

**Syntax**

**[no] ue** *profile-name*

**Context**

[\[Tree\]](#) configure mobile-gateway profile call-insight ue

## Description

This command specifies a call trace profile for the UE. The profile includes configuration to support tracing of specified events, reference point interfaces to capture control messages related to the traced UE user traffic, data volume control, output file size, time limit, and output file format.

## Default

ue "default"

## Parameters

*profile-name*

Specifies a profile name, up to 32 characters.

### 4.2.7.13 debug-output

#### Syntax

[no] debug-output

#### Context

[\[Tree\]](#) configure mobile-gateway profile call-insight ue debug-output

#### Description

This command sends the call trace outputs to the debug logs. The messages are available in the corresponding log file and can be viewed on the router. Viewing messages on the router simplifies troubleshooting by eliminating the need to extract PCAP files from the router to view the messages.

#### Default

no debug-output

### 4.2.7.14 description

#### Syntax

**description** *description-string*

**no description**

#### Context

[\[Tree\]](#) configure mobile-gateway profile call-insight ue description

#### Description

This command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

## Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.7.15 events

#### Syntax

[no] **events** *event*

#### Context

[\[Tree\]](#) configure mobile-gateway profile call-insight ue events

#### Description

This command configures events capturing for advanced debugging capabilities. Only use events configuration if needed and as instructed by Nokia technical support.

The **no** form of this command disables the specified event or, if no event is provided, disables all events.

#### Default

no events

#### Parameters

*event*

Specifies the events.

Values: all | acctmgr | apm | bmc | dcm | dhcp | dth | slaac | ga | gal | gtp | gtpv2 | gxc | gxl | ike | lrdm | mip | msngr | pmip | rfl | rol | s6b | sctp | sd | sessmgr | sigmgr | swm | sww | sta | rpy | dpy | pfcg | nserv

### 4.2.7.16 format

#### Syntax

[no] **format** [**pcap** | **simulated-pcap**]

#### Context

[\[Tree\]](#) configure mobile-gateway profile call-insight ue format

#### Description

This command configures the format for live output and for output toward locally stored PCAP files.

The **pcap** format outputs packets as a close replica of the input packets, and are accompanied with additional metadata to help debugging. This format requires a plugin for most packet inspection tools. The

**simulated-pcap** format does not generate additional metadata and changes some packet fields to produce a PCAP file that can be read by packet inspection tools without an additional plugin.

### Default

format simulated-pcap

### Parameters

#### pcap

Keyword to specify a pcap requiring a plugin.

#### simulated-pcap

Keyword to specify a pcap without a plugin.

## 4.2.7.17 live-output

### Syntax

```
[no] live-output ip-address | fqdn [port port] [router router-instance]
```

### Context

[\[Tree\]](#) configure mobile-gateway profile call-insight ue live-output

### Description

This command specifies to stream captured packets and events to the specified peer address. This automatically disables generating a locally stored PCAP file. This command and the following command are mutually exclusive.

```
configure mobile-gateway profile call-insight ue debug-output
```

The **no** form of this command disables streaming of captured packets and events, and falls back to generating a locally stored PCAP file.

### Parameters

#### ip-address

Specifies the address.

Values:

- ipv4-address – a.b.c.d
- ipv6-address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

#### fqdn

Specifies the fully qualified domain name, up to 255 characters.

*port*

Specifies the port.

Values: 1 to 65535

Default: 29770

*router-instance*

Specifies the router.

Values:

- *router-name* – base
- *service-id* – 1 to 2147483647

Default: Base

### 4.2.7.18 ref-point

#### Syntax

[no] **ref-point** *ref-point*

#### Context

[\[Tree\]](#) configure mobile-gateway profile call-insight ue ref-point

#### Description

This command configures on which interfaces to capture control messages related to the traced UE.



**Note:** the **sx-n4** ref-point includes any messages sent over IBCP, such as DHCP and PPPoE.

The **no** form of this command disables tracing the specified ref-point, or, if no ref-point is specified, reverts to the default.

#### Default

ref-point all

#### Parameters

*ref-point*

Specifies the reference point type.

Values: all | radius | s11 | s5 | sx-n4

### 4.2.7.19 sba-service

#### Syntax

**sba-service** *service*

**no sba-service**

## Context

[\[Tree\]](#) configure mobile-gateway profile call-insight ue sba-service

## Description

This command configures to trace a single SBI service when call-trace is started for a specific FWA UE.

The **no** form of this command falls back to the default to trace all services when executed without any parameters. When executed on a specific service, it removes tracing for that service.

## Default

sba-service all

## Parameters

*service*

Specifies the service to be traced. If the special value all is specified, all services are traced.

Values: all | namf-comm | nchf-convergedcharging | npcf-smpolicycontrol | nsmf-pdusession | nudm-sdm | nudm-uecm

### 4.2.7.20 size-limit

## Syntax

**[no] size-limit** *size-limit*

## Context

[\[Tree\]](#) configure mobile-gateway profile call-insight ue size-limit

## Description

This command configures maximum data volume in output.

The **no** form of this command reverts to the default.

## Default

size-limit 10

## Parameters

*size-limit*

Specifies the size limit in MB.

Values: 0 to 1000, where 0 means unlimited

Default: 10



### 4.2.7.21 time-limit

#### Syntax

[no] **time-limit** *time-limit*

#### Context

**[Tree]** configure mobile-gateway profile call-insight ue time-limit

#### Description

This command configures the maximum time limit for output.

#### Default

time-limit 86400

#### Parameters

*time-limit*

Specifies the time limit in seconds.

Values: 0 to 604800; 0 means unlimited

## 4.2.8 configure mobile-gateway profile charging command descriptions

### 4.2.8.1 charging

#### Syntax

**charging**

#### Context

**[Tree]** configure mobile-gateway profile charging

#### Description

Commands in this context configure the charging profile for the mobile gateway.

### 4.2.8.2 bng-charging

#### Syntax

[no] **bng-charging** *name*

#### Context

**[Tree]** configure mobile-gateway profile charging bng-charging

## Description

This command configures the specified BNG charging profile.

The **no** form of this command removes the specified charging profile.

## Parameters

*name*

Specifies the BNG charging profile name, up to 32 characters.

### 4.2.8.3 chf

## Syntax

**chf**

## Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging chf

## Description

Commands in this context configure CHF-based charging.

### 4.2.8.4 chf-profile

## Syntax

**chf-profile** *charging-profile-id*

**no chf-profile**

## Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging chf chf-profile

## Description

This command configures the CHF profile for charging sessions that are set up with this profile. The CHF profile defines common communication options, such as transmission timers and error handling.

The **no** form of this command removes the profile and causes the MAG-c to use default values for all communication.

## Default

no chf-profile

## Parameters

### *charging-profile-id*

Specifies the charging profile ID. Refers to a profile configured using the following command.

```
configure mobile-gateway profile charging chf-profile
```

Values: 0 to 255

## 4.2.8.5 chf-selection

### Syntax

**chf-selection**

### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging chf chf-selection

### Description

Commands in this context configure CHF selection options.

## 4.2.8.6 nf-id-list

### Syntax

**nf-id-list** *list-name*

**no nf-id-list**

### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging chf chf-selection nf-id-list

### Description

This command configures an NF ID list for the CHF selection. This list is used when the PCF does not provide the CHF peer.

The **no** form of this command removes the NF ID list from the configuration. The CHF selection falls back to NRF-based discovery and the NF ID list configured with the following command.

```
configure mobile-gateway pdn apn charging nchf chf-selection nf-id-list
```

### Default

no nf-id-list

## Parameters

*list-name*

Specifies the NF ID list name, up to 32 characters. Refers to a list configured using the following command.

```
configure mobile-gateway profile list nf-id-list
```

### 4.2.8.7 default-charging-method

#### Syntax

**default-charging-method** {**online** | **offline** | **disabled**}

**no default-charging-method**

#### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging chf default-charging-method

#### Description

This command configures the default charging method that is signaled toward the PCF in the SMPolicyContextData field when the creation of an SM policy association is requested.

The **no** form of this command reverts to the default.

#### Default

default-charging-method disabled

#### Parameters

**online** | **offline** | **disabled**

Keywords to define the default charging method.

Values:

- **online** – sets both the **online** and **offline** boolean IEs toward the PCF to indicate that online charging is requested
- **offline** – sets the **offline** boolean IE toward the PCF to indicate that offline charging is requested
- **disabled** – no default charging method

Default: disabled

### 4.2.8.8 dnn-format

#### Syntax

**dnn-format** {**real** | **real-ni-only** | **selected**}

**no dnn-format**

## Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging chf dnn-format

## Description

This command configures the data network name (DNN) format used when sending the DNN to the CHF. The **no** form of this command reverts to the default.

## Default

dnn-format selected

## Parameters

**real | real-ni-only | selected**

Keywords to configure the DNN format.

Values:

- **real** – specifies use of the real, unmodified DNN as signaled during the FWA session setup, including the OI if it is present
- **real-ni-only** – specifies use of the real DNN as signaled during the FWA session setup, but without the OI if it is present
- **selected** – specifies use of the selected DNN as is (returned after initial authentication). If no selected DNN is available, the system falls back to the **real-ni-only** option.

Default: selected

## 4.2.8.9 rating-group

### Syntax

```
[no] rating-group group-id
rating-group group-id custom-statistics-group name
```

### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging chf rating-group

### Description

This command configures a static rating group (RG) that is used to report a specific custom statistic. The FWA-UP determines the custom statistic based on the custom statistics group.

Adding a static RG to an in-use charging profile only affects new sessions. Existing sessions are not updated to use the new RG.

The **no** form of this command removes the static rating group.

### Parameters

*group-id*

Specifies the rating group ID.

Values: 0 to 4294967295

*name*

Specifies the custom statistics group name, up to 32 characters.

#### 4.2.8.10 description

##### Syntax

**description** *description-string*

**no description**

##### Context

**[Tree]** configure mobile-gateway profile charging bng-charging chf rating-group description

##### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

##### Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

#### 4.2.8.11 session-charging

##### Syntax

**session-charging**

##### Context

**[Tree]** configure mobile-gateway profile charging bng-charging chf session-charging

##### Description

Commands in this context configure session charging options.

#### 4.2.8.12 final-unit-policy-rules

##### Syntax

**final-unit-policy-rules**

## Context

[Tree] configure mobile-gateway profile charging bng-charging chf session-charging final-unit-policy-rules

## Description

Commands in this context configure mappings between final unit actions returned by the CHF and predefined policy rules.

### 4.2.8.13 redirect

## Syntax

**redirect** *base-policy-name*

**no redirect**

## Context

[Tree] configure mobile-gateway profile charging bng-charging chf session-charging final-unit-policy-rules redirect

## Description

This command specifies the name of the rule base policy to apply when a quota is exhausted and the CHF has indicated REDIRECT as the final unit action.

The **no** form of this command indicates no rule base policy is applied. The REDIRECT action is converted to a TERMINATE action.

## Default

no redirect

## Parameters

*base-policy-name*

Specifies the rule base policy name, up to 64 characters. Refers to a policy configured using the **configure mobile-gateway profile policy-options policy-rule-base** command.

### 4.2.8.14 rating-group

## Syntax

**rating-group** *rating-group*

**no rating-group**

## Context

[Tree] configure mobile-gateway profile charging bng-charging chf session-charging rating-group

## Description

This command configures the rating group (RG) for session charging. The RG must not overlap with any RGs provisioned by the PCF.

The **no** form of this command removes the RG from the configuration and disables session charging.

## Default

no rating-group

## Parameters

*rating-group*

Specifies the RG.

Values: 0 to 4294967295

### 4.2.8.15 shutdown

#### Syntax

**shutdown**

**no shutdown**

#### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging chf shutdown

#### Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

#### Default

shutdown

### 4.2.8.16 subscriber-identifier-format

#### Syntax

**subscriber-identifier-format {standard | identitytype}**

**no subscriber-identifier-format**

#### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging chf subscriber-identifier-format



## Description

This command configures the construction of the subscriberIdentifier IE for the ChargingDataRequest toward the CHF.

The **no** form of this command reverts to the default.

## Default

subscriber-identifier-format standard

## Parameters

### standard | identitytype

Keyword to define the construction of the subscriberIdentifier IE.

Values:

- standard – the subscriberIdentifier contains a subscription permanent identifier (SUPI) as defined in TS 32.291
- identitytype – the subscriberIdentifier is signaled as a grouped IE containing a subscriberIdentityType sub-IE that is always set to "SUPI", and a supi sub-IE that is encoded as a SUPI as defined in TS 29.571.

Default: standard

## 4.2.8.17 description

### Syntax

**description** *description-string*

**no description**

### Context

**[Tree]** configure mobile-gateway profile charging bng-charging description

### Description

This command associates a text string with a configuration context to help identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

### Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.8.18 radius

#### Syntax

**radius**

#### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius

#### Description

Commands in this context configure RADIUS-based charging for BNG.

### 4.2.8.19 interim-update-interval

#### Syntax

**interim-update-interval** *seconds*

**no interim-update-interval**

#### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius interim-update-interval

#### Description

This command configures the interim update interval for RADIUS BNG charging. If configured, this command takes priority over the following command for RADIUS BNG charging.

```
configure mobile-gateway profile radius-group interim-update-interval
```

This value can be changed while the profile is in use. For existing sessions, the new interval is only applied after sending the next interim update. Similarly, for existing sessions it is not possible to fall back to the configuration on the radius-group level (**no interim-update-interval**) and instead interim accounting is disabled for those sessions.

The **no** form of this command indicates the use of the interim interval of the linked RADIUS group.

#### Parameters

*seconds*

Specifies the interval, in seconds.

Values: 60 to 86400

### 4.2.8.20 radius-group

#### Syntax

**radius-group** *name*

## no radius-group

### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius radius-group

### Description

This command configures a RADIUS group to contain the servers to use for BNG charging. Any include attribute configuration under the RADIUS group is ignored.

The **no** form of this command unlinks the RADIUS group and disables RADIUS-based charging.

### Default

no radius-group

### Parameters

*name*

Specifies the RADIUS group name, up to 32 characters.

## 4.2.8.21 session

### Syntax

**session**

### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius session

### Description

Commands in this context configure RADIUS-based charging per session.

## 4.2.8.22 apn-format

### Syntax

**apn-format** *form*

### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius session apn-format

### Description

This command specifies the APN format in RADIUS messages. The format applies to all attributes that reflect the APN; for example, Called-Station-Id and User-Name.

## Default

apn-format selected

## Parameters

*form*

Specifies the APN format.

Values:

- **real** – keyword to use the real, unmodified APN as signaled during the FWA session setup, including the OI if it is present
- **real-ni-only** – keyword to use the real APN as signaled during the FWA session setup, but without the OI if it is present
- **selected** – keyword to use the selected APN as is (returned after initial authentication); if no selected APN is available, the system falls back to the real-ni-only option

### 4.2.8.23 include-attribute

#### Syntax

[no] **include-attribute**

#### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius session include-attribute

#### Description

This command enables attributes to be included in session-level accounting messages. Attributes may be absent in messages even if they are configured, for example, when no data is available for the attribute or it is not applicable for that accounting message. See the *MAG-c RADIUS Attributes and IU Triggers* for more information.

#### Default

include-attribute

### 4.2.8.24 access-loop-options

#### Syntax

[no] **access-loop-options**

#### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius session include-attribute access-loop-options

## Description

This command enables the inclusion of the following access loop option attributes:

- Actual-Data-Rate-Upstream
- Actual-Data-Rate-Downstream
- Minimum-Data-Rate-Upstream
- Minimum-Data-Rate-Downstream
- Attainable-Data-Rate-Upstream
- Attainable-Data-Rate-Downstream
- Maximum-Data-Rate-Upstream
- Maximum-Data-Rate-Downstream
- Minimum-Data-Rate-Upstream-Low-Power
- Minimum-Data-Rate-Downstream-Low-Power
- Maximum-Interleaving-Delay-Upstream
- Maximum-Interleaving-Delay-Downstream
- Actual-Interleaving-Delay-Upstream
- Actual-Interleaving-Delay-Downstream
- Access-Loop-Encapsulation

The **no** form of this command reverts to the default (disabled).

## Default

no access-loop-options

### 4.2.8.25 acct-authentic

## Syntax

[no] **acct-authentic**

## Context

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute acct-authentic

## Description

This command enables the inclusion of the Account-Authentic attribute.

The **no** form of this command reverts to the default (disabled).

## Default

no acct-authentic

#### 4.2.8.26 acct-delay-time

##### Syntax

[no] **acct-delay-time**

##### Context

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute acct-delay-time

##### Description

This command enables the inclusion of the Account-Delay-Time attribute.  
The **no** form of this command reverts to the default (disabled).

##### Default

no acct-delay-time

#### 4.2.8.27 acct-triggered-reason

##### Syntax

[no] **acct-triggered-reason**

##### Context

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute acct-triggered-reason

##### Description

This command enables the inclusion of the Alc-Account-Triggered-Reason attribute.  
The **no** form of this command reverts to the default (disabled).

##### Default

no acct-triggered-reason

#### 4.2.8.28 address-information

##### Syntax

[no] **address-information**

##### Context

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute address-information

## Description

This command enables the inclusion of the following attributes:

- Framed-IP-Address
- Framed-IP-Netmask
- Alc-Active-Addresses attribute

The **no** form of this command reverts to the default (disabled).

## Default

no address-information

### 4.2.8.29 aggregate-statistics

#### Syntax

[no] aggregate-statistics

#### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius session include-attribute aggregate-statistics

## Description

This command enables the inclusion of the following attributes:

- Acct-Input-Octets
- Acct-Output-Octets
- Acct-Input-Packets
- Acct-Input-Packets
- Acct-Output-Packets
- Acct-Input-Gigawords
- Acct-Output-Gigawords

The **no** form of this command reverts to the default (disabled).

## Default

no aggregate-statistics

### 4.2.8.30 called-station-id

#### Syntax

[no] called-station-id

## Context

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute called-station-id

## Description

This command includes the Called-Station-Id attribute in the accounting messages.

The **no** form of this command reverts to the default.

## Default

no called-station-id

### 4.2.8.31 calling-station-id

## Syntax

**calling-station-id** [*type*]

**no calling-station-id**

## Context

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute calling-station-id

## Description

This command configures the inclusion of the Calling-Station-Id attribute and specifies the type of session data from which the value is derived.

The **no** form of this command removes the configuration.

## Default

calling-station-id I2-circuit

## Parameters

*type*

Specifies the type of session data from which the value is derived.

Values: I2-circuit | mac-address | remote-id

### 4.2.8.32 circuit-id

## Syntax

**[no] circuit-id**

## Context

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute circuit-id



**Description**

This command enables the inclusion of the Agent-Circuit-Id attribute.  
The **no** form of this command reverts to the default (disabled).

**Default**

no circuit-id

**4.2.8.33 detailed-statistics****Syntax**

[no] detailed-statistics

**Context**

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute detailed-statistics

**Description**

This command enables the inclusion of the detailed statistics attributes.  
The **no** form of this command reverts to the default (disabled).

**Default**

no detailed-statistics

**4.2.8.34 dhcp-vendor-class-id****Syntax**

[no] dhcp-vendor-class-id

**Context**

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute dhcp-vendor-class-id

**Description**

This command enables the inclusion of the Alc-DHCP-Vendor-Class-Id attribute.  
The **no** form of this command reverts to the default (disabled).

**Default**

no dhcp-vendor-class-id

### 4.2.8.35 framed-protocol

#### Syntax

[no] framed-protocol

#### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius session include-attribute framed-protocol

#### Description

This command enables the inclusion of the Framed-Protocol attribute.

The **no** form of this command reverts to the default (disabled).

#### Default

no framed-protocol

### 4.2.8.36 imeisv

#### Syntax

[no] imeisv

#### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius session include-attribute imeisv

#### Description

This command includes the 3GPP-IMEISV attribute in the accounting messages.

The **no** form of this command reverts to the default.

#### Default

no imeisv

### 4.2.8.37 imsi

#### Syntax

[no] imsi

#### Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius session include-attribute imsi

**Description**

This command includes the 3GPP-IMSI attribute in the accounting messages.

The **no** form of this command reverts to the default.

**Default**

no imsi

**4.2.8.38 lac-tunnel-info****Syntax**

**lac-tunnel-info** [tunnel-connection-format *ascii-spec*]

**no lac-tunnel-info**

**Context**

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute lac-tunnel-info

**Description**

This command enables the inclusion of information related to the L2TP tunnel for a LAC session.

The **no** form of this command reverts to the default (disabled).

**Default**

no lac-tunnel-info

**Parameters**

*ascii-spec*

Specifies the content of the Acct-Tunnel-Connection attribute. It must be a valid ASCII string where per-session replacements are done when generating the attribute. For example: "SERIALNBR=%n,TUNNEL:loc-%t,rem-%T,SESSION:loc-%s,rem-%S,CONNECTIONID:loc-%c,rem-%C"

Values:

- *char-specification* [*ascii-spec*]  
where  
*char-specification* – *ascii-char* | *char-origin*  
*ascii-char* – a printable ASCII character  
*char-origin* – %*origin*
- *origin* – n | s | S | t | T | c | C  
where  
n – call serial number  
s | S – local (s) or remote (S) session ID  
t | T – local (t) or remote (T) tunnel ID

c | C – local (c) or remote (C) connection ID  
Default: %n

#### 4.2.8.39 mac-address

##### Syntax

[no] mac-address

##### Context

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute mac-address

##### Description

This command enables the inclusion of the Alc-Client-Hardware-Addr attribute.  
The **no** form of this command reverts to the default (disabled).

##### Default

no mac-address

#### 4.2.8.40 nas-identifier

##### Syntax

[no] nas-identifier

##### Context

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute nas-identifier

##### Description

This command enables the inclusion of the Nas-Identifier attribute.  
The **no** form of this command reverts to the default (disabled).

##### Default

no nas-identifier

#### 4.2.8.41 nas-ip-address

##### Syntax

[no] nas-ip-address

## Context

[Tree] configure mobile-gateway profile charging bng-charging radius session include-attribute nas-ip-address

## Description

This command enables the inclusion of the NAS-IP-Address and NAS-IPv6-Address attributes. The **no** form of this command reverts to the default (disabled).

## Default

no nas-ip-address

### 4.2.8.42 nas-port-id

## Syntax

**nas-port-id** [**prefix-string** *string*] [**suffix** *suffix-option*] [**suffix-string** *suffix-string*]  
**no nas-port-id**

## Context

[Tree] configure mobile-gateway profile charging bng-charging radius session include-attribute nas-port-id

## Description

This command configures the Nas-Port-ID attribute and defines optional suffixes and prefixes to the value. The **no** form of this command reverts to the default (disabled).

## Parameters

*string*

Specifies the prefix string, up to eight characters.

*suffix-option*

Specifies the suffix option.

Values: circuit-id | remote-id

*suffix-string*

Specifies the suffix string, up to 64 characters.

### 4.2.8.43 nas-port-type

## Syntax

**nas-port-type** [*value*]  
**no nas-port-type**

## Context

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute nas-port-type

## Description

This command configures the Nas-Port-Type attribute with the configured value.

The **no** form of this command reverts to the default.

## Default

nas-port-type

## Parameters

*value*

Specifies the NAS port type value.

Values: 0 to 255

### 4.2.8.44 nat-port-range

## Syntax

**[no] nat-port-range**

## Context

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute nat-port-range

## Description

This command enables the inclusion of the **Aic-Nat-Port-Range** and **Aic-ISA-Event-Timestamp** attributes in RADIUS accounting. To enable NAT logging in RADIUS accounting, enable this command and the **acct-triggered-reason** command under the same context.

The **no** form of this command reverts to the default (disabled).

## Default

no nat-port-range

### 4.2.8.45 rat-type

## Syntax

**[no] rat-type**

## Context

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute rat-type

**Description**

This command includes the 3GPP-RAT-Type attribute in the accounting messages.

The **no** form of this command reverts to the default.

**Default**

no rat-type

**4.2.8.46 remote-id****Syntax**

[no] remote-id

**Context**

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute remote-id

**Description**

This command enables the inclusion of the Agent-Remote-Id attribute.

The **no** form of this command reverts to the default (disabled).

**Default**

no remote-id

**4.2.8.47 service-type****Syntax**

[no] service-type

**Context**

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute service-type

**Description**

This command enables the inclusion of the Service-Type attribute.

The **no** form of this command reverts to the default (disabled).

**Default**

no service-type

#### 4.2.8.48 session-s-nssai

##### Syntax

[no] session-s-nssai

##### Context

[Tree] configure mobile-gateway profile charging bng-charging radius session include-attribute session-s-nssai

##### Description

This command enables the inclusion of the 3GPP-Session-S-NSSAI attribute.

The **no** form of this command reverts to the default.

##### Default

no session-s-nssai

#### 4.2.8.49 sla-profile

##### Syntax

[no] sla-profile

##### Context

[Tree] configure mobile-gateway profile charging bng-charging radius session include-attribute sla-profile

##### Description

This command enables the inclusion of the Alc-SLA-Prof-Str and Alc-SPI-Sharing attributes.

The **no** form of this command reverts to the default (disabled).

##### Default

no sla-profile

#### 4.2.8.50 static-port-forward

##### Syntax

[no] static-port-forward



## Context

[Tree] configure mobile-gateway profile charging bng-charging radius session include-attribute static-port-forward

## Description

This command enables the inclusion of the Static-Port-Forward attribute.

The **no** form of this command reverts to the default (disabled).

## Default

no static-port-forward

### 4.2.8.51 subscriber-id

#### Syntax

[no] subscriber-id

#### Context

[Tree] configure mobile-gateway profile charging bng-charging radius session include-attribute subscriber-id

#### Description

This command enables the inclusion of the Alc-Subsc-ID-Str attribute.

The **no** form of this command reverts to the default (disabled).

#### Default

no subscriber-id

### 4.2.8.52 subscriber-profile

#### Syntax

[no] subscriber-profile

#### Context

[Tree] configure mobile-gateway profile charging bng-charging radius session include-attribute subscriber-profile

#### Description

This command enables the inclusion of the Alc-Subsc-Prof-Str attribute.

The **no** form of this command reverts to the default (disabled).

**Default**

no subscriber-profile

**4.2.8.53 up-group****Syntax**

[no] up-group

**Context**

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute up-group

**Description**

This command enables the inclusion of the Alc-Up-Group attribute.

The **no** form of this command reverts to the default (disabled).

**Default**

no up-group

**4.2.8.54 up-info****Syntax**

[no] up-info

**Context**

**[Tree]** configure mobile-gateway profile charging bng-charging radius session include-attribute up-info

**Description**

This command enables the inclusion of various UP informational attributes such as the source IP address and the node ID.

The **no** form of this command reverts to the default (disabled).

**Default**

no up-info

**4.2.8.55 up-subscriber-id****Syntax**

[no] up-subscriber-id

## Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius session include-attribute up-subscriber-id

## Description

This command enables the inclusion of the UP-Subscriber-Id attribute.

The **no** form of this command reverts to the default (disabled).

## Default

no up-subscriber-id

### 4.2.8.56 user-location-info

## Syntax

**[no] user-location-info**

## Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius session include-attribute user-location-info

## Description

This command includes the 3GPP-User-Location-Info attribute in the accounting messages.

The **no** form of this command reverts to the default.

## Default

no user-location-info

### 4.2.8.57 user-name

## Syntax

**[no] user-name**

## Context

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius session include-attribute user-name

## Description

This command enables the inclusion of the User-Name attribute.

The **no** form of this command reverts to the default (disabled).

**Default**

no user-name

**4.2.8.58 shutdown****Syntax**

[no] shutdown

**Context**

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius session shutdown

**Description**

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

**4.2.8.59 update-triggers****Syntax**

[no] update-triggers

**Context**

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius session update-triggers

**Description**

Commands in this context configure whether automatic triggers generate an Interim Update message. When possible, simultaneous triggers are combined in a single message.

**Default**

update triggers

**4.2.8.60 active-upf-change****Syntax**

[no] active-upf-change

**Context**

[\[Tree\]](#) configure mobile-gateway profile charging bng-charging radius session update-triggers active-upf-change

### Description

This command configures the triggering of an IU message when the active BNG-UP changes. This is considered a non-critical trigger for the buffering of RADIUS messages.

The **no** form of this command removes the configuration.

### Default

no active-upf-change

## 4.2.8.61 address-state-change

### Syntax

[no] address-state-change

### Context

**[Tree]** configure mobile-gateway profile charging bng-charging radius session update-triggers address-state-change

### Description

This command enables sending an interim update when an additional IP stack is set up or torn down for the session.

The **no** form of this command reverts to the default (disabled).

### Default

no address-state-change

## 4.2.8.62 periodic

### Syntax

[no] periodic

### Context

**[Tree]** configure mobile-gateway profile charging bng-charging radius session update-triggers periodic

### Description

This command enables sending periodic interim updates. The applicable interval can be configured under the associated RADIUS group, the BNG charging profile, or provisioned via RADIUS.

The **no** form of this command disables sending periodic interim updates.

### Default

periodic

### 4.2.8.63 user-location-change

#### Syntax

[no] user-location-change

#### Context

[Tree] configure mobile-gateway profile charging bng-charging radius session update-triggers user-location-change

#### Description

This command enables sending an interim update when a location change is detected for the session. The **no** form of this command reverts to the default (disabled).

#### Default

no user-location-change

### 4.2.8.64 ccfh-profile

#### Syntax

[no] ccfh-profile *profile-id*

#### Context

[Tree] configure mobile-gateway profile charging ccfh-profile

#### Description

This command configures a credit control failure handling (CCFH) profile, which defines failure handling for credit control applications.

The **no** form of this command removes the CCFH profile from the configuration.

#### Parameters

*profile-id*

Specifies the ID of the CCFH profile.

Values: 0 to 255

### 4.2.8.65 cc-failure-handling

#### Syntax

cc-failure-handling *action*

no cc-failure-handling

## Context

[Tree] configure mobile-gateway profile charging ccfh-profile cc-failure-handling

## Description

This command specifies the failure handling behavior for the initial charging data request. For subsequent charging messages, such as updates and termination, this configuration is only used if the charging server did not specify a value. For example, a CHF can provide a failure handling option in the failureHandling IE of a response message.

If the following command is set or the equivalent indicator is signaled from the charging server, the **retry-and-terminate** and **retry-and-ap-continue** options automatically fall back to **terminate** and **ap-continue** respectively.

```
configure mobile-gateway profile charging ccfh-profile disable-cc-session-failover
```

This command applies to all failures. For CHF, more specific overrides can be provisioned using the following commands:

- **per HTTP error code override**

```
configure mobile-gateway profile charging ccfh-profile nchf-http-code
```

- **per application error cause code override**

```
configure mobile-gateway profile charging ccfh-profile nchf-cause-code
```

The **no** form of this command reverts to the default.

## Default

cc-failure-handling terminate

## Parameters

*action*

Specifies the failure handling action.

Values:

- **ap-continue** – continue with the session, but stop all charging functionality. Optionally, the MAG-c can periodically attempt to restart charging based on the following command.

```
configure mobile-gateway profile charging ccfh-profile session-restore-retry-timer
```

If charging cannot be restarted within the time specified by the following command, the session is terminated.

```
configure mobile-gateway profile charging ccfh-profile fh-session-continue-timer
```

- **terminate** – terminate the session

- **retry-and-terminate** – try alternative peers if any are available. If alternative peers are not available or also result in failures, fall back to the behavior as defined by the **terminate** option.
- **retry-and-ap-continue** – try alternative peers if any are available. If alternative peers are not available or also result in failures, fall back to the behavior as defined by the **ap-continue** option.

#### 4.2.8.66 disable-cc-session-failover

##### Syntax

[no] **disable-cc-session-failover**

##### Context

[\[Tree\]](#) configure mobile-gateway profile charging ccfh-profile disable-cc-session-failover

##### Description

This command configures that any retry failure handling actions fall back to their non-retry equivalent. This applies both to locally configured failure handling actions and actions received from the charging server, such as the CHF.

A CHF can override this local configuration by providing the sessionFailover IE in a Charging Data Response message.

The **no** form of this command keeps session failover as is and retry failure handling actions work as-is.

##### Default

no disable-cc-session-failover

#### 4.2.8.67 fh-session-continue-timer

##### Syntax

**fh-session-continue-timer** *fh-session-continue-timer*

**no fh-session-continue-timer**

##### Context

[\[Tree\]](#) configure mobile-gateway profile charging ccfh-profile fh-session-continue-timer

##### Description

This command defines how long a session is kept up when an **ap-continue** failure handling action is triggered. If a charging session is not reestablished by this time, a final charging session reestablishment attempt is made. If the final attempt is unsuccessful, the session is terminated. For more details on charging session reestablishment, see the following command.

```
configure mobile-gateway profile charging ccfh-profile session-restore-retry-timer
```



The special value 0 disables the timer, causing the session not to terminate based on a timeout.  
The **no** form of this command reverts to the default.

### Default

fh-session-continue-timer 30

### Parameters

*fh-session-continue-timer*

Specifies the time to keep the session up, defined in minutes.

Values: 0 to 1440

Default: 30

## 4.2.8.68 fh-volume-limit

### Syntax

**fh-volume-limit** *volume-limit*

**no fh-volume-limit**

### Context

[\[Tree\]](#) configure mobile-gateway profile charging ccfh-profile fh-volume-limit

### Description

This command defines a limit for the data volume a session can consume when an **ap-continue** failure handling action is triggered. If a charging session is not reestablished before the maximum data volume is exhausted, the MAG-c performs a final charging session reestablishment attempt. If that final attempt is unsuccessful, the session is terminated.

The special value 0 disables the volume limit and session termination based on volume usage.

For more information about charging session reestablishment, see the following command.

```
configure mobile-gateway profile charging ccfh-profile session-restore-retry-timer
```

The **no** form of this command reverts to the default.

### Default

fh-volume-limit 0

### Parameters

*volume-limit*

Specifies the volume limit in kilobytes.

Values: 0 to 104857600; 0 disables the volume limit.

Default: 0

## 4.2.8.69 nchf-cause-code

### Syntax

```
nchf-cause-code application-error-code action action  
no nchf-cause-code application-error-code
```

### Context

[\[Tree\]](#) configure mobile-gateway profile charging ccfh-profile nchf-cause-code

### Description

This command specifies the failure handling behavior for a specific application error code when using the CHF as a charging server. When receiving an error, the failure handling behavior is picked up using the following priority:

1. If the error matches both a specific HTTP status code and application error, the behavior of the application error code is used.
2. If the error matches a specific application error, that behavior is used.
3. If the error matches a specific HTTP status code, that behavior is used.
4. If none of the above apply, the failure handling behavior falls back to what is specified with the following command or its equivalent CHF override.

```
configure mobile-gateway profile charging ccfh-profile cc-failure-handling
```

Application error codes for Nchf\_ConvergedCharging are defined in 3GPP TS 32.291 table 6.1.7.3-1, and common application error values are defined in 3GPP TS 29.500 table 5.2.7.2-1.

The **no** form of this command removes the code-specific failure handling for the specified application error code.

### Parameters

*application-error-code*

Specifies the Nchf\_ConvergedCharging application error, up to 32 characters.

*action*

Specifies the failure handling action.

Values:

- **ap-continue** – continue with the session, but stop all charging functionality. Optionally, the MAG-c can periodically attempt to restart charging based on the following command.

```
configure mobile-gateway profile charging ccfh-profile session-restore-retry-timer
```

If charging cannot be restarted within the time specified by the following command, the session is terminated.

```
configure mobile-gateway profile charging ccfh-profile fh-session-continue-timer
```

- **terminate** – terminate the session
- **retry-and-terminate** – try alternative peers if any are available. If alternative peers are not available or also result in failures, fall back to the behavior as defined by the **terminate** option.
- **retry-and-ap-continue** – try alternative peers if any are available. If alternative peers are not available or also result in failures, fall back to the behavior as defined by the **ap-continue** option.

#### 4.2.8.70 nchf-http-code

##### Syntax

**nchf-http-code** *value action*

**no nchf-http-code** *value*

##### Context

[\[Tree\]](#) configure mobile-gateway profile charging ccfh-profile nchf-http-code

##### Description

This command specifies the failure handling behavior for a specific HTTP status code when using the CHF as a charging server. See the following command for more information about the priorities between HTTP code and application error code failure handling overrides.

```
configure mobile-gateway profile charging ccfh-profile nchf-cause-code
```

HTTP status codes are defined in RFC 9110 section 15.

The **no** form of this command removes the code-specific failure handling for the specified HTTP status code.

##### Parameters

*value*

Specifies the three-digit HTTP status code value.

Values: 300 to 599

*action*

Specifies the failure handling action.

Values:

- **ap-continue** – continue with the session, but stop all charging functionality. Optionally, the MAG-c can periodically attempt to restart charging based on the following command.

```
configure mobile-gateway profile charging ccfh-profile session-restore-retry-timer
```

If charging cannot be restarted within the time specified by the following command, the session is terminated.

```
configure mobile-gateway profile charging ccfh-profile fh-session-continue-timer
```

- **terminate** – terminate the session
- **retry-and-terminate** – try alternative peers if any are available. If alternative peers are not available or also result in failures, fall back to the behavior as defined by the **terminate** option.
- **retry-and-ap-continue** – try alternative peers if any are available. If alternative peers are not available or also result in failures, fall back to the behavior as defined by the **ap-continue** option.

#### 4.2.8.71 session-restore-retry-timer

##### Syntax

**session-restore-retry-timer** *retry-timer*

**no session-restore-retry-timer**

##### Context

[\[Tree\]](#) configure mobile-gateway profile charging ccfh-profile session-restore-retry-timer

##### Description

This command specifies a session restore retry timer. When an **ap-continue** failure handling is started, the MAG-c periodically attempts to reestablish a charging session according to this timer. When set to zero, the MAG-c does not attempt to reestablish a charging session periodically.

If charging is reestablished successfully, the MAG-c restarts all RGs for the charging session. Any usage and unused quotas from the previous session and from the failure handling period are discarded and not reported.

If a timer is also configured using the following command, the MAG-c attempts a final reestablishment for the charging session upon expiry, independent of the session restore retry timer.

```
configure mobile-gateway profile charging ccfh-profile fh-session-continue-timer
```

The **fh-session-continue-timer** must be configured higher than the **session-restore-retry-timer**, otherwise the latter is not used.

The **no** form of this command reverts to the default.

**Default**

session-restore-retry-timer 0

**Parameters**

*retry-timer*

Specifies the periodic timer used to attempt charging session reestablishment, in minutes.

Values: 0 to 60

Default: 0

**4.2.8.72 chf-profile****Syntax**

**chf-profile** *charging-profile-id*

**no chf-profile** *charging-profile-id*

**Context**

**[Tree]** configure mobile-gateway profile charging chf-profile

**Description**

This command configures a CHF profile, which defines the communication options for the Nchf\_ConvergedCharging service.

The **no** form of this command removes the CHF profile from the configuration.

**Parameters**

*charging-profile-id*

Specifies the ID of the CHF profile.

Values: 0 to 255

**4.2.8.73 ccfh-profile****Syntax**

**ccfh-profile** *profile-id*

**no ccfh-profile**

**Context**

**[Tree]** configure mobile-gateway profile charging chf-profile ccfh-profile

**Description**

This command defines the credit-control failure handling (CCFH) profile for charging sessions that are set up with this profile.

The **no** form of this command removes the CCFH profile and causes the MAG-c to use default values for all failure handling.

### Default

no ccfh-profile

### Parameters

*profile-id*

Specifies the CCFH profile ID. Refers to a profile configured using the following command.

```
configure mobile-gateway profile charging ccfh-profile
```

Values: 0 to 255

## 4.2.8.74 description

### Syntax

**description** *description-string*

**no description**

### Context

[\[Tree\]](#) configure mobile-gateway profile charging chf-profile description

### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

### Default

no description

### Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.8.75 sbi-srvc-operation

### Syntax

**sbi-srvc-operation**

## Context

[\[Tree\]](#) configure mobile-gateway profile charging chf-profile sbi-srvc-operation

## Description

Commands in this context configure communication options to handle service operations.

### 4.2.8.76 retry-count

## Syntax

**retry-count** *max*

**no retry-count**

## Context

[\[Tree\]](#) configure mobile-gateway profile charging chf-profile sbi-srvc-operation retry-count

## Description

This command configures the maximum number of times a message is retransmitted if there is no reply when the message is sent. The message is resent after the time configured by the following command elapses and until the maximum number of retries is reached. If the message times out after the last retry, failure handling is triggered.

```
configure mobile-gateway profile charging chf-profile sbi-srvc-operation transaction-timer
```

The **no** form of this command configures that no retries are attempted.

## Default

no retry-count

## Parameters

*max*

Specifies the maximum number of retries to resend the message.

Values: 1 to 10

### 4.2.8.77 transaction-timer

## Syntax

**transaction-timer** *value*

## Context

[\[Tree\]](#) configure mobile-gateway profile charging chf-profile sbi-srvc-operation transaction-timer

## Description

This command configures the transaction time used to send messages. If there is no reply during the transaction time, the message is resent until the retry count is reached, as configured by the following command. If the message times out again, the MAG-c considers the connection to the CHF down and triggers the failure handling.

```
configure mobile-gateway profile charging chf-profile sbi-srvc-operation retry-count
```

The **no** form of this command reverts to the default.

## Default

transaction-timer 5000

## Parameters

*value*

Specifies the transaction timer value, in milliseconds.

Values: 1000 to 20000

## 4.2.9 configure mobile-gateway profile cloud-db command descriptions

### 4.2.9.1 cloud-db

#### Syntax

[no] **cloud-db** *profile-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile cloud-db

#### Description

This command configures a cloud database profile. It creates an interface with an external database used for storage of subscriber/PDN context.

The **no** form of this command removes the profile from the configuration.

#### Parameters

*profile-name*

Specifies a profile name, up to 32 characters.

### 4.2.9.2 description

#### Syntax

**description** *description-string*



**no description****Context**

**[Tree]** configure mobile-gateway profile cloud-db description

**Description**

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

**Parameters**

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

**4.2.9.3 server****Syntax**

**[no] server ip-addr | fqdn [port port]**

**Context**

**[Tree]** configure mobile-gateway profile cloud-db server

**Description**

This command configures a cloud database server for the external database.

The **no** form of this command removes the cloud database server from the configuration.

**Parameters**

*ip-addr*

Specifies the IPv4 or IPv6 address.

Values:

- ipv4-address – a.b.c.d
- ipv6-address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x.d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*fqdn*

Specifies the Fully Qualified Domain Name, up to 255 characters.

*port*

Specifies the port number.

Values: 1 to 65535

Default: 5678

#### 4.2.9.4 shutdown

##### Syntax

[no] shutdown

##### Context

[\[Tree\]](#) configure mobile-gateway profile cloud-db server shutdown

##### Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

#### 4.2.10 configure mobile-gateway profile dns-profile command descriptions

##### 4.2.10.1 dns-profile

##### Syntax

**dns-profile** *profile-name*

**no dns-profile** *profile-name*

##### Context

[\[Tree\]](#) configure mobile-gateway profile dns-profile

##### Description

This command configures a DNS profile for the MAG-c. The DNS profile can be used in a DNS lookup related to MAG-c session management.

The **no** form of this command deletes the DNS profile.

##### Parameters

*profile-name*

Specifies the name of the DNS profile, up to 32 characters.

## 4.2.10.2 ip-dscp

### Syntax

**ip-dscp** *value*  
**no ip-dscp**

### Context

[\[Tree\]](#) configure mobile-gateway profile dns-profile ip-dscp

### Description

This command configures the IP DSCP/TOS value in the IP header of a DNS request. By default, the DSCP/TOS value for DNS lookup is nc2.

The **no** form of this command reverts to the default.

### Default

ip-dscp 56

### Parameters

*value*

Specifies the DSCP/TOS value in the IP header.

Values: 0 to 63

## 4.2.10.3 ip-ttl

### Syntax

**no ip-ttl**  
**ip-ttl** *value*

### Context

[\[Tree\]](#) configure mobile-gateway profile dns-profile ip-ttl

### Description

This command configures the IP Time To Live (TTL) value in the IP header of a DNS request. By default, the TTL value for DNS lookup is 255.

The **no** form of this command reverts to the default.

### Default

ip-ttl 255

## Parameters

*value*

Specifies the TTL value in the IP header.

Values: 0 to 255

### 4.2.10.4 message-retransmit

#### Syntax

**no message-retransmit**

**message-retransmit** [*timeout seconds*] [**retry-count** *value*]

#### Context

[\[Tree\]](#) configure mobile-gateway profile dns-profile message-retransmit

#### Description

This command configures the DNS request timeout and retry values for DNS lookup messages.

The **no** form of this command reverts to the default.

#### Default

message-retransmit timeout 5 retry-count 3

#### Parameters

*seconds*

Specifies the time, in seconds, before a DNS request message is retransmitted

Values: 1 to 30

*value*

Specifies the number of retries before a DNS request message to the server is considered failed.

Values: 1 to 8

### 4.2.10.5 primary-dns

#### Syntax

**no primary-dns**

**primary-dns** *ip-address*

#### Context

[\[Tree\]](#) configure mobile-gateway profile dns-profile primary-dns

## Description

This command configures the primary IPv4 or IPv6 address of the DNS server.

The **no** form of this command removes the primary DNS server address from the DNS profile.

## Parameters

*ip-address*

Specifies the IPv4 or IPv6 address of the primary DNS server.

Values:

- *ipv4-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where  
x – [0..FFFF]H  
d – [0..255]D

### 4.2.10.6 secondary-dns

## Syntax

**no secondary-dns**

**secondary-dns** *ip-address*

## Context

[\[Tree\]](#) configure mobile-gateway profile dns-profile secondary-dns

## Description

This command configures the secondary IPv4 or IPv6 address of the DNS server.

The **no** form of this command removes the secondary DNS server address from the DNS profile.

## Parameters

*ip-address*

Specifies the IPv4 or IPv6 address of the secondary DNS server.

Values:

- *ipv4-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where  
x – [0..FFFF]H  
d – [0..255]D

## 4.2.10.7 tertiary-dns

### Syntax

**no tertiary-dns**

**tertiary-dns** *ip-address*

### Context

[\[Tree\]](#) configure mobile-gateway profile dns-profile tertiary-dns

### Description

This command configures the tertiary IPv4 or IPv6 address of the DNS server.

The **no** form of this command removes the tertiary DNS server address from the DNS profile.

### Parameters

*ip-address*

Specifies the IPv4 or IPv6 address of the tertiary DNS server.

Values:

- ipv4-address – a.b.c.d
- ipv6-address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

## 4.2.11 configure mobile-gateway profile gtp command descriptions

### 4.2.11.1 gtp

#### Syntax

**[no] gtp** *profile-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile gtp

#### Description

Commands in this context configure GTP parameters.

#### Parameters

*profile-name*

Specifies the name of the GTP profile, up to 32 characters.

## 4.2.11.2 description

### Syntax

**description** *long-description-string*  
**no description**

### Context

[\[Tree\]](#) configure mobile-gateway profile gtp description

### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

### Parameters

*long-description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.11.3 gtpv2-session-rejection-cause

### Syntax

**gtpv2-session-rejection-cause**

### Context

[\[Tree\]](#) configure mobile-gateway profile gtp gtpv2-session-rejection-cause

### Description

Commands in this context configure the supported features for the GTPv2 session rejection cause.

## 4.2.11.4 apn-shutdown

### Syntax

**apn-shutdown** *cause-code-value*  
**no apn-shutdown**

### Context

[\[Tree\]](#) configure mobile-gateway profile gtp gtpv2-session-rejection-cause apn-shutdown

## Description

This command defines the value for the Cause IE in the Create Session Response if the PDN connection activation is rejected because the APN is in shutdown state.

The **no** form of this command reverts to the default.



**Note:** This command requires a PDN shutdown.

## Parameters

*cause-code-value*

Specifies the value for the Cause IE.

Values: 64 to 239

Default: 93 (APN access denied - no subscription)

## 4.2.11.5 gw-suspend

### Syntax

**gw-suspend** *cause-code-value*

**no gw-suspend**

### Context

[\[Tree\]](#) configure mobile-gateway profile gtp gtpv2-session-rejection-cause gw-suspend

## Description

This command defines the value for the GTPv2 Cause IE, if the gateway is in suspend state.

The **no** form of this command reverts to the default.



**Note:** This command requires a PDN shutdown.

## Parameters

*cause-code-value*

Specifies the value for the Cause IE.

Values: 64 to 239

Default: 89 (service denied)

## 4.2.11.6 sx-connection-failure

### Syntax

**sx-connection-failure** *cause-code-value*

**no sx-connection-failure**



## Context

[\[Tree\]](#) configure mobile-gateway profile gtp gtpv2-session-rejection-cause sx-connection-failure

## Description

This command defines the value for the Cause IE in the Create Session Response message if the PDN Connection Activation message is rejected because of PFCP connection failure.

The **no** form of this command reverts to the default.



**Note:** This command requires a PDN shutdown.

## Parameters

*cause-code-value*

Specifies the value for the Cause IE.

Values: 64 to 239

Default: 94 (Request message rejected — reason not specified)

### 4.2.11.7 ip-dscp

## Syntax

**ip-dscp** *value*

**no ip-dscp**

## Context

[\[Tree\]](#) configure mobile-gateway profile gtp ip-dscp

## Description

This command specifies the DSCP value in the IP header.

The **no** form of this command reverts to the default.

## Default

ip-dscp 56

## Parameters

*value*

Specifies Differentiated Services Code Point (DSCP) value.

Values: 0 to 63

### 4.2.11.8 ip-ttl

#### Syntax

**ip-ttl** *value*  
**no ip-ttl**

#### Context

[\[Tree\]](#) configure mobile-gateway profile gtp ip-ttl

#### Description

This command specifies the IP Time-To-Live (TTL) value for GTP signaling messages. The **no** form of this command reverts to the default.

#### Default

ip-ttl 255

#### Parameters

*value*  
Specifies IP Time-To-Live (TTL) value.  
Values: 1 to 255

### 4.2.11.9 keep-alive

#### Syntax

**keep-alive** [**interval** *interval*] [**retry-count** *retry-count*] [**timeout** *timeout*]  
**no keep-alive**

#### Context

[\[Tree\]](#) configure mobile-gateway profile gtp keep-alive

#### Description

This command configures the keep alive timeout attributes for the GTP profile. Keep alive (GTPv2 Echo messages) are sent when a GTPv2 path comes up (one or more UEs attach). The keep alive interval timer is based on the attributes configured for **keep-alive**. The gateway sends a message at the time specified for **interval**. If a GTP-C Echo Response is not received within the time specified for **timeout**, the gateway retries the timeout wait period, for the number of times specified for **retry-count**. If the gateway hears a GTP-C Echo Response from the remote end, it aborts the retry procedure and restarts the keep alive interval timer for this peer. If no response is received before the end of the retry-timeout sequence, the path is declared to be down.

The **no** form of this command reverts to the default.

## Default

keep-alive interval 60 retry-count 4 timeout 5

## Parameters

### *interval*

Specifies the keep alive message interval, in seconds.

Values: 0 | 60 to 600

### *retry-count*

Specifies the number of retries.

Values: 1 to 15

### *timeout*

Specifies the timeout interval, in seconds.

Values: 1 to 30

## 4.2.11.10 message-retransmit

### Syntax

**message-retransmit** [**timeout** *timeout*] [**retry-count** *value*] [**timeout-msec** *timeout-msec*]

**no message-retransmit**

### Context

[\[Tree\]](#) configure mobile-gateway profile gtp message-retransmit

### Description

This command configures the GTP message retransmit timeout and retry count values. Retransmit timeout consists of T3 and N3 values. T3 is the time period a network element waits before re-attempting to send a message, if there is no response to an initial message. T3 can be configured either in seconds (**timeout**) or milliseconds (**timeout-msec**). N3 is the maximum number of times a network element re-attempts to send a message. N3 can be configured by changing the value of *value*.

The **no** form of this command reverts to the default.

### Parameters

#### *timeout*

Specifies the time period, in seconds, that a network element waits before resending a message if there is no response to an initial message. The **timeout** and **timeout-msec** parameters cannot be both set at the same time.

Values: 1 to 30

Default: 5

#### *value*

Specifies the number of times the NE re-attempts to send a message.

Values: 1 to 8

Default: 3

#### *timeout-msec*

Specifies the time period in milliseconds that a network element waits before resending a message if there is no response to the initial message. The **timeout** and **timeout-msec** parameters cannot be both set at the same time.

Values: 1000 to 30000 (increments of 100 milliseconds)

Default: 5000

## 4.2.12 configure mobile-gateway profile http2 command descriptions

### 4.2.12.1 http2

#### Syntax

[no] **http2** *profile-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile http2

#### Description

This command configures a profile for HTTP/2 connections and commands in this context configure the common HTTP/2 and SBI parameters to use with HTTP/2 connections.

The **no** form of this command removes the specified profile from the configuration.

#### Parameters

*profile-name*

Specifies the HTTP/2 profile name, up to 32 characters.

### 4.2.12.2 connection-timer

#### Syntax

**connection-timer** *value*

**no connection-timer**

#### Context

[\[Tree\]](#) configure mobile-gateway profile http2 connection-timer

#### Description

This command configures the setup attempt frequency for a new HTTP/2 connection when not enough HTTP/2 connections are available to a peer.

The **no** form of this command reverts to the default.

**Default**

connection-timer 20

**Parameters**

*value*

Specifies the timer value, in seconds.

Values: 1 to 180

### 4.2.12.3 fail-num-retries

**Syntax**

**fail-num-retries** *value*

**no fail-num-retries**

**Context**

[\[Tree\]](#) configure mobile-gateway profile http2 fail-num-retries

**Description**

This command configures the maximum number of times that an HTTP/2 client tries to send a message before failing the transaction service. This command, together with the **fail-retry-interval** command, only applies to HTTP/2 messages that are sent over an open HTTP/2 stream. Contrary to the configuration using the **request-timeout** command, this functionality does not take into account the time a service call is buffered while waiting for an available HTTP/2 stream when the stream limit is reached.

When set to 0, no retries are attempted and a single request timeout results in a failure.

The **no** form of this command reverts to the default.

**Default**

fail-num-retries 0

**Parameters**

*value*

Specifies the number of retries.

Values: 0 to 50

### 4.2.12.4 fail-retry-interval

**Syntax**

**fail-retry-interval** *value*

**no fail-retry-interval**

## Context

[\[Tree\]](#) configure mobile-gateway profile http2 fail-retry-interval

## Description

This command configures the time that an HTTP/2 client waits for an HTTP/2 response from a server before attempting to resend the message. See the **fail-num-retries** command for more information.

The **no** form of this command reverts to the default.

## Default

fail-retry-interval 5

## Parameters

*value*

Specifies the retry interval in seconds.

Values: 1 to 50

## 4.2.12.5 ip-dscp

### Syntax

**ip-dscp** *value*

**no ip-dscp**

### Context

[\[Tree\]](#) configure mobile-gateway profile http2 ip-dscp

### Description

This command configures the IPv4 DSCP or the IPv6 Traffic Class DS in the IP header for the HTTP2 signaling messages sent.

The **no** form of this command reverts to the default.

### Default

ip-dscp 56

### Parameters

*value*

Specifies the DSCP value or traffic class.

Values: 0 to 63

## 4.2.12.6 ping-period

### Syntax

**ping-period** *value*  
**no ping-period**

### Context

**[Tree]** configure mobile-gateway profile http2 ping-period

### Description

This command defines the frequency of sending ping frames after a quiet period. The timer for sending ping frames is reset every time there is activity.

The **no** form of this command reverts to the default.

### Default

ping-period 60

### Parameters

*value*

Specifies the ping period value, in seconds.

Values: 1 to 60

## 4.2.12.7 python-policy

### Syntax

**python-policy** *name*  
**no python-policy**

### Context

**[Tree]** configure mobile-gateway profile http2 python-policy

### Description

This command configures a Python policy to apply on incoming and outgoing HTTP/2 frames.

The **no** form of this command removes the Python policy from the HTTP/2 profile.

### Default

no python-policy

## Parameters

*name*

Specifies the name of the referenced Python policy, up to 32 characters, as configured using the **configure python python-policy** command.

### 4.2.12.8 request-timeout

#### Syntax

**request-timeout** *time*

**no request-timeout**

#### Context

[\[Tree\]](#) configure mobile-gateway profile http2 request-timeout

#### Description

This command configures the time that an HTTP/2 client waits for an HTTP/2 response before the whole service call is considered failed. In contrast to the configuration using the **fail-num-retries** and **fail-retry-interval** commands, this timeout takes into account the time the service call is spent buffered if the HTTP/2 connections reached the maximum outstanding streams.

The **no** form of this command reverts to the default.

Values: 5 to 30

#### Default

request-timeout 20

#### Parameters

*time*

Specifies the time, in seconds.

Values: 5 to 30

### 4.2.13 configure mobile-gateway profile list command descriptions

#### 4.2.13.1 list

#### Syntax

**list**

#### Context

[\[Tree\]](#) configure mobile-gateway profile list



## Description

Commands in this context configure list instances.

### 4.2.13.2 cell-id-list

#### Syntax

[no] **cell-id-list** *name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile list cell-id-list

#### Description

This command configures a list of e-UTRAN cell global identification (ECGI) and NR cell global identification (NCGI) values.

The **no** form of this command removes the configuration.

#### Parameters

*name*

Specifies the list name, up to 32 characters.

### 4.2.13.3 description

#### Syntax

**description** *description-string*

**no description**

#### Context

[\[Tree\]](#) configure mobile-gateway profile list cell-id-list description

#### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

#### Default

no description

## Parameters

### *description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.13.4 plmn

### Syntax

[no] **plmn** *mcc* *mcc value* *mnc* *mnc value*

### Context

[\[Tree\]](#) configure mobile-gateway profile list cell-id-list plmn

### Description

This command configures a new public land mobile network (PLMN) consisting of a mobile country code (MCC) and mobile network code (MNC).

The **no** form of this command removes the configuration.

### Parameters

#### *mcc value*

Specifies the MCC value that identifies the PLMN.

Values: 000 to 999 (three digit number)

#### *mnc value*

Specifies the MNC value that identifies the PLMN.

Values: 00 to 999 (two or three digit number)

## 4.2.13.5 description

### Syntax

**description** *description-string*

**no description**

### Context

[\[Tree\]](#) configure mobile-gateway profile list cell-id-list plmn description

### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

**Default**

no description

**Parameters**

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

**4.2.13.6 eci****Syntax**

**eci** *eci-value* [**end** *eci-value*]

**no eci** *eci-value*

**Context**

[\[Tree\]](#) configure mobile-gateway profile list cell-id-list plmn eci

**Description**

This command adds a new e-UTRAN cell identity (ECI) to the PLMN. Together, the PLMN and the ECI form the ECGI. The user can provide an end ECI value to, optionally, specify a range of ECIs.

The **no** form of this command removes the configuration.

**Parameters**

*eci-value*

Specifies a valid ECI value as a seven-digit hexadecimal number.

Values: 0x0000000 to 0xFFFFFFFF

**4.2.13.7 description****Syntax**

**description** *description-string*

**no description**

**Context**

[\[Tree\]](#) configure mobile-gateway profile list cell-id-list plmn eci description

**Description**

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

**Default**

no description

**Parameters**

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

**4.2.13.8 nci****Syntax**

**nci** *nci-value* [**end** *nci-value*]

**no nci** *nci-value*

**Context**

[\[Tree\]](#) configure mobile-gateway profile list cell-id-list plmn nci

**Description**

This command adds a new NR cell identity (NCI) to the PLMN. Together, the PLMN and the NCI form the NCGI. The user can provide an end NCI value to, optionally, specify a range of NCIs.

The **no** form of this command removes the configuration.

**Parameters**

*nci-value*

Specifies a valid NCI value as a nine-digit hexadecimal number.

Values: 0x000000000 to 0xFFFFFFFFF (nine hexadecimal nibbles)

**4.2.13.9 description****Syntax**

**description** *description-string*

**no description**

**Context**

[\[Tree\]](#) configure mobile-gateway profile list cell-id-list plmn nci description

**Description**

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

**Default**

no description

**Parameters**

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

**4.2.13.10 nf-id-list****Syntax**

[no] **nf-id-list** *list-name*

**Context**

**[Tree]** configure mobile-gateway profile list nf-id-list

**Description**

This command configures a list of Network Function (NF) instances.

The **no** form of this command removes the specified list from the configuration.

**Parameters**

*list-name*

Specifies the name of the NF ID list, up to 32 characters.

**4.2.13.11 nf-prof-id****Syntax**

[no] **nf-prof-id** *nf-id*

**Context**

**[Tree]** configure mobile-gateway profile list nf-id-list nf-prof-id

**Description**

This command adds a new NF instance with the specified NF profile parameters to the list of NF peers.

The **no** form of this command removes the NF instance from the list.

**Parameters**

*nf-id*

Specifies the internal ID of the NF peer.

Values: 1 to 4294967295

### 4.2.13.12 api-prefix

#### Syntax

**api-prefix** *api-prefix-value*  
**no api-prefix**

#### Context

**[Tree]** configure mobile-gateway profile list nf-id-list nf-prof-id api-prefix

#### Description

This command configures the API prefix to be used after the authority part of the API URI endpoint. The **no** form of this command removes the API prefix.

#### Default

no api-prefix

#### Parameters

*api-prefix-value*  
Specifies the API prefix, up to 64 characters.

### 4.2.13.13 enable

#### Syntax

**[no] enable**

#### Context

**[Tree]** configure mobile-gateway profile list nf-id-list nf-prof-id enable

#### Description

This command enables the NF profile. To enable the NF profile, the UUID of the NF profile must be configured using the **uuid** command in the profile. An FQDN or a list of IP addresses using the **fqdn** command or the **prioritized-address-list** command must also be configured.

The **no** form of this command disables the NF profile.

#### Default

no enable

#### 4.2.13.14 fqdn

##### Syntax

**fqdn** *fqdn-sni-string*  
**no fqdn**

##### Context

[\[Tree\]](#) configure mobile-gateway profile list nf-id-list nf-prof-id fqdn

##### Description

This command configures an FQDN identifying this NF Instance. When a DNS client is provisioned under the **configure mobile-gateway pdn** context, the FQDN is used to retrieve the IP address for the NF instance using an A/AAAA DNS lookup. You must configure either the **fqdn** command or the **prioritized-address-list** command.

##### Default

no fqdn

##### Parameters

*fqdn-sni-string*  
Specifies the FQDN name string, up to 255 characters.

#### 4.2.13.15 nf-priority

##### Syntax

**nf-priority** *priority-value*  
**no nf-priority**

##### Context

[\[Tree\]](#) configure mobile-gateway profile list nf-id-list nf-prof-id nf-priority

##### Description

This command configures the priority of this NF instance compared to other instances in the same list. To indicate a higher priority, use a lower priority value.

The **no** form of this command reverts to the default.

##### Default

**nf-priority 65535**

## Parameters

*priority-value*

Specifies the priority value.

Values: 0 to 65535

### 4.2.13.16 prioritized-address-list

#### Syntax

**prioritized-address-list** *list-name*

**no prioritized-address-list**

#### Context

[\[Tree\]](#) configure mobile-gateway profile list nf-id-list nf-prof-id prioritized-address-list

#### Description

This command configures a list of prioritized IP addresses used to reach this NF instance. This references a list configured using the **configure mobile-gateway profile list prioritized-ip-address-list** command. You must configure either the **prioritized-address-list** command or the **fqdn** command.

The **no** form of this command reverts to the default.

#### Default

**no prioritized-address-list**

#### Parameters

*list-name*

Specifies the list name, up to 32 characters.

### 4.2.13.17 uuid

#### Syntax

**uuid** *uuid*

**no uuid**

#### Context

[\[Tree\]](#) configure mobile-gateway profile list nf-id-list nf-prof-id uuid

#### Description

This command adds the NF instance ID in UUIDv4 canonical textual representation. You must configure the UUID.

The **no** form of this command removes the UUID from the configuration.



**Default**

**no uuid**

**Parameters**

*uuid*

Specifies the NF instance ID.

Values: UUID - xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx

x - [0..F]H

**4.2.13.18 plmn****Syntax**

[no] **plmn** *list-name*

**Context**

[\[Tree\]](#) configure mobile-gateway profile list plmn

**Description**

This command configures a PLMN list. A PLMN list consists of a list of MCC and MNC IDs.

The **no** form of this command removes the list name from the configuration.

**Parameters**

*list-name*

Specifies the name of this PLMN list, up to 32 characters.

**4.2.13.19 mcc****Syntax**

[no] **mcc** *mcc-value* **mnc** *mnc-value*

**Context**

[\[Tree\]](#) configure mobile-gateway profile list plmn mcc

**Description**

This command specifies the MCC and MNC for this PLMN.

The **no** form of this command removes the values from the configuration.

**Parameters**

*mcc-value*

Specifies the MCC of this PLMN, three digit number.

Values: 000 to 999

*mnc-value*

Specifies the MNC of this PLMN, two or three digit number.

Values: 00 to 999

### 4.2.13.20 prioritized-ip-address-list

#### Syntax

[no] **prioritized-ip-address-list** *list-name*

#### Context

**[Tree]** configure mobile-gateway profile list prioritized-ip-address-list

#### Description

This command creates a new prioritized IP address list.

The **no** form of this command removes the configured list.

#### Parameters

*list-name*

Specifies the name of the prioritized IP address list, up to 32 characters.

### 4.2.13.21 address

#### Syntax

**address** {*ip-address* | *fqdn*} [**priority** *value*] [**port** *port*]

**no address** {*ip-address* | *fqdn*} [**port** *port*]

#### Context

**[Tree]** configure mobile-gateway profile list prioritized-ip-address-list address

#### Description

This command configures an IP address in the configured prioritized IP address list. The address can optionally be assigned with a priority.

The **no** form of this command removes the IP address from the list.

#### Parameters

*ip-address*

Specifies the IP address.

Values:

- ipv4-address – a.b.c.d

- `ipv6-address` – `x:x:x:x:x:x:x` (eight 16-bit pieces) or `x:x:x:x:x.d.d.d.d` where  
`x` – [0..FFFF]H  
`d` – [0..255]D

*fqdn*

Specifies the FQDN, up to 255 characters.

*value*

Specifies the priority.

Values: 0 to 8

Default: 8

*port*

Specifies the port.

Values: 0 to 65535

Default: 80

#### 4.2.13.22 slice-instance-list

##### Syntax

`[no] slice-instance-list list-name`

##### Context

[\[Tree\]](#) configure mobile-gateway profile list slice-instance-list

##### Description

This command configures a list of slice instances.

The **no** form of this command removes the configured slice instance list.

##### Parameters

*list-name*

Specifies the list name, up to 32 characters.

#### 4.2.13.23 slice-instance

##### Syntax

`[no] slice-instance name`

##### Context

[\[Tree\]](#) configure mobile-gateway profile list slice-instance-list slice-instance

## Description

This command configures a single slice instance.

The **no** form of this command removes the slice instance from the list.

## Parameters

*name*

Specifies the name of the slice instance, up to 128 characters.

### 4.2.13.24 slice-list

## Syntax

[no] slice-list *list-name*

## Context

[\[Tree\]](#) configure mobile-gateway profile list slice-list

## Description

A list of slices.

The **no** form of this command removes the configured slice list.

## Parameters

*list-name*

Specifies the name of the list, up to 32 characters.

### 4.2.13.25 slice

## Syntax

slice *name* [sst *sst-value* [sd *hex-string*]]

no slice *name*

## Context

[\[Tree\]](#) configure mobile-gateway profile list slice-list slice

## Description

This command configures a slice in the configured slice list. The slice must be associated with a Slice Service Type (SST). Optionally, the slice is associated with a Service Differentiator (SD). The SD is optional information that complements the SST to differentiate among multiple network slices of the same type.

The **no** form of this command removes the slice from the list.

## Parameters

*name*

Specifies the name of the slice, up to 32 characters.

*sst-value*

Specifies the SST identifier for the created slice.

Values: 0 to 255



**Note:** Values 0 to 127 are standardized and are defined in clause 5.15.2.2 of 3GPP TS 23.501. The most common standardized value is 1, which indicates eMBB (5G enhanced Mobile Broadband). Values from 128 to 255 correspond to operator-specific SSTs.

*hex-string*

Specifies the SD identifier for the created slice, representing the SD, a 3 octet string in hexadecimal representation.

Values: xxxxxx, x: [0..F]H

## 4.2.13.26 slice-instances

### Syntax

**slice-instances** *list-name*

**no slice-instances**

### Context

[\[Tree\]](#) configure mobile-gateway profile list slice-list slice slice-instances

### Description

This command configures a list of slice instances which are instantiated for the specific slice. A slice instance can belong to lists of more than one slice.

The **no** form of this command removes the slice instances list.

### Default

**no slice-instances**

### Parameters

*list-name*

Specifies the name of the prioritized IP address list, up to 32 characters, as configured using the **configure mobile-gateway profile list slice-instance-list** command.

### 4.2.13.27 tai-list

#### Syntax

**[no] tai-list** *tai-list-name*

#### Context

**[Tree]** configure mobile-gateway profile list tai-list

#### Description

This command configures a list of tracking area identity (TAI) values. The list can contain TAI values and TAI ranges.

The **no** form of this command removes the specified list from the configuration.

#### Parameters

*tai-list-name*

Specifies the list name, up to 32 characters.

### 4.2.13.28 tai

#### Syntax

**no tai mcc** *mcc value mnc mnc value tac tac value*

**no tai mcc** *mcc value mnc mnc value tac-range-start tac-range-start value tac-range-end tac-range-end value*

**tai mcc** *mcc value mnc mnc value tac tac value [priority priority-value]*

**tai mcc** *mcc value mnc mnc value tac-range-start tac-range-start value tac-range-end tac-range-end value [priority priority-value]*

#### Context

**[Tree]** configure mobile-gateway profile list tai-list tai

#### Description

This command adds a new TAI or TAI range to the list.

The **no** form of this command removes the specified TAI or TAI range from the list.

#### Parameters

*mcc value*

Specifies the MCC value of the TAI.

Values: 000 to 999

*mnc value*

Specifies the MNC value of the TAI.

Values: 00 to 999

*tac value*

Specifies the TAC value of the TAI. The TAC value and the TAC range are mutually exclusive.

Value: six-digit hexadecimal number

*tac-range-start value*

Specifies the start of the TAC for the TAI range. The TAC value and the TAC range are mutually exclusive.

Values: six-digit hexadecimal number

*tac-range-end value*

Specifies the end of the TAC for the TAI range. The TAC value and the TAC range are mutually exclusive.

Values: six-digit hexadecimal number

*priority-value*

Specifies the priority that is signaled to the Network Repository Function (NRF) if this list is used for NRF registration.

Values: 0 to 65535

## 4.2.14 configure mobile-gateway profile n1-profile command descriptions

### 4.2.14.1 n1-profile

#### Syntax

[no] n1-profile *profile-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile n1-profile

#### Description

This command enables an N1 profile with the specified name and the commands in this context configure the attributes of the N1 profile.

The **no** form of this command removes the specified N1 profile.

#### Parameters

*profile-name*

Specifies the N1 profile name, up to 32 characters.

## 4.2.14.2 cause-code

### Syntax

**cause-code**

### Context

[\[Tree\]](#) configure mobile-gateway profile n1-profile cause-code

### Description

Commands in this context configure the error codes that the SMF signals in specific session-deletion and session-setup failure scenarios.

## 4.2.14.3 apn-shutdown

### Syntax

**apn-shutdown**

### Context

[\[Tree\]](#) configure mobile-gateway profile n1-profile cause-code apn-shutdown

### Description

Commands in this context configure error codes that are signaled when the APN is shutdown.

## 4.2.14.4 5gsm-cause-code

### Syntax

**5gsm-cause-code** *5gsm-cause-code*

**no 5gsm-cause-code**

### Context

[\[Tree\]](#) configure mobile-gateway profile n1-profile cause-code apn-shutdown 5gsm-cause-code

### Description

This command specifies the 5GSM Cause IE in the N1 PDU Session message when the APN is in shutdown state. 5GSM cause codes are defined in 3GPP TS 24.501 clause 9.11.4.2 and are described in more detail in Appendix B of the same specification.

The **no** form of this command reverts to the default.

### Default

5gsm-cause-code 8 – Operator Determined Barring



## Parameters

*5gsm-cause-code*

Specifies the N1 5GSM cause code value.

Values: 0 to 255

## 4.2.14.5 application-error-code

### Syntax

**application-error-code** *application-error-code*

**no application-error-code**

### Context

[\[Tree\]](#) configure mobile-gateway profile n1-profile cause-code apn-shutdown application-error-code

### Description

This command specifies the application error in the N11 Namf\_Communication message when the APN is in shutdown state. The application error values for N11 are defined in 3GPP TS 29.502 table 6.1.7.3-1, and common application error values are defined in 3GPP TS 29.500 table 5.2.7.2-1.

The **no** form of this command reverts to the default.

### Default

application-error-code DNN\_NOT\_SUPPORTED

### Parameters

*application-error-code*

Specifies the application error, up to 64 characters.

## 4.2.14.6 http-status-code

### Syntax

**http-status-code** *http-status-code*

**no http-status-code**

### Context

[\[Tree\]](#) configure mobile-gateway profile n1-profile cause-code apn-shutdown http-status-code

### Description

This command specifies the HTTP status code in the N11 Namf\_Communication message when the APN is in shutdown state. HTTP status codes are defined in RFC 9110 section 15.

The **no** form of this command reverts to the default.

## Default

http-status-code 403

## Parameters

*http-status-code*

Specifies the HTTP status code.

Values:

- 400 – Bad Request
- 403 – Forbidden
- 404 – Not Found
- 500 – Internal Server Error
- 503 – Service Unavailable
- 504 – Gateway Timeout

### 4.2.14.7 gw-suspend

#### Syntax

**gw-suspend**

#### Context

[\[Tree\]](#) configure mobile-gateway profile n1-profile cause-code gw-suspend

#### Description

Commands in this context configure error codes when the gateway is suspended.

### 4.2.14.8 5gsm-cause-code

#### Syntax

**5gsm-cause-code** *5gsm-cause-code*

**no 5gsm-cause-code**

#### Context

[\[Tree\]](#) configure mobile-gateway profile n1-profile cause-code gw-suspend 5gsm-cause-code

#### Description

This command specifies the 5GSM Cause IE in the N1 PDU Session message when the gateway is suspended. 5GSM cause codes are defined in 3GPP TS 24.501 clause 9.11.4.2 and described in more detail in appendix B of the same specification.

The **no** form of this command reverts to the default.

**Default**

5gsm-cause-code 8 – Operator Determined Barring

**Parameters**

*5gsm-cause-code*

Specifies the N1 5GSM cause code value.

Values: 0 to 255

#### 4.2.14.9 application-error-code

**Syntax**

**application-error-code** *application-error-code*

**no application-error-code**

**Context**

[\[Tree\]](#) configure mobile-gateway profile n1-profile cause-code gw-suspend application-error-code

**Description**

This command configures the application error in the N11 Namf\_Communication message when the gateway is suspended. The application error values for N11 Namf\_Communication are defined in 3GPP TS 29.502 table 6.1.7.3-1, and common application error values are defined in 3GPP TS 29.500 table 5.2.7.2-1.

The **no** form of this command reverts to the default.

**Default**

application-error-code NF\_FAILOVER

**Parameters**

*application-error-code*

Specifies the application error, up to 64 characters.

#### 4.2.14.10 http-status-code

**Syntax**

**http-status-code** *http-status-code*

**no http-status-code**

**Context**

[\[Tree\]](#) configure mobile-gateway profile n1-profile cause-code gw-suspend http-status-code

## Description

This command specifies the HTTP status code in the N11 Namf\_Communication message when the gateway is suspended. HTTP status code are defined in RFC 9110 section 15.

The **no** form of this command reverts to the default.

## Default

http-status-code 500

## Parameters

*http-status-code*

Specifies the HTTP status code.

Values:

- 400 – Bad Request
- 403 – Forbidden
- 404 – Not Found
- 500 – Internal Server Error
- 503 – Service Unavailable
- 504 – Gateway Timeout

### 4.2.14.11 n1-t3591

## Syntax

**n1-t3591** *timeout* [**retry-count** *retry-count*]

**no n1-t3591**

## Context

[\[Tree\]](#) configure mobile-gateway profile n1-profile n1-t3591

## Description

This command configures the T3591 timer specified in 3GPP TS 24.501. The T3591 timer defines the retransmission timeout for the PDU SESSION MODIFICATION COMMAND message.

The **no** form of this command reverts to the default.

## Default

n1-t3591 160 retry-count 4

## Parameters

*timeout*

Specifies the timeout period in deciseconds.

Values: 10 to 300

*retry-count*

Specifies the number of retransmissions.

Values: 0 to 10

#### 4.2.14.12 n1-t3592

##### Syntax

**n1-t3592** *timeout* [**retry-count** *retry-count*]

**no n1-t3592**

##### Context

[\[Tree\]](#) configure mobile-gateway profile n1-profile n1-t3592

##### Description

This command configures the T3592 timer specified in 3GPP TS 24.501. The T3592 timer defines the retransmission timeout for the PDU SESSION RELEASE COMMAND message.

The **no** form of this command reverts to the default.

##### Default

n1-t3592 160 *retry-count* 4

##### Parameters

*timeout*

Specifies the timeout period in deciseconds.

Values: 10 to 300

*retry-count*

Specifies the number of retransmissions.

Values: 0 to 10

### 4.2.15 configure mobile-gateway profile node-selection command descriptions

#### 4.2.15.1 node-selection

##### Syntax

**node-selection**

##### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection

## Description

Commands in this context configure policies for the UPF node selection.

### 4.2.15.2 abort

#### Syntax

```
abort
```

#### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection abort

#### Description

This command ends the current policy editing session and discards the policy changes made during the session.

### 4.2.15.3 begin

#### Syntax

```
begin
```

#### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection begin

#### Description

This command starts a policy editing session, which is required for all configuration changes under the following context.

```
configure mobile-gateway profile node-selection
```

Editing sessions are not interrupted by high availability activity switches or CLI session terminations, such as closing a Telnet session.

Use the following command to save the policy changes made during the session. Any modifications made during the editing session take effect when this command is issued.

```
configure mobile-gateway profile node-selection commit
```

Use the following command to discard the policy changes made during the session.

```
configure mobile-gateway profile node-selection abort
```

#### 4.2.15.4 client-profile

##### Syntax

[no] **client-profile** *profile-name*

##### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection client-profile

##### Description

This command configures a client selection profile for policy-based UPF node selection.

The **no** form of this command removes the specified client profile.

##### Parameters

*profile-name*

Specifies the client profile name, up to 32 characters.

#### 4.2.15.5 default-action

##### Syntax

**default-action**

##### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection client-profile default-action

##### Description

Commands in this context configure the default action to apply if the session does not match any of the client profile entries.

#### 4.2.15.6 set-target-profile

##### Syntax

**set-target-profile** *profile-name*

**no set-target-profile**

##### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection client-profile default-action set-target-profile

## Description

This command configures the default target profile to apply per client profile. The target profile defines the rules for the UPF node selection. If there is no default target profile configured and the session does not match any client-profile entries, the session is rejected.

Nokia recommends to configure at least a default target profile with no match criteria. This allows the system to fall back to the default UPF selection criteria.

The **no** form of this command removes the configuration.

## Parameters

*profile-name*

Specifies the target profile name, up to 32 characters.

### 4.2.15.7 description

#### Syntax

**description** *description-string*

**no description**

#### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection client-profile description

#### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

#### Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.15.8 entry

#### Syntax

**[no] entry** *id*

#### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection client-profile entry



## Description

This command configures an entry for the client profile. A client profile can have up to 256 entries, with each entry matching the session parameters (for example, TAI or APN or both) to determine the target profile.

Each entry has a selection priority processing based on the numeric value of the ID associated with the entry. The parameters configured per entry are applied collectively. If no **match** parameters are configured within an entry, it is considered as matching all sessions.



### Note:

- An action and a target profile under the action must be present even if no match criteria are provided, else the MAG-c throws an error when committing the configuration.
- Nokia advises against entries without match criteria.

The **no** form of this command removes the specified entry.

## Parameters

*id*

Specifies the ID.

Values: 0 to 294967295

## 4.2.15.9 action

### Syntax

**action**

### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection client-profile entry action

### Description

Commands in this context configure the action to apply if the session matches the client profile entry.

## 4.2.15.10 set-target-profile

### Syntax

**set-target-profile** *profile-name*

**no set-target-profile**

### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection client-profile entry action set-target-profile

## Description

This command configures the target profile to apply if the session matches the client profile entry. The target profile defines the rules for UPF node selection.

The **no** form of this command removes the configuration.

## Parameters

*profile-name*

Specifies an existing target profile name, up to 32 characters, that is previously configured using the following command.

```
configure mobile-gateway profile node-selection target-profile
```

### 4.2.15.11 description

#### Syntax

**description** *description-string*

**no description**

#### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection client-profile entry description

## Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

## Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.15.12 match

#### Syntax

**match**

#### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection client-profile entry match

## Description

Commands in this context configure the match criteria for the client profile entry.

### 4.2.15.13 apn

#### Syntax

[no] apn *apn-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection client-profile entry match apn

#### Description

This command configures the APN name that the system uses to match the session to the client profile entry. The client selection policy applies the selection rule for the UPF node selection if the APN name of the session matches at least one APN name configured per entry. A maximum of five APNs can be configured per entry.

The **no** form of this command removes the specified APN name from the match criteria.

#### Parameters

*apn-name*

Specifies the APN name, up to 80 characters.

### 4.2.15.14 cell-id-list

#### Syntax

cell-id-list *name*

no cell-id-list

#### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection client-profile entry match cell-id-list

#### Description

This command configures the list of e-UTRAN cell global identification (ECGI) and NR cell global identification (NCGI) values that the MAG-c uses to match the session to the client profile entry.

The **no** form of this command removes the configuration.

#### Default

no cell-id-list

## Parameters

*name*

Specifies the name of a list of ECGI and NCGI values that is configured using the following command, up to 32 characters.

```
configure mobile-gateway profile list cell-id-list
```

### 4.2.15.15 tai-list

#### Syntax

**tai-list** *list-name*

**no tai-list**

#### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection client-profile entry match tai-list

#### Description

This command configures the list of tracking area identity (TAI) values that the MAG-c uses to match the session to the client profile entry.

The **no** form of this command removes the configuration.

#### Default

no tai-list

#### Parameters

*list-name*

Specifies the name of a TAI list that is configured using the following command, up to 32 characters.

```
configure mobile-gateway profile list tai-list
```

### 4.2.15.16 commit

#### Syntax

**commit**

#### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection commit

## Description

This command saves the UPF node selection changes made during the current editing session. Any policy changes made during the editing session only take effect when they are committed. When the changes are successfully committed and no errors are detected during the commit or cross-reference verification against the existing policy configuration, the editing session is closed.

### 4.2.15.17 diff

#### Syntax

**diff**

#### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection diff

#### Description

This command shows the changes done to the UPF node selection during an editing session.

### 4.2.15.18 group-label

#### Syntax

**[no] group-label** *profile-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection group-label

#### Description

This command configures the group-label profile for UPF node selection. The group label can identify a set of UPF nodes based on a common criterion.

The **no** form of this command removes the specified group label.

#### Parameters

*profile-name*

Specifies the group-label profile name, up to 32 characters.

### 4.2.15.19 description

#### Syntax

**description** *description-string*

**no description**

## Context

**[Tree]** configure mobile-gateway profile node-selection group-label description

## Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

## Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.15.20 target-profile

## Syntax

**[no] target-profile** *profile-name*

## Context

**[Tree]** configure mobile-gateway profile node-selection target-profile

## Description

This command configures the target profile for UPF node selection. The target profile applies individually to a client profile entry.

The **no** form of this command removes the specified target profile.

## Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

### 4.2.15.21 description

## Syntax

**description** *description-string*

**no description**

## Context

**[Tree]** configure mobile-gateway profile node-selection target-profile description

## Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

## Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.15.22 entry

#### Syntax

[no] entry *id*

#### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection target-profile entry

#### Description

This command configures a target profile entry for UPF node selection. Each entry has a selection priority processing based on the numeric value of the ID associated with the entry.

The **no** form of this command removes the specified target profile entry.

#### Parameters

*id*

Specifies the entry ID.

Values: 0 to 4294967295

### 4.2.15.23 description

#### Syntax

**description** *description-string*

**no description**

#### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection target-profile entry description

#### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

### Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.15.24 match

### Syntax

**match**

### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection target-profile entry match

### Description

Commands in this context configure the match criteria for the target profile entry.

## 4.2.15.25 apn

### Syntax

**apn client-apn**

**no apn**

### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection target-profile entry match apn

### Description

This command configures the system to use the client APN to match the session to the target profile entry.

The **no** form of this command removes the configuration from the match criteria.

## 4.2.15.26 group-label

### Syntax

**[no] group-label group-name**

### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection target-profile entry match group-label



## Description

This command configures a set of group labels to determine eligible BNG-UPs by matching the configured group labels to the group labels in the UP peer list, configured in the following context.

```
configure mobile-gateway profile pfc up-peer-list peer
```

A maximum of five group labels can be configured per entry.

The **no** form of this command removes the configuration from the match criteria.

## Parameters

*group-name*

Specifies the group name, up to 32 characters.

## 4.2.15.27 threshold

### Syntax

**threshold** *number surviving upfs*

**no threshold**

### Context

[\[Tree\]](#) configure mobile-gateway profile node-selection target-profile entry threshold

## Description

This command configures the minimum number of BNG-UPs that must be available under this target profile entry for the entry to be used for UPF selection.

## Default

no threshold

## Parameters

*number surviving upfs*

Specifies the minimum number of BNG-UPs that must be available.

Values: 0 to 8

## 4.2.16 configure mobile-gateway profile pcf-profile command descriptions

### 4.2.16.1 pcf-profile

#### Syntax

**pcf-profile** *profile-name*

**no pcf-profile** *profile-name*

## Context

[\[Tree\]](#) configure mobile-gateway profile pcf-profile

## Description

This command configures a PCF profile that defines the failure-handling policy and feature support signaling when the Npcf\_SMPolicyControl services are used.

The **no** form of this command removes the PCF profile from the configuration.

## Parameters

*profile-name*

Specifies the name of the PCF profile, up to 32 characters.

### 4.2.16.2 ap-action

## Syntax

**ap-action** {**keep-pcf-rules** | **keep-local-rules-only**}

## Context

[\[Tree\]](#) configure mobile-gateway profile pcf-profile ap-action

## Description

This command configures the PCC rules to keep when a failure-handling action of **ap-continue** is applied.

## Default

ap-action keep-pcf-rules

## Parameters

**keep-pcf-rules**

Keyword to indicate the last PCC rules received from the PCF are kept as-is until the session is terminated.

**keep-local-rules-only**

Keyword to indicate only the local any-to-any PCC rule is kept.

### 4.2.16.3 fh-session-no-response

## Syntax

**fh-session-no-response** *action*

**no fh-session-no-response**

## Context

[\[Tree\]](#) configure mobile-gateway profile pcf-profile fh-session-no-response

## Description

This command specifies failure handling behavior for messages that do not get a response subject to the retry-count and transaction-timer configuration.

The **no** form of this command reverts to the default.

## Default

fh-session-no-response terminate

## Parameters

*action*

Specifies the failure handling action.

Values:

- **retry-and-attempt-continue**  
Keyword to first try alternative peers if any are available, for the create operation only. If alternative peers are not available or still time out, try to continue the triggering procedure without removing the SM policy association. This may just fail the procedure or terminate the session depending on whether the procedure can continue without PCF interaction.
- **retry-and-ap-continue**  
Keyword to first try alternative peers if any are available, for the create operation only. If alternative peers are not available or still time out, continue with the session, but remove the SM policy association and fall back to the rules defined by the **ap-action** command.
- **terminate**  
Keyword to terminate the session.
- **retry-and-terminate**  
Keyword that is the same as **terminate**, but first tries alternative peers if any are available. It falls back to **terminate** for the update and delete operations.

### 4.2.16.4 fh-time-limit

#### Syntax

**fh-time-limit** *time-limit*

**no fh-time-limit**

#### Context

[\[Tree\]](#) configure mobile-gateway profile pcf-profile fh-time-limit

#### Description

This command is only applicable when failure handling is set to **ap-continue** and indicates the time limit during which a session is kept without an SM policy association. The special value 0 disables the time limit.

The **no** form of this command reverts to the default.

**Default**

fh-time-limit 0

**Parameters**

*time-limit*

Specifies the time limit in minutes; the value 0 indicates that no time limit is applied.

Values: 0 to 2880 (48h)

### 4.2.16.5 fh-volume-limit

**Syntax**

**fh-volume-limit** *volume-limit*

**no fh-volume-limit**

**Context**

[\[Tree\]](#) configure mobile-gateway profile pcf-profile fh-volume-limit

**Description**

This command is only applicable when failure handling is set to **ap-continue** and indicates the data volume in kilobytes that a session can consume while it has no active SM policy association. The special value 0 disables the volume limit.

The **no** form of this command reverts to the default.

**Default**

fh-volume-limit 0

**Parameters**

*volume-limit*

Specifies the volume limit in kilobytes; the value 0 indicates that no volume limit is applied.

Values: 0 to 10000000

### 4.2.16.6 npcf-error-mapping-profile

**Syntax**

**npcf-error-mapping-profile** *profile-name*

**no npcf-error-mapping-profile**

**Context**

[\[Tree\]](#) configure mobile-gateway profile pcf-profile npcf-error-mapping-profile

## Description

This command applies an error-mapping profile that is used to map PCF application error codes to specific 5G Session Management error codes or 4G GTP error codes.

The **no** form of this command removes the profile.

## Default

no npcf-error-mapping-profile

## Parameters

*profile-name*

Specifies the error-mapping profile, up to 32 characters. Refers to a profile configured using the following command.

```
configure mobile-gateway profile sbi-error-mapping-profile
```

## 4.2.16.7 sbi-srvc-operation

### Syntax

```
sbi-srvc-operation {create | update | delete}  
no sbi-srvc-operation {create | update | delete}
```

### Context

[\[Tree\]](#) configure mobile-gateway profile pcf-profile sbi-srvc-operation

### Description

This command enters the context to configure SBI service operation specific failure handling.

The **no** form of this command removes the configuration for that operation and resets all values to the default.

### Default

no sbi-srvc-operation

### Parameters

**create**

Specifies the context for the create operation.

**update**

Specifies the context for the update operation.

**delete**

Specifies the context for the delete operation.

## 4.2.16.8 http-status-code

### Syntax

**http-status-code** *status-code-value* {**terminate** | **attempt-continue** | **ap-continue** | **retry-and-terminate** | **retry-and-ap-continue** } [**application-error** *app-error-code*]

**no http-status-code** *status-code-value* [**application-error** *app-error-code*]

### Context

[Tree] configure mobile-gateway profile pcf-profile sbi-srv-operation http-status-code

### Description

This command configures the failure-handling behavior for a specific HTTP status code. Optionally, you can specify a more granular failure-handling behavior per status code and per application error. When an error is received, the following priority determines the failure handling behavior:

1. If the error matches a specific HTTP status code and application error, use that behavior.
2. If the error matches a specific HTTP status code without an application error, use that behavior.
3. If the error matches an HTTP status code 3xxx, HTTP status code 4xx, or HTTP status code 5xxx configuration with a specific application error, use that behavior.
4. Use the matching HTTP status code 3xxx, HTTP status code 4xx, or HTTP status code 5xxx configuration, or its default value.

RFC 9110 section 15 defines the HTTP status codes. 3GPP TS 29.512 table 5.7.3-1 defines the application error codes for Npcf\_SMPolicyManagement, and 3GPP TS 29.500 table 5.2.7.2-1 defines common application error values.

The **no** form of this command removes the code specific failure handling for that HTTP status code and optional application error code.

### Parameters

*status-code-value*

Specifies the 3-digit HTTP status code value.

Values: 300 to 599

**application-error**

Specifies the Npcf\_SMPolicyManagement application error, up to 36 characters.

**attempt-continue**

Keyword to continue the triggering procedure without removing the SM policy association. This may just fail the procedure or terminate the session depending on whether the procedure can continue without PCF interaction.

**ap-continue**

Keyword to first try alternative peers, if any are available, for the create operation only. If alternative peers are unavailable or still time out, continue with the session, but remove the SM policy association and fall back to the rules as defined by the **ap-action** command.

**terminate**

Keyword to terminate the session.

**retry-and-terminate**

Keyword that is the same as **terminate**, but first tries alternative peers if any are available. This falls back to **terminate** for the **update** and **delete** operations.

**retry-and-ap-continue**

Same as **ap-continue**, but first try alternative peers if any are available. This falls back to **terminate** for the **update** and **delete** operations.

*app-error-code*

Specifies the application error, up to 32 characters. It can be a standard application error or a customer-specified application error. The standard application errors are:

- INVALID\_API
- INVALID\_MSG\_FORMAT
- INVALID\_QUERY\_PARAM
- MANDATORY\_QUERY\_PARAM\_INCORRECT
- OPTIONAL\_QUERY\_PARAM\_INCORRECT
- MANDATORY\_QUERY\_PARAM\_MISSING
- MANDATORY\_IE\_INCORRECT
- OPTIONAL\_IE\_INCORRECT
- MANDATORY\_IE\_MISSING
- UNSPECIFIED\_MSG\_FAILURE
- MODIFICATION\_NOT\_ALLOWED
- SUBSCRIPTION\_NOT\_FOUND
- RESOURCE\_URI\_STRUCTURE\_NOT\_FOUND
- INCORRECT\_LENGTH
- NF\_CONGESTION\_RISK
- INSUFFICIENT\_RESOURCES
- UNSPECIFIED\_NF\_FAILURE
- SYSTEM\_FAILURE
- USER\_UNKNOWN
- ERROR\_INITIAL\_PARAMETERS
- ERROR\_TRIGGER\_EVENT
- ERROR\_TRAFFIC\_MAPPING\_INFO\_REJECTED
- ERROR\_CONFLICTING\_REQUEST
- POLICY\_CONTEXT\_DENIED

## 4.2.16.9 http-status-code-3xx

### Syntax

**http-status-code-3xx** {**terminate** | **attempt-continue** | **retry-and-terminate** | **ap-continue** | **retry-and-ap-continue**} [**application-error** *app-error-code*]

**no http-status-code-3xx** [**application-error** *app-error-code*]

### Context

[Tree] configure mobile-gateway profile pcf-profile sbi-srvc-operation http-status-code-3xx

### Description

This command configures the failure-handling behavior for any message with HTTP status codes 300 to 399. Optionally, a more granular per application-error failure-handling behavior for those codes can be specified. See the **http-status-code** command for more information about priority of configuration and error values.

The **no** form of this command either removes the application error specific failure handling if the **application-error** parameter is specified, or resets the generic code 300-399 failure handling to its default.

### Default

http-status-code-3xx terminate

### Parameters

#### **application-error**

Specifies the Npcf\_SMPolicyManagement application error, up to 36 characters.

#### **attempt-continue**

Keyword to continue the triggering procedure without removing the SM policy association. This may just fail the procedure or terminate the session depending on whether the procedure can continue without PCF interaction.

#### **ap-continue**

Keyword to continue with the session but remove the SM policy association and fall back to the rules defined by the **ap-action** command.

#### **terminate**

Keyword to terminate the session.

#### **retry-and-terminate**

Keyword that is the same as **terminate**, but first try alternative peers if any are available. This falls back to **terminate** for the **update** and **delete** operations.

#### **retry-and-ap-continue**

Keyword that is the same as **ap-continue**, but first try alternative peers if any are available. This falls back to **terminate** for the **update** and **delete** operations.

#### *app-error-code*

Specifies the standard application errors, up to 32 characters.

- INVALID\_API



- INVALID\_MSG\_FORMAT
- INVALID\_QUERY\_PARAM
- MANDATORY\_QUERY\_PARAM\_INCORRECT
- OPTIONAL\_QUERY\_PARAM\_INCORRECT
- MANDATORY\_QUERY\_PARAM\_MISSING
- MANDATORY\_IE\_INCORRECT
- OPTIONAL\_IE\_INCORRECT
- MANDATORY\_IE\_MISSING
- UNSPECIFIED\_MSG\_FAILURE
- MODIFICATION\_NOT\_ALLOWED
- SUBSCRIPTION\_NOT\_FOUND
- RESOURCE\_URI\_STRUCTURE\_NOT\_FOUND
- INCORRECT\_LENGTH
- NF\_CONGESTION\_RISK
- INSUFFICIENT\_RESOURCES
- UNSPECIFIED\_NF\_FAILURE
- SYSTEM\_FAILURE
- USER\_UNKNOWN
- ERROR\_INITIAL\_PARAMETERS
- ERROR\_TRIGGER\_EVENT
- ERROR\_TRAFFIC\_MAPPING\_INFO\_REJECTED
- ERROR\_CONFLICTING\_REQUEST
- POLICY\_CONTEXT\_DENIED

#### 4.2.16.10 http-status-code-4xx

##### Syntax

**http-status-code-4xx** {**terminate** | **attempt-continue** | **retry-and-terminate** | **ap-continue** | **retry-and-ap-continue**} [**application-error** *app-error-code*]

**no http-status-code-4xx** [**application-error** *app-error-code*]

##### Context

[\[Tree\]](#) configure mobile-gateway profile pcf-profile sbi-svc-operation http-status-code-4xx

##### Description

This command configures the failure-handling behavior for any message with HTTP status codes 400 to 499. Optionally, a more granular per application-error failure handling behavior for those codes can be

specified. See the **http-status-code** command for more information about priority of configuration and error values.

The **no** form of this command either removes the application error specific failure handling if the **application-error** parameter is specified, or resets the generic code 400-499 failure handling to its default.

## Default

http-status-code-4xx terminate

## Parameters

### attempt-continue

Keyword to continue the triggering procedure without removing the SM policy association. This may just fail the procedure or terminate the session depending on whether the procedure can continue without PCF interaction.

### ap-continue

Keyword to continue with the session, but remove the SM policy association and fall back to the rules as defined by the **ap-action** command.

### terminate

Keyword to terminate the session.

### retry-and-terminate

Same as **terminate**, but first try alternative peers if any are available. This falls back to **terminate** for the **update** and **delete** operations.

### retry-and-ap-continue

Same as **ap-continue**, but first try alternative peers if any are available. This falls back to **terminate** for the **update** and **delete** operations.

### app-error-code

Standard application errors, up to 32 characters.

- INVALID\_API
- INVALID\_MSG\_FORMAT
- INVALID\_QUERY\_PARAM
- MANDATORY\_QUERY\_PARAM\_INCORRECT
- OPTIONAL\_QUERY\_PARAM\_INCORRECT
- MANDATORY\_QUERY\_PARAM\_MISSING
- MANDATORY\_IE\_INCORRECT
- OPTIONAL\_IE\_INCORRECT
- MANDATORY\_IE\_MISSING
- UNSPECIFIED\_MSG\_FAILURE
- MODIFICATION\_NOT\_ALLOWED
- SUBSCRIPTION\_NOT\_FOUND
- RESOURCE\_URI\_STRUCTURE\_NOT\_FOUND
- INCORRECT\_LENGTH

- NF\_CONGESTION\_RISK
- INSUFFICIENT\_RESOURCES
- UNSPECIFIED\_NF\_FAILURE
- SYSTEM\_FAILURE
- USER\_UNKNOWN
- ERROR\_INITIAL\_PARAMETERS
- ERROR\_TRIGGER\_EVENT
- ERROR\_TRAFFIC\_MAPPING\_INFO\_REJECTED
- ERROR\_CONFLICTING\_REQUEST
- POLICY\_CONTEXT\_DENIED

### 4.2.16.11 http-status-code-5xx

#### Syntax

**http-status-code-5xx** {**terminate** | **attempt-continue** | **retry-and-terminate** | **ap-continue** | **retry-and-ap-continue**} [**application-error** *app-error-code*]

**no http-status-code-5xx** [**application-error** *app-error-code*]

#### Context

[\[Tree\]](#) configure mobile-gateway profile pcf-profile sbi-srvc-operation http-status-code-5xx

#### Description

This command specifies the failure handling behavior for any message with HTTP status codes 500 to 599. Optionally, a more granular per application-error failure handling behavior for those codes can be specified. See the **http-status-code** command for more information about priority of configuration and error values.

The **no** form of this command either removes the application error specific failure handling if the **application-error** parameter is specified, or resets the generic code 500-599 failure handling to its default.

#### Default

http-status-code-5xx terminate

#### Parameters

##### **attempt-continue**

Keyword to continue the triggering procedure without removing the SM policy association. This may just fail the procedure or terminate the session depending on whether the procedure can continue without PCF interaction.

##### **ap-continue**

Keyword to continue with the session, but remove the SM policy association and fall back to the rules as defined by the **ap-action** command.

##### **terminate**

Keyword to terminate the session.

**retry-and-terminate**

Same as **terminate**, but first try alternative peers if any are available. This falls back to **terminate** for the **update** and **delete** operations.

**retry-and-ap-continue**

Same as **ap-continue**, but first try alternative peers if any are available. This falls back to **terminate** for the **update** and **delete** operations.

*app-error-code*

Standard application errors, up to 32 characters.

- INVALID\_API
- INVALID\_MSG\_FORMAT
- INVALID\_QUERY\_PARAM
- MANDATORY\_QUERY\_PARAM\_INCORRECT
- OPTIONAL\_QUERY\_PARAM\_INCORRECT
- MANDATORY\_QUERY\_PARAM\_MISSING
- MANDATORY\_IE\_INCORRECT
- OPTIONAL\_IE\_INCORRECT
- MANDATORY\_IE\_MISSING
- UNSPECIFIED\_MSG\_FAILURE
- MODIFICATION\_NOT\_ALLOWED
- SUBSCRIPTION\_NOT\_FOUND
- RESOURCE\_URI\_STRUCTURE\_NOT\_FOUND
- INCORRECT\_LENGTH
- NF\_CONGESTION\_RISK
- INSUFFICIENT\_RESOURCES
- UNSPECIFIED\_NF\_FAILURE
- SYSTEM\_FAILURE
- USER\_UNKNOWN
- ERROR\_INITIAL\_PARAMETERS
- ERROR\_TRIGGER\_EVENT
- ERROR\_TRAFFIC\_MAPPING\_INFO\_REJECTED
- ERROR\_CONFLICTING\_REQUEST
- POLICY\_CONTEXT\_DENIED

**4.2.16.12 retry-count****Syntax**

**retry-count** *max*

## no retry-count

### Context

[\[Tree\]](#) configure mobile-gateway profile pcf-profile sbi-srv-operation retry-count

### Description

This command configures the maximum number of times a message is retransmitted if there is no reply after the message is sent. The message is resent after the time configured by the following command elapses and until the maximum number of retries is reached. If the message times out after the last retry, failure handling is triggered.

```
configure mobile-gateway profile pcf-profile sbi-srv-operation transaction-timer
```

The **no** form of this command configures that no retries are attempted.

### Default

no retry-count

### Parameters

*max*

Specifies the maximum number of retries to resend the message.

Values: 1 to 10

## 4.2.16.13 transaction-timer

### Syntax

**transaction-timer** *value*

### Context

[\[Tree\]](#) configure mobile-gateway profile pcf-profile sbi-srv-operation transaction-timer

### Description

This command configures the transaction time used to send messages to the PCF. If there is no reply during the transaction time, the message is resent until the retry count configured by the following command is reached. If the message times out after the last retry, failure handling is triggered.

The following command configures the retry counter.

```
configure mobile-gateway profile pcf-profile sbi-srv-operation retry-count
```

### Default

transaction-timer 5000

## Parameters

*value*

Specifies the transaction timer value, in milliseconds.

Values: 1000 to 20000

### 4.2.16.14 supported-features

#### Syntax

**supported-features**

#### Context

[\[Tree\]](#) configure mobile-gateway profile pcf-profile supported-features

#### Description

Commands in this context configure supported features for the PCF profile. These features are signaled in the suppFeat IE when generating messages toward the PCF.

### 4.2.16.15 policy-decision-error-handling

#### Syntax

**no policy-decision-error-handling**

**policy-decision-error-handling**

#### Context

[\[Tree\]](#) configure mobile-gateway profile pcf-profile supported-features policy-decision-error-handling

#### Description

This command configures signaling of the PolicyDecisionErrorHandling feature within the suppFeat IE.

The **no** form of this command disables signaling of PolicyDecisionErrorHandling.

#### Default

no policy-decision-error-handling

### 4.2.16.16 resp-based-session-rel

#### Syntax

**no resp-based-session-rel**

**resp-based-session-rel**

## Context

[\[Tree\]](#) configure mobile-gateway profile pcf-profile supported-features resp-based-session-rel

## Description

This command configures support to signal the RespBasedSessionRel feature within the suppFeat IE. The **no** form of this command disables signaling of the RespBasedSessionRel feature.

## Default

no resp-based-session-rel

### 4.2.16.17 session-rule-error-handling

#### Syntax

**no session-rule-error-handling**  
**session-rule-error-handling**

#### Context

[\[Tree\]](#) configure mobile-gateway profile pcf-profile supported-features session-rule-error-handling

#### Description

This command configures signaling of the SessionRuleErrorHandling feature within the suppFeat IE. The **no** form of this command disables signaling of the SessionRuleErrorHandling feature.

#### Default

no session-rule-error-handling

### 4.2.16.18 unlimited-multi-ipv6-prefix

#### Syntax

**no unlimited-multi-ipv6-prefix**  
**unlimited-multi-ipv6-prefix**

#### Context

[\[Tree\]](#) configure mobile-gateway profile pcf-profile supported-features unlimited-multi-ipv6-prefix

#### Description

This command configures signaling of the MultiIpv6AddrPrefix feature within the suppFeat IE. The **no** form of this command disables signaling of the MultiIpv6AddrPrefix feature.

**Default**

no unlimited-multi-ipv6-prefix

## 4.2.17 configure mobile-gateway profile pfcpc command descriptions

### 4.2.17.1 pfcpc

**Syntax**

**pfcpc**

**Context**

[\[Tree\]](#) configure mobile-gateway profile pfcpc

**Description**

Commands in this context configure a PFCPC profile.

### 4.2.17.2 pfcpc-association-peer-list

**Syntax**

**[no] pfcpc-association-peer-list** *profile-name*

**Context**

[\[Tree\]](#) configure mobile-gateway profile pfcpc pfcpc-association-peer-list

**Description**

This command creates a PFCPC association peer list profile.

The **no** form of this command removes the profile from the configuration.

**Parameters**

*profile-name*

Specifies the name for the profile, up to 32 characters.

### 4.2.17.3 description

**Syntax**

**description** *long-description-string*

**no description**



## Context

[\[Tree\]](#) configure mobile-gateway profile pfcf pfcf-association-peer-list description

## Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

## Parameters

*long-description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.17.4 node-id

## Syntax

[no] **node-id** *node-id*

## Context

[\[Tree\]](#) configure mobile-gateway profile pfcf pfcf-association-peer-list node-id

## Description

This multi-entry command configures a node ID string of the remote PFCP peer.

The **no** form of this command removes the specified node ID of the remote PFCP peer from the configuration.

## Parameters

*node-id*

Specifies the node ID of the remote PFCP peer, up to 31 characters.

### 4.2.17.5 bfd-enable

## Syntax

[no] **bfd-enable**

## Context

[\[Tree\]](#) configure mobile-gateway profile pfcf pfcf-association-peer-list node-id bfd-enable

## Description

This command enables the BFD association with the PFCP peer. The MAG-c uses the BFD state to determine the route convergence toward itself, before triggering a PFCP Association Setup Request toward the PFCP peers.

The **no** form of this command disables the BFD association with the PFCP peer.



### Note:

- When this feature is used on the UP function, only a single IP address peer can be configured.
- To monitor the BFD status for PFCP interfaces, use the following command with the appropriate router ID.

```
show router bfd session
```



**Note:** For more information about the preceding command, see the SR OS documentation.

## Default

no bfd-enable

## 4.2.17.6 pfc-peer

### Syntax

[no] pfc-peer *ipv4* | *ipv6*

### Context

[\[Tree\]](#) configure mobile-gateway profile pfc pfc-association-peer-list pfc-peer

### Description

This multi-entry command configures the IPv4 or the IPv6 address of the remote PFCP peer.

The **no** form of this command removes the specified IPv4 or the IPv6 address of the remote PFCP peer from the configuration.

### Parameters

*ipv4* | *ipv6*

Specifies the peer's IP address.

Values:

- *ipv4* – a.b.c.d
- *ipv6* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x.d.d.d where  
x – [0..FFFF]H  
d – [0..255]D

### 4.2.17.7 bfd-enable

#### Syntax

[no] bfd-enable

#### Context

[\[Tree\]](#) configure mobile-gateway profile pfcf pfcf-association-peer-list pfcf-peer bfd-enable

#### Description

This command enables the BFD association with the PFCP peer. The MAG-c uses the BFD state to determine route convergence toward itself, before triggering a PFCP Association Setup Request toward the PFCP peers.

The **no** form of this command disables the BFD association with the PFCP peer.



#### Note:

- When this feature is used on the UP function, only a single IP address peer can be configured.
- To monitor the BFD status for PFCP interfaces, use the following command with the appropriate router ID.

```
show router bfd session
```



**Note:** For more information about the preceding command, see the SR OS documentation.

#### Default

no bfd-enable

### 4.2.17.8 pfcf-profile

#### Syntax

[no] pfcf-profile *profile-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile pfcf pfcf-profile

#### Description

This command creates a PFCP profile.

The **no** form of this command removes the profile from the configuration.

#### Default

pfcf-profile "default"

## Parameters

*profile-name*

Specifies the name for the profile, up to 32 characters.

### 4.2.17.9 association-retry-timer

#### Syntax

**association-retry-timer** *retry-time*

#### Context

[\[Tree\]](#) configure mobile-gateway profile pfcf pfcf-profile association-retry-timer

#### Description

This command configures the retry time between sending an association request in case of a PFCF interface path fault or if the initial association setup request fails.

#### Default

association-retry-timer 10

#### Parameters

*retry-time*

Specifies the time between retries for sending an association request, in seconds.

Values: 1 to 36000

### 4.2.17.10 audit-ip-dscp

#### Syntax

**audit-ip-dscp** *audit-ip-dscp-value*

**no audit-ip-dscp**

#### Context

[\[Tree\]](#) configure mobile-gateway profile pfcf pfcf-profile audit-ip-dscp

#### Description

This command configures PFCF audit messages to use the DSCP value specified for **audit-ip-dscp** instead of the configured **ip-dscp** value.

The **no** form of this command causes PFCF audit messages to use the configured **ip-dscp** value.

#### Default

no audit-ip-dscp

## Parameters

*audit-ip-dscp-value*

Specifies the DSCP value sent in IPv4 and IPv6 PFCP audit messages.

Values: 0 to 63

### 4.2.17.11 description

#### Syntax

**description** *long-description-string*

**no description**

#### Context

[\[Tree\]](#) configure mobile-gateway profile pfcf pfcf-profile description

#### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

#### Parameters

*long-description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.17.12 heart-beat

#### Syntax

**heart-beat** [**interval** *seconds*] [**retry-count** *retry-count-value*] [**timeout** *timeout-value*]

#### Context

[\[Tree\]](#) configure mobile-gateway profile pfcf pfcf-profile heart-beat

#### Description

This command configures the heartbeat attributes for the PFCP profile. When configured, heartbeats are sent when the PFCP node association has been successfully set up. The gateway sends a heartbeat message at the time specified in the **interval** keyword. If a PFCP Heartbeat Response is not received within the time specified in the **timeout** keyword, the gateway retries the timeout wait period, for the number of times specified in the **retry-count** keyword.

#### Default

heart-beat interval 60 retry-count 4 timeout 5

## Parameters

### *seconds*

Specifies the heartbeat message interval.

Values: 60 to 180

### *retry-count-value*

Specifies the number of retries.

Values: 1 to 15

### *timeout-value*

Specifies the timeout interval, in seconds.

Values: 1 to 20

## 4.2.17.13 ip-dscp

### Syntax

**ip-dscp** *ip-dscp-value*

**no ip-dscp**

### Context

[\[Tree\]](#) configure mobile-gateway profile pfcf pfcf-profile ip-dscp

### Description

This command configures the DSCP value in the IP Header used for PFCP signaling messages.

The **no** form of this command reverts to the default.

### Default

ip-dscp 56

### Parameters

#### *ip-dscp-value*

Specifies the DSCP value.

Values: 0 to 63

## 4.2.17.14 ip-ttl

### Syntax

**ip-ttl** *ip-ttl-value*

**no ip-ttl**

## Context

[\[Tree\]](#) configure mobile-gateway profile pfcf pfcf-profile ip-ttl

## Description

This command configures the IP TTL value used for PFCP signaling messages.  
The **no** form of this command reverts to the default.

## Default

ip-ttl 255

## Parameters

*ip-ttl-value*

Specifies the IP TTL value.

Values: 0 to 255

## 4.2.17.15 message-retransmit

### Syntax

**message-retransmit** [**timeout** *timeout*] [**timeout-msec** *timeout-msec*] [**retry-count** *retry-count-value*]

### Context

[\[Tree\]](#) configure mobile-gateway profile pfcf pfcf-profile message-retransmit

### Description

This command configures the PFCP message retransmit timeout and retry count values. The retransmit timeout consists of T1 and N1 values. T1 is the time period that the PFCP waits before re-attempting the request message if there is no response to an initial request message. T1 can be configured either in seconds (**timeout**) or milliseconds (**timeout-msec**). N1 is the maximum number of times that the PFCP attempts to send a message. N1 can be configured by specifying the value of the **retry-count** keyword.

### Default

message-retransmit timeout 1 retry-count 3

### Parameters

*timeout*

Specifies the time that the PFCP waits before resending a message if there is no response to an initial message, in seconds.

Values: 1 to 30

*timeout-msec*

Specifies the time that the PFCP waits before resending a message if there is no response to an initial message, in milliseconds.

Values: 1000 to 3000 (increments of 100)



**Note:** You can specify either the **timeout** or the **timeout-msec** keywords.

*retry-count-value*

Specifies the number of times the PFCP attempts to send a message.

Values: 1 to 8

#### 4.2.17.16 path-restoration-time

##### Syntax

**path-restoration-time** *minutes*

**no path-restoration-time**

##### Context

**[Tree]** configure mobile-gateway profile pfcf pfcf-profile path-restoration-time

##### Description

This command configures the path restoration time for the PFCP profile. A PFCP path is kept for the configured number of minutes after a path failure is detected. After the time expires, the path is considered down and all related sessions are removed. If the path recovers before the time expires, the system triggers an audit of all sessions related to that path.

The **no** form of this command disables the restoration time.

##### Default

no path-restoration-time

##### Parameters

*minutes*

Specifies the number of minutes a path can wait for the restoration procedures.

Values: 1 to 1440

#### 4.2.17.17 pfcf-translate-profile

##### Syntax

**[no] pfcf-translate-profile** *profile-name*

##### Context

**[Tree]** configure mobile-gateway profile pfcf pfcf-translate-profile



## Description

This command creates a PFCP message translation function profile for sending selective subscriber information values in the PFCP IEs. Use the following command to associate the profile with an APN.

```
configure mobile-gateway pdn apn pfcpc-translate-tx
```

The **no** form of this command removes the specified profile from the configuration.

## Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

### 4.2.17.18 description

#### Syntax

[no] **description** *description-string*

#### Context

[\[Tree\]](#) configure mobile-gateway profile pfcpc pfcpc-translate-profile description

#### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

#### Default

no description

#### Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### 4.2.17.19 field

#### Syntax

[no] **field** *name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile pfcpc pfcpc-translate-profile field

## Description

This command configures the fields to forward to the UP in the PFCP message.

The **no** form of this command removes the specified field from being forwarded to the UP.

## Parameters

*name*

Specifies the field name to include in the PFCP messages to the BNG-UP.

Values:

- pcc-rule-name – PCC rule name field
- rat-type – RAT type field
- user-location – user location field
- default-qos-id – QCI (4G) or 5QI (5G) field
- serving-node-id – MME/AMF IP address field

### 4.2.17.20 up-peer-list

#### Syntax

[no] up-peer-list *list-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile pfc up-peer-list

#### Description

This command creates a list of BNG-UPs.

The **no** form of this command removes the list from the configuration.

#### Parameters

*list-name*

Specifies the name for the list, up to 32 characters.

### 4.2.17.21 description

#### Syntax

description *long-description-string*

no description

#### Context

[\[Tree\]](#) configure mobile-gateway profile pfc up-peer-list description

## Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

## Parameters

*long-description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.17.22 peer

### Syntax

[no] peer ipv4 | ipv6

### Context

[\[Tree\]](#) configure mobile-gateway profile pfc up-peer-list peer

### Description

This multi-entry command specifies the IPv4 or the IPv6 address of the user plane peer.

### Parameters

*ipv4 | ipv6*

Specifies the user plane peer's IP address.

Values:

- ipv4 – a.b.c.d
- ipv6 – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

## 4.2.17.23 apn

### Syntax

[no] apn apn-name

### Context

[\[Tree\]](#) configure mobile-gateway profile pfc up-peer-list peer apn

## Description

This multi-entry command specifies the APN names associated with the user plane peer. This is used when selecting an FWA-UP for FWA sessions.

## Parameters

*apn-name*

Specifies an APN name, up to 80 characters.

## 4.2.17.24 group-label

### Syntax

[no] **group-label** *profile-name*

### Context

**[Tree]** configure mobile-gateway profile pfcf up-peer-list peer group-label

## Description

This command configures a group label for the UP peer. The group label creates a logical grouping of target nodes with selection criteria based on different parameters (APN, TAI, and so on). A maximum of five groups can be associated with a PFCP peer.

The **no** form of this command removes the specified group label from the PFCP peer.

## Parameters

*profile-name*

Specifies an existing group label, up to 32 characters, that was previously configured using the following command.

```
configure mobile-gateway profile node-selection group-label
```

## 4.2.17.25 upf-id

### Syntax

**upf-id uuid** *uuid*

**no upf-id**

### Context

**[Tree]** configure mobile-gateway profile pfcf up-peer-list peer upf-id

## Description

This command configures a universally unique identifier (UUID) that identifies the UPF. The MAG-c sends this UUID in interfaces where a network function instance ID (NFInstanceId) for the UP is expected; for example, in the uPFID element of the ConvergedCharging interface to the CHF.

## Parameters

*uuid*

Specifies the UUID identifying the UPF.

Values: xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx

where

x – [0..F]H

### 4.2.17.26 upf-selection

#### Syntax

**upf-selection {true | false}**

**no upf-selection**

#### Context

**[Tree]** configure mobile-gateway profile pfcf up-peer-list peer upf-selection

#### Description

This command configures a peer that is defined in the UP peer list to be selectable (upf-selection **true**) or not selectable (upf-selection **false**) for FWA sessions. This enables UPF selection to be suspended, to support on-the-fly configuration of the PFCP association list and UP peer list. When UPF selection is set to false, the CP function does not select the peer for any new FWA sessions, therefor enabling the peer to gracefully drain its existing sessions before it is taken out of service. While in this mode, the MAG-c continues to handle existing sessions and to run PFCP path management with the peer.

The **no** form of this command reverts to the default state; UPF selection is true (selectable).



#### Note:

- The default state for the UPF selection of a new peer depends on the method used to add the peer to the UP peer list:
  1. If using CLI configuration through a console, UPF selection of a new peer is automatically false. This ensures that the peer is not selected for new PDN/PDU sessions until it has been fully added and is ready to be selected.
  2. If executing the admin save config file without UPF selection configured in it, UPF selection is automatically allowed (true).
- Changing the UPF selection is only allowed for existing peers. You must not add a new peer and set the UP selection in the same command execution (in a single line). Changing the UPF selection state is permitted after the peer has been added.

#### Default

no upf-selection

## 4.2.18 configure mobile-gateway profile policy-options command descriptions

### 4.2.18.1 policy-options

#### Syntax

**policy-options**

#### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options

#### Description

Commands in this context create and configure MAG-c traffic policies. Use the following commands when configuring traffic policy options:

- **begin** command to enter the transactional editing mode
- **commit** command to apply policy changes and exit the transactional editing mode
- **abort** command to discard changes and exit the transactional editing mode
- **diff** command to view the difference between the candidate (configured) and currently active policies

### 4.2.18.2 abort

#### Syntax

**abort**

#### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options abort

#### Description

This command ends the current policy editing session entered via the **begin** command and discards changes made to policies during the editing session.

### 4.2.18.3 action-rule-unit

#### Syntax

**[no] action-rule-unit** *aru-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options action-rule-unit

## Description

This command configures an action rule unit (ARU) to associate with a predefined PCC rule. The **no** form of this command removes the specified configuration.

## Parameters

*aru-name*

Specifies the ARU name, up to 32 characters.

### 4.2.18.4 app-profile-name

## Syntax

**app-profile-name** *profile-name*

**no app-profile-name**

## Context

[\[Tree\]](#) configure mobile-gateway profile policy-options action-rule-unit app-profile-name

## Description

This command specifies an existing AA application profile name. If an application profile is not configured under the action-rule unit (ARU), or the ARU is not associated with a policy rule, the MAG-c selects the application profile from the next highest priority policy rule.

The **no** form of this command removes the configuration.

## Parameters

*profile-name*

Specifies the name of an existing AA application profile, up to 32 characters.



**Note:** The name of the application profile configured on the SMF must match the application profile configured on the UPF in the following context.

```
configure application-assurance group policy app-profile
```

If it is not configured on the UPF, the session is rejected. See the *7450 ESS, 7750 SR, 7950 XRS, and VSR MD-CLI Command Reference Guide* and the *7450 ESS, 7750 SR, 7950 XRS, and VSR Classic CLI Command Reference Guide* for more information.

### 4.2.18.5 begin

## Syntax

**begin**

## Context

[Tree] configure mobile-gateway profile policy-options begin

## Description

This command enables the policy editing mode. It is required for all configuration changes under the **policy-options** context. The editing session continues until an **abort** or **commit** command is issued, or a control complex reset takes place. Modifications done during the editing session take effect when the **commit** command is issued. Editing sessions are not interrupted by high-availability activity switches or CLI session terminations, such as closing a Telnet session.

### 4.2.18.6 commit

#### Syntax

**commit**

#### Context

[Tree] configure mobile-gateway profile policy-options commit

#### Description

This command saves the changes that were made during the current policy editing session. Policy changes made during the editing session take effect only when they are committed. If the changes are successfully committed, with no errors detected during the commit or cross-reference verification against the existing policy configuration, the editing session is closed.

### 4.2.18.7 diff

#### Syntax

**diff**

#### Context

[Tree] configure mobile-gateway profile policy-options diff

#### Description

This command displays the uncommitted changes made during a policy editing session.

### 4.2.18.8 policy-rule

#### Syntax

**policy-rule** *policy-rule-name* **policy-rule-unit** *policy-rule-unit-name* [**qci** *qci*] [**arp** *arp-value*]  
**precedence** *precedence* [**action-rule-unit** *aru-name*]

**no policy-rule** *policy-rule-name*



## Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule

## Description

This command configures a policy rule. Changes made during the editing session (**begin** command) take effect only when they are committed. If the changes are successfully committed, with no errors detected during the commit or cross-reference verification against the existing policy configuration, the editing session is also closed.

The **no** form of this command removes the specified policy rule.

## Parameters

*policy-rule-name*

Specifies the name of the policy rule, up to 64 characters.

*policy-rule-unit name*

Specifies the policy rule unit name, up to 32 characters.

*qci*

Specifies the value of the QCI.

Values: 1 to 255 | \* (where \* means wildcard)

*arp-value*

Specifies the ARP value.

Values: 1 to 15 | \* (where \* means wildcard)

*precedence*

Specifies the precedence value.

Values: 0 to 65535

*aru-name*

Specifies an existing ARU name, up to 32 characters, configured using the following command.

```
configure mobile-gateway profile policy-options action-rule-unit
```

## 4.2.18.9 policy-rule-base

### Syntax

**[no] policy-rule-base** *base-policy-name*

### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule-base

## Description

This command configures the base policy. By default, the system supports modifications to policies installed on a UE (via PCF) without the need to remove them from the UE session. Changes to the base policy are applied dynamically to existing sessions.

The **no** form of this command removes the specified base policy.

## Parameters

*base-policy-name*

Specifies the base policy name, up to 64 characters.

### 4.2.18.10 aa-adv-functions

#### Syntax

**aa-adv-functions**

#### Context

**[Tree]** configure mobile-gateway profile policy-options policy-rule-base aa-adv-functions

#### Description

Commands in this context configure AA advanced functions for the base policy.

### 4.2.18.11 app-profile-name

#### Syntax

**app-profile-name** *profile-name*

**no app-profile-name**

#### Context

**[Tree]** configure mobile-gateway profile policy-options policy-rule-base aa-adv-functions app-profile-name

#### Description

This command specifies the application assurance (AA) profile name.

The **no** form of this command removes the profile name from the configuration.

## Parameters

*profile-name*

Specifies the profile name, up to 16 characters.



**Note:** The name of the application profile configured on the SMF must match the application profile configured on the UPF in the context **configure application-assurance group policy app-profile**. If it is not configured on the UPF, the session is rejected. See the 7450 ESS,

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7750 SR, 7950 XRS, and VSR MD-CLI Command Reference Guide and the 7450 ESS, 7750 SR, 7950 XRS, and VSR Classic CLI Command Reference Guide for more information.

#### 4.2.18.12 policy-rule

##### Syntax

[no] **policy-rule** *policy-rule-name*

##### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule-base policy-rule

##### Description

This command configures the policy rule for the base policy.

The **no** form of this command removes the specified policy rule.

##### Parameters

*policy-rule-name*

Specifies the policy rule name, up to 64 characters.

#### 4.2.18.13 policy-rule-unit

##### Syntax

[no] **policy-rule-unit** *policy-name*

##### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule-unit

##### Description

This command configures the policy rule unit (PRU). By default, the system supports modifications to policies that are referenced under an APN or installed on a UE (via PCF or static PCC configuration), without having to remove them from the APN or the UE session. Changes are applied to existing sessions.

The **no** form of this command removes the specified PRU.

##### Parameters

*policy-name*

Specifies the PRU name, up to 32 characters.

#### 4.2.18.14 description

##### Syntax

**description** *long-description-string*  
**no description**

##### Context

**[Tree]** configure mobile-gateway profile policy-options policy-rule-unit description

##### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

##### Parameters

*long-description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

#### 4.2.18.15 flow-description

##### Syntax

**[no] flow-description** *entry-id*

##### Context

**[Tree]** configure mobile-gateway profile policy-options policy-rule-unit flow-description

##### Description

This command configures the identifier for a specific policy rule unit (PRU) flow.

The **no** form of this command removes the specified identifier.

##### Parameters

*entry-id*

Specifies the entry identifier.

Values: 1 to 255

#### 4.2.18.16 direction

##### Syntax

**direction** {**up-link** | **down-link** | **both**}

##### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule-unit flow-description direction

##### Description

This command configures the applicable direction for the flow.

##### Default

direction both

##### Parameters

{**up-link** | **down-link** | **both**}

Keywords to specify the flow direction.

Default: both

#### 4.2.18.17 match

##### Syntax

**match**

##### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule-unit flow-description match

##### Description

Commands in this context configure match conditions for the PRU flow description.

#### 4.2.18.18 local-port

##### Syntax

**local-port** {**eq**} *lcl-port-number*

**local-port range** *start end*

**no local-port**

##### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule-unit flow-description match local-port

## Description

This command configures the local port match condition. When configuring a port range, at least two port numbers need to match for a valid condition.

The **no** form of this command removes the configuration.

## Default

no local-port

## Parameters

### eq

Keyword to specify the operator "is equal to".

### *lcl-port-number*

Specifies the port number.

Values: for eq – 0 to 65535

### *start*

Specifies the start of the port number range.

Values: 0 to 65534 with *start* < *end*

### *end*

Specifies the end of the port number range.

Values: 1 to 65535 with *start* < *end*

## 4.2.18.19 protocol

### Syntax

**protocol** *protocol-id*

**no protocol**

### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule-unit flow-description match protocol

### Description

This command configures the protocol match condition.

The **no** form of this command removes the configuration.

### Parameters

#### *protocol-id*

Specifies the protocol ID.

Values:

- decimal value – 0 to 255

- keyword – none | crtp | crudp | egp | eigrp | encap | ether-ip || gre| l cmp | idrp | igmp | igp | ip | ipv6 | ipv6-frag | ipv6-icmp | ipv6-no-nxt | ipv6-opts | ipv6-route | isis | iso-ip | l2tp | ospf-igp | pim | pnni | ptp | rdp | rsvp | stp | tcp | udp | vrrp | sctp

#### 4.2.18.20 remote-ip

##### Syntax

**remote-ip** *{ip-prefix/ip-prefix-length}*

**no remote-ip**

##### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule-unit flow-description match remote-ip

##### Description

This command configures the remote IP match condition.

The **no** form of this command removes the configuration.

##### Parameters

*ip-prefix*

Specifies the IP prefix.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where  
x – [0..FFFF]H  
d – [0..255]D

*ip-prefix-length*

Specifies the IP prefix length.

Values:

- IPv4 prefix length – 1 to 32
- IPv6 prefix length – 1 to 128

#### 4.2.18.21 remote-port

##### Syntax

**remote-port** {eq} *rmt-port-number*

**remote-port range** *start end*

**no remote-port**

## Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule-unit flow-description match remote-port

## Description

This command configures the remote port match condition. When configuring a port range, at least two port numbers need to match for a valid condition.

The **no** form of this command removes the configuration.

## Default

no remote-port

## Parameters

**eq**

Keyword to specify the operator "is equal to".

*rmt-port-number*

Specifies the port number.

Values: for eq – 0 to 65535

*start*

Specifies the start of the port number range.

Values: 0 to 65534 with *start* less than *end*

*end*

Specifies the end of the port number range.

Values: 1 to 65535 with *start* less than *end*

## 4.2.18.22 tos-tc

### Syntax

**tos-tc** *dscp-value*

**no tos-tc**

### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule-unit flow-description match tos-tc

### Description

This command configures the PCC rule match criteria to include the Type of Service (ToS) traffic class (TC) Differentiated Services Code Point (DSCP).

The **no** form of this command reverts to the default.

### Default

no tos-tc



## Parameters

*dscp-value*

Specifies the DSCP value.



**Note:** Nokia uses only the DSCP part of the ToS/TC value and a fixed mask (0xFC).

Values: 0 to 63

### 4.2.18.23 flow-gate-status

#### Syntax

**flow-gate-status** *flow-gate-status*

#### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule-unit flow-gate-status

#### Description

This command configures the applicable direction for the flow.

#### Default

flow-gate-status allow

#### Parameters

*flow-gate-status*

Specifies the direction of the flow.

Values: allowUL | allowDL | allow | drop

Default: allow

### 4.2.18.24 qos

#### Syntax

**qos**

#### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule-unit qos

#### Description

Commands in this context configure the QoS options for the PRU.

#### 4.2.18.25 down-link

##### Syntax

**down-link gbr** *Guaranteed Bit Rate* **mbr** *Maximum Bit Rate*  
**no down-link**

##### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule-unit qos down-link

##### Description

This command configures the downlink GBR and MBR rates for the associated SDF in the PCC rule. The **no** form of this command reverts to the default.

##### Default

down-link gbr 0 mbr 0

##### Parameters

###### *Guaranteed Bit Rate*

Specifies the GBR in kilobits per second.

Values: 0 to 25000000

Default: 0

###### *Maximum Bit Rate*

Specifies the MBR in kilobits per second.

Values: 0 to 25000000

Default: 0

#### 4.2.18.26 up-link

##### Syntax

**up-link gbr** *Guaranteed Bit Rate* **mbr** *Maximum Bit Rate*  
**no up-link**

##### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options policy-rule-unit qos up-link

##### Description

This command configures the uplink GBR and MBR rates for the associated SDF in the PCC rule. The **no** form of this command reverts to the default.

**Default**

up-link gbr 0 mbr 0

**Parameters***Guaranteed Bit Rate*

Specifies the GBR in kilobits per second.

Values: 0 to 25000000

Default: 0

*Maximum Bit Rate*

Specifies the MBR in kilobits per second.

Values: 0 to 25000000

Default: 0

**4.2.18.27 qci-policy****Syntax**

[no] qci-policy *policy-name*

**Context**

[\[Tree\]](#) configure mobile-gateway profile policy-options qci-policy

**Description**

This command configures a QCI policy that is used to map QCI (5QI) and ARP values to different QoS values such as DSCP values.

The **no** form of this command removes the configured policy.

**Default**

qci-policy "default"

**Parameters**

*policy-name*

Specifies the name of the QCI policy, up to 32 characters.

**4.2.18.28 description****Syntax**

**description** *long-description-string*

**no description**

## Context

[Tree] configure mobile-gateway profile policy-options qci-policy description

## Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

## Default

no description

## Parameters

*long-description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.18.29 qci

### Syntax

**qci** *qci-value* **arp** *arp-value*

### Context

[Tree] configure mobile-gateway profile policy-options qci-policy qci

### Description

This command configures QoS values for a specific QCI (5QI) and ARP value.

### Default

The default QoS values for each QCI differs and can be retrieved by executing the **info detail** command directly under the QCI policy.

### Parameters

*qci-value*

Specifies the QCI/5QI value.

Values: 1 to 255

*arp-value*

Specifies a specific ARP value or all ARP values.

Values: 1 to 15, or \* (wildcard) to specify all ARP values

### 4.2.18.30 dscp

#### Syntax

```
dscp {dscp-name | in dscp-name [out dscp-name] | out dscp-name [in dscp-name]}
no dscp
```

#### Context

[\[Tree\]](#) configure mobile-gateway profile policy-options qci-policy qci dscp

#### Description

This command specifies the DSCP values. You can specify a combined value for the uplink (**in**) and downlink (**out**) value or a separate value for each direction. To apply these DSCP values on the FWA UP, the **dscp-preserve** command must be disabled.

The **no** form of this command reverts to the default.

#### Default

The default DSCP depends on the QCI value:

- 1 – nc2 (in) - nc2 (out)
- 2 – ef (in) – ef (out)
- 3 – af41 (in) – af42 (out)
- 4 – nc1 (in) – nc1 (out)
- 5 – af21 (in) – af22 (out)
- 6 – af11 (in) – af12 (out)
- 7 – af11 (in) – af12 (out)
- 8 – cs1 (in) – cs1 (out)
- 9 to 255 – be (in) – be (out)

#### Parameters

*dscp-name*

Specifies the DSCP name.

Values: be | ef | cp1 | cp2 | cp3 | cp4 | cp5 | cp6 | cp7 | cp9 | cs1 | cs2 | cs3 | cs4 | cs5 | nc1 | nc2 | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cp11 | cp13 | cp15 | cp17 | cp19 | cp21 | cp23 | cp25 | cp27 | cp29 | cp31 | cp33 | cp35 | cp37 | cp39 | cp41 | cp42 | cp43 | cp44 | cp45 | cp47 | cp49 | cp50 | cp51 | cp52 | cp53 | cp54 | cp55 | cp57 | cp58 | cp59 | cp60 | cp61 | cp62 | cp63

### 4.2.18.31 dscp-preserve

#### Syntax

```
[no] dscp-preserve
```

## Context

[\[Tree\]](#) configure mobile-gateway profile policy-options qci-policy qci dscp-preserve

## Description

This command configures to use the incoming DSCP values, instead of the DSCP values configured using the following command. The MAG-c does not signal the configured values to the FWA-UP in PFCP messages.

```
configure mobile-gateway profile policy-options qci-policy qci dscp
```

The **no** form of this command configures to use the DSCP values configured using the preceding command and override the incoming DSCP values. The MAG-c signals the configured DSCP values to the FWA-UP in PFCP messages.

## Default

dscp-preserve

## 4.2.19 configure mobile-gateway profile priority-mapping command descriptions

### 4.2.19.1 priority-mapping

#### Syntax

**[no]** priority-mapping *name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile priority-mapping

#### Description

This command configures a priority-mapping profile.

The **no** form of this command removes the priority-mapping profile and reverts to the default profile.

#### Default

priority-mapping default

#### Parameters

*name*

Specifies a profile name, up to 32 characters.

## 4.2.19.2 arp

### Syntax

[no] arp *arp-value*

### Context

[\[Tree\]](#) configure mobile-gateway profile priority-mapping arp

### Description

This command configures an ARP value for priority-service handling for the priority mapping profile.

The **no** form of this command removes the ARP value.

### Parameters

*arp-value*

Specifies the ARP value.

Values: 1 to 15

## 4.2.19.3 priority

### Syntax

priority *value*

### Context

[\[Tree\]](#) configure mobile-gateway profile priority-mapping arp priority

### Description

This command configures the priority identifier for the configured ARP for priority-service handling for the mapping profile.

### Default

priority 1

### Parameters

*value*

Specifies the priority identifier for the ARP priority mapping.

Values: 1 to 4

#### 4.2.19.4 description

##### Syntax

**description** *description-string*  
**no description**

##### Context

**[Tree]** configure mobile-gateway profile priority-mapping description

##### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

##### Default

no description

##### Parameters

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

#### 4.2.19.5 gtp-rx-message-priority

##### Syntax

**[no] gtp-rx-message-priority** *value*

##### Context

**[Tree]** configure mobile-gateway profile priority-mapping gtp-rx-message-priority

##### Description

This command configures a message priority value received in the GTP signaling message header for priority service handling for the priority-mapping profile.

The **no** form of this command removes the GTP signaling message priority.

##### Default

gtp-rx-message-priority \*



## Parameters

*value*

Specifies the GTP signaling message value.

Values: [0 to 15] | \*

### 4.2.19.6 priority

#### Syntax

**priority** *value*

#### Context

[\[Tree\]](#) configure mobile-gateway profile priority-mapping gtp-rx-message-priority priority

#### Description

This command configures the priority identifier for the configured GTP signaling message for priority-service handling for the mapping profile.

#### Default

priority 1

#### Parameters

*value*

Specifies the priority identifier for the GTP signaling message.

Values: 1 to 4

### 4.2.20 configure mobile-gateway profile priority-profile command descriptions

#### 4.2.20.1 priority-profile

#### Syntax

**[no] priority-profile** *name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile priority-profile

#### Description

This command configures a local priority profile.

The **no** form of this command removes the specified priority profile and reverts to the default.

**Default**

priority-profile default

**Parameters**

*name*

Specifies a profile name, up to 32 characters.

## 4.2.20.2 description

**Syntax**

**description** *description-string*

**no description**

**Context**

[\[Tree\]](#) configure mobile-gateway profile priority-profile description

**Description**

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

**Default**

no description

**Parameters**

*description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.20.3 priority

**Syntax**

**priority** *value*

**Context**

[\[Tree\]](#) configure mobile-gateway profile priority-profile priority

**Description**

This command configures the priority level for the local priority profile.

**Default**

priority 1

**Parameters**

*value*

Specifies the priority level for the profile.

Values: 1 to 4

**4.2.20.4 egress****Syntax**

**egress**

**Context**

[\[Tree\]](#) configure mobile-gateway profile priority-profile priority egress

**Description**

Commands in this context configure egress treatment of priority sessions for the local priority profile.

**4.2.20.5 gtp-dscp****Syntax**

**gtp-dscp** *dscp-value*

**Context**

[\[Tree\]](#) configure mobile-gateway profile priority-profile priority egress gtp-dscp

**Description**

This command configures the IP DSCP value used for GTP signaling messages.

**Default**

gtp-dscp 56

**Parameters**

*dscp-value*

Specifies the GTP DSCP value.

Values: 0 to 63

## 4.2.20.6 gtp-tx-message-priority

### Syntax

**gtp-tx-message-priority** *value*

### Context

[\[Tree\]](#) configure mobile-gateway profile priority-profile priority egress gtp-tx-message-priority

### Description

This command configures the message priority value sent in the GTP signaling message header.

### Default

gtp-tx-message-priority 0

### Parameters

*value*

Specifies the priority level for the profile.

Values: 0 to 15

## 4.2.20.7 pfcp-dscp

### Syntax

**pfcp-dscp** *value*

### Context

[\[Tree\]](#) configure mobile-gateway profile priority-profile priority egress pfcp-dscp

### Description

This command configures the IP DSCP value used for PFCP signaling messages.

### Default

pfcp-dscp 56

### Parameters

*value*

Specifies the PFCP DSCP value.

Values: 0 to 63

## 4.2.20.8 pfc-priority-level

### Syntax

**pfc-priority-level** *level*

### Context

[\[Tree\]](#) configure mobile-gateway profile priority-profile priority egress pfc-priority-level

### Description

This command configures the priority level for the PFCP message.



**WARNING:** Only use the **critical** level very sparingly because this level bypasses any overload protection mechanisms. Use the **urgent** option whenever possible.

### Default

pfc-priority-level critical

### Parameters

*level*

Specifies the PFCP priority level, in order of descending priority.

Values: critical | urgent | high | regular

## 4.2.20.9 sbi-tx-message-priority

### Syntax

**sbi-tx-message-priority** *value*

### Context

[\[Tree\]](#) configure mobile-gateway profile priority-profile priority egress sbi-tx-message-priority

### Description

This command configures the message priority value sent in the 3gpp-sbi-message-priority header.

### Default

sbi-tx-message-priority 0

### Parameters

*value*

Specifies the SBI egress message priority value.

Values: 0 to 31

## 4.2.21 configure mobile-gateway profile qfi-mapping-profile command descriptions

### 4.2.21.1 qfi-mapping-profile

#### Syntax

[no] **qfi-mapping-profile** *profile-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile qfi-mapping-profile

#### Description

This command configures an optional QoS flow binding profile. QoS parameters specified within the profile are used for QoS flow binding in 5G systems.

The **no** form of this command removes the specified QoS flow binding profile.

#### Parameters

*profile-name*

Specifies the name of the QAFI mapping profile, up to 32 characters.

### 4.2.21.2 5qi-as-qfi

#### Syntax

[no] **5qi-as-qfi**

#### Context

[\[Tree\]](#) configure mobile-gateway profile qfi-mapping-profile 5qi-as-qfi

#### Description

This command enables 5QI to be used as the QFI value. This option supports only a single QoS flow for each 5QI and does not allow mid-session 5QI changes for an existing QoS flow, including the default QoS flow.

The **no** form of this command enables the MAG-c to generate a dynamic QFI value for each QoS flow.

#### Default

no 5qi-as-qfi

## 4.2.22 configure mobile-gateway profile qos-5g-profile command descriptions

### 4.2.22.1 qos-5g-profile

#### Syntax

**[no] qos-5g-profile** *profile-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile qos-5g-profile

#### Description

This command specifies a new 5G QoS profile for FWA sessions.  
The **no** form of this command removes the specified profile.

#### Parameters

*profile-name*

Specifies the 5G QoS profile name, up to 32 characters.

### 4.2.22.2 5qi

#### Syntax

**5qi** *5qi-value*  
**no 5qi**

#### Context

[\[Tree\]](#) configure mobile-gateway profile qos-5g-profile 5qi

#### Description

This command configures the 5qi value for the default QoS Flow.  
The **no** form of this command removes the 5QI value for the default QoS Flow.

#### Default

no 5qi

#### Parameters

*5qi-value*

Specifies the default QoS flow 5QI value.

Values: 1 to 255

### 4.2.22.3 arp

#### Syntax

**arp** *arp-value*  
**no arp**

#### Context

[\[Tree\]](#) configure mobile-gateway profile qos-5g-profile arp

#### Description

This command configures the ARP value for the default QoS flow.  
The **no** form of this command removes the ARP value.

#### Default

no arp

#### Parameters

*arp-value*  
Specifies the default ARP value.  
Values: 1 to 15

### 4.2.22.4 dl-ambr

#### Syntax

**dl-ambr** *ambr-value*  
**no dl-ambr**

#### Context

[\[Tree\]](#) configure mobile-gateway profile qos-5g-profile dl-ambr

#### Description

This command configures the DL session AMBR value applied to all non-GBR QoS flows.  
The **no** form of this command removes the DL session AMBR value. If no other source provides a DL Session AMBR, no DL Session AMBR is applied.

#### Default

no dl-ambr



## Parameters

*ambr-value*

Specifies the DL Session AMBR rate in kbps.

Values: 1 to 25000000

### 4.2.22.5 ul-ambr

#### Syntax

**no ul-ambr**

**ul-ambr** *ambr-value*

#### Context

[\[Tree\]](#) configure mobile-gateway profile qos-5g-profile ul-ambr

#### Description

This command configures the UL session AMBR value applied to all non-GBR QoS flows.

The **no** form of this command removes the UL session AMBR value. If no other source provides an UL session AMBR, no UL session AMBR is applied

#### Default

no ul-ambr

#### Parameters

*ambr-value*

Specifies the UL Session AMBR rate in kb/s.

Values: 1 to 25000000

## 4.2.23 configure mobile-gateway profile qos-profile command descriptions

### 4.2.23.1 qos-profile

#### Syntax

**[no] qos-profile** *profile-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile qos-profile

#### Description

This command specifies a new 4G QoS profile for FWA sessions.

The **no** form of this command removes the specified profile.

### Parameters

*profile-name*

Specifies the 4G QoS profile name, up to 32 characters.

## 4.2.23.2 arp

### Syntax

**arp** *arp-value*

**no arp**

### Context

[\[Tree\]](#) configure mobile-gateway profile qos-profile arp

### Description

This command configures the ARP value for the default bearer.

The **no** form of this command removes the ARP value.

### Default

no arp

### Parameters

*arp-value*

Specifies the default bearer ARP value.

Values: 1 to 15

## 4.2.23.3 dl-ambr

### Syntax

**dl-ambr** *ambr-value*

**no dl-ambr**

### Context

[\[Tree\]](#) configure mobile-gateway profile qos-profile dl-ambr

### Description

This command configures the DL APN AMBR value.

The **no** form of this command removes the DL APN AMBR value. If no other source provides a DL APN AMBR, no DL APN AMBR is applied.

**Default**

no dl-ambr

**Parameters**

*ambr-value*

Specifies the DL APN AMBR rate in kb/s.

Values: 1 to 25000000

**4.2.23.4 qci****Syntax**

**no qci**

**qci** *qci-value*

**Context**

[\[Tree\]](#) configure mobile-gateway profile qos-profile qci

**Description**

This command configures the QCI value for the default bearer.

The **no** form of this command removes the QCI value.

**Default**

no qci

**Parameters**

*qci-value*

Specifies the default bearer QCI value.

Values: 1 to 9 | 65 | 66 | 69 | 70 | 128 to 254

**4.2.23.5 ul-ambr****Syntax**

**no ul-ambr**

**ul-ambr** *ambr-value*

**Context**

[\[Tree\]](#) configure mobile-gateway profile qos-profile ul-ambr

**Description**

This command configures the UL APN AMBR value.

The **no** form of this command removes the UL APN AMBR value. If no other source provides an UL APN AMBR, no UL APN AMBR is applied.

**Default**

no ul-ambr

**Parameters**

*ambr-value*

Specifies the UL APN AMBR rate in kb/s.

Values: 1 to 25000000

## 4.2.24 configure mobile-gateway profile radius-group command descriptions

### 4.2.24.1 radius-group

**Syntax**

[no] **radius-group** *radius-group*

**Context**

[\[Tree\]](#) configure mobile-gateway profile radius-group

**Description**

This command creates a named radius-group and enters a radius-group context. A radius-group may only apply to a single pdn gateway ID. A radius-group defines a list of RADIUS servers and associated parameters. The radius-profile is applied to the entire group or to an individual server. The radius-group is used at the PDN level or at the APN level.

**Parameters**

*radius-group*

Specifies the group name, up to 31 characters.

### 4.2.24.2 accounting-buffer

**Syntax**

[no] **accounting-buffer**

**Context**

[\[Tree\]](#) configure mobile-gateway profile radius-group accounting-buffer

## Description

This command enables the buffering of one Accounting Stop message per session when no RADIUS server responds. The Accounting Start and Interim Update messages are buffered optionally. The system retries sending the buffered messages periodically using a non-configurable retransmit timer.

The **no** form of this command disables the buffering of all accounting messages.

## Default

no accounting-buffer

### 4.2.24.3 interim-update

#### Syntax

[no] interim-update

#### Context

[\[Tree\]](#) configure mobile-gateway profile radius-group accounting-buffer interim-update

#### Description

This command enables buffering of the Accounting Interim Update messages. The system classifies the Interim Update messages internally as critical or non-critical:

- Non-critical messages do not reflect a significant state change. When buffering is enabled, only the last non-critical Interim Update message per session is buffered.
- Critical messages reflect a significant state change (for example, SPI stop). When buffering is enabled, up to four critical Interim Update messages per session are buffered to prevent loss of data.

The **no** form of this command disables buffering of the Accounting Interim Update messages.



**Note:** Nokia recommends not to enable buffering of the Interim Update messages because the amount of messages that can be buffered is limited.

#### Default

no interim-update

### 4.2.24.4 lifetime

#### Syntax

lifetime *hours*

no lifetime

#### Context

[\[Tree\]](#) configure mobile-gateway profile radius-group accounting-buffer lifetime

## Description

This command configures the lifetime for buffered accounting messages. Buffered messages exceeding the lifetime are discarded.

The **no** form of this command reverts to the default.

## Default

lifetime 24

## Parameters

*hours*

Specifies the lifetime in hours.

Values: 1 to 24

### 4.2.24.5 start

## Syntax

[no] start

## Context

[\[Tree\]](#) configure mobile-gateway profile radius-group accounting-buffer start

## Description

This command enables buffering of one Accounting Start message per session.

The **no** form of this command disables the buffering of the Accounting Start messages.



**Note:** Nokia recommends not to enable buffering of the Start messages because the amount of accounting messages that can be buffered is limited.

## Default

no start

### 4.2.24.6 acct-server-port

## Syntax

acct-server-port *port*

no acct-server-port

## Context

[\[Tree\]](#) configure mobile-gateway profile radius-group acct-server-port

## Description

This command sets the destination UDP port for the RADIUS accounting server. When configured at the radius-group level it is the default for the entire group.

The **no** form of this command reverts to the default.

## Default

acct-server-port 1813

## Parameters

*port*

Specifies the destination UDP port.

Values: 1 to 65535

## 4.2.24.7 auth-server-port

### Syntax

**auth-server-port** *port*

**no auth-server-port**

### Context

[\[Tree\]](#) configure mobile-gateway profile radius-group auth-server-port

### Description

This command sets the destination UDP port for the RADIUS authentication server. When configured at the radius-group level it is the default for the entire group.

The **no** form of this command reverts to the default.

### Default

auth-server-port 1812

### Parameters

*port*

Specifies the destination UDP port.

Values: 1 to 65535

## 4.2.24.8 description

### Syntax

**description** *long-description-string*

**no description**

## Context

[Tree] configure mobile-gateway profile radius-group description

## Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

## Parameters

*long-description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.24.9 interface

### Syntax

**interface** [*router router-instance*] *interface-name*

**no interface**

### Context

[Tree] configure mobile-gateway profile radius-group interface

### Description

This command configures the interface name to send and receive RADIUS messages. The interface name indirectly determines the source IP address. If the interface belongs to a VPRN other than the Base instance, this command must configure the VPRN name (interface names have VPRN scope).

The **no** form of this command removes the configuration.

### Parameters

*router-instance*

Specifies the name of a VPRN.

Values: *router-name* | *service-id*

- *router-name* – Base
- *service-id* – 1 to 2147483647

Default: Base

*interface-name*

Specifies an interface name, up to 32 characters. The name must start with a letter.



### 4.2.24.10 interim-update-interval

#### Syntax

```
interim-update-interval value  
no interim-update-interval
```

#### Context

[\[Tree\]](#) configure mobile-gateway profile radius-group interim-update-interval

#### Description

This command enables interim accounting and sets the interval for sending interim-update messages to the accounting server.

The **no** form of this command reverts to the default.

#### Default

no interim-update-interval

#### Parameters

*value*

Specifies the time interval, in minutes, for sending interim-update messages to the accounting server.

Values: 15 to 1440 (1 day)

### 4.2.24.11 peer

#### Syntax

```
[no] peer {ipv4-address | ipv6-address}
```

#### Context

[\[Tree\]](#) configure mobile-gateway profile radius-group peer

#### Description

This command identifies a RADIUS server and enters the server context to configure parameters specific to the identified server. This command may configure a single RADIUS server by its IPv4 or IPv6 address. The servers belonging to a radius-group must use the same IP version and the IP version must match that of the RADIUS source interface.

The **no** form of this command removes the IP address from the configuration.

#### Parameters

*ipv4-address* | *ipv6-address*

Specifies the IP address of a RADIUS server.

Values:

- ipv4-address – a.b.c.d
- ipv6-address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d  
where  
x – [0..FFFF]H  
d – [0..255]D

#### 4.2.24.12 acct-server-port

##### Syntax

**acct-server-port** *port*  
**no acct-server-port**

##### Context

[\[Tree\]](#) configure mobile-gateway profile radius-group peer acct-server-port

##### Description

This command sets the destination UDP port for the RADIUS accounting server. When configured at the radius-group level it is the default for the entire group.

The **no** form of this command reverts to the default.

##### Default

acct-server-port 1813

##### Parameters

*port*

Specifies the destination UDP port.

Values: 1 to 65535

#### 4.2.24.13 auth-server-port

##### Syntax

**auth-server-port** *port*  
**no auth-server-port**

##### Context

[\[Tree\]](#) configure mobile-gateway profile radius-group peer auth-server-port

## Description

This command sets the destination UDP port for the RADIUS authentication server. When configured at the radius-group level it is the default for the entire group.

The **no** form of this command reverts to the default.

## Default

auth-server-port 1812

## Parameters

*port*

Specifies the destination UDP port.

Values: 1 to 65535

### 4.2.24.14 failover-threshold

#### Syntax

**failover-threshold** *count*

**no failover-threshold**

#### Context

[\[Tree\]](#) configure mobile-gateway profile radius-group peer failover-threshold

#### Description

This command configures the number of times an unresponsive peer is re-selected, before the RADIUS server is considered unresponsive.

The **no** form of this command reverts to the default value.

#### Default

failover-threshold 0

#### Parameters

*count*

Specifies the number of re-selection attempts.

Values: 0 to 255

### 4.2.24.15 failure-detection-time

#### Syntax

**failure-detection-time** *value*

**no failure-detection-time**

## Context

[\[Tree\]](#) configure mobile-gateway profile radius-group peer failure-detection-time

## Description

This command configures the failure detection timer defining the maximum duration in seconds the MAG-c waits to receive any successful Auth/Acct response before the server is considered failed. A timer is maintained separately for each authentication and accounting server. This command is effective only with transaction-based load balancing.

The **no** form of this command reverts to the default.



**Note:** The system waits for a few more seconds ( $\leq 20$ ) before finally marking the peer dead to smooth out fluctuations caused by temporary effect such as network congestion or server overload.

## Default

failure-detection-time 10

## Parameters

*value*

Specifies the failure detection timer, in seconds.

Values: 1 to 60

## 4.2.24.16 priority

### Syntax

**priority** *value*

**no priority**

### Context

[\[Tree\]](#) configure mobile-gateway profile radius-group peer priority

### Description

This command specifies the priority value. This is a number from 1 to 3 with 3 considered the highest priority. The system attempts to use the highest priority server available at the time. The system automatically uses round-robin load-balancing among servers configured with the same priority.

The **no** form of this command reverts to the default.

### Default

priority 1

### Parameters

*value*

Specifies the priority of the server.

Values: 1 to 3

#### 4.2.24.17 radius-profile

##### Syntax

**radius-profile** *profile-name*  
**no radius-profile**

##### Context

[\[Tree\]](#) configure mobile-gateway profile radius-group peer radius-profile

##### Description

This command applies a radius-profile to the radius-group or to an individual server. When configured at the radius-group level it is the default for the entire group.

The **no** form of this command removes the *name* parameter from the configuration.

##### Parameters

*profile-name*  
Specifies the group name.

#### 4.2.24.18 secret

##### Syntax

**secret** *secret* [**hash** | **hash2**]  
**no secret**

##### Context

[\[Tree\]](#) configure mobile-gateway profile radius-group peer secret

##### Description

This is the shared secret key to be used with the server. When configured at the radius-group level it is the default for the entire group. If the hash/hash2 parameter is not used for the password, the key is assumed to be in a non-encrypted, clear text form. For security, all keys are anyway stored automatically in encrypted hash form in the configuration. The info/save uses the configuration defined in following command.

```
system security password hashing
```

##### Parameters

*secret*  
Specifies the shared secret key to be used with the server.

Values:

- secret – up to 64 characters
- hash-key – up to 33 characters
- hash2-key – up to 96 characters

#### **hash**

Specifies the key is entered in an encrypted form.

#### **hash2**

Specifies the key is entered in a more complex encrypted form.

### 4.2.24.19 shutdown

#### **Syntax**

**shutdown**

**no shutdown**

#### **Context**

[\[Tree\]](#) configure mobile-gateway profile radius-group peer shutdown

#### **Description**

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

### 4.2.24.20 python-policy

#### **Syntax**

**python-policy** *policy-name*

**no python-policy**

#### **Context**

[\[Tree\]](#) configure mobile-gateway profile radius-group python-policy

#### **Description**

This command configures the Python policy to modify the RADIUS messages.

The **no** form of the command removes the configuration.

#### **Default**

no python-policy

## Parameters

*policy-name*

References a Python policy that is configured in the following context, up to 32 characters.

```
configure python python-policy
```

### 4.2.24.21 radius-profile

#### Syntax

**radius-profile** *profile-name*

**no radius-profile**

#### Context

[\[Tree\]](#) configure mobile-gateway profile radius-group radius-profile

#### Description

This command applies a radius-profile to the radius-group or to an individual server. When configured at the radius-group level it is the default for the entire group.

The **no** form of this command removes the *profile-name* parameter from the configuration.

#### Parameters

*profile-name*

Specifies the RADIUS profile name.

### 4.2.24.22 secret

#### Syntax

**secret** *secret* [**hash** | **hash2**]

**no secret**

#### Context

[\[Tree\]](#) configure mobile-gateway profile radius-group secret

#### Description

This is the shared secret key to be used with the server. When configured at the radius-group level it is the default for the entire group.

If the hash/hash2 parameter is not used for the password, the key is assumed to be in a non-encrypted, clear text form. For security, all keys are anyway stored automatically in encrypted hash form in the configuration. The info/save uses the configuration defined in following context.

```
system security password hashing
```

## Parameters

*secret*

Specifies the shared secret key to be used with the server, up to 64 characters.

Values:

- hash-key – Up to 33 characters.
- hash2-key – Up to 96 characters.

**hash | hash2**

Keywords to specify the hashing scheme.

### 4.2.24.23 server-type

#### Syntax

**server-type** *server-type*

**no server-type**

#### Context

[\[Tree\]](#) configure mobile-gateway profile radius-group server-type

#### Description

This command configures the RADIUS group to be all authentication servers, accounting servers, or both.

The **no** form of this command reverts to the default.

#### Default

server-type none

#### Parameters

*server-type*

Specifies the type of the RADIUS server group.

Values:

- none – the servers cannot be used for authentication or accounting
- auth – all servers can be used for authentication
- acct – all servers can be used for accounting
- both – all servers can be used for both authentication and accounting

### 4.2.24.24 transaction-based-load-balancing

#### Syntax

**[no] transaction-based-load-balancing**



## Context

[Tree] configure mobile-gateway profile radius-group transaction-based-load-balancing

## Description

This command configures the MAG-c load balancing behavior for RADIUS authentication and accounting messages. Instead of the default behavior (session-based load balancing), where in the case of a response timeout the messages are retried to the same server until the retry-count is exhausted, in the transaction-based load balancing the server is selected separately for each authentication and accounting request using round-robin distribution. There is no guarantee that all accounting requests related to the same bearer are sent to the same RADIUS server. Authentication and accounting functions are handled separately from each other. Accounting ON/OFF messages (per APN) are not affected by this command. This setting also affects retries. The RADIUS profile containing the **retry-count** parameter must be linked to the RADIUS group level, in which case it is used for all peers in that group (differing values per server are not supported). The system maintains this counter on group level.

## Default

no transaction-based-load-balancing

## 4.2.25 configure mobile-gateway profile radius command descriptions

### 4.2.25.1 radius

#### Syntax

[no] radius *profile-name*

#### Context

[Tree] configure mobile-gateway profile radius

#### Description

This command creates a named RADIUS profile.

The **no** form of this command removes the profile from the configuration.

#### Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

### 4.2.25.2 acct-retry-count

#### Syntax

acct-retry-count *value*

no acct-retry-count

## Context

[\[Tree\]](#) configure mobile-gateway profile radius acct-retry-count

## Description

This command sets a limit to the number of times the system attempts to retry sending a RADIUS accounting message to the server. When this limit is reached, the server is considered to be dead and another server is selected. This command requires a shutdown and a no shutdown action in the RADIUS group peer definition associated with the RADIUS profile before the change is effective for a RADIUS server peer.

The **no** form of this command reverts to the default.



### Note:

- The system waits for a few more seconds ( $\leq 20$ ) before finally marking the peer as dead to smooth out fluctuations caused by temporary effect such as network congestion or server overload.
- For a single message, the system only tries up to three peers, regardless of the number of peers in the RADIUS group. After the three peers have been exhausted (or less if the RADIUS group has less than three peers) the system declares a final timeout for that message and discard it.

## Default

acct-retry-count 3

## Parameters

*value*

The number of times the system attempts to send a RADIUS accounting message to the server.

Values: 0 to 10

### 4.2.25.3 acct-retry-timeout

## Syntax

**acct-retry-timeout** *seconds*

**no acct-retry-timeout**

## Context

[\[Tree\]](#) configure mobile-gateway profile radius acct-retry-timeout

## Description

This command sets the interval, in seconds, between retries for RADIUS accounting messages. This command requires a shutdown and a no shutdown action in the RADIUS group peer definition associated with the RADIUS profile before the change is effective for a RADIUS server peer.

The **no** form of this command reverts to the default.

**Default**

acct-retry-timeout 4

**Parameters**

*seconds*

Specifies the interval, in seconds, between retries.

Values: 1 to 255

#### 4.2.25.4 auth-probe-interval

**Syntax**

**auth-probe-interval** *value*

**no auth-probe-interval**

**Context**

[\[Tree\]](#) configure mobile-gateway profile radius auth-probe-interval

**Description**

This command sets the interval at which the system send authentication probe messages to an authentication server. An authentication probe is a “fake” Access-Request message for a specific username and password. If the server responds to the Access-Request (even with an Access-Reject) the server is considered operational. The authentication probe messages is not sent to servers that are used for accounting only. This command requires a shutdown and a no shutdown action in the RADIUS group peer definition associated with the RADIUS profile before the change is effective for a RADIUS server peer.

The **no** form of this command reverts to the default.

**Default**

auth-probe-interval 0

**Parameters**

*seconds*

Specifies the time interval, in seconds, at which the system sends authentication probe messages to an authentication server.

Values: 20 to 600

#### 4.2.25.5 auth-retry-count

**Syntax**

**auth-retry-count** *value*

**no auth-retry-count**

## Context

[\[Tree\]](#) configure mobile-gateway profile radius auth-retry-count

## Description

This command sets a limit to the number of times the system attempts to retry sending a RADIUS authentication message to the server. When this limit is reached, the server is considered to be dead and another server is selected. This command requires a shutdown and a no shutdown action in the RADIUS group peer definition associated with the RADIUS profile before the change is effective for a RADIUS server peer.



### Note:

- The system waits for a few more seconds ( $\leq 20$ ) before finally marking the peer as dead to smooth out fluctuations caused by temporary effect such as network congestion or server overload.
- For a single message, the system only tries up to three peers, regardless of the number of peers in the RADIUS group. After the three peers have been exhausted (or less if the RADIUS group has less than three peers) the system declares a final timeout for that message and discard it.

The **no** form of this command reverts to the default.

## Default

auth-retry-count 3

## Parameters

*value*

Specifies the number of times the system attempts to send a RADIUS authentication message to the server.

Values: 0 to 10

## 4.2.25.6 auth-retry-timeout

### Syntax

**auth-retry-timeout** *seconds*

**no auth-retry-timeout**

### Context

[\[Tree\]](#) configure mobile-gateway profile radius auth-retry-timeout

### Description

This command sets the interval, in seconds, between retries for RADIUS authentication. This command requires a shutdown and a no shutdown action in the RADIUS group peer definition associated with the RADIUS profile before the change is effective for a RADIUS server peer.

The **no** form of this command reverts to the default.

## Default

auth-retry-timeout 4

## Parameters

*seconds*

Specifies the interval, in seconds, between retries.

Values: 1 to 255

### 4.2.25.7 deadtime

## Syntax

**deadtime** *deadtime* [**drop-acct-messages**] [**send-auth-messages**]

**no deadtime**

## Context

[\[Tree\]](#) configure mobile-gateway profile radius deadtime

## Description

When the system fails to reach a particular server after a configurable number of retries, the server is marked dead and another server is selected. This command sets the time that a server continues to be considered dead before the system attempts to use it for normal authentication or accounting requests.



**Note:** For authentication servers, the system continuously attempts to verify the operational state of the dead server if the auth-probe-interval is set to be non-zero. If the authentication server responds to an auth-probe the system considers the server to be operational even if the dead timer has not yet expired.

When the dead-timer expires, the system may send the server authentication or accounting messages again. The server is subject to the retry-timeout and retry-count mechanism to determine if the server is still in the failed state. If all servers are unreachable (operating state down), for authentication purposes, the system immediately declares an authentication failure. For accounting purposes, the system attempts to send messages to the highest priority server even if it is during the dead time period. It is possible to separately configure the system to also drop accounting messages destined for a dead server.

The **no** form of this command reverts to the default.

## Default

deadtime 300

## Parameters

*deadtime*

Specifies the time interval that a server is considered dead, in seconds.

Values: 0 to 7200

**drop-acct-messages**

Keyword to drop accounting messages, if no servers are currently reachable.

### send-auth-messages

Keyword to attempt sending messages to the highest priority server, even if it is during the dead time period, in case all servers are unreachable (operating state down).

## 4.2.25.8 description

### Syntax

**description** *long-description-string*

**no description**

### Context

[\[Tree\]](#) configure mobile-gateway profile radius description

### Description

This command associates a text string with a configuration context to identify the content in the configuration file.

The **no** form of this command removes the description from the configuration.

### Parameters

*long-description-string*

Specifies the description string, up to 80 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.25.9 max-peer-reselections

### Syntax

**max-peer-reselections** *count* [*wrap*]

**no max-peer-reselections**

### Context

[\[Tree\]](#) configure mobile-gateway profile radius max-peer-reselections

### Description

This command specifies the number of times in total a peer can be reselected after exhausting the retries toward the currently selected peer. The maximum number of re-selections is limited to the number of available peers in the RADIUS group. By default, for a single message, the system tries up to three peers, regardless of the number of peers in the RADIUS group. After all the three peers have been exhausted (or less if the RADIUS group has less than three peers), the system declares a final timeout for that message and discards it. When the **transaction-based-load-balancing** command is enabled for the RADIUS group, the server selection can wrap around as the retries are going to different servers. If the parameter **wrap** is specified, the system tries up to the configured count, possibly wrapping around back to the original

selected server, when all other available servers have been tried already. If this parameter is not specified, the maximum amount of re-selections is limited to the number of available peers in the RADIUS group.

The **no** form of this command reverts to the default.

### Default

max-peer-reselections 3

### Parameters

*count*

Specifies the number of times a peer can be reselected.

Values: 0 to 250

**wrap**

Keyword to specify if the system tries the configured count, to wrap around back to the original selected server, when all other available servers are tried.

## 4.2.26 configure mobile-gateway profile sbi-error-mapping-profile command descriptions

### 4.2.26.1 sbi-error-mapping-profile

#### Syntax

**[no] sbi-error-mapping-profile** *profile-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile sbi-error-mapping-profile

#### Description

This command configures the SBI error mapping profile that contains mappings between SBI errors and 5GSM/GTP error codes.

The **no** form of this command removes the specific profile from the configuration.

#### Parameters

*profile-name*

Specifies the SBI error mapping profile name, up to 32 characters

### 4.2.26.2 http-to-5gsm

#### Syntax

**http-to-5gsm** *http-status-code* **application-error** *app-error-code* **5gsm-cause** *5gsm-cause-code*

**no http-to-5gsm** *http-status-code* **application-error** *app-error-code*

## Context

[Tree] configure mobile-gateway profile sbi-error-mapping-profile http-to-5gsm

## Description

This command configures the mapping from a specific HTTP status code and application error code to the 5GSM Cause Code.

HTTP status codes are defined in RFC 9110 section 15. Common application error values are defined in 3GPP TS 29.500 table 5.2.7.2-1. Specific service application error values are defined in their corresponding specifications. For example, for Npcf\_SMPolicyManagement the error codes are defined in 3GPP TS 29.512 table 5.7.3-1. 5GSM Cause codes are defined in 3GPP TS 24.501 clause 9.11.4.2 and described in more detail in appendix B of the same specification.

The **no** form of this command removes the specific mapping. MAG-c falls back to standard values.

## Parameters

### *http-status-code*

Specifies the 3-digit HTTP status code value.

Values: 300 to 999

### *app-error-code*

Specifies the application error, up to 36 characters.

This can be a user-specified application error or the following standard application errors:

- INVALID\_API
- INVALID\_MSG\_FORMAT
- INVALID\_QUERY\_PARAM
- MANDATORY\_QUERY\_PARAM\_INCORRECT
- OPTIONAL\_QUERY\_PARAM\_INCORRECT
- MANDATORY\_QUERY\_PARAM\_MISSING
- MANDATORY\_IE\_INCORRECT
- OPTIONAL\_IE\_INCORRECT
- MANDATORY\_IE\_MISSING
- UNSPECIFIED\_MSG\_FAILURE
- MODIFICATION\_NOT\_ALLOWED
- SUBSCRIPTION\_NOT\_FOUND
- RESOURCE\_URI\_STRUCTURE\_NOT\_FOUND
- INCORRECT\_LENGTH
- NF\_CONGESTION\_RISK
- INSUFFICIENT\_RESOURCES
- UNSPECIFIED\_NF\_FAILURE
- SYSTEM\_FAILURE
- USER\_UNKNOWN



- ERROR\_INITIAL\_PARAMETERS
- ERROR\_TRIGGER\_EVENT
- ERROR\_TRAFFIC\_MAPPING\_INFO\_REJECTED
- ERROR\_CONFLICTING\_REQUEST
- POLICY\_CONTEXT\_DENIED

#### *5gsm-cause-code*

Specifies the 5GSM Cause value.

Values: 0 to 255

### 4.2.26.3 http-to-gtp

#### Syntax

**http-to-gtp** *http-status-code* **application-error** *app-error-code* **gtp-error** *gtp-error-cause-code*

**no http-to-gtp** *http-status-code* **application-error** *app-error-code*

#### Context

[\[Tree\]](#) configure mobile-gateway profile sbi-error-mapping-profile http-to-gtp

#### Description

This command configures the mapping from a specific HTTP status code and application error code to the GTP Cause Code.

HTTP status codes are defined in RFC 9110 section 15. Common application error values are defined in 3GPP TS 29.500 table 5.2.7.2-1. Specific service application error values are defined in their corresponding specifications. For example, for Npcf\_SMPolicyManagement the error codes are defined in 3GPP TS 29.512 table 5.7.3-1. GTP Cause codes are defined in 3GPP TS 29.274 clause 8.4. For more information about how a 4G MME maps these GTP cause codes to a 4GSM Cause code, see annex C of the same specification.

The **no** form of this command removes the specific mapping and the MAG-c falls back to the standard.

#### Parameters

##### *http-status-code*

Specifies the 3-digit HTTP status code value.

Values: 300 to 999

##### *app-error-code*

Specifies the application error, up to 36 characters.

This can be a user-specified application error or the following standard application errors:

- INVALID\_API
- INVALID\_MSG\_FORMAT
- INVALID\_QUERY\_PARAM
- MANDATORY\_QUERY\_PARAM\_INCORRECT

- OPTIONAL\_QUERY\_PARAM\_INCORRECT
- MANDATORY\_QUERY\_PARAM\_MISSING
- MANDATORY\_IE\_INCORRECT
- OPTIONAL\_IE\_INCORRECT
- MANDATORY\_IE\_MISSING
- UNSPECIFIED\_MSG\_FAILURE
- MODIFICATION\_NOT\_ALLOWED
- SUBSCRIPTION\_NOT\_FOUND
- RESOURCE\_URI\_STRUCTURE\_NOT\_FOUND
- INCORRECT\_LENGTH
- NF\_CONGESTION\_RISK
- INSUFFICIENT\_RESOURCES
- UNSPECIFIED\_NF\_FAILURE
- SYSTEM\_FAILURE
- USER\_UNKNOWN
- ERROR\_INITIAL\_PARAMETERS
- ERROR\_TRIGGER\_EVENT
- ERROR\_TRAFFIC\_MAPPING\_INFO\_REJECTED
- ERROR\_CONFLICTING\_REQUEST
- POLICY\_CONTEXT\_DENIED

*gtp-cause-code*

Specifies the GTP Cause value.

Values: 0 to 15 or 64 to 253 or 255

## 4.2.27 configure mobile-gateway profile udm-sdm-profile command descriptions

### 4.2.27.1 udm-sdm-profile

#### Syntax

[no] udm-sdm-profile *profile-name*

#### Context

[\[Tree\]](#) configure mobile-gateway profile udm-sdm-profile

#### Description

This command configures a UDM SDM profile that defines the failure-handling policy for the Nudm\_SubscriberDataManagement services.

The **no** form of this command removes the specified profile.

### Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

## 4.2.27.2 create-subscription

### Syntax

**create-subscription**

### Context

[\[Tree\]](#) configure mobile-gateway profile udm-sdm-profile create-subscription

### Description

Commands in this context configure parameters for handling the create subscription service call toward the UDM.

## 4.2.27.3 fh-session-no-response

### Syntax

**fh-session-no-response** *action*

### Context

[\[Tree\]](#) configure mobile-gateway profile udm-sdm-profile create-subscription fh-session-no-response

### Description

This command configures the failure-handling behavior when no response is received from the UDM peer.

### Default

fh-session-no-response terminate

### Parameters

*action*

Specifies the failure handling action.

Values:

- ap-continue – keyword to continue the session without the SDM subscription
- retry-and-ap-continue – keyword to try alternative peers if any are available and then continue the session without the SDM subscription
- retry-and-terminate – keyword to terminate the session after trying alternative peers if any are available

- terminate – keyword to terminate the session

#### 4.2.27.4 http-status-code

##### Syntax

**http-status-code** *status-code-value* [**application-error** *app-error-code*] **action** { **terminate** | **ap-continue** | **retry-and-ap-continue** | **retry-and-terminate**}

no **http-status-code** *status-code-value* [**application-error** *app-error-code*]

##### Context

[\[Tree\]](#) configure mobile-gateway profile udm-sdm-profile create-subscription http-status-code

##### Description

This command configures the failure-handling behavior for a specific HTTP status code. Optionally, a more granular per status code and per application error failure handling behavior can be specified. When an error is received, the following priority in the order listed determines the failure handling behavior:

1. If the error matches a specific HTTP status code and application error, use that behavior.
2. If the error matches a specific HTTP status code without an application error, use that behavior.
3. If the two previous priorities do not apply, use the **terminate** option.

The HTTP status codes are defined in RFC 9110 section 15. Application error codes for Nudm\_SubscriberDataManagement are defined in 3GPP TS 29.503 table 6.1.7.3-1, and common application error values are defined in 3GPP TS 29.500 table 5.2.7.2-1.

The **no** form of this command removes the code-specific failure handling for that HTTP status code and optional application error code.

##### Parameters

*status-code-value*

Specifies the three-digit HTTP status code value.

Values: 300 to 599

*app-error-code*

Specifies the application error, up to 36 characters.

**ap-continue**

Keyword to continue the session without the SDM subscription.

**terminate**

Keyword to terminate the session.

**retry-and-terminate**

Keyword to terminate the session after trying alternative peers if any are available.

**retry-and-ap-continue**

Keyword to try alternative peers if any are available and then continue the session without the SDM subscription.

### 4.2.27.5 retry-count

#### Syntax

**retry-count** *max*  
**no retry-count**

#### Context

[\[Tree\]](#) configure mobile-gateway profile udm-sdm-profile create-subscription retry-count

#### Description

This command configures the maximum number of times a message is retransmitted if there is no reply when the message is sent. The message is resent after the time configured by the **transaction-timer** command elapses and until the maximum number of retries is reached. If the message times out after the last retry, failure handling is triggered.

The **no** form of this command configures that no retries are attempted.

#### Default

no retry-count

#### Parameters

*max*

Specifies the maximum number of retries to resend the message.

Values: 1 to 10

### 4.2.27.6 transaction-timer

#### Syntax

**transaction-timer** *value*

#### Context

[\[Tree\]](#) configure mobile-gateway profile udm-sdm-profile create-subscription transaction-timer

#### Description

This command configures the transaction time used to send messages. If there is no reply during the transaction time, the message is sent again until the retry count is reached, as configured by the **retry-count** command. If the message times out again, the connection to the UDM SDM is considered down and failure handling is triggered.

#### Default

transaction-timer 5000

## Parameters

*value*

Specifies the transaction timer value, in milliseconds in increments of 100.

Values: 1000 to 20000

### 4.2.27.7 get-sm-subscription-data

#### Syntax

**get-sm-subscription-data**

#### Context

**[Tree]** configure mobile-gateway profile udm-sdm-profile get-sm-subscription-data

#### Description

Commands in this context configure parameters for handling the get service call toward the UDM.

### 4.2.27.8 fh-session-no-response

#### Syntax

**fh-session-no-response** *action*

#### Context

**[Tree]** configure mobile-gateway profile udm-sdm-profile get-sm-subscription-data fh-session-no-response

#### Description

This command configures the failure-handling behavior when no response is received from the UDM peer.

#### Default

fh-session-no-response terminate

#### Parameters

*action*

Specifies the failure handling action.

Values:

- ap-continue – keyword to continue the session without the SDM subscription
- retry-and-ap-continue – keyword to try alternative peers if any are available and then continue the session without the SDM subscription data
- retry-and-terminate – keyword to terminate the session after trying alternative peers if any are available

- terminate – keyword to terminate the session

### 4.2.27.9 http-status-code

#### Syntax

**http-status-code** *status-code-value* [**application-error** *app-error-code*] **action** { **terminate** | **ap-continue** | **retry-and-ap-continue** | **retry-and-terminate**}

no **http-status-code** *status-code-value* [**application-error** *app-error-code*]

#### Context

[Tree] configure mobile-gateway profile udm-sdm-profile get-sm-subscription-data http-status-code

#### Description

This command configures the failure-handling behavior for a specific HTTP status code. Optionally, a more granular per status code and per application error failure handling behavior can be specified. When an error is received, the following priority in the order listed determines the failure handling behavior:

1. If the error matches a specific HTTP status code and application error, use that behavior.
2. If the error matches a specific HTTP status code without an application error, use that behavior.
3. If the two previous priorities do not apply, use the **terminate** option.

The HTTP status codes are defined in RFC 9110 section 15. Application error codes for Nudm\_SubscriberDataManagement are defined in 3GPP TS 29.503 table 6.1.7.3-1, and common application error values are defined in 3GPP TS 29.500 table 5.2.7.2-1.

The **no** form of this command removes the code-specific failure handling for that HTTP status code and optional application error code.

#### Parameters

*status-code-value*

Specifies the three-digit HTTP status code value.

Values: 300 to 599

*app-error-code*

Specifies the application error, up to 36 characters.

**ap-continue**

Keyword to continue the session without the SDM subscription data.

**terminate**

Keyword to terminate the session.

**retry-and-terminate**

Keyword to terminate the session after trying alternative peers if any are available.

**retry-and-ap-continue**

Keyword to try alternative peers if any are available and then continue the session without the SDM subscription data.

### 4.2.27.10 retry-count

#### Syntax

**retry-count** *max*  
**no retry-count**

#### Context

[\[Tree\]](#) configure mobile-gateway profile udm-sdm-profile get-sm-subscription-data retry-count

#### Description

This command configures the maximum number of times a message is retransmitted if there is no reply when the message is sent. The message is resent after the time configured by the **transaction-timer** command elapses and until the maximum number of retries is reached. If the message times out after the last retry, failure handling is triggered.

The **no** form of this command configures that no retries are attempted.

#### Default

no retry-count

#### Parameters

*max*

Specifies the maximum number of retries to resend the message.

Values: 1 to 10

### 4.2.27.11 transaction-timer

#### Syntax

**transaction-timer** *value*

#### Context

[\[Tree\]](#) configure mobile-gateway profile udm-sdm-profile get-sm-subscription-data transaction-timer

#### Description

This command configures the transaction time used to send messages. If there is no reply during the transaction time, the message is sent again until the retry count is reached, as configured by the **retry-count** command. If the message times out again, the connection to the UDM SDM is considered down and failure handling is triggered.

#### Default

transaction-timer 5000



## Parameters

*value*

Specifies the transaction timer value, in milliseconds.

Values: 1000 to 20000

Default: 5000

## 4.2.27.12 unsubscribe

### Syntax

**unsubscribe**

### Context

[\[Tree\]](#) configure mobile-gateway profile udm-sdm-profile unsubscribe

### Description

Commands in this context configure parameters to handle the unsubscribe service call toward the UDM.

## 4.2.27.13 retry-count

### Syntax

**retry-count** *max*

**no** **retry-count**

### Context

[\[Tree\]](#) configure mobile-gateway profile udm-sdm-profile unsubscribe retry-count

### Description

This command configures the maximum number of times a message is retransmitted if there is no reply after the message is sent. The message is resent after the time configured by the **transaction-timer** command elapses and until the maximum number of retries is reached. If the message times out after the last retry, the ongoing session termination process continues.

The **no** form of this command configures that no retries are attempted.

### Default

no retry-count

### Parameters

*max*

Specifies the maximum number of retries to resend the message.

Values: 1 to 10

#### 4.2.27.14 transaction-timer

##### Syntax

**transaction-timer** *value*

##### Context

[\[Tree\]](#) configure mobile-gateway profile udm-sdm-profile unsubscribe transaction-timer

##### Description

This command configures the transaction time to send messages. If there is no reply during the transaction time, the message is resent until the retry count configured by the **retry-count** command is reached. If the message times out after the last retry, the ongoing session termination process continues.

The **no** form of this command reverts to the default.

##### Default

transaction-timer 5000

##### Parameters

*value*

Specifies the transaction timer value, in milliseconds, in increments of 100.

Values: 1000 to 20000

### 4.2.28 configure mobile-gateway profile udm-uecm-profile command descriptions

#### 4.2.28.1 udm-uecm-profile

##### Syntax

**[no] udm-uecm-profile** *profile-name*

##### Context

[\[Tree\]](#) configure mobile-gateway profile udm-uecm-profile

##### Description

This command configures a UDM UECM profile that defines the failure-handling policy when the Nudm\_UECM services are used.

The **no** form of this command removes the configuration.

##### Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

## 4.2.28.2 deregister-smf

### Syntax

**deregister-smf**

### Context

**[Tree]** configure mobile-gateway profile udm-uecm-profile deregister-smf

### Description

Commands in this context configure parameters to handle the deregistration of the SMF service call toward the UDM.

## 4.2.28.3 retry-count

### Syntax

**retry-count** *max*  
**no retry-count**

### Context

**[Tree]** configure mobile-gateway profile udm-uecm-profile deregister-smf retry-count

### Description

This command configures the maximum number of times a message is retransmitted if there is no reply when the message is sent. The message is resent after the time configured by the **transaction-timer** command elapses and until the maximum number of retries is reached. If the message times out after the last retry, the ongoing session termination process continues.

The **no** form of this command configures that no retries are attempted.

### Default

no retry-count

### Parameters

*max*

Specifies the maximum number of retries to resend the message.

Values: 1 to 10

## 4.2.28.4 transaction-timer

### Syntax

**transaction-timer** *value*

## Context

[\[Tree\]](#) configure mobile-gateway profile udm-uecm-profile deregister-smf transaction-timer

## Description

This command configures the transaction time to send messages. If there is no reply during the transaction time, the message is resent until the retry count configured by the **retry-count** command is reached. If the message times out after the last retry, the ongoing session termination process continues.

## Default

transaction-timer 5000

## Parameters

*value*

Specifies the transaction timer value, in milliseconds, in increments of 100.

Values: 1000 to 20000

### 4.2.28.5 register-smf

## Syntax

**register-smf**

## Context

[\[Tree\]](#) configure mobile-gateway profile udm-uecm-profile register-smf

## Description

Commands in this context configure parameters for handling the register SMF service call toward the UDM.

### 4.2.28.6 fh-session-no-response

## Syntax

**fh-session-no-response** *action*

## Context

[\[Tree\]](#) configure mobile-gateway profile udm-uecm-profile register-smf fh-session-no-response

## Description

This command configures the failure-handling behavior when no response is received from the UDM peer.

## Default

fh-session-no-response terminate

## Parameters

### *action*

Specifies the failure handling action.

Values:

- `ap-continue` – continue the session without registering the MAG-c with the UDM
- `terminate` – terminate the session
- `retry-and-terminate` – terminate the session after trying alternative peers if any are available
- `retry-and-ap-continue` – try alternative peers if any are available and then continue the session without registering the MAG-c with the UDM

### 4.2.28.7 http-status-code

#### Syntax

**http-status-code** *status-code-value* [**application-error** *app-error-code*] **action** *failure-action*

**no http-status-code** *status-code-value* [**application-error** *app-error-code*]

#### Context

[\[Tree\]](#) configure mobile-gateway profile udm-uecm-profile register-smf http-status-code

#### Description

This command configures the failure-handling behavior for a specific HTTP status code. Optionally, a more granular per status code and per application error failure handling behavior can be specified. When an error is received, the following priority in the order listed determines the failure handling behavior:

1. If the error matches a specific HTTP status code and application error, use that behavior.
2. If the error matches a specific HTTP status code without an application error, use that behavior.
3. If the two previous priorities do not apply, use the **terminate** option.

HTTP status codes are defined in RFC 9110 section 15. Application error codes for Nudm\_UEContextManagement are defined in 3GPP TS 29.503 table 6.2.7.3-1, and common application error values are defined in 3GPP TS 29.500 table 5.2.7.2-1.

The **no** form of this command removes the code-specific failure handling for that HTTP status code and optional application error code.

#### Parameters

##### *status-code-value*

Specifies the three-digit HTTP status code value.

Values: 300 to 599

##### *app-error-code*

Specifies the application error, up to 36 characters.

*failure-action*

Specifies the failure action.

Values:

- *ap-continue* – continue the session without registering the MAG-c with the UDM
- *terminate* – terminate the session
- *retry-and-terminate* – terminate the session after trying alternative peers if any are available
- *retry-and-ap-continue* – try alternative peers if any are available and then continue the session without registering the MAG-c with the UDM

## 4.2.28.8 retry-count

### Syntax

**retry-count** *max*

**no retry-count**

### Context

[\[Tree\]](#) configure mobile-gateway profile udm-uecm-profile register-smf retry-count

### Description

This command configures the maximum number of times a message is retransmitted if there is no reply when the message is sent. The message is resent after the time configured by the **transaction-timer** command elapses and until the maximum number of retries is reached. If the message times out after the last retry, failure handling is triggered.

The **no** form of this command configures that no retries are attempted.

### Default

no retry-count

### Parameters

*max*

Specifies the maximum number of retries to resend the message.

Values: 1 to 10

## 4.2.28.9 transaction-timer

### Syntax

**transaction-timer** *value*

## Context

[\[Tree\]](#) configure mobile-gateway profile udm-uecm-profile register-smf transaction-timer

## Description

This command configures the transaction time used to send messages. If there is no reply during the transaction time, the message is resent until the retry count is reached, as configured by the **retry-count** command. If the message times out again, failure handling is triggered.

## Default

transaction-timer 5000

## Parameters

*value*

Specifies the transaction timer value, in milliseconds, in increments of 100.

Values: 1000 to 20000

## 4.2.29 configure mobile-gateway system command descriptions

### 4.2.29.1 system

#### Syntax

system

#### Context

[\[Tree\]](#) configure mobile-gateway system

#### Description

Commands in this context configure the mobile gateway system.

### 4.2.29.2 bng

#### Syntax

bng

#### Context

[\[Tree\]](#) configure mobile-gateway system bng

#### Description

Commands in this context configure BNG system parameters.

### 4.2.29.3 queries

#### Syntax

**queries**

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries

#### Description

Commands in this context configure queries to retrieve YANG state information of MAG-c sessions and subscribers.

### 4.2.29.4 session

#### Syntax

**session** *name*

**no session** *name*

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session

#### Description

This command configures a query to retrieve YANG state information of MAG-c sessions. The **no** form of this command removes the specified session query.

#### Parameters

*name*

Specifies the name of the session query, up to 32 characters.

### 4.2.29.5 acct-multi-session-id

#### Syntax

**acct-multi-session-id** *identifier*

**no acct-multi-session-id**

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session acct-multi-session-id



**Description**

This command configures the accounting multi-session ID.  
The **no** form of this command removes the configuration.

**Default**

no acct-multi-session-id

**Parameters**

*identifier*

Specifies the accounting multi-session ID, up to 25 characters.

**4.2.29.6 acct-session-id****Syntax**

**acct-session-id** *identifier*  
**no acct-session-id**

**Context**

[\[Tree\]](#) configure mobile-gateway system bng queries session acct-session-id

**Description**

This command configures the accounting session ID.  
The **no** form of this command removes the configuration.

**Default**

no acct-session-id

**Parameters**

*identifier*

Specifies the accounting session ID, up to 25 characters.

**4.2.29.7 apn****Syntax**

**apn** *name*  
**no apn**

**Context**

[\[Tree\]](#) configure mobile-gateway system bng queries session apn

### Description

This command configures the APN.

The **no** form of this command removes the configuration.

### Default

no apn

### Parameters

*name*

Specifies the APN name, up to 80 characters.

## 4.2.29.8 c-vlan

### Syntax

**c-vlan** *tag*

**no c-vlan**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session c-vlan

### Description

This command configures the customer VLAN (inner VLAN).

The **no** form of this command removes the configuration.

### Default

no c-vlan

### Parameters

*tag*

Specifies the customer VLAN tag.

Values: 0 to 4094

## 4.2.29.9 circuit-id

### Syntax

**circuit-id string** *cid-string*

**circuit-id hex** *binary cid*

**no circuit-id**

## Context

[\[Tree\]](#) configure mobile-gateway system bng queries session circuit-id

## Description

This command configures the circuit ID.

The **no** form of this command removes the configuration.

## Default

no circuit-id

## Parameters

*cid-string*

Specifies the circuit ID string, up to 255 characters.

*binary cid*

Specifies the binary value of the circuit ID.

Values: 0x0 to 0xFFFFFFFF... (maximum 510 hex nibbles)

### 4.2.29.10 client-user-name

## Syntax

**client-user-name** *string*

**no client-user-name**

## Context

[\[Tree\]](#) configure mobile-gateway system bng queries session client-user-name

## Description

This command configures the username of the client.

The **no** form of this command removes the configuration.

## Default

no client-user-name

## Parameters

*string*

Specifies the client username, up to 253 characters.

### 4.2.29.11 client-user-name-domain

#### Syntax

**client-user-name-domain** *string*  
**no client-user-name-domain**

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session client-user-name-domain

#### Description

This command configures the username domain of the client.  
The **no** form of this command removes the configuration.

#### Default

no client-user-name-domain

#### Parameters

*string*

Specifies the username domain, up to 128 characters.

### 4.2.29.12 data-triggered

#### Syntax

**[no] data-triggered**

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session data-triggered

#### Description

This command configures filtering of sessions with a data-triggered address stack.  
The **no** form of this command removes the configuration.

#### Default

no data-triggered

### 4.2.29.13 description

#### Syntax

**description** *description-string*

**no description****Context**

[\[Tree\]](#) configure mobile-gateway system bng queries session description

**Description**

This command configures a description for the session query.

The **no** form of this command removes the description.

**Default**

no description

**Parameters**

*description-string*

Specifies the description of the session query, up to 80 characters.

#### 4.2.29.14 fate-sharing-group-id

**Syntax**

**fate-sharing-group-id** *fsg-id*

**no fate-sharing-group-id**

**Context**

[\[Tree\]](#) configure mobile-gateway system bng queries session fate-sharing-group-id

**Description**

This command configures the fate-sharing group ID.

The **no** form of this command removes the configuration.

**Default**

no fate-sharing-group-id

**Parameters**

*fsg-id*

Specifies the ID.

Values: 1 to 65535

#### 4.2.29.15 imei

**Syntax**

**imei** *number*

**no imei**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session imei

### Description

This command configures the IMEI.

The **no** form of this command removes the configuration.

### Default

no imei

### Parameters

*number*

Specifies the IMEI in 15 or 16 digits.

## 4.2.29.16 imsi

### Syntax

**imsi** *number*

**no imsi**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session imsi

### Description

This command configures the IMSI.

The **no** form of this command removes the configuration.

### Default

no imsi

### Parameters

*number*

Specifies the IMSI in 10 to 15 digits.

## 4.2.29.17 ip

### Syntax

**ip**

**Context**

[Tree] configure mobile-gateway system bng queries session ip

**Description**

Commands in this context configure the IP match criteria.

**4.2.29.18 address-stacks****Syntax**

**address-stacks**

**Context**

[Tree] configure mobile-gateway system bng queries session ip address-stacks

**Description**

Commands in this context configure the address stack match criteria.

**4.2.29.19 ipv4****Syntax**

**ipv4 {false | true}**  
**no ipv4**

**Context**

[Tree] configure mobile-gateway system bng queries session ip address-stacks ipv4

**Description**

This command configures the IPv4 address stack criterion.

When configured to **true**, IPv4 sessions are included in the query.

When configured to **false**, IPv4 sessions are excluded in the query.

The **no** form of this command removes the IPv4 address stack criterion.

**Default**

no ipv4

**4.2.29.20 ipv6-na****Syntax**

**ipv6-na {false | true}**

## no ipv6-na

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session ip address-stacks ipv6-na

### Description

This command configures the IPv6 NA address stack criterion.

When configured to **true**, IPv6 NA sessions are included in the query.

When configured to **false**, IPv6 NA sessions are excluded in the query.

The **no** form of this command removes the IPv6 NA address stack criterion.

### Default

no ipv6-na

## 4.2.29.21 ipv6-pd

### Syntax

**ipv6-pd** {**false** | **true**}

**no ipv6-pd**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session ip address-stacks ipv6-pd

### Description

This command configures the IPv6 PD address stack criterion.

When configured to **true**, IPv6 PD sessions are included in the query.

When configured to **false**, IPv6 PD sessions are excluded in the query.

The **no** form of this command removes the IPv6 PD address stack criterion.

### Default

no ipv6-pd

## 4.2.29.22 ipv6-slaac

### Syntax

**ipv6-slaac** {**false** | **true**}

**no ipv6-slaac**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session ip address-stacks ipv6-slaac



## Description

This command configures the IPv6 SLAAC address stack criterion.

When configured to **true**, IPv6 SLAAC sessions are included in the query.

When configured to **false**, IPv6 SLAAC sessions are excluded in the query.

The **no** form of this command removes the IPv6 SLAAC address stack criterion.

## Default

no ipv6-slaac

## 4.2.29.23 prefix

### Syntax

**prefix** *ip-prefix/prefix-length*

**no prefix**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session ip prefix

### Description

This command configures the IP prefix and IP prefix length.

The **no** form of this command removes the configuration.

### Default

no prefix

### Parameters

*ip-prefix*

Specifies the IP address prefix.

Values:

- ipv4 – a.b.c.d
- ipv6 – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*prefix-length*

Specifies the IP prefix length.

Values:

- IPv4: 0 to 32
- IPv6: 0 to 128

#### 4.2.29.24 l2-access-id

##### Syntax

**l2-access-id** *string*  
**no l2-access-id**

##### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session l2-access-id

##### Description

This command configures the Layer 2 access ID.  
The **no** form of this command removes the configuration.

##### Default

no l2-access-id

##### Parameters

*string*  
Specifies the L2 access ID, up to 64 characters.

#### 4.2.29.25 mac-address

##### Syntax

**mac-address** *ieee-address*  
**no mac-address**

##### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session mac-address

##### Description

This command configures the MAC address.  
The **no** form of this command removes the configuration.

##### Default

no mac-address

##### Parameters

*ieee-address*  
Specifies the MAC address.  
Values: xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

## 4.2.29.26 msisdn

### Syntax

**msisdn** *number*  
**no msisdn**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session msisdn

### Description

This command configures the MSISDN.

The **no** form of this command removes the configuration.

### Default

no msisdn

### Parameters

*number*  
Specifies the MSISDN in 9 to 15 digits.

## 4.2.29.27 nat-profile

### Syntax

**nat-profile** *name*  
**no nat-profile**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session nat-profile

### Description

This command configures the NAT profile name.

The **no** form of this command removes the configuration.

### Default

no nat-profile

### Parameters

*name*  
Specifies the profile name, up to 32 characters.

## 4.2.29.28 network-realm

### Syntax

**network-realm** *name*  
**no network-realm**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session network-realm

### Description

This command configures the name of the associated network realm.  
The **no** form of this command removes the configuration.

### Default

no network-realm

### Parameters

*name*

Specifies the network realm name, up to 80 characters.

## 4.2.29.29 output-options

### Syntax

**output-options**  
**no output-options**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session output-options

### Description

Commands in this context configure the information to include in the output.  
The **no** form of this command removes the configuration.

### Default

no output-options

### 4.2.29.30 charging

#### Syntax

**charging** [**detailed-stats**] [**fetch-upf**]  
**no charging**

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session output-options charging

#### Description

This command configures the charging information to display in the output.  
The **no** form of this command removes the configuration.

#### Default

no charging

#### Parameters

##### **detailed-stats**

Displays the detailed charging statistics.

##### **fetch-upf**

Fetches the latest statistics from the BNG-UP.

### 4.2.29.31 count

#### Syntax

**count**  
**no count**

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session output-options count

#### Description

This command displays only the number of matching sessions without any additional data.  
The **no** form of this command removes the configuration.

#### Default

no count

### 4.2.29.32 nat

#### Syntax

**nat**  
**no nat**

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session output-options nat

#### Description

This command displays information about the NAT pool of the CP NAT profile and the outside routing context for the sessions.

The **no** form of this command removes the configuration.

#### Default

no nat

### 4.2.29.33 pfcpc

#### Syntax

**pfcpc**

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session pfcpc

#### Description

Commands in this context configure the PFCPC match criteria.

### 4.2.29.34 local-seid

#### Syntax

**local-seid** *binary seid*  
**no local-seid**

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session pfcpc local-seid

#### Description

This command configures the PFCPC local session ID.

The **no** form of this command removes the configuration.

### Default

no local-seid

### Parameters

*binary seid*

Specifies the local session ID.

Values: 0xFFFF... (exact 16 hex nibbles)

## 4.2.29.35 remote-seid

### Syntax

**remote-seid** *binary reid*

**no remote-seid**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session pfcpc remote-seid

### Description

This command configures the PFCPC remote session ID.

The **no** form of this command removes the configuration.

### Default

no remote-seid

### Parameters

*binary reid*

Specifies the remote session ID.

Values: 0xFFFF... (exact 16 hex nibbles)

## 4.2.29.36 rat-type

### Syntax

**rat-type** *radio-access-type*

**no rat-type**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session rat-type

## Description

This command configures the Radio Access Technology (RAT) type.

The **no** form of this command reverts to the default.

## Default

rat-type any

## Parameters

*radio-access-type*

Specifies the RAT type to match on.

Values:

- any: match any RAT type
- eutran: match sessions connected via eutran RAT (4G)
- nr: match sessions connected via NR RAT (5G)

## 4.2.29.37 remote-id

### Syntax

**remote-id string** *rid-string*

**remote-id hex** *binary rid*

**no remote-id**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session remote-id

### Description

This command configures the remote ID.

The **no** form of this command removes the configuration.

### Default

no remote-id

### Parameters

*rid-string*

Specifies the remote ID string, up to 255 characters.

*binary rid*

Specifies the binary value for the remote ID.

Values: 0x0 to 0xFFFFFFFF... (maximum 510 hex nibbles)]



### 4.2.29.38 s-nssai

#### Syntax

**s-nssai**

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session s-nssai

#### Description

Commands in this context configure the Single-Network Slice Selection Assistance Information (S-NSSAI).

### 4.2.29.39 sd

#### Syntax

**sd** *sd hex string*

**no sd**

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session s-nssai sd

#### Description

This command configures the slice differentiator (SD) part of the S-NSSAI.

The **no** form of this command removes the configuration.

#### Default

no sd

#### Parameters

*sd hex string*

Specifies the hexadecimal value for the SD.

Values: 000000 to FFFFFFFF

### 4.2.29.40 sst

#### Syntax

**sst** *sst value*

**no sst**

## Context

[\[Tree\]](#) configure mobile-gateway system bng queries session s-nssai sst

## Description

This command configures the slice service type (SST) part of the S-NSSAI.  
The **no** form of this command removes the configuration.

## Default

no sst

## Parameters

*sst value*

Specifies the SST.

Values: 0 to 255

### 4.2.29.41 s-vlan

## Syntax

**s-vlan** *tag*

**no s-vlan**

## Context

[\[Tree\]](#) configure mobile-gateway system bng queries session s-vlan

## Description

This command configures the service VLAN (outer VLAN).  
The **no** form of this command removes the configuration.

## Default

no s-vlan

## Parameters

*tag*

Specifies the service VLAN tag.

Values: 0 to 4094

### 4.2.29.42 standby-state

## Syntax

**standby-state** *stdby-state*

## no standby-state

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session standby-state

### Description

This command configures the resiliency mode for the session on the standby BNG-UP.  
The **no** form of this command removes the configuration.

### Default

no standby-state

### Parameters

*stdby-state*

Specifies the resiliency mode for the session.

Values:

- any – the session is in any of the following resiliency modes
- hot – hot standby is enabled for the session
- hot-created – hot standby is enabled for the session and the session is created on the standby BNG-UP
- hot-to-create – hot standby is enabled for the session and the session is not yet created on the standby BNG-UP
- warm – warm standby is enabled for the session

Default: any

## 4.2.29.43 subscriber-name

### Syntax

**subscriber-name** *name*

**no subscriber-name**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session subscriber-name

### Description

This command configures the subscriber name.  
The **no** form of this command removes the configuration.

### Default

no subscriber-name

## Parameters

*name*

Specifies the subscriber name, up to 128 characters.

### 4.2.29.44 up-ip

#### Syntax

**up-ip** *ip-address* | *ipv6-address*

**no up-ip**

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session up-ip

#### Description

This command configures the UP IP address.

The **no** form of this command removes the configuration.

#### Default

no up-ip

#### Parameters

*ip-address*

Specifies the UP IPv4 address.

Values: a.b.c.d

*ipv6-address*

Specifies the UP IPv6 address.

Values: x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where

x – [0..FFFF]H

d – [0..255]D

### 4.2.29.45 user-access-type

#### Syntax

**user-access-type** *access-type*

**no user-access-type**

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session user-access-type

## Description

This command configures the user access type.

The **no** form of this command removes the configuration.

## Default

no user-access-type

## Parameters

*access-type*

Specifies the user access type.

Values: any | ipoe | ppoe | fixed-wireless-access

## 4.2.29.46 wpp-portal-group

### Syntax

**wpp-portal-group** *name*

**no wpp-portal-group**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries session wpp-portal-group

### Description

This command configures the WPP portal group name.

The **no** form of this command removes the configuration.

### Default

no wpp-portal-group

### Parameters

*name*

Specifies the portal group name, up to 32 characters.

## 4.2.29.47 subscriber

### Syntax

**subscriber** *name*

**no subscriber** *name*

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries subscriber

**Description**

This command configures a query to retrieve YANG state information of MAG-c subscribers.

The **no** form of this command removes the specified subscriber query.

**Default**

no subscriber

**Parameters**

*name*

Specifies the name of the subscriber query, up to 32 characters.

**4.2.29.48 acct-session-id****Syntax**

**acct-session-id** *identifier*

**no acct-session-id**

**Context**

[\[Tree\]](#) configure mobile-gateway system bng queries subscriber acct-session-id

**Description**

This command configures the accounting session ID.

The **no** form of this command removes the configuration.

**Default**

no acct-session-id

**Parameters**

*identifier*

Specifies the accounting session ID, up to 25 characters.

**4.2.29.49 apn****Syntax**

**apn** *name*

**no apn**

**Context**

[\[Tree\]](#) configure mobile-gateway system bng queries subscriber apn

**Description**

This command configures the APN.

The **no** form of this command removes the configuration.

**Default**

no apn

**Parameters**

*name*

Specifies the APN name, up to 80 characters.

**4.2.29.50 description****Syntax**

**description** *description-string*

**no description**

**Context**

[\[Tree\]](#) configure mobile-gateway system bng queries subscriber description

**Description**

This command configures a description for the subscriber query.

The **no** form of this command removes the description.

**Default**

no description

**Parameters**

*description-string*

Specifies the description, up to 80 characters.

**4.2.29.51 fate-sharing-group-id****Syntax**

**fate-sharing-group-id** *fsg-id*

**no fate-sharing-group-id**

**Context**

[\[Tree\]](#) configure mobile-gateway system bng queries subscriber fate-sharing-group-id

### Description

This command configures the fate-sharing group ID.  
The **no** form of this command removes the configuration.

### Default

no fate-sharing-group-id

### Parameters

*fsg-id*

Specifies the ID.

Values: 1 to 65535

## 4.2.29.52 I2-access-id

### Syntax

**I2-access-id** *string*

**no I2-access-id**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries subscriber I2-access-id

### Description

This command configures the Layer 2 access ID.  
The **no** form of this command removes the configuration.

### Default

no I2-access-id

### Parameters

*string*

Specifies the Layer 2 access ID, up to 64 characters.

## 4.2.29.53 network-realm

### Syntax

**network-realm** *name*

**no network-realm**

### Context

[\[Tree\]](#) configure mobile-gateway system bng queries subscriber network-realm



**Description**

This command configures the name of the associated network realm.

The **no** form of this command removes the configuration.

**Default**

no network-realm

**Parameters**

*name*

Specifies the network realm name, up to 80 characters.

**4.2.29.54 output-options****Syntax**

**output-options**

**no output-options**

**Context**

[\[Tree\]](#) configure mobile-gateway system bng queries subscriber output-options

**Description**

Commands in this context configure the information to include in the output.

The **no** form of this command removes the configuration.

**Default**

no output-options

**4.2.29.55 charging****Syntax**

**charging {detailed-stats} [fetch-upf]**

**no charging**

**Context**

[\[Tree\]](#) configure mobile-gateway system bng queries subscriber output-options charging

**Description**

This command configures the charging information to display in the output.

The **no** form of this command removes the configuration.

**Default**

no charging

**Parameters****detailed-stats**

Displays the detailed charging statistics.

**fetch-upf**

Fetches the latest statistics from the BNG-UP.

**4.2.29.56 count****Syntax**

count

no count

**Context**

[\[Tree\]](#) configure mobile-gateway system bng queries subscriber output-options count

**Description**

This command displays only the number of matching sessions without any further data.

The **no** form of this command removes the configuration.

**Default**

no count

**4.2.29.57 nat****Syntax**

nat

no nat

**Context**

[\[Tree\]](#) configure mobile-gateway system bng queries subscriber output-options nat

**Description**

This command displays information about the NAT pool of the CP NAT profile and the outside routing context for the sessions.

The **no** form of this command removes the configuration.

**Default**

no nat

**4.2.29.58 subscriber-id****Syntax**

**subscriber-id** *identifier*

**no subscriber-id**

**Context**

[\[Tree\]](#) configure mobile-gateway system bng queries subscriber subscriber-id

**Description**

This command configures the subscriber ID.

The **no** form of this command removes the configuration.

**Default**

no subscriber-id

**Parameters**

*identifier*

Specifies the ID.

Values: 1 to 4294967295

**4.2.29.59 subscriber-name****Syntax**

**subscriber-name** *name*

**no subscriber-name**

**Context**

[\[Tree\]](#) configure mobile-gateway system bng queries subscriber subscriber-name

**Description**

This command configures the subscriber name.

The **no** form of this command removes the configuration.

**Default**

no subscriber-name

## Parameters

*name*

Specifies the name, up to 128 characters.

### 4.2.29.60 up-ip

#### Syntax

**up-ip** *ip-address* | *ipv6-address*

**no up-ip**

#### Context

[\[Tree\]](#) configure mobile-gateway system bng queries subscriber up-ip

#### Description

This command configures the UP IPv4 or IPv6 address.

The **no** form of this command removes the configuration.

#### Default

no up-ip

#### Parameters

*ip-address*

Specifies the UP IPv4 address.

Values: a.b.c.d

*ipv6-address*

Specifies the UP IPv6 address.

Values: x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where

x – [0..FFFF]H

d – [0..255]D

### 4.2.29.61 call-insight

#### Syntax

**call-insight**

#### Context

[\[Tree\]](#) configure mobile-gateway system call-insight

## Description

Commands in this context configure global call trace settings.

### 4.2.29.62 location

#### Syntax

**location** *location*

#### Context

[\[Tree\]](#) configure mobile-gateway system call-insight location

#### Description

This command configures the location of the Compact Flash (CF) call trace storage.

#### Parameters

*location*

Specifies the location of the call trace storage.

Values: cf1 | cf2

Default: cf1

### 4.2.29.63 disable

#### Syntax

**[no] disable**

#### Context

[\[Tree\]](#) configure mobile-gateway system call-insight location disable

#### Description

This command enables or disables the specified storage location for call trace files.

#### Default

no disable

### 4.2.29.64 limit

#### Syntax

**limit** *limit*

**no limit**

## Context

[Tree] configure mobile-gateway system call-insight location limit

## Description

This command limits the total captured call trace files size per CF.

## Default

limit 1000

## Parameters

*limit*

Specifies the total captured call trace files size in megabytes.

Values: 0 to 65536 (0 means unlimited)

### 4.2.29.65 primary

## Syntax

[no] primary

## Context

[Tree] configure mobile-gateway system call-insight location primary

## Description

This command sets the primary CF. The other CF is automatically set to be secondary.

The **no** form of this command sets the secondary CF.

## Default

For CF1: primary

For CF2: no primary

### 4.2.29.66 max-files-number

## Syntax

**max-files-number** *max-files-number*

**no max-files-number**

## Context

[Tree] configure mobile-gateway system call-insight max-files-number

## Description

This command configures the maximum number of files for call trace output.

The **no** form of this command reverts to the default.

## Default

max-files-number 200

## Parameters

*max-files-number*

Specifies the maximum call trace files.

Values: 0 to 1024

## 4.2.29.67 group

### Syntax

**group** *group-number* [**resource-pool** *resource-pool-id*]

**no group** *group-number*

### Context

[\[Tree\]](#) configure mobile-gateway system group

### Description

This command configures the mobile-gateway system group with one or more SM-VMs for N:K redundant systems.

The **no** form of this command removes the specified group row entry, when the group is in shutdown.



**Note:** The resource pool must be configured before configuring the system group; see the **resource-pool** command.

### Parameters

*group-number*

Specifies a mobile-gateway system group.

Values: 1 to 15

*resource-pool-id*

Specifies the ID of the resource pool.

Values: 1 to 16



**Note:** Configure the resource pool before the mobile-gateway system group; see the **resource-pool** command.

## 4.2.29.68 protect-active-delay

### Syntax

**protect-active-delay** *protect-active-delay*  
**no protect-active-delay**

### Context

[\[Tree\]](#) configure mobile-gateway system group protect-active-delay

### Description

This command specifies the time to wait for the working card to come online before a standby card becomes active.

The **no** form of this command reverts to the default.

### Default

protect-active-delay 10

### Parameters

*protect-active-delay*  
Specifies the wait time in seconds.  
Values: 1 to 30

## 4.2.29.69 shutdown

### Syntax

**[no] shutdown**

### Context

[\[Tree\]](#) configure mobile-gateway system group shutdown

### Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The **shutdown** command administratively disables an entity. The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

### Default

shutdown



## 4.2.29.70 resource-pool

### Syntax

```
resource-pool resource-pool-id redundancy type gateway gw-id  
no resource-pool resource-pool-id
```

### Context

[\[Tree\]](#) configure mobile-gateway system resource-pool

### Description

This command configures a resource pool consisting of SM-VMs on the MAG-c platform and the redundancy method to use when the resource pool is associated with a mobile-gateway system group. Currently this command supports configuration of N:K (many-to-many) redundant systems. The resource pool must also be associated with a mobile-gateway system group when configuring N:K redundancy. For more details, see the **group** command.



**Note:** For N:K redundant systems, this configuration includes all VMs (cards) used across multiple mobile-gateway system groups. The cards in this context must not be configured as active (**working**) or standby (**protect**); see the **card** command.

### Parameters

*resource-pool-id*

Specifies the ID of the resource pool.

Values: 1 to 16

*type*

Specifies the redundancy method.

Values: many-to-many

*gw-id*

Specifies the ID of the mobile gateway to which the resource pool belongs.

Values: 1 to 8

## 4.2.29.71 card

### Syntax

```
card slot-number  
no card slot-number
```

### Context

[\[Tree\]](#) configure mobile-gateway system resource-pool card

## Description

This command configures the VM for the mobile-gateway system group or resource pool contexts. Depending on the failure scenario, either VM can be in an active or standby state.

The **no** form of this command removes the VM from the resource pool.



**Note:** An N:K redundant system does not use an active (**working**) or a standby (**protect**) VM. These undocumented parameters are present because of legacy reasons and must not be configured.

## Parameters

*slot-number*

Specifies the VM slot number.

Values: 1 to 20

### 4.2.29.72 protect-active-delay

#### Syntax

**protect-active-delay** *protect-active-delay*

**no protect-active-delay**

#### Context

[\[Tree\]](#) configure mobile-gateway system resource-pool protect-active-delay

## Description

This command specifies the time to wait for the working card to come online before a standby card becomes active.

The **no** form of this command reverts to the default.

## Default

protect-active-delay 10

## Parameters

*protect-active-delay*

Specifies the wait time in seconds.

Values: 1 to 30, in seconds.

### 4.2.29.73 thresholds

#### Syntax

**thresholds**

**Context**

[Tree] configure mobile-gateway system thresholds

**Description**

Commands in this context configure monitoring thresholds.

**4.2.29.74 system-mg-ism****Syntax**

[no] **system-mg-ism** *group-number*

**Context**

[Tree] configure mobile-gateway system thresholds system-mg-ism

**Description**

This command configures monitoring thresholds for ISM-MG (SM-VM).

The **no** form of this command removes the monitoring thresholds from the profile configuration.

**Parameters**

*group-number*

Specifies group number.

Values: 1 to 15

**4.2.29.75 interval****Syntax**

**interval** *minutes*

**Context**

[Tree] configure mobile-gateway system thresholds system-mg-ism interval

**Description**

This command configures the interval values for ISM-MG.

**Default**

interval 5

**Parameters**

*minutes*

Specifies group number.

---

Values: 5 to 60

## 4.2.29.76 shutdown

### Syntax

[no] shutdown

### Context

[\[Tree\]](#) configure mobile-gateway system thresholds system-mg-ism shutdown

### Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.

The **shutdown** command administratively disables an entity. When an entity is disabled, the operational state of the entity is disabled, as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

### Default

shutdown

## 4.2.30 configure mobile-gateway command descriptions

### 4.2.30.1 mobile-gateway

#### Syntax

mobile-gateway

#### Context

[\[Tree\]](#) configure mobile-gateway

#### Description

Commands in this context configure a gateway instance.

## 4.2.31 debug mobile-gateway command descriptions

### 4.2.31.1 mobile-gateway

#### Syntax

**mobile-gateway**

#### Context

**[Tree]** debug mobile-gateway

#### Description

Commands in this context enable and configure call trace debugging.

### 4.2.31.2 call-insight

#### Syntax

**call-insight**

#### Context

**[Tree]** debug mobile-gateway call-insight

#### Description

This command enables the context for debugging call trace.

### 4.2.31.3 all-ues

#### Syntax

**all-ues profile** *profile-name*

**no all-ues**

#### Context

**[Tree]** debug mobile-gateway call-insight all-ues

#### Description

This command enables call-insight for all sessions.

## Parameters

*profile-name*

Specifies the profile name, up to 32 characters. It references a profile configured using the following command.

```
configure mobile-gateway profile call-insight all-ues
```

### 4.2.31.4 bng

#### Syntax

**bng** [**mac-address** *mac*] [**remote-id** *rem*] [**circuit-id** *circ*] [**up** *up-node-id*] [**I2-access-id** *I2-acc*] [**I2-circuit** *I2-circ*] [**profile** *profile-name*] [**max-sessions** *max*]

**no bng** [**mac-address** *mac*] [**remote-id** *rem*] [**circuit-id** *circ*] [**up** *up-node-id*] [**I2-access-id** *I2-acc*] [**I2-circuit** *I2-circ*]

**no bng all**

#### Context

[\[Tree\]](#) debug mobile-gateway call-insight bng

#### Description

This command enables the call trace debugging of the BNG sessions matching the specified parameters using the specified profile.

The **no** form of this command removes either a specific trace matching the specified filters or all configured traces.

#### Parameters

**all**

Keyword to remove all traces.

*mac*

Specifies the MAC address of the BNG session.

Values: xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx (where x is a hexadecimal digit)

*rem*

Specifies the remote ID of the BNG session, up to 255 characters. The wildcard character (\*) can be used only at the start or the end.

*circ*

Specifies the circuit ID of the BNG session, up to 255 characters. The wildcard character (\*) can be used only at the start or the end.

*up-node-id*

Specifies the UP node ID of the UPF where the session is active.

Values:

- IPv4 address – a.b.c.d

- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where  
 x – [0..FFFF]H  
 d – [0..255]D
- fqdn – Up to 255 characters (per label max 63); the wildcard character (\*) can be used only at the start or the end

***l2-acc***

Specifies the layer 2 access ID where the session is active, up to 50 characters. The wildcard character (\*) can be used only at the start or the end.

***l2-circ***

Specifies the layer 2 circuit ID where the session is active, up to 50 characters. The wildcard character (\*) can be used only at the start or the end.

***profile-name***

Specifies an existing call-insight profile, as configured with the **ue** command in the following context.

```
configure mobile-gateway profile call-insight
```

It is a string of up to 32 characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

***max***

Specifies the maximum number of BNG sessions that can be traced for the specified criteria. Additional sessions matching the specified criteria are not traced.

Values: 1 to 50

## 4.2.31.5 ue

### Syntax

```
ue {imei | imsi | msisdn} value [profile profile-name]
ue {imei | imsi | msisdn} value reset-user-traffic-stats
no ue {imei | imsi | msisdn} value
no ue all
no ue {imei | imsi | msisdn} mask pattern
no ue mask-name mask-name
```

### Context

[\[Tree\]](#) debug mobile-gateway call-insight ue

### Description

This command enables adding and removing of specified call trace jobs.

## Parameters



### Note:

The parameters of the following commands are not supported with metadata for call trace:

- **no ue** {imei | imsi | msisdn} **mask** *pattern*
- **no ue mask-name** *mask-name*

### all

Keyword to remove all call trace jobs.

### imei

Keyword to add or remove an IMEI call trace job, up to 16 digits.

### imsi

Keyword to add or remove an IMSI call trace job. up to 15 digits.

### msisdn

Keyword to add or remove an MSISDN call trace job, up to 15 digits.

### *mask-name*

Removes call trace jobs matching a specified mask name. The mask name is up to 16 characters.

Default: "default"

### *pattern*

Removes call trace jobs matching a unique mask type and pattern. The pattern is up to 16 characters long composed of digits 0-9, '\*' and '!'.

### *profile-name*

Specifies an existing profile name. Allowed values are any string up to 32 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### *value*

Removes call trace jobs matching a specified IMEI, IMSI, or MSISDN value.

### **reset-user-traffic-stats**

Keyword to reset call-insight UE user traffic statistics.

## 4.2.31.6 ue-mask

### Syntax

**ue-mask** {imei | imsi | msisdn} *pattern* [**name** *mask-name*] [**profile** *profile-name*] [**max-ues** *num*]

**no ue-mask** {imei | imsi | msisdn} *pattern*

**no ue-mask name** *mask-name*

**no ue-mask all**

### Context

[\[Tree\]](#) debug mobile-gateway call-insight ue-mask



## Description

This command adds or removes a mask template for call-trace jobs to be generated automatically. If the **name** is not specified, a default name is used. If the **profile** is not specified, a default profile is used. If the **max-ues** is not specified, a default value of 50 is used.

## Parameters

### **all**

Keyword to remove all mask templates.

### **imei**

Keyword to add or remove an IMEI mask template.

### **imsi**

Keyword to add or remove an IMSI mask template.

### **msisdn**

Keyword to add or remove an MSISDN mask template.

### *mask-name*

Specifies the mask name, up to 16 characters. The default mask name is "default".

### *num*

Specifies the maximum number of UEs. The default is 50.

Values: 1 to 50

### *pattern*

The pattern is a maximum of 16 characters composed of digits 0-9, '\*' and '!'.

### *profile-name*

Specifies an existing profile name. Allowed values are any string up to 32 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

## 4.2.32 show mobile-gateway command descriptions

### 4.2.32.1 mobile-gateway

#### Syntax

**mobile-gateway**

#### Context

[\[Tree\]](#) show mobile-gateway

#### Description

Commands in this context display gateway information.

### 4.2.32.2 bng

**Syntax**

**bng**

**Context**

[\[Tree\]](#) show mobile-gateway bng

**Description**

Commands in this context display BNG information.

### 4.2.32.3 charging

**Syntax**

**charging**

**Context**

[\[Tree\]](#) show mobile-gateway bng charging

**Description**

Commands in this context display charging information.

### 4.2.32.4 radius

**Syntax**

**radius**

**Context**

[\[Tree\]](#) show mobile-gateway bng charging radius

**Description**

This command displays RADIUS charging information.

### 4.2.32.5 buffering

**Syntax**

**buffering**

**Context**

[\[Tree\]](#) show mobile-gateway bng charging radius buffering

**Description**

This command displays buffering statistics of the RADIUS charging messages.

**4.2.32.6 nat****Syntax**

**nat**

**Context**

[\[Tree\]](#) show mobile-gateway bng nat

**Description**

Commands in this context display NAT information.

**4.2.32.7 histogram****Syntax**

**histogram**

**Context**

[\[Tree\]](#) show mobile-gateway bng nat histogram

**Description**

Commands in this context display NAT histogram information.

**4.2.32.8 extended-port-blocks-per-ip****Syntax**

**extended-port-blocks-per-ip cp-nat-profile** *cp-nat-profile* **nat-pool** *nat-pool* [**gateway** *gw-id*] **up** *ip-addr* | *fqdn* **bucket-size** *size* **num-buckets** *number*

**extended-port-blocks-per-ip cp-nat-profile** *cp-nat-profile* **nat-pool** *nat-pool* [**gateway** *gw-id*] **fsg** *fsg-id* **bucket-size** *size* **num-buckets** *number*

**Context**

[\[Tree\]](#) show mobile-gateway bng nat histogram extended-port-blocks-per-ip

## Description

This command displays the aggregated distribution of extended PBs across IP addresses. Unused IP addresses are not included.

## Parameters

### *cp-nat-profile*

Specifies the NAT profile name, up to 32 characters.

### *nat-pool*

Specifies the NAT pool name, up to 32 characters.

### *gw-id*

Specifies the gateway ID.

Values: 1 to 8

Default: 1

### *ip-addr*

Specifies the UP IP address.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

### *fqdn*

Specifies the fully qualified domain name (FQDN) for the UP, up to 255 characters.

### *size*

Specifies the size of the PB buckets.

Values: 1 to 65536

### *number*

Specifies the number of PB buckets to display in the output.

Values: 2 to 50

### *fsg-id*

Specifies the fate sharing group.

Values: 0 to 4294967295

## Output

The following output is an example of the aggregated distribution of extended PBs across IP addresses for the specified NAT profile, NAT pool, and UP IP address.

### Output example

```
A:MAG-c# show mobile-gateway bng nat histogram extended-port-blocks-per-ip cp-nat-profile
"Dut-C_pol_pol1_for_601-pool-0" nat-pool "601-pool-0" up 10.0.1.3 bucket-size 100 num-
buckets 50
```

```
=====
Usage histogram UP 10.0.1.3 extended port blocks per IP address
=====
Num extended port blocks      Num IP addresses
-----
1-99                          0
100-199                       0
200-299                       0
300-399                       14
400-499                       2
500-599                       1
600-699                       6
700-799                       11
800-899                       50
900-999                       65
1000-1099                    104
1100-1199                    171
1200-1299                    201
1300-1399                    163
1400-1499                    60
1500-1599                    23
1600-1699                    1
1700-1799                    0
1800-1899                    0
1900-1999                    0
2000-2099                    0
2100-2199                    0
2200-2299                    0
2300-2399                    0
2400-2499                    0
2500-2599                    0
2600-2699                    0
2700-2799                    0
2800-2899                    0
2900-2999                    0
3000-3099                    0
3100-3199                    0
3200-3299                    0
3300-3399                    0
3400-3499                    0
3500-3599                    0
3600-3699                    0
3700-3799                    0
3800-3899                    0
3900-3999                    0
4000-4099                    0
4100-4199                    0
4200-4299                    0
4300-4399                    0
4400-4499                    0
4500-4599                    0
4600-4699                    0
4700-4799                    0
4800-4899                    0
4900-                        0
-----
No. of entries: 50
```

## 4.2.32.9 port-blocks

### Syntax

```
port-blocks cp-nat-profile cp-nat-profile nat-pool nat-pool [gateway gw-id] up ip-addr | fqdn
port-blocks cp-nat-profile cp-nat-profile nat-pool nat-pool [gateway gw-id] fsg fsg-id
```

### Context

[\[Tree\]](#) show mobile-gateway bng nat histogram port-blocks

### Description

This command displays the PB allocation in relation to the number of subscribers.

### Parameters

*cp-nat-profile*

Specifies the NAT profile name, up to 32 characters.

*nat-pool*

Specifies the NAT pool name, up to 32 characters.

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

Default: 1

*ip-addr*

Specifies the UP IP address.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*fqdn*

Specifies the fully qualified domain name (FQDN) for the UP, up to 255 characters.

*fsg-id*

Specifies the fate sharing group.

Values: 0 to 4294967295

### Output

The following output is an example of PB allocation in relation to the number of subscribers for the specified NAT profile, NAT pool, and UP IP address. In the example, only one PB is allocated for 24,241 subscribers, two PBs are allocated for 229 subscribers, and so on.

## Output example

```
A:MAG-c# show mobile-gateway bng nat histogram port-blocks cp-nat-profile "Dut-C_pol_poll_
for_601-pool-0" nat-pool "601-pool-0" up 10.0.1.3

=====
Usage histogram UP 10.0.1.3 port blocks per subscriber
=====
Num port blocks          Num subscribers
-----
1                        24241
2                        229
3                        232
4                        230
5                        236
6                        222
7                        200
8                        245
9                        281
10                       112737
-----
No. of entries: 10
```

### 4.2.32.10 session

#### Syntax

```
session [c-vlan tag] [s-vlan tag] [subscriber-name name] [I2-access-id string-64] [up-ip ip-address
| ipv6-address] [mac ieee-address] [cid-string string-255] [cid-hex binary-cid] [rid-string string-255]
[rid-hex binary-rid] [ppp-username-domain domain] [ppp-username username] [output-option]
[user-access-type type] [pfcp-local-session-id hex-num] [pfcp-remote-session-id hex-num] [apn
apn] [network-realm realm-name] [cp-nat-profile profile-name] [ip-prefix ip-prefix[/prefix-length]]
[group group-number] [acct-session-id id] [acct-multi-session-id id] [fsg fsg-id] [address-stack stack
[stack...(up to 4 max)]] [address-stack-exclude {stack} [{stack}...(up to 4 max)]] [data-triggered]
```

#### Context

[\[Tree\]](#) show mobile-gateway bng session

#### Description

This command displays basic information for BNG sessions. By default, this command displays all sessions up to a maximum number. The maximum number equals the number of MSCP VMs × 1024. Add any optional parameter to filter the output and only display the data of specific sets of sessions up to the same maximum number.

#### Parameters

##### **c-vlan tag**

Specifies the customer VLAN (inner VLAN) filter.

Values: 1 to 4096

##### **s-vlan tag**

Specifies the service VLAN (outer VLAN) filter.

Values: 1 to 4096

*name*

Specifies the subscriber name filter, up to 255 characters.

*string-64*

Specifies the Layer 2 access ID filter, up to 64 characters.

*ip-address* | *ipv6-address*

Specifies the UP IP address filter.

Values:

- *ip-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*ieee-address*

Specifies the MAC address filter.

Values: xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

*string-255*

Specifies the circuit ID string filter, up to 255 characters.

*binary-cid*

Specifies the circuit ID binary value filter

Values: 0x0 to 0xFFFFFFFF... (maximum of 510 hex nibbles).

**rid-string** *string-255*

Specifies the remote ID string filter, up to 255 characters.

*binary-rid*

Specifies the remote ID binary value filter

Values: 0x0 to 0xFFFFFFFF... (maximum of 510 hex nibbles).

*domain*

Specifies the PPP username domain filter, up to 253 characters.

*username*

Specifies the PPPoE username filter, up to 253 characters.

**output-option**

Specifies what information to include in the output; by default, only part of the session information is displayed.

Values: all | count | ibcp

- all – specifies to display all data
- count – specifies to display only the number of sessions, no other data
- ibcp – specifies to display only the IBCP data



**type**

Specifies the user access type filter.

Values: ipoe | pppoe

**hex-num**

Specifies the PFCP local session ID filter.

Values: 0x0..0xFFFFFFFF (max 16 hex nibbles)

**pfcp-remote-session-id hex-num**

Specifies the PFCP remote session ID filter.

Values: 0x0..0xFFFFFFFF (max 16 hex nibbles)

**apn**

Specifies the APN filter, up to 80 characters.

**realm-name**

Specifies the name of the associated network realm for the network realm filter, up to 80 characters.

**profile-name**

Specifies the NAT profile name filter, up to 32 characters.

**ip-prefix**

Specifies the IP prefix filter, that is, only display the sessions with an IP address that matches the prefix.

Values:

- ipv4-prefix – a.b.c.d (host bits must be 0)
- ipv6-prefix – x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d

where

x: [0..FFFF]H

d: [0..255]D

**prefix-length**

Specifies the IP prefix length.

Values:

- ipv4-prefix-length – 0 to 32
- ipv6-prefix-length – 0 to 128

**group-number**

Specifies the mobile gateway group filter.

Values: 1 to 15

**acct-session-id id**

Specifies the acct-session-id filter, up to 25 characters.

**acct-multi-session-id id**

Specifies the acct-multi-session-id filter, up to 25 characters.

*fsg-id*

Specifies the fate sharing group filter.

Values: 1 to 65535

*stack*

Specifies the address stacks filter, that is, only show sessions with the specified stacks.

Values: ipv4 | ipv6-na | ipv6-pd | ipv6-slaac

**address-stack-exclude stack**

Specifies the address stacks exclude filter, that is, exclude the sessions with the specified stacks.

Values: ipv4 | ipv6-na | ipv6-pd | ipv6-slaac

**data-triggered**

Specifies to shows sessions with a data-triggered address stack.

**Output**

The following output is an example of all information for the filtered BNG session.

**Output example: Information for BNG sessions**

```
A:MAG-c# show mobile-gateway bng session mac 02:de:14:00:01:fa all
=====
BNG Sessions
=====
[IPoE] MAC                : 02:de:14:00:01:fa
-----
UP Peer                    : 172.16.10.51 (Base)
L2 Access Id              : 1/1/2
S-Vlan                    : 300
C-Vlan                    : N/A
MAC                       : 02:de:14:00:01:fa
Up Time                   : 0d 03:16:13
Circuit Id                : N/A
Remote Id                 : N/A
Provisioned Addresses     : IPv4, IPv6_PD, IPv6_NA
Signaled Addresses       : IPv4
APN                       : mybngvrf
Network Realm             : mybngvrf
IPv4 Pool                 : p1
IPv4 Address              : 20.20.1.242
IPv4 Address Origin      : Local pool
IPv4 Prefix Len          : 24
IPv4 Gateway              : 20.20.1.254
IPv4 Primary DNS         : 0.0.0.0
IPv4 Secondary DNS       : 0.0.0.0
IPv4 Primary NBNS        : 0.0.0.0
IPv4 Secondary NBNS     : 0.0.0.0
DHCPv4 Server IP        : 20.20.1.254
DHCPv4 Lease Time       : 7d 00:00:00
DHCPv4 Renew Time       : 3d 12:00:00
DHCPv4 Rebind Time      : 6d 03:00:00
DHCPv4 Lease End        : 04/29/2021 19:53:47
DHCPv4 Remaining Lease Time : 6d 20:43:47
IPv6 Delegated Prefix    : 2002:0:6:4b00::/56
IPv6 Delegated Prefix Origin : Local pool
IPv6 PD Subnet Length    : 50
IPv6 PD as Framed Route  : No
```

```

IPv6 Delegated Prefix Pool      : p1
IPv6 NA                          : 2001:dead:1::6e0
IPv6 NA Origin                   : Local pool
IPv6 NA Subnet Length           : 110
IPv6 NA Pool                     : p1
IPv6 Link-local                 : fe80::58c7:ffff:fe00:0
IPv6 Preferred Lifetime        : 7d 00:00:00
IPv6 Valid Lifetime            : 30d 00:00:00
IPv6 Primary DNS                 : ::
IPv6 Secondary DNS              : ::
DHCPv6 Server DUID              : (hex) 00 02 00 00 19 7f 42 4e 47 2d 53 4d 46
DHCPv6 IA_PD id                 : N/A
DHCPv6 IA_NA id                 : N/A
DHCPv6 T1                       : 3d 12:00:00
DHCPv6 T2                       : 5d 14:24:00
Subscriber                      : auto_sub_1767 (1767)
Acct-Session-Id                 : X00060F80C8C74843000006E7
Acct-Multi-Session-Id          : Y000006E7C8C74843000006E6
State Id                        : 0x6081d44b000001b8
Sub Profile                     : base
Sla Profile                     : base
SAP-Template                    : defaultsap
Group-itf-template              : defaultgrp
NAT Profile                     : N/A
Intermediate Destination Id     : N/A
Ingress IPv4 filter override    : N/A
Egress IPv4 filter override     : N/A
Ingress IPv6 filter override    : N/A
Egress IPv6 filter override     : N/A
Number of QoS Overrides         : 0
PCFP Local SE Id                : 0x00000000000060f80
PCFP Remote SE Id              : 0x100000000000039d
UE Id                           : 0x00060f80
Group/VM                        : 1/1
Call-Insight                    : disabled
Charging Profile 1              : mybngcharging
  Charging enabled               : Yes
-----
Charging
Acct-Session-Id                 : X00060F80C8C74843000006E7
Acct-Multi-Session-Id          : Y000006E7C8C74843000006E6
Mode                            : Session level
Charging Profile 1              : mybngcharging
  Charging enabled               : Yes
  Operational interim interval  : N/A
Charging Profile 2              : N/A
  Charging enabled               : No
  Operational interim interval  : N/A
Charging Profile 3              : N/A
  Charging enabled               : No
  Operational interim interval  : N/A
Charging Profile 4              : N/A
  Charging enabled               : No
  Operational interim interval  : N/A
Charging Profile 5              : N/A
  Charging enabled               : No
  Operational interim interval  : N/A
Radius user name                 : N/A
Radius class 1                  : N/A
CP Total Volume Limit           : Disabled
CP UP Volume Limit              : Disabled
CP DOWN Volume Limit            : Disabled
-----
IBCP

```

```

IBCP Local MAC           : ea:ac:33:01:02:44
IBCP Local IP           : 45.45.45.45 (Base)
IBCP Remote IP          : 172.16.10.51 (Base)
IBCP Local TE Id        : 0x40060f81
IBCP Remote TE Id       : 0x801200e7
IBCP DSCP                : 56
IBCP TTL                : 255
-----
Number of sessions shown : 1
=====

```

### 4.2.32.11 charging

#### Syntax

**charging**

#### Context

[\[Tree\]](#) show mobile-gateway bng session charging

#### Description

This command shows the charging information for the BNG sessions.

### 4.2.32.12 aggregate-stats

#### Syntax

**aggregate-stats [fetch-upf]**

#### Context

[\[Tree\]](#) show mobile-gateway bng session charging aggregate-stats

#### Description

This command displays the aggregate charging statistics for BNG sessions.



**Note:** To prevent heavy load between the BNG CPF and the BNG UPF when the **fetch-upf** parameter is used, this command is only available in combination with the **acct-session-id** parameter for the **session** command.

#### Parameters

##### **fetch-upf**

Keyword to fetch the latest statistics from the BNG UPF.

### 4.2.32.13 detailed-stats

#### Syntax

**detailed-stats** [**fetch-upf**]

#### Context

[\[Tree\]](#) show mobile-gateway bng session charging detailed-stats

#### Description

This command displays detailed charging statistics for BNG sessions.



**Note:** To prevent heavy load between the BNG CPF and the BNG UPF when the **fetch-upf** parameter is used, this command is only available in combination with the **acct-session-id** parameter for the **session** command.

#### Parameters

##### **fetch-upf**

Keyword to fetch the latest statistics from the BNG UPF.

#### Output

The following output example shows detailed statistics for the filtered BNG session.

#### Output example: Detailed statistics for BNG sessions

```
A:MAG-c# show mobile-gateway bng session acct-session-id X00011140F00EE5FD0000000A charging detailed-stats
=====
BNG session detailed statistics
=====
-----
Packets          Octets
-----
PPP User Name: u10083
Ingress queue: 1
Time: 04/27/2021 19:48:48
-----
Offered high priority      0          0
Offered low priority       39        25350
Dropped high priority      0          0
Dropped low priority       0          0
Forwarded in profile       0          0
Forwarded out of profile   39        25350
=====
BNG session detailed statistics
=====
-----
Packets          Octets
-----
PPP User Name: u10083
Ingress queue: 2
Time: 04/27/2021 19:48:48
-----
Offered high priority      0          0
Offered low priority       39        29250
```

```

Dropped high priority          0          0
Dropped low priority           0          0
Forwarded in profile           0          0
Forwarded out of profile       39        29250
=====
=====
BNG session detailed statistics
=====
                               Packets          Octets
-----
PPP User Name: u10083
Ingress queue: 3
Time: 04/27/2021 19:48:48
-----
Offered high priority          0          0
Offered low priority           39        9750
Dropped high priority          0          0
Dropped low priority           0          0
Forwarded in profile           0          0
Forwarded out of profile       39        9750
=====
=====
BNG session detailed statistics
=====
                               Packets          Octets
-----
PPP User Name: u10083
Ingress queue: 4
Time: 04/27/2021 19:48:48
-----
Offered high priority          0          0
Offered low priority           39       33150
Dropped high priority          0          0
Dropped low priority           0          0
Forwarded in profile           0          0
Forwarded out of profile       39       33150
=====
=====
BNG session detailed statistics
=====
                               Packets          Octets
-----
PPP User Name: u10083
Ingress queue: 5
Time: 04/27/2021 19:48:48
-----
Offered high priority          0          0
Offered low priority           39       17550
Dropped high priority          0          0
Dropped low priority           0          0
Forwarded in profile           0          0
Forwarded out of profile       39       17550
=====
=====
BNG session detailed statistics
=====
                               Packets          Octets
-----
PPP User Name: u10083
Ingress queue: 6
Time: 04/27/2021 19:48:48
-----
Offered high priority          0          0
Offered low priority           39       21450

```

```

Dropped high priority          0          0
Dropped low priority           0          0
Forwarded in profile           0          0
Forwarded out of profile       39         21450
=====
=====
BNG session detailed statistics
=====
=====
                                Packets          Octets
-----
PPP User Name: u10083
Ingress queue: 7
Time: 04/27/2021 19:48:48
-----
Offered high priority          0          0
Offered low priority           39         5850
Dropped high priority          0          0
Dropped low priority           0          0
Forwarded in profile           0          0
Forwarded out of profile       39         5850
=====
=====
BNG session detailed statistics
=====
=====
                                Packets          Octets
-----
PPP User Name: u10083
Ingress queue: 8
Time: 04/27/2021 19:48:48
-----
Offered high priority          0          0
Offered low priority           39        13650
Dropped high priority          0          0
Dropped low priority           0          0
Forwarded in profile           0          0
Forwarded out of profile       39        13650
=====
=====
BNG session detailed statistics
=====
=====
                                Packets          Octets
-----
PPP User Name: u10083
Egress queue: 1
Time: 04/27/2021 19:48:48
-----
Dropped in profile             0          0
Dropped out of profile         0          0
Forwarded in profile           0          0
Forwarded out of profile       42        29736
=====
=====
BNG session detailed statistics
=====
=====
                                Packets          Octets
-----
PPP User Name: u10083
Egress queue: 2
Time: 04/27/2021 19:48:48
-----
Dropped in profile             0          0
Dropped out of profile         0          0
Forwarded in profile           0          0
Forwarded out of profile       42        33936

```

```

=====
BNG session detailed statistics
=====
                Packets          Octets
-----
PPP User Name: u10083
Egress queue: 3
Time: 04/27/2021 19:48:48
-----
Dropped in profile          0          0
Dropped out of profile      0          0
Forwarded in profile         0          0
Forwarded out of profile    42        12936
=====

BNG session detailed statistics
=====
                Packets          Octets
-----
PPP User Name: u10083
Egress queue: 4
Time: 04/27/2021 19:48:48
-----
Dropped in profile          0          0
Dropped out of profile      0          0
Forwarded in profile         0          0
Forwarded out of profile    42       38136
=====

BNG session detailed statistics
=====
                Packets          Octets
-----
PPP User Name: u10083
Egress queue: 5
Time: 04/27/2021 19:48:48
-----
Dropped in profile          0          0
Dropped out of profile      0          0
Forwarded in profile         0          0
Forwarded out of profile    42       21336
=====

BNG session detailed statistics
=====
                Packets          Octets
-----
PPP User Name: u10083
Egress queue: 6
Time: 04/27/2021 19:48:48
-----
Dropped in profile          0          0
Dropped out of profile      0          0
Forwarded in profile         0          0
Forwarded out of profile    42       25536
=====

BNG session detailed statistics
=====
                Packets          Octets
-----
PPP User Name: u10083
Egress queue: 7

```



```

Time: 04/27/2021 19:48:48
-----
Dropped in profile           0           0
Dropped out of profile      0           0
Forwarded in profile        0           0
Forwarded out of profile    42          8736
=====
BNG session detailed statistics
=====
                               Packets           Octets
-----
PPP User Name: u10083
Egress queue: 8
Time: 04/27/2021 19:48:48
-----
Dropped in profile           0           0
Dropped out of profile      0           0
Forwarded in profile        0           0
Forwarded out of profile    42          17136
=====

```

#### 4.2.32.14 nat

##### Syntax

```
nat
```

##### Context

[\[Tree\]](#) show mobile-gateway bng session nat

##### Description

This command displays the information about the NAT address, port ranges, and the realm for the subscriber.

##### Output

The following output is an example of NAT information for the BNG sessions.

##### Output example

```

A:MAG-c# show mobile-gateway bng session nat
=====
BNG Sessions NAT
=====
[IPoE] MAC                : 02:00:00:00:00:01
-----
CP NAT profile            : Dut-C_pol_l2a-0-1_1
NAT pool                  : l2a-0-1
UP NAT policy             : l2a-0-1_1
Outside network realm    : 123321
Outside IP address       : 130.0.0.25
Outside ports            : 1024-1024
Extended ports           : 1026-1035
                          : 1036-1045

```

```

: 1046-1055
: 1056-1065
: 1066-1075
: 1076-1085
: 1086-1095
: 1096-1105
: 1106-1115

Number of sessions shown : 1

```

### 4.2.32.15 port-forwarding-entries

#### Syntax

**port-forwarding-entries**

#### Context

[\[Tree\]](#) show mobile-gateway bng session nat port-forwarding-entries

#### Description

This command displays port forwarding entries.

### 4.2.32.16 summary

#### Syntax

**summary**

#### Context

[\[Tree\]](#) show mobile-gateway bng session summary

#### Description

This command displays the BNG session summary.

#### Output

The following output example shows the BNG session summary.

#### Output example: BNG session summary

```

A:MAG-c# show mobile-gateway bng session summary
=====
BNG sessions overview
=====
Type  MAC/IMSI/SUPI          Acct-Session-Id
      Network-Realm      IP-Address
-----
IPoE  00:00:00:00:01:01      X00010120E153ABFC00000002
      hsi                  192.0.2.1
FWA   00101000000001      F00010130E153ABFC01300032
      hsi                  192.0.2.17

```

```
-----
No. of sessions shown: 2
=====
```

## 4.2.32.17 session-lockout

### Syntax

```
session-lockout [c-vlan tag] [s-vlan tag] [l2-access-id string-64] [up-ip ip-address | ipv6-address]
[mac ieee-address] [cid-string string-255] [cid-hex binary-cid] [rid-string string-255] [rid-hex binary-rid]
[user-access-type type] [state lockout-state] [up-group name]
```

```
session-lockout [c-vlan tag] [s-vlan tag] [l2-access-id string-64] [up-ip ip-address | ipv6-address]
[mac ieee-address] [cid-string string-255] [cid-hex binary-cid] [rid-string string-255] [rid-hex binary-rid]
[user-access-type type] [state lockout-state] count [up-group name]
```

### Context

[\[Tree\]](#) show mobile-gateway bng session-lockout

### Description

This command displays information for sessions that are subject to session lockout monitoring. Add any optional parameter to filter the output and only display the data of specific sets of sessions.



**Note:** The maximum number of sessions that are displayed in the output is limited. The last line of the output shows the number of displayed sessions. Use the count keyword to get the number of all matching sessions.

### Parameters

#### *c-vlan tag*

Specifies the customer VLAN (inner VLAN) filter.

Values: 1 to 4096

#### *s-vlan tag*

Specifies the service VLAN (outer VLAN) filter.

Values: 1 to 4096

#### *string-64*

Specifies the Layer 2 access ID filter, up to 64 characters.

#### *ip-address | ipv6-address*

Specifies the UP IP address filter.

Values:

- ip-address – a.b.c.d
- ipv6-address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*ieee-address*

Specifies the MAC address filter.

Values: xx:xx:xx:xx:xx:xx | xx-xx-xx-xx-xx-xx

*string-255*

Specifies the circuit ID string filter, up to 255 characters.

*binary-cid*

Specifies the circuit ID binary value filter.

Values: 0x0 to 0xFFFFFFFF... (maximum of 510 hex nibbles)

**rid-string** *string-255*

Specifies the remote ID string filter, up to 255 characters.

**rid-hex** *binary-rid*

Specifies the remote ID binary value filter.

Values: 0x0 to 0xFFFFFFFF... (maximum of 510 hex nibbles)

*type*

Specifies the user access type filter.

Values: ipoe | pppoe

*lockout-state*

Specifies the session lockout state filter.

Values: locked-out | monitored

*name*

Specifies the UP group name, up to 32 characters.

**count**

Keyword to display only the number of sessions per lockout state, no other data.

**Output**

The following output example shows BNG session lockout information.

**Output example: BNG session lockout information**

```
A:MAG-c# show mobile-gateway bng session-lockout
=====
BNG session lockout information
=====
[PPPoE] Session Id           : 0
-----
UP Peer                       : 172.16.10.51 (Base)
L2 Access Id                  : 1/1/2
S-Vlan                         : 300
C-Vlan                         : N/A
MAC                           : 02:de:14:00:01:11
Circuit Id                     : N/A
Remote Id                      : N/A
State                          : locked-out
block time left (s)           : 594 of 600
Attempts failed                : 3 (allowed 3)
=====
```

```
#show mobile-gateway bng session-lockout count
=====
BNG session lockout information
=====
Sessions locked-out      : 1
Sessions monitored      : 0
=====
```

## 4.2.32.18 subscriber

### Syntax

**subscriber** [**name** *subscriber-name*] [**id** *subscriber-id*] [**count**] [**acct-session-id** *id*] [**fsg** *fsg-id*] [**I2-access-id** *string-64*] [**up-ip** *ip-address* | *ipv6-address*] [**apn** *apn*] [**group** *group-number*] [**network-realm** *realm-name*] [**summary**] [**user-access-type** *type*]

### Context

[\[Tree\]](#) show mobile-gateway bng subscriber

### Description

This command displays BNG subscriber information. By default, this command displays all subscribers up to a maximum number. The maximum number equals the number of MSCP VMs × 1024. Add any optional parameter to filter the output and only display the data of specific sets of subscribers up to the same maximum number.

### Parameters

*subscriber-name*

Specifies the subscriber name filter, up to 255 characters.

*subscriber-id*

Specifies the subscriber ID filter.

Values: 0 to 4294967295

**count**

Keyword to display only the number of subscribers, no other data.

*id*

Specifies the acct-session-id filter, up to 25 characters.

*fsg-id*

Specifies the fate sharing group filter.

Values: 1 to 65535

*string-64*

Specifies the Layer 2 access ID filter, up to 64 characters.

*ip-address* | *ipv6-address*

Specifies the UP IP address filter.

Values:

- *ip-address* – a.b.c.d

- `ipv6-address` – `x:x:x:x:x:x:x` (eight 16-bit pieces) or `x:x:x:x:x:d.d.d.d` where  
`x` – [0..FFFF]H  
`d` – [0..255]D

***apn***

Specifies the APN filter, up to 80 characters.

***group-number***

Specifies the mobile gateway group filter, up to 255 characters.

Values: 1 to 15

***realm-name***

Specifies the name of the associated network realm for the network realm filter, up to 80 characters.

**summary**

Specifies to display a summary of the subscriber information.

***type***

Specifies the user access type.

Values: ipoe | pppoe | fwa | lac

**Output**

The following output example shows the subscriber information for the BNG sessions.

**Output example: Subscriber information for BNG sessions**

```
A:MAG-c# show mobile-gateway bng subscriber id 2557
=====
Subscribers
=====
Name           : auto_sub_2557
-----
Id             : 2557
Num Sessions   : 1
Group/VM       : 1/1
UP Peer        : 172.16.10.51
Acct-Session-Id: Y000009FDC8C74843000009FC
L2 Access Id   : 1/1/2
FSG            : 0
Sub Profile     : base
Inter-Dest-Id  : N/A
-----
Number of subscribers shown : 1
=====
```

**4.2.32.19 wpp****Syntax**

**wpp**

## Context

[Tree] show mobile-gateway bng wpp

## Description

Commands under this context display WPP related information.

### 4.2.32.20 statistics

## Syntax

**statistics portal** *name*

**statistics portal-group** *name*

## Context

[Tree] show mobile-gateway bng wpp statistics

## Description

This command displays the statistics of the specified WPP portal or portal group.

## Parameters

**portal** *name*

Specifies the WPP portal name, up to 32 characters.

**portal-group** *name*

Specifies the WPP portal group name, up to 32 characters.

## Output

The following output example shows the statistics information for the specified WPP portal.

### Output example: Statistics information for a WPP portal

```

A:MAG-c# show mobile-gateway bng wpp statistics portal "p1"
=====
WPP Portal "p1"
=====
-----
Rx-Type                rx          accept      drop
-----
Req-challenge          0           0           0
Ack-challenge          0           -           0
Req-auth               0           0           0
Ack-auth               0           -           0
Req-logout             0           0           0
  Disconnect           0           0           0
  Timeout              0           0           0
Ack-logout             0           0           0
Aff-ack-auth          0           0           0
Ntf-logout             0           -           0
Req-info               0           0           0
Ack-info               0           -           0
-----

```

```

-----
Tx-Type                tx          re-tx
-----
Ack-challenge
  Success              0          -
  Reject              0          -
  Already-Established 0          -
  Authentication-Pending 0          -
  Fail                0          -
Ack-auth
  Success              0          0
  Reject              0          -
  Already-Established 0          -
  Authentication-Pending 0          -
  Fail                0          -
Ack-logout
  Success              0          -
  Reject              0          -
  Fail                0          -
Ntf-logout            0          0
Ack-info
  Success              0          -
  Unsupported          0          -
  Fail                0          -
-----
Error events          count
-----
Unknown msg type      0
Unexpected msg type   0
Unexpected error code 0
Unknown protocol version 0
Unexpected protocol version 0
Duplicated attribute  0
Unknown attribute     0
Unsupported attribute 0
Conflicting attribute 0
Unknown authentication type 0
Missing username      0
Missing password      0
Invalid Req-Id        0
Invalid Serial-No     0
Invalid authenticator 0
Unassigned portal group 0
Unavailable challenge 0
Incompatible SBM state 0
Unknown host          0
=====

```

#### 4.2.32.21 call-insight

##### Syntax

**call-insight**

##### Context

**[Tree]** show mobile-gateway call-insight



## Description

Commands in this context display call trace information.

### 4.2.32.22 all-ues

#### Syntax

**all-ues**

#### Context

[\[Tree\]](#) show mobile-gateway call-insight all-ues

#### Description

This command displays call trace jobs that are configured to trace all UEs.

### 4.2.32.23 bng

#### Syntax

**bng** [**mac-address** *mac*] [**remote-id** *rem*] [**circuit-id** *circ*] [**up** *up-node-id*] [**I2-access-id** *I2-acc*] [**I2-circuit-id** *I2-circ*] [**detail**]

#### Context

[\[Tree\]](#) show mobile-gateway call-insight bng

#### Description

This command displays Call Trace information for specific BNG sessions.

#### Parameters

*mac*

Specifies the MAC address of the BNG session.  
Values: xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

*rem*

Specifies the remote ID of the BNG session, up to 255 characters; the wildcard (\*) character can be used only at the start or the end.

*circ*

Specifies the circuit ID of the BNG session, up to 255 characters; the wildcard (\*) character can be used only at the start or the end.

*up-node-id*

Specifies the UP node ID of the UPF where the session is active.

Values:

- ipv4-address – a.b.c.d (host bits must be 0)

- `ipv6-address` – `x:x:x:x:x:x:x` (eight 16-bit pieces) or `x:x:x:x:x:d.d.d.d` where  
`x` – [0..FFFF]H  
`d` – [0..255]D
- `fqdn` – up to 255 characters (per label max 63); the wildcard (\*) character can be used only at the start or the end

***l2-acc***

Specifies the layer 2 access ID where the session is active, up to 50 characters; the wildcard (\*) character can be used only at the start or the end.

***l2-circ***

Specifies the layer 2 circuit ID where the session is active, up to 50 characters; the wildcard (\*) character can be used only at the start or the end.

**detail**

Keyword to display detailed Call Trace information.



**Note:** When using the wildcard (\*) character in parameter values of the **show** command, the following apply:

- The parameter values of the **show** command that use the wildcard (\*) character must match the corresponding values when the **debug** command was issued. For example, if a **debug** command is issued with a value of `1/1/2*` for the **l2-circuit-id** parameter, the same value must be set in the **show** command. Setting, for example, `1/1/*` as the parameter value, returns no results in the output.
- If no wildcard (\*) character is used in a parameter value of the **debug** command, none can be used in the corresponding value of the **show** command. For example, if a **debug** command is issued with a value of `remote_id_83` for the **remote-id** parameter, the same value must be set in the **show** command. Setting, for example, `remote_id_*` as the parameter value, returns no results in the output.

**Output**

The following output examples show call insight information for specific BNG sessions, without and with the **detail** keyword:

- [Example output call trace BNG](#)
- [Example output call trace BNG detailed information](#)

**Output example: Call trace BNG**

```
A:MAG-c# show mobile-gateway call-insight bng mac-address 00:11:22:33:44:55
=====
Call-insight BNG
=====
Match          Value                               Status    Msgs
-----
mac-address    00:11:22:33:44:55                 running   0
-----
Number of call-insight debug jobs: 1
```

### Output example: Detailed call trace information

```

=====
A:MAG-c# show mobile-gateway call-insight bng mac-address 00:11:22:33:44:55 detail
=====
Call-insight BNG detail
=====
MAC address           : 00:11:22:33:44:55           Status           : running
Circuit Id           : --                      Profile          : default
Remote Id            : --                      Capture format  : simulated-p*
UP Node Id           : --                      Time limit      : 86400s
L2 Access Id         : --                      Data limit      : 10MB
L2 Circuit           : --                      Session limit   : --
Nr. of captured msgs : 0
|--control-plane msgs: 0
|--user-plane msgs   : 0
|--events             : 0
Size of captured msgs: 0B
Started              : JUN 29 2021, 12:36:07 UTC
Ref-points           : dhcp,dns,ga,gn,gp,gx,gxc,pi,radius,rf,ro,s1,s11,s12,s2a
                    ,s2b,s4,s5,s6b,s8,sd,swm,swu,swu-cleartext,swu,sta,sx-
                    n4
SBA-services         : all
User-traffic         : none
Events               : none
Mask-name            : N/A
Live output          : N/A
Output file base     : N/A
-----
Number of call-insight debug jobs: 1
Nr. of dropped user-plane packets: 0
-----
Note:Reference points field above is applicable only to control-plane messages.
=====
* indicates that the corresponding row element may have been truncated.

```

## 4.2.32.24 files

### Syntax

**files [long]**

**files finished [long]**

**files running [long]**

### Context

**[Tree]** show mobile-gateway call-insight files

### Description

This command displays Call Trace information for UEs, all UEs and masked UEs.

## Parameters

### long

Keyword to display long list format.

### finished

Keyword to display completed Call Trace files.

### running

Keyword to display active Call Trace files.

## Output

The following output examples show Call Trace file information.

### Output example: Call trace files statistics

```
A:MAG-c# show mobile-gateway call-insight files
=====
Call trace files of running jobs
=====
File path                                                    Size
-----
cf1-A:/calltrace/running/imsi_123456789012300_m_150327_1313.pcap      4194
cf1-A:/calltrace/running/imsi_223456789012300_m_150327_1313.pcap      4194
cf1-A:/calltrace/running/imsi_323456789012300_m_150327_1313.pcap      4194
=====
Call trace files of finished jobs
=====
File path                                                    Size
-----
=====
Call trace files storage limits for active CPM
=====
cf1-A available space :   304 MB           cf1-A volume limit : 1000 MB
Available file count  :   197             Maximal file count :   200
=====
```

## 4.2.32.25 ue

### Syntax

**ue** [**detail**]

**ue imei** *imei* [**detail**]

**ue imsi** *imsi* [**detail**]

**ue mask-name** *mask-name* [**detail**]

**ue msisdn** *msisdn* [**detail**]

### Context

[\[Tree\]](#) show mobile-gateway call-insight ue

## Description

This command displays call trace information for the specified UE type.

## Parameters

### detail

Keyword to display detailed call trace information.

### imei

Specifies an IMEI identification string, up to 16 characters.

### imsi

Specifies an IMSI identification string, up to 15 characters.

### mask-name

Specifies a mask name, up to 16 characters.

### msisdn

Specifies an MSISDN identification string, up to 15 characters.

## Output

The following output examples show Call Trace UE information.

- [Example output call trace UE statistics](#)
- [Example output call trace UE detail statistics](#)
- [Example output call trace UE IMSI detail statistics](#)

### Output example: Call trace UE statistics

```
A:MAG-c# show mobile-gateway call-insight ue
=====
Call-insight UEs
=====
Match      Value                Mask-name           Status    Msgs
-----
imsi       222222222222223    N/A                 running   0
msisdn    17962480143        N/A                 running   0
imei      505024101215080    N/A                 running   0
imsi      222222222222221    N/A                 running   0
-----
Number of call-insight debug jobs: 4
=====
```

### Output example: Call trace UE detail statistics

```
A:MAG-c# show mobile-gateway call-insight ue detail
=====
Call-insight UE detail
=====
IMSI           : 13456789012345      Status          : running
IMEI           : --                 Match type     : imsi
MSISDN        : --                 Capture format : simulated-p*
MAC address    : --                 Time limit     : 86400s
Nr. of captured msgs : 128                Data limit     : 10MB
|--control-plane msgs: 48
|--user-plane msgs  : 80
|--events        : 0
```

```

Size of captured msgs: 31770B
Started                : FEB 15 2018, 18:53:41 UTC
Ref-points             : all
User-traffic           : all
Events                 : none
Mask-name              : N/A
Live output            : N/A
Output file base       : imsi_13456789012345_180215_1853
Detailed user-plane debug statistics
|--VMId:1 LB-VM ingress Uplink      packets: 40      size: 9440      B
|--VMId:1 LB-VM ingress Downlink    packets: 40      size: 9440      B
|--VMId:1 LB-VM egress Uplink       packets: 40      size: 9440      B
|--VMId:1 LB-VM egress Downlink     packets: 40      size: 9440      B
|--VMId:3 MG-VM - Uplink            packets: 30      size: 6000      B
|--VMId:3 MG-VM - Downlink          packets: 30      size: 6000      B
|--VMId:4 MG-VM - Uplink            packets: 10      size: 2000      B
|--VMId:4 MG-VM - Downlink          packets: 10      size: 2000      B
-----
Number of call-insight debug jobs: 1
Nr. of dropped user-plane packets: 0
-----
Note:Reference points field above is applicable only to control-plane messages.
=====

```

### Output example: Call trace UE IMSI detail statistics

```

A:MAG-c# show mobile-gateway call-insight ue imsi 310012001000001 detail
=====
Call-insight UE detail
=====
IMSI                   : 310012001000001      Status           : running
IMEI                   : --                Match type       : imsi
MSISDN                 : --                Capture format   : simulated-p*
MAC address            : --                Time limit       : 86400s
Nr. of captured msgs  : 21                Data limit       : 10MB
|--control-plane msgs : 21
|--user-plane msgs    : 0
|--events             : 0
Size of captured msgs : 10407B
Started                : SEP 08 2017, 11:05:37 UTC
Ref-points             : all
User-traffic           : enabled
Events                 : none
Mask-name              : N/A
Live output addr/port : 10.10.7.10/50001
Live output router     : Base
Output file base       : N/A
-----
Number of call-insight debug jobs: 1
Nr. of dropped user-plane packets: 0
-----
Note:Reference points field above is applicable only to control-plane messages.
=====
* indicates that the corresponding row element may have been truncated.

```

## 4.2.32.26 ue-mask

### Syntax

```
ue-mask [name name]
```

## Context

[\[Tree\]](#) show mobile-gateway call-insight ue-mask

## Description

This command displays Call Trace information for masked UEs.

## Parameters

*name*

Specifies a string, up to 16 characters.

## Output

The following output example shows UE mask Call Trace information.

### Output example: Call trace UE mask statistics

```

A:MAG-c# show mobile-gateway call-insight ue-mask
=====
Call-insight UE-mask
=====
Mask-name           Mask (Type/Value)      UEs-active  Max-UEs    UEs-finished
-----
default             imsi/123*              0           50         0
default             imsi/223.5.7*         0           50         0
myMask              imei/323.5.7*         0           5          0
-----
Number of call-insight masks: 3
=====

```

## 4.2.32.27 connections

### Syntax

**connections gateway** *gw-id* [**protocol** *protocol-type*] [**address** *ip-address*] [**port** *port-number*] [**detail**]

**connections** [**card** *slot-number*] [**protocol** *protocol-type*] [**address** *ip-address*] [**port** *port-number*] [**detail**]

**connections** [**protocol** *protocol-type*] [**address** *ip-address*] [**port** *port-number*] [**detail**] [**vm** *vm-id*]

### Context

[\[Tree\]](#) show mobile-gateway connections

### Description

This command displays SCTP, TCP, or UDP connection statistics.

### Parameters

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

*protocol-type*

Specifies the protocol type.

Values: sctp | tcp | udp

*ip-address*

Specifies the IP address.

Values: ipv4-address | ipv6-address

Values:

- ipv4-address – a.b.c.d
- ipv6-address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where  
x – [0..FFFF]H  
d – [0..255]D

*slot-number*

Specifies the card slot number.

Values: 1 to 20 | A | B

*port-number*

Specifies the port number.

Values: 0 to 65535

**detail**

Keyword to display detail statistics.

*vm-id*

Specifies the VM ID.

Values: 1 to 20 | A | B

#### 4.2.32.28 mg-vm

**Syntax**

**mg-vm**

**Context**

[\[Tree\]](#) show mobile-gateway mg-vm

**Description**

This command displays information about the SM-VM.



## 4.2.32.29 cpu

### Syntax

**cpu** [**vm** *vm-id*] [**vm-function** *vm-function-number*] [**repeat** *repeat-number*]

### Context

[\[Tree\]](#) show mobile-gateway mg-vm cpu

### Description

This command displays the CPU utilization of SM-VMs.

### Parameters

*vm-id*

Specifies the VM number.

Values: 1 to 10

*vm-function-number*

Specifies the SM-VM function number.

Values: 1 | 2

*repeat-number*

Specifies the sample period, the number of times to repeat the sampling.

Values: 1 to 5

### Output

The following output examples show CPU utilization information for SM-VMs and [Table 3: Show SM-VM CPU utilization fields](#) describes the output fields.

*Table 3: Show SM-VM CPU utilization fields*

Label	Description
VM	SM-VM number
VMF	SM-VM function number
Group	Group number
GW-ID	Gateway ID (1 to 8)
CPU utilization	Percentage of CPU utilization per SM-VM number
Name	Protocol or interface name
CPU usage	Percentage of CPU usage per interface

### Output example: SM-VM CPU utilization summary statistics

```
A:MAG-c# show mobile-gateway mg-vm cpu
```

```

=====
CPU utilization starting at 09/14/2018 21:53:33
=====
ISM-MG Summary
=====
VM      VMF      Group gw-id      cpu utilization
-----
3       1       1       1       5.72%
4       1       1       1       1.85%
=====

```

### Output example: SM-VM CPU utilization statistics for a specified SM-VM

```

A:MAG-c# show mobile-gateway mg-vm cpu vm 3
=====
CPU utilization starting at 09/14/2018 21:54:08
=====
ISM-MG VM 3 VMF 1
=====
Name          VM Usage
-----
AMS           0.01%
DHCP          ~ 0.00%
GA            ~ 0.00%
GX            0.01%
GY            0.02%
HA            0.07%
PFCP          0.02%
RADIUS        0.02%
RF            0.02%
S6B           0.03%
SESSMGR       0.03%
SIG           0.05%
SYSTEM        3.88%
TRACE         0.02%
RPY           0.01%
SWM           ~ 0.00%
LDNSC         ~ 0.00%
SD            0.01%
SDLB          ~ 0.00%
STA           ~ 0.00%
CDBMGR        0.09%
<NULL>        ~ 0.00%
HTTP          ~ 0.00%
-----
Total In Use: 4.27%
Idle:         95.73%
=====

```

## 4.2.32.30 memory-pools

### Syntax

**memory-pools** [*vm vm-id*] [*vm-function vm-function-number*] [*repeat repeat-number*]

### Context

**[Tree]** show mobile-gateway mg-vm memory-pools

## Description

This command displays the memory utilization of SM-VMs.

## Parameters

*vm-id*

Specifies the VM number.

Values: 1 to 10

*vm-function-number*

Specifies the SM-VM function number.

Values: 1 | 2

*repeat-number*

Specifies the sample period, the number of times to repeat the sampling.

Values: 1 to 5

## Output

The following output examples show memory utilization information for SM-VMs and [Table 4: Show SM-VM memory utilization fields](#) describes the output fields.

*Table 4: Show SM-VM memory utilization fields*

Label	Description
VM	SM-VM number
VMF	SM-VM function number
Group	Group number
GW-ID	Gateway ID (1 to 8)
Current size	Total available memory size (per VM/VM function or interface)
In use	Total memory that is allocated (per VM/VM function or interface)
Avail Virt Mem	Total available virtual memory (per VM/VM function)
Avail Phys Mem	Total available physical memory (per VM/VM function)
Name	Protocol or interface name

## Output example: SM-VM memory statistics

```
A:MAG-c# show mobile-gateway mg-vm memory-pools
=====
MEM utilization starting at 09/20/2018 20:45:32
=====
ISM-MG Summary
=====
VM   |VMF  |Group|gw-id|  Current Size|          In Use|Avail Virt Mem|Avail Phys Mem
-----+-----+-----+-----+-----+-----+-----+-----
3   | 1   | 1   | 1   | 9,289,334,784| 8,900,651,816| 6,677,331,968| 6,677,331,968
4   | 1   | 1   | 1   | 9,242,148,864| 8,862,652,080| 6,811,549,696| 6,811,549,696
```

### Output example: SM-VM memory statistics for a specified SM-VM

```

=====
A:MAG-c# show mobile-gateway mg-vm memory-pools vm 3
=====
MEM utilization starting at 09/20/2018 00:03:30
=====
ISM-MG VM 3 VMF 1
=====
Name                | Current Size|      In Use
-----|-----|-----
AMS                 | 1,048,576|    158,264
DHCP                | 9,437,184|   5,566,256
GA                  | 2,097,152|    755,928
GX                  | 8,388,608|   6,203,808
GY                  | 6,291,456|   2,972,640
HA                  | 9,437,184|   1,816,176
PFCP                | 9,437,184|   2,748,104
RADIUS              | 13,631,488|   3,336,288
RF                  | 77,594,624|  68,117,896
S6B                 | 39,845,888|  34,266,368
SESSMGR             | 136,314,880| 82,402,904
SIG                 | 68,157,440|  46,028,992
SYSTEM              | 2,164,260,864| 2,017,004,704
TRACE               | 28,311,552|   21,164,912
RPY                 | 7,340,032|   3,420,904
SWM                 | 7,340,032|   3,415,472
LDNSC               | 2,097,152|    47,560
SD                  | 7,340,032|   4,600,416
SDLB                | 0| 0
STA                 | 5,242,880|   2,354,608
CDBMGR              | 0| 0
<NULL>              | 0| 0
HTTP                | 0| 0
-----|-----|-----
Total:                2,603,614,208  2,306,382,200
=====
available virtual memory:  5,133,828,096
available physical memory:  5,133,828,096
=====

```

#### 4.2.32.31 pdn

##### Syntax

pdn

##### Context

[\[Tree\]](#) show mobile-gateway pdn

##### Description

Commands in this context display configured PDN gateway profiles.

## 4.2.32.32 apn

### Syntax

```
apn apn-name statistics [group group-number]  
apn apn-name delete-session-statistics [gateway gw-id | group group-number] [summary]  
apn apn-name attach-failure-statistics [gateway gw-id | group group-number] [summary]  
apn apn-name dhcp-relay-statistics [group group-number]  
apn apn-name [detail]  
apn apn-name pcf-ap-statistics  
apn apn-name call-flow-stats [gateway gw-id | group group-number] [summary]
```

### Context

[\[Tree\]](#) show mobile-gateway pdn apn

### Description

This command displays APN information, including statistics on the types of PDN sessions by access protocol and PDN type. APN statistics are tracked for real and virtual PDN connections. The virtual APN capability allows the PGW to change the APN from the one received via GTP-C (the "real" APN) to one that is used locally (the "virtual" APN). However a PDN session only counts statistics for the virtual APN to which it has been mapped. Furthermore an APN may be real for some PDN sessions and virtual for other PDNs. To track the usage of real APNs even though they are being mapped to a smaller set of virtual APNs, the PGW keeps statistics for the number of PDN connections that use the APN as a real APN. All other counters in the output are incremented only for those PDNs that use the APN as a virtual APN.

### Parameters

*apn-name*

Specifies the APN name, up to 80 characters

**statistics**

Keyword to display aggregated statistics.

*group-number*

Specifies the group number.

Values: 1 to 8

**delete-session-statistics**

Keyword to delete session statistics.

*gw-id*

Specifies the gateway identifier number.

Values: 1 to 8

**summary**

Keyword to display summarized aggregated statistics.

**attach-failure-statistics**

Keyword to attach failure statistics.

**dhcp-relay-statistics**

Keyword to display DHCP relay statistics.

**detail**

Keyword to display detailed APN configuration.

**pcf-ap-statistics**

Keyword to display statistics related to sessions in PCF assume positive (AP) mode.

**call-flow-stats**

Keyword to display the call flow statistics per APN.

**4.2.32.33 pfc****Syntax**

**pfc**

**Context**

[\[Tree\]](#) show mobile-gateway pdn apn pfc

**Description**

This command displays APN PFC configuration.

**Output**

The following example shows the APN PFC configuration.

**Output example**

```
A:MAG-c>config>mobile>profile>pcf-profile$ show mobile-gateway pdn apn "hsi" pfc
=====
APN Configuration
=====
APN Name : "hsi"
APN Admin State : up
Gateway : 1

PFC
=====
PFC Translate Tx Prof : none

-----
Number of entries : 1
=====
```

### 4.2.32.34 bng

#### Syntax

**bng**

#### Context

[\[Tree\]](#) show mobile-gateway pdn bng

#### Description

Commands in this context display information for BNG sessions.

### 4.2.32.35 fsg

#### Syntax

**fsg**

**fsg** *fsg-id* [**detail**]

#### Context

[\[Tree\]](#) show mobile-gateway pdn bng fsg

#### Description

This command, when run without parameters, displays a high-level overview of the provisioned FSGs.

With parameters, this command displays the UP group and the current active/standby BNG-UPs for the specified FSG. The following are examples to get a specific FSG ID:

- from a command in the following context

```
show mobile-gateway bng session
```

- from a BNG-UP-specific operational command

#### Parameters

*fsg-id*

Specifies the FSG.

Values: 1 to 4294967295

**detail**

Keyword to display the detailed output, such as advanced UP group configuration parameters.

#### Output

The following example shows detailed output for a specific FSG.

### Output example: Detailed output for a specific FSG

```
A:MAG-c>show>mobile-gateway>pdn>bng# fsg 4 detail
=====
FSG 4
=====
UP Group
  PDN gateway           : 1
  Description            : (Not Specified)
  FSG Profile           : basic
  UP FSG Template       : N/A
  Default Standby Type  : hot

Active UP               : b.upf
  Changing              : no
  Preferred              : yes
  Drain                 : no
  Health                : 255
  S-Vlan Range          : N/A
  C-Vlan Range          : N/A
  L2-Access-Id Health  :
    to-access           : 255
  Network Realm Health :

Standby UP              : c.upf
  Ready                 : yes
  Preferred              : no
  Drain                 : no
  Health                : 255
  S-Vlan Range          : N/A
  C-Vlan Range          : N/A
  L2-Access-Id Health  :
    to-access           : 255
  Network Realm Health :

No. Of Sessions        : 2
Current Hold-Off Delay : 0 msec
=====
```

#### 4.2.32.36 static-session

##### Syntax

```
static-session [up-ip ip-address|ipv6-address] [up-id identifier] [up-group group-name] [counters]
static-session name name
```

##### Context

**[Tree]** show mobile-gateway pdn bng static-session

##### Description

This command displays static session information.

##### Parameters

*ip-address|ipv6-address*  
Specifies the IP address.



Values:

- `ip-address` – a.b.c.d
- `ipv6-address` – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*identifier*

Specifies the IP address or the FQDN.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D
- FQDN - fully qualified domain name, up to 255 characters.

*group-name*

Specifies the UP group name, up to 32 characters.

*name*

Specifies the name, up to 64 characters.

**counters**

Keyword to show counters.

## 4.2.32.37 up

### Syntax

**up** [*ip-addr* | *fqdn*] [**up-group** *group-name*]

### Context

[\[Tree\]](#) show mobile-gateway pdn bng up

### Description

This command, when run without parameters, displays an overview of all BNG-UPs and their UP group participation. The applicable Layer 2 access ID, the applicable VLAN range, and the active/standby state for the BNG-UP in the UP group are displayed. The optional parameters filter the output to display only the UP group participation for the specific BNG-UP or only the participation of the BNG-UPs in the specified UP group.

### Parameters

*ip-addr*

Specifies the IP address of the PFCP node ID for the BNG-UP filter.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*fqdn*

Specifies the fully qualified domain name (FQDN) of the PFCP node ID for the BNG-UP filter, up to 255 characters.

*group-name*

Specifies the UP group name for the UP group filter, up to 32 characters.

## Output

The following output is an example of the overview of all BNG-UPs and their UP group participation.

### Output example: Participation of the BNG-UPs in the UP groups

```
A: MAG-c>show>mobile-gateway>pdn>bng# up
=====
Up Table
=====
Gw UpId
  L2-Access-Id      S-Vlan  C-Vlan  Up-Group  Fsg  Role
-----
1  b.upf (192.0.2.11)
   to-access                               alpha   4     Act
-----
1  c.upf (192.0.2.12)
   to-access                               alpha   4     Std
-----
1  east (192.0.2.13)
   to-access                               beta    5     Std
-----
1  west (192.0.2.14)
   to-access                               beta    5     Act
-----
No. of UPs : 4
=====
```

## 4.2.32.38 up-group

### Syntax

```
up-group
up-group group-name [up ip-addr | fqdn] [detail]
```

### Context

```
[Tree] show mobile-gateway pdn bng up-group
```

## Description

This command, when run without parameters, displays a high-level overview of the provisioned UP groups.

With parameters, this command displays an overview of the specified UP group, the associated list of FSGs, and the associated BNG-UPs.

## Parameters

*group-name*

Specifies the UP group name, up to 32 characters.

**up**

Keyword to filter the output to only contain information relevant to the specified UP, identified by the provisioned PFCP node ID.

*ip-addr*

Specifies the UP IP address filter.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*fqdn*

Specifies the UP fully qualified domain name (FQDN) filter, up to 255 characters.

**detail**

Keyword to display detailed output.

## Output

The following output examples show UP group information.

- [High-level UP groups information](#)
- [Detailed output for a specific UP group](#)

### Output example: High-level UP groups information

```
A:MAG-c>show>mobile-gateway>pdn>bng# up-group
=====
Up-Group Table
=====
Gw Up-Group                               Admin   No. Of   No. Of
      State                               Sessions  UPs
-----
1 alpha                                   up        2         2
1 beta                                   up        5         2
-----
No. of Sessions   : 7
-----
No. of Up-Groups  : 2
```

**Output example: Detailed output for a specific UP group**

```

A:MAG-c->show>mobile-gateway>pdn>bng# up-group "alphas" detail
=====
Up-Group 'alpha'
=====
PDN gateway                : 1
Description                 : (Not Specified)
Admin State                 : up

FSG Profile                 : basic
UP FSG Template             : N/A
Gateway MAC Prefix         : 02:00:5e:00
Default Standby Type       : hot

Active Change Without Failure : always
Recovery Event Hold Off Delay : 5000 msec
Degradation Event Hold Off Delay : 0 msec

Health Aggregation Mode    : lowest
Minimum Active Health      : 1
Health Calculate Include    : L2-Access-Id

-----
          FSG Active UP          Standby UP          Sessions  Hold-Off
-----
          4 b.upf                c.upf (ready)          2          0
-----
No. of FSGs: 1
-----

UP b.upf (192.0.2.11)
-----
FSG Role                    : Active
Preferred                   : yes
Drain                        : no
S-Vlan Range                : N/A
C-Vlan Range                : N/A
Health                      : 255
L2-Access-Id Health         :
  to-access                  : 255
Network Realm Health        :
-----

UP c.upf (192.0.2.12)
-----
FSG Role                    : Standby
Preferred                   : no
Drain                        : no
S-Vlan Range                : N/A
C-Vlan Range                : N/A
Health                      : 255
L2-Access-Id Health         :
  to-access                  : 255
Network Realm Health        :
-----

No of UPs : 2
=====

```

### 4.2.32.39 call-flow-stats

#### Syntax

```
call-flow-stats [gateway gw-id | group group-number | vm vm-id] [gw-type gw-type] [summary]
[suppress-zero]
```

#### Context

[\[Tree\]](#) show mobile-gateway pdn call-flow-stats

#### Description

This command displays call flow statistics for each card.

When displaying Operator Identifier (OI) mapping statistics, it shows the number of sessions established (initial and handover) as a summary per gateway ID, OI override mapping list, or per subscriber PLMN entry that the ePDG used OI or serving network PLMN replacement from the OI override mapping table.

#### Parameters

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

*group-number*

Specifies the group number.

Values: 1 to 15

*vm-id*

Specifies the VM ID.

Values: 1 to 20 | A | B

*gw-type*

Specifies the gateway type.

Values: sgw | pgw | upf | smf

**summary**

Keyword to display summarized information.

**suppress-zero**

Keyword to hide counters with value zero.

### 4.2.32.40 clear-status

#### Syntax

```
clear-status [gateway gw-id]
```

## Context

**[Tree]** show mobile-gateway pdn clear-status

## Description

This command shows the status of the last administrative clear command. The user can monitor an ongoing clear command using this output.

## Parameters

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

### 4.2.32.41 load-overload-control

## Syntax

**load-overload-control**

## Context

**[Tree]** show mobile-gateway pdn load-overload-control

## Description

This command displays the local load and overload information of the node.

### 4.2.32.42 gtp-local-load

## Syntax

**gtp-local-load**

## Context

**[Tree]** show mobile-gateway pdn load-overload-control gtp-local-load

## Description

This command displays the local-load information for the node.

## Output

The following output is an example of GTP local load statistics.

### Output example

```
=====
PDN gateway gtp local load statistics
=====
```

```
Last twenty 100% load report events:
```

```
-----
Time                LCI reported          Slot
-----
07/02/2024 23:15:15    100                    1
-----

Current GTP-C load (LCI) reported : 100
-----
Number of nodes : 1
=====
```

### 4.2.32.43 gtp-local-overload

#### Syntax

```
gtp-local-overload
```

#### Context

[\[Tree\]](#) show mobile-gateway pdn load-overload-control gtp-local-overload

#### Description

This command displays the local overload control information of the node.

#### Output

The following output is an example of GTP local overload statistics.

#### Output example

```
=====
PDN gateway gtp local overload statistics
=====
Last overload report time   : 07/02/2024 23:15:15

Last twenty overload report events:

-----
Time                Overload level          OCI reported          Slot
-----
07/02/2024 23:15:15    critical                90                    1
-----

Current GTP-C overload      : Yes      Traffic reduction value : 90 %
Local throttling value      : 100 %
Remaining validity time     : 2 sec
Cumulative CS Req dropped   : 150     Cumulative MB Com dropped : 0
Cumulative UB Req dropped   : 0
-----

Number of nodes : 1
=====
```

#### 4.2.32.44 gtp-peer-overload

##### Syntax

**gtp-peer-overload**

##### Context

[\[Tree\]](#) show mobile-gateway pdn load-overload-control gtp-peer-overload

##### Description

This command displays the GTP-C overload information received from the peering node.

##### Output

The following output is an example of GTP overload statistics per node.

##### Output example

```

=====
PDN gateway gtp overload statistics per node
=====
Node address           : 75.0.1.76
Node Id                : MME
Router                 : N/A
Last overload report time : 07/03/2024 00:00:32
Current overload       : Yes      Traffic reduction value   : 75 %
Remaining validity time : 44 sec
Cumulative UB Req dropped : 31
Cumulative DB Req dropped : 0      Last overload UB Req dropped: 31
Last overload DB Req dropped: 0
-----
Number of nodes : 1
=====

```

#### 4.2.32.45 sbi-local-overload

##### Syntax

**sbi-local-overload**

##### Context

[\[Tree\]](#) show mobile-gateway pdn load-overload-control sbi-local-overload

##### Description

This command displays information about SBI local overload statistics.

##### Output

The following output is an example of SBI local overload statistics.



## Output example

```

=====
Nsmf overload control statistics
=====
Last overload report time      : 10/07/2024 23:58:42

Last twenty overload report events:

-----
Time                               Overload level
-----
10/07/2024 23:58:42                critical
-----
Current Nsmf overload             : Yes
Cum PDU Sess Est Req dropped      : 0
-----
Number of nodes : 1
=====

```

### 4.2.32.46 sbi-local-reporting

#### Syntax

**sbi-local-reporting**

#### Context

[\[Tree\]](#) show mobile-gateway pdn load-overload-control sbi-local-reporting

#### Description

This command displays information about SBI local reporting.

#### Output

The following output is an example of SBI local reporting statistics.

#### Output example

```

=====
Nsmf load reporting statistics
=====
Last twenty load report events:

-----
Time UTC           Load reported      Slot
-----
10/07/2024 23:57:57    10                 3
10/07/2024 23:58:00    15                 3
10/07/2024 23:58:10     9                 3
10/07/2024 23:58:27   100                21
-----
Current SBI Load reported to NRF : 100
-----
Number of nodes : 1
=====

```

### 4.2.32.47 sbi-peer-congestion

#### Syntax

**sbi-peer-congestion**

#### Context

[\[Tree\]](#) show mobile-gateway pdn load-overload-control sbi-peer-congestion

#### Description

This command displays information about SBI peer congestion statistics.

#### Output

The following output is an example of SBI peer congestion statistics.

#### Output example

```

=====
PDN gateway Sbi congestion statistics per peer
=====
NFId           : 894c:c176:820a:11ef:9ab6:ff:900:1
Node Id        : AMF
Last overload report time : 10/04/2024 04:39:41
Remaining validity time  : 248 sec
Cum NW init mod dropped  : 0
-----
Number of nodes : 1
=====

```

### 4.2.32.48 summary

#### Syntax

**summary**

#### Context

[\[Tree\]](#) show mobile-gateway pdn load-overload-control summary

#### Description

This command displays the configuration information for the overload and load control and the current status.

#### Output

The following output is an example of load and overload control summary information.

#### Output example

```

A:MAG-c# show mobile-gateway pdn load-overload-control summary
=====

```

```

Load and over load control information
=====
Gateway                : 1

Load control           : Enabled
Load change trigger value : 5 %      Nth msg load report update : 1

Overload control       : Disabled
Minor threshold value  : 89 %      Major threshold value       : 92 %
Critical threshold value : 97 %
Minor reduction value   : 30 %      Major reduction value       : 60 %
Critical reduction value : 90 %

local overload throttling : Enabled  throttling alarms           : Disabled
Minor local overload throttling
value                    : 0 %
Major local overload throttling
value                    : 60 %
Critical local overload throttling
value                    : 90 %

Overload Validity time : 100 sec

Current load           : 51 %      Current overload state       : no-over*
=====

```

#### 4.2.32.49 local-address-assignment

##### Syntax

**local-address-assignment**

##### Context

[\[Tree\]](#) show mobile-gateway pdn local-address-assignment

##### Description

Commands in this context display ODSA pool information.

#### 4.2.32.50 pool

##### Syntax

**pool gateway *gw-id* network-realm *realm* name *pool* [*type*]**

##### Context

[\[Tree\]](#) show mobile-gateway pdn local-address-assignment pool

##### Description

This command displays a high-level overview of the ODSA pool.

## Parameters

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

*realm*

Specifies the realm name of the network instance, up to 80 characters.

*pool*

Specifies the pool name, up to 32 characters.

*type*

Specifies the address type.

Values: ipv4 | ipv6-na | ipv6-pd | ipv6-slaac

## Output

The following output is an example of the ODSA pool overview information.

### Output example

```
A:MAG-c>show>mobile-gateway>pdn>laa# pool gateway 1 network-realm "601" name "601-pool-0"
=====
Local Address Assignment Pool
=====
PDN gateway           : 1
Network realm        : 601
Pool                 : 601-pool-0
-----
Description           : (Not Specified)
Tracking             : none
Dedicated            : no
Hold time            : 00h00m00s
Minimum number of free micro-nets : 1
  Rising threshold   : 2
IPv4
  Default gateway    : first-address
  Subnet allocation  : (Not Specified)
  Primary DNS        : (Not Specified)
  Secondary DNS      : (Not Specified)
  Micro-net length   : 24
  Number of prefixes : 1
  Number of excludes : 0
  Number of micro-nets : 8
  IP address usage   : 11%
  Micro-net usage    : 13%
IPv6
  Primary DNS        : (Not Specified)
  Secondary DNS      : (Not Specified)
  NA
    Micro-net length : (Not Specified)
    Number of prefixes : 0
    Number of excludes : 0
    Number of micro-nets : 0
    IP address usage   : 0%
    Micro-net usage    : 0%
  PD
    Delegated prefix  : length 56
    Micro-net length  : (Not Specified)
```

```

Number of prefixes      : 0
Number of excludes     : 0
Number of micro-nets   : 0
IP address usage       : 0%
Micro-net usage        : 0%
SLAAC
Micro-net length       : (Not Specified)
Number of prefixes     : 0
Number of excludes     : 0
Number of micro-nets   : 0
IP address usage       : 0%
Micro-net usage        : 0%

```

### 4.2.32.51 prefix

#### Syntax

`prefix prefix/len`

#### Context

[\[Tree\]](#) show mobile-gateway pdn local-address-assignment pool prefix

#### Description

This command displays high-level information about a specific prefix with differentiation between the subscriber session address assignment and the NAT pool addressing applications.

#### Parameters

`prefix/len`

Specifies the IP address prefix and length, up to 64 characters.

#### Output

The following output is an example of high-level information about prefix 130.0.0.0/21 with differentiation between the subscriber session address assignment and the NAT pool addressing applications.

#### Output example

```

A:MAG-c>show>mobile-gateway>pdn>laa# pool gateway 1 network-realm "601" name "601-pool-0"
prefix 130.0.0.0/21

=====
Local Address Assignment Prefix
=====
PDN gateway           : 1
Network realm         : 601
Pool                  : 601-pool-0
Prefix                : 130.0.0.0/21
-----
Address family        : ipv4
Micro-net length      : 24
Operational state     : up
Drain                  : no

```

```

Micro-nets                : 8
Micro-nets in use (%)     : 1 (13%)
NAT
  Micro-nets in use (%)   : 1 (13%)
  IP addresses            : 256
  IP addresses in use (%) : 218 (85%)
Address assignment
  Micro-nets in use (%)   : 0 (0%)
  IP addresses            : 1792
  IP addresses reserved   : 21
  IP addresses in use (%) : 0 (0%)
  IP addresses active (%) : 0 (0%)
  IP addresses holdoff (%) : 0 (0%)
  IP addresses excluded (%) : 0 (0%)

```

## 4.2.32.52 micro-net

### Syntax

```
micro-net micro-net/len
```

### Context

[\[Tree\]](#) show mobile-gateway pdn local-address-assignment pool prefix micro-net

### Description

This command displays the overall subscriber usage per micro-net and the association between the CP NAT profile and the micro-net.

### Parameters

*micro-net/len*

Specifies the IP address prefix and length, up to 64 characters.

### Output

The following output is an example of the overall subscriber usage for micro-net 130.0.0.0/24.

### Output example

```

A:MAG-c>show>mobile-gateway>pdn>laa# pool gateway 1 network-realm "601" name "601-pool-0"
prefix 130.0.0.0/21 micro-net 130.0.0.0/24

=====
Local Address Assignment Micro-net
=====
PDN gateway                : 1
Network realm              : 601
Pool                       : 601-pool-0
Prefix                     : 130.0.0.0/21
Address family             : ipv4
Micro-net                  : 130.0.0.0/24
-----
UPF/FSG                    : NAT 10.0.1.3
NAT
  CP NAT profile           : Dut-C_pol_poll1_for_601-pool-0
  NAT pool                 : 601-pool-0

```

```

IP addresses           : 256
IP addresses in use (%) : 218 (85%)
Maximum subscribers   : 165120
Active subscribers (%) : 138853 (84%)
Maximum ext port blocks : 1486336
Active ext port blocks (%) : 377434 (25%)

```

### 4.2.32.53 nat-members

#### Syntax

```
nat-members
```

#### Context

[\[Tree\]](#) show mobile-gateway pdn local-address-assignment pool prefix micro-net nat-members

#### Description

This command displays overall subscriber usage and extended PB usage per NAT member micro-net on the BNG-UP.

#### Output

The following output is an example of the overall subscriber usage and extended PB usage per NAT member micro-net.

#### Output example

```

A:MAG-c>show>mobile-gateway>pdn>laa# pool gateway 1 network-realm "601" name "601-pool-0"
prefix 130.0.0.0/21 micro-net 130.0.0.0/24 nat-members

=====
Local Address Assignment Micro-net nat-members
=====
PDN gateway           : 1
Network realm         : 601
Pool                  : 601-pool-0
Prefix                : 130.0.0.0/21
Address family        : ipv4
Micro-net             : 130.0.0.0/24
UPF/FSG               : NAT 10.0.1.3

-----
Member Address Range      IP Addresses  Subscribers  Ext Port Blocks
-----
  1 130.0.0.171 - 130.0.0.255      85          46284          86504
  2 130.0.0.0 - 130.0.0.85         86          46284          86808
  3 130.0.0.86 - 130.0.0.170      85          46285          80243
-----

```

## 4.2.32.54 micro-nets

### Syntax

**micro-nets** [*mn-filter/len*] [**count**]

**micro-nets** [*mn-filter/len*] **sort** {**subnet** | **usage** | **active** | **hold**} [**ascend** | **descend**]

### Context

[\[Tree\]](#) show mobile-gateway pdn local-address-assignment pool prefix micro-nets

### Description

This command displays an overview of all micro-nets for a specific prefix, their corresponding associations with the BNG-UPs, and the IP address usage within each micro-net.

### Parameters

*mn-filter/len*

Specifies the micro-net prefix and length, up to 64 characters.

**count**

Keyword to display only the number of micro-nets.

**sort**

Keyword to sort the output.

**subnet** | **usage** | **active** | **hold**

Keyword to specify the column to sort on.

**ascend** | **descend**

Keyword to specify the order of sorting.

### Output

The following output is an example of the overview of all micro-nets for prefix 130.0.0.0/21.

### Output example

```
A:MAG-c>show>mobile-gateway>pdn>laa pool gateway 1 network-realm "601" name "601-pool-0"
prefix 130.0.0.0/21 micro-nets

=====
Local Address Assignment Micro-nets for Prefix 130.0.0.0/21
=====
Micro-net                UPF/FSG                IP Addresses In Use
                        Active    Hold Usage
-----
130.0.0.0/24             NAT 10.0.1.3           218      85%
130.0.1.0/24             N/A                    0         0 0%
130.0.2.0/24             N/A                    0         0 0%
130.0.3.0/24             N/A                    0         0 0%
130.0.4.0/24             N/A                    0         0 0%
130.0.5.0/24             N/A                    0         0 0%
130.0.6.0/24             N/A                    0         0 0%
130.0.7.0/24             N/A                    0         0 0%
-----
```



```
No. of micro-nets: 8
```

## 4.2.32.55 nat

### Syntax

```
nat
```

### Context

[\[Tree\]](#) show mobile-gateway pdn local-address-assignment pool prefix micro-nets nat

### Description

This command displays the number of allocated micro-nets, the number of users within each micro-net, and the extended PB usage for each micro-net under a specific prefix.

### Output

The following output is an example of the number of allocated micro-nets, the number of users within each micro-net, and the extended PB usage for each micro-net for prefix 130.0.0.0/21.

### Output example

```
A:MAG-c>show>mobile-gateway>pdn>laa# pool gateway 1 network-realm "601" name "601-pool-0"
prefix 130.0.0.0/21 micro-nets nat

=====
Local Address Assignment NAT Micro-nets for Prefix 130.0.0.0/21
=====
Micro-net                UPF/FSG                Subscribers (%)  Ext Port Blocks (%)
-----
130.0.0.0/24            NAT 10.0.1.3           138853 (84%)    483479 (33%)
-----
No. of subscribers :    138853
No. of NAT micronets:    1
```

## 4.2.32.56 extended-port-blocks

### Syntax

```
extended-port-blocks
```

### Context

[\[Tree\]](#) show mobile-gateway pdn local-address-assignment pool prefix micro-nets nat extended-port-blocks

### Description

This command displays the extended PB usage per IP address under a specific prefix.

## Output

The following output is an example of the extended PB usage per IP address for prefix 130.0.0.0/21.

### Output example

```
A:MAG-c>show>mobile-gateway>pdn>laa# pool gateway 1 network-realm "601" name "601-pool-0"
prefix 130.0.0.0/21 micro-nets nat extended-port-blocks
```

```
=====
Local Address Assignment NAT Micro-nets for Prefix 130.0.0.0/21
=====
```

Micro-net IP Address	UPF/FSG	Subscribers (%)	Ext Port Blocks (%)
130.0.0.0/24	NAT 10.0.1.3		
130.0.0.0		645 (100%)	207 (4%)
130.0.0.1		645 (100%)	220 (4%)
130.0.0.2		645 (100%)	93 (2%)
130.0.0.3		645 (100%)	63 (1%)
130.0.0.4		645 (100%)	0 (0%)
130.0.0.5		645 (100%)	0 (0%)
130.0.0.6		645 (100%)	0 (0%)
130.0.0.7		645 (100%)	0 (0%)
130.0.0.8		645 (100%)	0 (0%)
130.0.0.9		645 (100%)	0 (0%)
130.0.0.10		645 (100%)	0 (0%)
130.0.0.11		645 (100%)	0 (0%)
130.0.0.12		645 (100%)	0 (0%)
130.0.0.13		645 (100%)	0 (0%)
130.0.0.14		645 (100%)	0 (0%)
130.0.0.15		645 (100%)	0 (0%)
130.0.0.16		645 (100%)	0 (0%)
130.0.0.17		645 (100%)	0 (0%)
130.0.0.18		645 (100%)	0 (0%)
130.0.0.19		645 (100%)	0 (0%)
130.0.0.20		645 (100%)	0 (0%)
130.0.0.21		645 (100%)	0 (0%)
130.0.0.22		645 (100%)	0 (0%)
130.0.0.23		645 (100%)	0 (0%)
130.0.0.24		645 (100%)	0 (0%)
130.0.0.25		645 (100%)	0 (0%)
130.0.0.26		645 (100%)	0 (0%)
130.0.0.27		645 (100%)	0 (0%)
130.0.0.28		645 (100%)	0 (0%)
130.0.0.29		645 (100%)	0 (0%)
130.0.0.30		645 (100%)	0 (0%)
130.0.0.31		645 (100%)	0 (0%)
130.0.0.32		645 (100%)	18 (<1%)
130.0.0.33		645 (100%)	18 (<1%)
130.0.0.34		645 (100%)	251 (4%)
130.0.0.35		645 (100%)	252 (4%)
130.0.0.36		645 (100%)	12 (<1%)
130.0.0.37		645 (100%)	4 (<1%)
130.0.0.38		645 (100%)	0 (0%)
130.0.0.39		645 (100%)	0 (0%)
130.0.0.40		645 (100%)	0 (0%)
130.0.0.41		645 (100%)	0 (0%)
130.0.0.42		645 (100%)	0 (0%)

## 4.2.32.57 prefixes

### Syntax

**prefixes** [*prefix-filter/len*] [*type*] [*count*]

**prefixes** [*prefix-filter/len*] [*type*] **sort** {**prefix** | **usage**} [**ascend** | **descend**]

### Context

**[Tree]** show mobile-gateway pdn local-address-assignment pool prefixes

### Description

This command displays summary information of the pool prefixes that match the specified filters.

### Parameters

*prefix-filter/len*

Specifies the IP prefix filter, up to 64 characters.

*type*

Specifies the address type filter.

Values: ipv4 | ipv6-na | ipv6-pd | ipv6-slaac

**count**

Keyword to display only the number of pool prefixes that match the specified filters.

**sort**

Specifies to sort the output.

{**prefix** | **usage**}

Keyword to sort the output on prefix or usage.

[**ascend** | **descend**]

Keyword to sort the output in ascending or descending order.

### Output

The following output example shows a sorted pool prefixes summary.

#### Output example: Sorted Pool Prefixes Summary

```
A:MAG-c>show>mobile-gateway>pdn>laa# pool gateway 1 network-
realm "mybngvrf" name "p1" prefixes sort usage descend
=====
Local Address Assignment Pool Prefixes
=====
Prefix                               Address  Oper  Usage Drain
Family                               State
-----
20.20.0.0/16                          ipv4     up    6%   no
2002::/40                              ipv6-pd  up    6%   no
2001:dead:1::/105                     ipv6-na  up    0%   no
2003::/45                              ipv6-slaac up    0%   no
-----
No. of prefixes: 4
```

## 4.2.32.58 pools

### Syntax

```
pools [gateway gw-id] [network-realm realm] [name pool] [type] [count]
pools [gateway gw-id] [network-realm realm] [name pool] [type] sort{name | usage} [ascend | descend]
```

### Context

**[Tree]** show mobile-gateway pdn local-address-assignment pools

### Description

This command displays summary information for the pools matching the specified filters.

### Parameters

*gw-id*

Specifies the mobile gateway filter.

Values: 1 to 8

*realm*

Specifies the network realm filter, up to 80 characters.

**pool**

Specifies the pool name filter, up to 32 characters.

*type*

Specifies the address type filter.

Values: ipv4 | ipv6-na | ipv6-pd | ipv6-slaac

**count**

Keyword to display only the number of pools that match the specified filters.

**sort**

Specifies to sort the output.

**{name | usage}**

Keyword to sort the output on poolname or pool usage.

**[ascend | descend]**

Keyword to sort the output in ascending or descending order.

### Output

The following output example shows a sorted pools summary.

#### Output example: Sorted Pools Summary

```
A:MAG-c>show>mobile-gateway>pdn>laa# pools sort usage descend
```

```

=====
Local Address Assignment Pools
=====
Gw Network Realm          Type          Prov. Oper-up
Pool                      Type          Prefixes  Prefixes IP-address Usage
-----
1  mybngvrf
   p1                    overall      4         4      12000 (0%)
                        ipv4         1         1      4000 (6%)
                        ipv6-slaac  1         1         0 (0%)
                        ipv6-pd     1         1      4000 (6%)
                        ipv6-na     1         1      4000 (0%)
1  mybngvrf
   radius                ipv4         1         1         0 (0%)
-----
No. of pools: 2
=====

```

## 4.2.32.59 path-mgmt-stats

### Syntax

**path-mgmt-stats** *ref-point-type* **peer** *ip-address* [**port** *port-number*] [**gateway** *gw-id* | **group** *group-number* | **vm** *vm-id*] [**instance** | **aggregate**]

**path-mgmt-stats** {**gn** | **gp**} [**ref-point** *ref-point-name*] [**peer** *ip-address* [**port** *port-number*]] [**gateway** *gw-id* | **group** *group-number* | **vm** *vm-id*] [**instance** | **aggregate**] [**active**]

**path-mgmt-stats** {**s5** | **s8**} [**ref-point** *ref-point-name*] [**peer** *ip-address* [**port** *port-number*]] [**gateway** *gw-id* | **group** *group-number* | **vm** *vm-id*] [**instance** | **aggregate**]

### Context

[\[Tree\]](#) show mobile-gateway pdn path-mgmt-stats

### Description

This command displays path management statistics.

### Parameters

#### *ref-point-type*

Specifies the interface type.

Values: s11 | s1u | s12 | s4 | s5 | s8 | gx | rf | gn | ga | gp | gy | s2a | s2b | s6b | swm | sta | sx-n4

#### *ip-address*

Specifies an existing IP address.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where  
x – [0..FFFF]H

**d** – [0..255]D

*port-number*

Specifies a port ID.

Values: 1 to 65535

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

*group-number*

Specifies the group number.

Values: 1 to 15

*vm-id*

Specifies the VM ID.

Values: 1 to 20 | A | B

*ref-point-name*

Specifies the reference point name, up to 32 characters.

**instance**

Keyword to display routing instance statistics per peer and per card.

**aggregate**

Keyword to display aggregated global statistics.

**active**

Keyword to display active peer statistics.

## 4.2.32.60 pdn-context

### Syntax

**pdn-context** [imsi | imei | msisdn *string*] [**detail**] [**apn name**] [**gateway gw-id** | **group group-number** | **vm vm-id**] [**access-type access-type**]

**pdn-context** imsi | imei | msisdn *string* [**apn name**] [**gateway gw-id**] **acct** {rf | gy | radius} [**detail**]

**pdn-context** imsi | imei | msisdn *string* **gx-usage-monitoring** [**gateway gw-id**] [**apn name**] [**monitoring-key monitoring-key**]

**pdn-context** imsi | imei | msisdn *string* **gx-time-of-day-info** [**gateway gw-id**] [**apn name**]

**pdn-context** imsi *string* **detail** {epdg | epdg-decrypt}

**pdn-context** mac *ieee-address* [**apn name**] [**gateway gw-id** | **group group-number** | **vm vm-id**] [**detail**]

**pdn-context** **default-session** [**def-session-pgw-ip pgw-ip-address**] [**apn name**] **detail**] [**gateway gw-id** | **group group-number** | **vm vm-id**] [**access-type access-type**]

**pdn-context** **default-session** **acct** {rf | gy} [**def-session-pgw-ip pgw-ip-address**] [**apn name**] [**gateway gw-id**] [**detail**]

**pdn-context** **ipsec-lockout** [**summary**]

```

pdn-context subscriber-id subscriber-id [apn name] [gateway gw-id | group group-number | vm vm-id] [access-type access-type]
pdn-context subscriber-id subscriber-id detail acct {rf | gy | radius} [apn name] [gateway gw-id]
pdn-context default-session [apn name] [gateway gw-id | group group-number | vm vm-id] [def-session-pgw-ip pgw-ip-address] [session-type {transit-pass-through | transit-capture}] [detail]
pdn-context imsi | subscriber-id string [gateway gw-id] [apn name] acct {stats}
pdn-context ue-ip ue-ip network-instance network-inst detail
pdn-context up-seid string detail
pdn-context cp-seid string {cp-ipv4 ipv4-address | cp-ipv6 ipv6-address} [ detail]
pdn-context def-pfcp-u-sessions [network-realm realm-name] [pfcp-u-peer-ip ip-address] [gateway gw-id | group group-number | vm vm-id] [apn name]
pdn-context wrap [gateway gw-id | group group-number | vm vm-id] [apn name]
pdn-context field-name value [gateway gw-id | group group-number | vm vm-id] [apn name]

```

## Context

[\[Tree\]](#) show mobile-gateway pdn pdn-context

## Description

This command displays the current PDN contexts for each card.

## Parameters

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

*name*

Specifies the APN name for the context, up to 80 characters.

*vm-id*

Specifies the VM ID.

Values: 1 to 20 | A | B

*group-number*

Specifies the group number.

Values: 1 to 8

*IDi*

Specifies the initiator ID for the IPsec authentication lockout list.

*ieee-address*

Specifies the UE MAC.

**imsi** | **imei** | **msisdn** *string*

Specifies the UE's IMSI or IMEI or MSISDN.

***subscriber-id***

String value, up to 32 characters, stored in the Subscriber Profile Repository (SPR) that identifies each subscriber in the network; the value is assigned and maintained by individual operators and varies in format.

**acct rf**

Keyword to display the RF context statistics.

**acct radius**

Keyword to display the RADIUS accounting statistics.

**detail**

Keyword to display the detailed summary information for the PDN context.

**epdg-decrypt**

Keyword to display the decryption keys for both IKE and ESP SAs.

**gx-usage-monitoring**

Keyword to display the Gx usage monitoring information for the specified IMSI, IMEI, or MSISDN.

Displayed information for each IP-CAN session includes the usage monitoring instances and the list of associated usage monitoring-keys.

**ipsec-lockout**

Keyword to display IPsec lockout statistics for the PDN context.

***monitoring-key***

Specifies the monitoring key, up to 80 characters.

When specified, the MAG-c displays more information for the specified monitoring key instance (scope, GSU, GSU-scope, usage-reported, number of threshold reports and on-demand reports).

When the usage monitoring key scope is at the PCC rule level, the associated PCC rule names are also displayed.

**gx-time-of-day-info**

Keyword to display the Gx Time of Day procedures related information for the specified IMSI for each IP-CAN session including the current Revalidation-Time applicable for the session, Rule-Activation-Time, Rule-Deactivation-Time and the corresponding applicable rules.

**up-seid *string***

Specifies the Session Endpoint Identifier for the UE session context, up to 40 characters.

**cp-seid *string***

Specifies the Session Endpoint Identifier for the CP session context, up to 40 characters.

***realm-name***

Specifies the realm name of the network instance that has the PFCP GTP-U interface on the UP function, up to 80 characters.

***ip-address***

Specifies the CP function's Sx/N4 reference point IPv4 address.

Values: a.b.c.d



**ipv6-address**

Specifies the CP function's Sx/N4 reference point IPv6 address, up to 64 characters.

**summary**

Keyword to display summary information for IPsec lockout statistics.

**field-name value**

Specifies to display the list of UEs together with the specified field.

**wrap**

Keyword to specify that the UE IP address column is not truncated and the full IP address is visible by wrapping the output in the next line displays.

**Output**

The following output example shows a session output example .

**Output example: Sorted Pools Summary**

```
A:MAG-c# show mobile-gateway pdn pdn-context msisdn 10000098761 detail
```

```
=====
PDN context detail
=====
```

```
SUPI           : 001010000000001
DNN            : hsi
Public DNN     : N/A
Virtual DNN    : N/A
Virtual DNN sel : -
Virtual DNN sel user-range type      : -
Virtual DNN sel scope                 : N/A
Auth Status    : IMSI authenticated
PEI           : 987654321012345
GPSI          : 10000098761
RAT           : NR
Interworking   : Subscribed/N26
SMF type      : SMF
Ref-point/Sig-pr*: N11/http2          DNN restriction : 0
5G Capability
  RQI         : Disabled                Multihoming    : Disabled
PDU Session ID : 1
UL DNN AMBR   : 20.00 Mbps              DL DNN AMBR    : 50.00 Mbps
Bearer contexts : 2                     SDFs           : 1
```

```
Primary DNS IPv4 address :-
Secondary DNS IPv4 address :-
Primary DNS IPv6 address :-
Secondary DNS IPv6 address :-
```

```
Pri NBNS IPv4 ad*: -                Sec NBNS IPv4 ad*: -
Pri NBNS IPv6 ad*: -
Sec NBNS IPv6 ad*: -
```

```
Charging bearer *: Home
```

```
UE IPv4 address : 192.0.2.1
UE IPv4 address source : unknown
```

```
UE IPv6 address : ::a17:ffff:fe00:1
UE IPv6 address source : unknown
```

```
Charging profile : 0                Interim records *: 0
```

```

RF triggers      : 0
Framed Routes   : 0
P-CSCF Reselection      : Y
Override Rating Group   : N/A
Override Online Billing Method : Disabled
Override Offline Billing Method : Disabled
MO Exception Cou*: 0      MO Exception Tim*: 0
ULI Timestmp(sec): 0      SSC Mode      : 1
N3 State      : Active
LADN state    : Inactive
NSSAI
SST          : 1          SD          : 0xcaff01
-----
Service Based Interface (SBI) Information
-----
Service Realm      : fwa_realm
NF Service         : nsmf-pdusession
NF Role           : producer
NF ID             : 4f4738e7-41a8-4485-963e-db1124007808
URI              : http://192.168.2.1:65534/nsmf-pdusession/v1/sm-contexts/
                  00010110
Service Instance  : fwa_smf
NF Service         : namf-comm
NF Role           : consumer
NF ID             : 4f4738e7-41a8-4485-963e-db1124007808
Service Instance  : amf_comm_client
NF Service         : namf-evts
NF Role           : consumer
NF ID             : 4f4738e7-41a8-4485-963e-db1124007808
URI              : http://192.168.2.1:65534/smfPduSession/00010110
NF Service         : npcf-smpolicycontrol
NF Role           : consumer
NF ID             : 1df98a9d-2d71-46b0-839e-461956fa5ab2
URI              : http://192.168.40.4:80/ncf-smpolicycontrol/v1/sm-policies/
                  1010000000001_1
Service Instance  : pcf_client
NF Service         : nudm-sdm
NF Role           : consumer
NF ID             : 58e12c9c-e736-4d01-9c3f-9e37763a51c3
URI              : http://192.168.40.3:80/nudm-sdm/v1/imsi-00101000000001/sdm-
                  subscriptions/00101000000001_0
Service Instance  : sdm_client
NF Service         : nudm-uecm
NF Role           : consumer
NF ID             : 58e12c9c-e736-4d01-9c3f-9e37763a51c3
Service Instance  : uecm_client
-----
QoS Information
-----
QFI : 1   QFI Type : Dynamic   QoS Flow Type : Default
-----
QoS Profile

```

```

5QI/ARP          : 5/9          Priority Level    : 0
Avg Window (ms)  : 0            Max Bst Vol (bytes) : 0
QNC              : Disabled     RQI              : Disabled
UL MBR (kbps)   : 0            DL MBR (kbps)    : 0
UL GBR (kbps)   : 0            DL GBR (kbps)    : 0
-----
QFI : 2   QFI Type : Dynamic   QoS Flow Type : GBR
-----
QoS Profile
5QI/ARP          : 4/9          Priority Level    : 20
Avg Window (ms)  : 0            Max Bst Vol (bytes) : 0
QNC              : Disabled     RQI              : Disabled
UL MBR (kbps)   : 100         DL MBR (kbps)    : 100
UL GBR (kbps)   : 100         DL GBR (kbps)    : 100
-----
User Plane (UP) Information
-----
UP Type          : Original PSA
UP Sx-N4 Ctl V4  : 192.0.2.11
CP Sx-N4 Ctl V4  : 17.17.17.10
CP Sx-N4 Seid    : 0x10110
UP Sx-N4 Seid    : 0x2
gNb N3 Data TEID : 0x10000001
gNb N3 IPv4 Address : 172.10.1.101
UP N3 Data TEID  : 0x40000
UP N3 IPv4 Address : 172.20.1.1
UP N3 IPv6 Address : 2001:db8:2020::1

QFI(s)          : 1, 2
-----
Def PFCP-u Sess : False
Network/Itf Realm: N/A
-----
Number of PDN contexts : 1
=====
* indicates that the corresponding row element may have been truncated.

```

## 4.2.32.61 cp-seid

### Syntax

**cp-seid** *seid* [**cp-ipv4** *ip-address*] [**cp-ipv6** *ipv6-address*]

**cp-seid** *seid* [**cp-ipv4** *ip-address*] [**cp-ipv6** *ipv6-address*] **detail**

### Context

**[Tree]** show mobile-gateway pdn pdn-context cp-seid

### Description

This command displays CP session context information related to a specific SEID.

## Parameters

*seid*

Specifies the SEID for the CP or UP session context, up to 40 characters.

*ip-address*

Specifies the CP function's Sx/N4 reference point IPv4 address.

Values: a.b.c.d

*ipv6-address*

Specifies the CP function's Sx/N4 reference point IPv6 address, up to 64 characters.

**detail**

Keyword to display additional details.

### 4.2.32.62 def-pfcp-u-sessions

#### Syntax

**def-pfcp-u-sessions** [**network-realm** *realm-name*] [**pfcp-u-peer-ip** *ip-address*] [**gateway** *gw-id*] [**apn** *apn-name*] [**card** *slot-number*] [**vm** *vm-id*] [**group** *group-number*]

#### Context

[\[Tree\]](#) show mobile-gateway pdn pdn-context def-pfcp-u-sessions

#### Description

This command displays the default PFCP-u shared tunnel session information, when PFCP-u (GTP-U) tunnels are configured to handle ICMPv6 RS/RA and NS/NA message exchange between the CP function and the UP function. When only **def-pfcp-u** is specified, results for all default PFCP-u sessions are displayed. The **network-realm** option may also be specified to identify the realm name of the network instance that has the PFCP GTP-U interface on the UP function, and is communicated in the Network-Instance IE part of the PFCP Session Establishment/Modification process. The **pfcp-u-peer-ip** option can also be used to display information for a specific PFCP-u Peer IP address.

#### Parameters

*realm-name*

Specifies the realm name of the network instance that has the PFCP GTP-U interface on the UP function, up to 80 characters.

*ip-address*

Specifies the PFCP-u peer IP address, up to 64 characters.

Values:

- *ipv4-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

*apn-name*

Specifies the APN name, up to 80 characters.

*slot-number*

Specifies the card slot number (applicable only to 7750 SR MG).

Values: 1 to 20 | A | B

*vm-id*

Specifies the VM ID.

Values: 1 to 20 | A | B

*group-number*

Specifies the group number.

Values: 1 to 15

### 4.2.32.63 **gpsi**

#### **Syntax**

**gpsi** *imsi-msisdn* [**detail**]

#### **Context**

[\[Tree\]](#) show mobile-gateway pdn pdn-context gpsi

#### **Description**

This command displays CP session context information related to a specific GPSI (MSISDN).

#### **Parameters**

*imsi-msisdn*

Specifies the MSISDN, up to 15 digits.

**detail**

Keyword to display additional details.

### 4.2.32.64 **pei**

#### **Syntax**

**pei** *imei* [**detail**]

#### **Context**

[\[Tree\]](#) show mobile-gateway pdn pdn-context pei

**Description**

This command displays CP session context information related to a specific PEI (IMEI).

**Parameters**

*imei*

Specifies the IMEI, up to 16 digits.

**detail**

Keyword to display additional details.

**4.2.32.65 supi****Syntax**

**supi** *imsi-msisdn* [**detail**]

**Context**

[\[Tree\]](#) show mobile-gateway pdn pdn-context supi

**Description**

This command displays PDN context information for the specified SUPI (IMSI).

**Parameters**

*imsi-msisdn*

Specifies the SUPI identifier, up to 15 characters.

**detail**

Specifies detail information.

**4.2.32.66 ue-ip****Syntax**

**ue-ip** *ip-address network-instance network-instance* [**access-type** {*utran* | *geran* | *wlan* | *gan* | *hspa* | *eutran* | *ehrpd* | *hrpd* | *1xrtt* | *umb* | *virtual* | *eutran-nb-iot*}]

**ue-ip** *ip-address network-instance network-instance detail acct stats* [*urr-id urr-id*] [**access-type** {*utran* | *geran* | *wlan* | *gan* | *hspa* | *eutran* | *ehrpd* | *hrpd* | *1xrtt* | *umb* | *virtual* | *eutran-nb-iot*}]

**ue-ip** *ip-address network-instance network-instance detail* [**access-type** {*utran* | *geran* | *wlan* | *gan* | *hspa* | *eutran* | *ehrpd* | *hrpd* | *1xrtt* | *umb* | *virtual* | *eutran-nb-iot*}]

**Context**

[\[Tree\]](#) show mobile-gateway pdn pdn-context ue-ip

**Description**

This command displays context information related to a specific UE IP address.

**Parameters***ip-address*

Specifies the UE IP address.

Values:

- *ipv4-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where  
     x – [0..FFFF]H  
     d – [0..255]D

*network-instance*

Specifies the network instance, up to 80 characters.

*urr-id*

Specifies a unique identity for the usage rule report for this session.

Values: 1 to 2147483647

**detail**

Keyword to display additional details.

**access-type**

Specifies access type.

**4.2.32.67 up-seid****Syntax**

**up-seid** *seid*

**up-seid** *seid detail acct stats* [*urr-id urr-id*]

**up-seid** *seid detail*

**Context**

[\[Tree\]](#) show mobile-gateway pdn pdn-context up-seid

**Description**

This command displays context information related to a specific Session Endpoint Identifier for the UP session context.

**Parameters***seid*

Specifies the Session Endpoint Identifier for the CP or UP session context, up to 40 characters.

*urr-id*

Specifies a unique identity for the usage rule report for this session.

Values: 1 to 2147483647

**detail**

Keyword to displays additional details.

### 4.2.32.68 pdu-session

**Syntax**

```
pdu-session supi imsi-msisdn [detail] acct nchf
```

```
pdu-session
```

```
pdu-session supi imsi-msisdn
```

```
pdu-session supi imsi-msisdn detail
```

**Context**

[\[Tree\]](#) show mobile-gateway pdn pdu-session

**Description**

This command displays context information related to the PDU session SUPI and Nchf service.

**Parameters**

*imsi-msisdn*

Specifies the SUPI identifier, up to 15 digits.

**detail**

Keyword to display additional details.

**nchf**

Keyword to display Nchf information.

### 4.2.32.69 priority-service

**Syntax**

```
priority-service summary
```

**Context**

[\[Tree\]](#) show mobile-gateway pdn priority-service

**Description**

This command displays the priority services information.

**Parameters**

**summary**

Keyword to display summary information.



## Output

The following example shows priority-service summary information.

### Output example: Priority-service summary information

```

=====
Priority service summary
=====
Local priority                : 1
Number of 4G PDN sessions    : 0
Number of 5G PDU sessions    : 0

Local priority                : 2
Number of 4G PDN sessions    : 0
Number of 5G PDU sessions    : 0

Local priority                : 3
Number of 4G PDN sessions    : 0
Number of 5G PDU sessions    : 0

Local priority                : 4
Number of 4G PDN sessions    : 0
Number of 5G PDU sessions    : 0

-----
Total
Number of 4G PDN sessions    : 0
Number of 5G PDU sessions    : 0
=====

```

## 4.2.32.70 qos-flow

### Syntax

```

qos-flow [dnn dnn]
qos-flow supi supi [dnn dnn]
qos-flow supi supi detail [qfi qfi] [dnn dnn]

```

### Context

[\[Tree\]](#) show mobile-gateway pdn qos-flow

### Description

This command displays QoS flow information for the specified SUPI for 5G sessions.

### Parameters

*dnn*  
Specifies the DNN, up to 80 characters.

*supi*  
Specifies the SUPI identifier, up to 15 digits.

**detail**

Keyword to display detailed information.

*qfi*

Specifies the QFI identifier.

Values: 0 to 63

**4.2.32.71 ref-point-peers****Syntax**

```
ref-point-peers {s11 | s11u | s12 | s1u | s4 | s4u | s5 | s5u | s8 | s8u | gx | rf | gn | gnu | gp | gpu | ga
| radius | gy | s2a | s2a-gtp | s2b | s6b | swm | sww | sta | sx-n4 | sd | dhcp | n3 | n9} [ref-point ref-
point-name] [peer ip-address [port port-number]] [gateway gw-id] [peer-type {sgw | pgw}]
```

```
ref-point-peers {gn | gnu | gp | gpu} [ref-point ref-point-name] [peer ip-address] [gateway gw-id]
[active]
```

```
ref-point-peers {radius} [radius-group radius-group [peer ip-address]] [gateway gw-id]
```

```
ref-point-peers {s5 | s5u | s8 | s8u | n9} [ref-point ref-point-name] [peer ip-address] [gateway gw-id]
```

```
ref-point-peers {dhcp} [dhcp-group dhcp-group [peer ip-address]] [gateway gw-id]
```

```
ref-point-peers {cdbx} [peer ip-address] [gateway gw-id] [vm vm-id]
```

```
ref-point-peers {s6b | gx | swm | sta | sd} [gateway-id gw-id] [peer ip-address [port port-number]]
doic
```

```
ref-point-peer {sx-n4} [peer ip-address] [gateway gw-id] [ref-point ref-point-name]
```

**Context**

[\[Tree\]](#) show mobile-gateway pdn ref-point-peers

**Description**

This command displays the reference point peers for the router instance.

**Parameters**

```
s11 | s11u | s12 | s1u | s4 | s4u | s5 | s5u | s8 | s8u | gx | rf | gn | gnu | gp | gpu | ga | radius | gy
| s2a | s2a-gtp | s2b | s6b | swm | sww | sta | sx-n4 | sd | dhcp | n3 | n9
```

Keyword to specify the reference point type.

*ip-address*

Specifies the IP address of the peer.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

**peer-type {sgw | pgw}**

Keyword to specify the peer type.

*radius-group*

Specifies the RADIUS group name, up to 31 characters.

*ref-point-name*

Specifies the reference point name, up to 32 characters.

*sww-type*

Specifies the SWw type.

**active**

Keyword to display the active peers.

**radius**

Keyword to display the RADIUS peers.

**dhcp**

Keyword to display the DHCP peers.

*dhcp-group*

Specifies the DHCP group name, up to 31 characters.

**dia-routing-table**

Keyword to display the configuration of the Diameter routing table.

**cdbx**

Keyword to display the cloud database peers.

**doic**

Keyword to display the realms and hosts with valid Diameter Overload Indication Conveyance (DOIC) parameters.

*vm-id*

Specifies the VM ID.

Values: 1 to 22

## 4.2.32.72 ref-point-stats

### Syntax

**ref-point-stats** *ref-point-type* [**peer** *ip-address* [**port** *port-number*]] [**gateway** *gw-id* | **group** *group-number* | **card** *slot-number*] [**instance** | **aggregate**] [**peer-type** {**sgw** | **pgw** | **epdg** | **twag** | **scef**}]

**ref-point-stats** {**s11** | **s4** | **s5** | **s8** | **s2a-gtp** | **s2b**} [**peer** *ip-address*] [**ref-point** *ref-point-name*] [**gateway** *gw-id* | **group** *group-number* | **card** *slot-number*] [**peer-type** {**sgw** | **pgw** | **epdg** | **twag**}] [**instance** | **aggregate**] [**failure-codes**]

```

ref-point-stats {s12 | s1u | s11u | n3 | n9}[ peer ip-address] [ref-point ref-point-name] [gateway gw-id | group group-number | card slot-number] [peer-type {sgw | pgw | epdg | twag}] instance | aggregate]
ref-point-stats {gx | sd | rf | gy | ga | s2a | s6b | swm | sta} [peer ip-address [port port-number]] [gateway gw-id | group group-number | card slot-number] [instance | aggregate] [failure-codes]
ref-point-stats {sx | sx-n4} [peer ip-address ] [ref-point ref-point-name] [gateway gw-id | group group-number | card slot-number] [instance | aggregate] [failure-codes]
ref-point-stats {gn | gp} [peer ip-address ] [ref-point ref-point-name] [gateway gw-id | group group-number | card slot-number] [instance | aggregate] [failure-codes] [active]
ref-point-stats {radius} [radius-group radius-group [peer ip-address]] [gateway gw-id | group group-number | card slot-number] [instance | aggregate]
ref-point-stats {dhcp} [dhcp-group dhcp-group [peer ip-address]] [gateway gw-id > | group group-number | card slot-number] [instance | aggregate]
ref-point-stats {pi} [pi-peer ipv4 [port port-number]] [gateway gw-id | group group-number | card slot-number] [instance | aggregate]
ref-point-stats {cdbx} [peer ip-address] [gateway gw-id | vm vm-id] [instance | aggregate]
ref-point-stats {ibcp} [gateway gw-id | card slot-number] [aggregate]

```

## Context

[\[Tree\]](#) show mobile-gateway pdn ref-point-stats

## Description

This command displays reference point statistics.

## Parameters

### *ref-point-type*

Keyword to specify the reference point type.

Values: s11 | s11u | s12 | s1u | s4 | s5 | s8 | gx | rf | gn | ga | gp | gy | s2a | s2a-gtp | s2b | s2bu | s6b | swm | sta | sx-n4



**Note:** In the show outputs, the *Number of Bearers* of the s1u and s12 reference point types, is shown only where the peer filter is used. For the s11u reference point type, the *Number of Bearers* is shown even without the peer filter.

### *ip-address*

Specifies an existing peer IP address.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*port-number*

Specifies a port ID.

Values: 1 to 65535

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

*group-number*

Specifies the group number.

Values: 1 to 15

*slot-number*

Specifies the card slot number.

Values: 1 to 20 | A | B

**instance**

Keyword to show statistics per-peer per-card.

**aggregate**

Keyword to display aggregated statistics globally.

*ref-point-name*

Specifies the reference point name, up to 32 characters.

**failure-codes**

Keyword to show failure-code statistics.

**active**

Keyword to display statistics from the active peers.

**radius**

Keyword to display the RADIUS statistics.

*radius-group*

Specifies the RADIUS group, up to 31 characters.

**dhcp**

Keyword to display the DHCP statistics.

*dhcp-group*

Specifies the DHCP group, up to 31 characters.

**pi**

Keyword to display the PI reference point.

*ipv4*

Specifies an existing peer IPv4 address for the PI peer.

Values: a.b.c.d

**cdbx**

Keyword to display the cloud database statistics.

*vm-id*

Specifies the VM ID.

Values: 1 to 22

**ibcp**

Keyword to display the BNG IBCP statistics for both the default tunnel and the per-session tunnel.

### 4.2.32.73 service-stats

#### Syntax

**service-stats**

#### Context

[\[Tree\]](#) show mobile-gateway pdn service-stats

#### Description

Commands in this context display Service Based Interface (SBI) statistics.

### 4.2.32.74 nf-type

#### Syntax

**nf-type** [**service-realm** *service-realm-name*] [**service-name** *service-name*] [**service-instance** *service-instance*] [**remote-nf-id** *uuid* | **remote-nf-ip** *ip-address* | *fqdn*] [**gateway** *gw-id* | **group** *group-id*] [**failure-codes**] [**instance** | **aggregate**]

#### Context

[\[Tree\]](#) show mobile-gateway pdn service-stats nf-type

#### Description

This command displays the SBI statistics for a specific network function (NF).

#### Parameters

*nf-type*

Specifies the NF type.

Values: amf | nrf | pcf | udm | chf | smf | scp

*service-realm-name*

Specifies the service realm name, up to 32 characters.

*service-name*

Specifies the service name.

Values: nsmf-pdusession | namf-comm | namf-evts | nrf-nfm | nrf-disc | npcf-smpolicycontrol | nudm-sdm | nudm-uecm | nchf-convergedcharging | nrf-oauth2 | scp

*service-instance*

Specifies the service instance name, up to 32 characters.

*uuid*

Specifies the UUID of the remote NF.

Values: xxxxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx

x - [0..F]H

*ip-address*

Specifies the IP address of the remote NF.

Values:

- ipv4-address – a.b.c.d
- ipv6-address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*fqdn*

Specifies an existing fully qualified domain name (FQDN) of the remote NF, up to 255 characters.

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

*group-id*

Specifies the VM ID, with 0 indicating the OAM-VM and any other value indicating and SM-VM.

Values: 0 to 15

**failure-codes**

Keyword to show failure-code statistics.

**instance**

Keyword to show stats per remote-nf per VM

**aggregate**

Keyword to show aggregated stats per service-realm.

**Output**

The following output example shows SBI statistics for the AMF Network Function.

**Output example: Statistics for the AMF**

```
A:MAG-c# show mobile-gateway pdn service-stats nf-type amf
```

```
=====
AMF peer service statistics
```

```

=====
Service Realm      : fwa_realm                      Gateway Id   : 1
Service Name       : namf-comm
-----
Service Instance   : amf_comm_client
NF instance ID     : unknown
N1N2 Message Transfer : 0
  N1 PDU Session Establishment Reject      : 0
  N1 PDU Session Modification Command      : 0
  N1 PDU Session Release Command          : 0
  N2 PDU Session Resource Setup Request    : 0
  N1 PDU Session Establishment Accept      : 0
  N2 PDU Session Resource Modify Request   : 0
  N2 PDU Session Resource Release Command  : 0
N1N2 Msg Transf Succ : 0                      N1N2 Msg Transf Fail : 0
N1N2 Transf Fail Notif : 0
N1N2 Req Timed Out   : 0
EBI Assignment Req    : 0                      EBI Assignment Succ  : 0
EBI Assignment Fail   : 0
EBI Asgn Req Timed Out : 0
Number Of Sessions   : 0
-----
Service Instance   : amf_comm_client
NF instance ID     : 4f4738e7-41a8-4485-963e-db1124007808
N1N2 Message Transfer : 1
  N1 PDU Session Establishment Reject      : 0
  N1 PDU Session Modification Command      : 0
  N1 PDU Session Release Command          : 0
  N2 PDU Session Resource Setup Request    : 1
  N1 PDU Session Establishment Accept      : 1
  N2 PDU Session Resource Modify Request   : 0
  N2 PDU Session Resource Release Command  : 0
N1N2 Msg Transf Succ : 1                      N1N2 Msg Transf Fail : 0
N1N2 Transf Fail Notif : 0
N1N2 Req Timed Out   : 0
EBI Assignment Req    : 1                      EBI Assignment Succ  : 1
EBI Assignment Fail   : 0
EBI Asgn Req Timed Out : 0
Number Of Sessions   : 0
-----
Number of instances : 2
-----
Service Realm      : fwa_realm                      Gateway Id   : 1
Service Name       : nsmf-pdusession
-----
Service Instance   : fwa_smf
NF instance ID     : unknown
Create SM Ctx Req  : 0
  N1 PDU Session Establishment Request     : 0
  N2 Handover Required                     : 0
  N2 Path Switch Request                   : 0
Create SM Ctx Succ : 0
  N2 PDU Session Resource Setup Request     : 0
  N2 Path Switch Request Acknowledge        : 0
  N2 Path Switch Request Unsuccessful      : 0
Create SM Ctx Fail : 0
  N1 PDU Session Establishment Reject      : 0
  N1 5GSM Status                           : 0
Update SM Ctx Req  : 0
  N1 PDU Session Modification Request      : 0
  N1 PDU Session Modification Complete     : 0
  N1 PDU Session Release Request          : 0
  N1 PDU Session Release Complete         : 0
  N1 5GSM Status                           : 0

```



```

N2 PDU Session Resource Setup Response : 0
N2 PDU Session Resource Setup Unsuccessful : 0
N2 PDU Session Resource Notify : 0
N2 PDU Session Resource Modify Indication : 0
N2 PDU Session Resource Modify Response : 0
N2 PDU Session Resource Modify Unsuccessful : 0
N2 PDU Session Resource Release Response : 0
N2 PDU Session Resource Notify Released : 0
N2 Path Switch Request : 0
N2 Path Switch Request Setup Failed : 0
N2 Handover Required : 0
N2 Handover Request Acknowledge : 0
N2 Handover Resource Allocation Unsuccessful : 0
With HoState Completed : 0
With HoState Cancelled : 0
With upCnxState Activating : 0
With upCnxState Deactivated : 0
With amfId change : 0
With dataForwarding True : 0
With dataForwarding False : 0
With release due to reactivation : 0
With release due to duplicate session Id : 0
With release due to slice not available : 0
With AN not responding : 0
Update SM Ctx Succ : 0
N1 PDU Session Modification Command : 0
N1 PDU Session Release Command : 0
N1 PDU Session Establishment Reject : 0
N2 PDU Session Resource Setup Request : 0
N2 PDU Session Resource Modify Confirm : 0
N2 PDU Session Resource Modify Request : 0
N2 PDU Session Resource Release Command : 0
N2 Path Switch Request Acknowledge : 0
N2 Handover Command : 0
With upCnxState Deactivated : 0
Update SM Ctx Fail : 0
N1 PDU Session Modification Reject : 0
N1 PDU Session Release Reject : 0
N1 5GSM Status : 0
N2 PDU Session Resource Modify Indication Unsuccessful : 0
N2 Path Switch Request Unsuccessful : 0
N2 Handover Preparation Unsuccessful : 0
Release SM Ctx Req : 0
With PDU session status mismatch : 0
Release SM Ctx Succ : 0
SM Ctx Stat Notif : 0
SM Ctx Stat Notif Fail : 0
Retrieve SM Ctx Req : 0
Retrieve SM Ctx Fail : 0
Release SM Ctx Fail : 0
SM Ctx Stat Notif Succ : 0
Retrieve SM Ctx Succ : 0
-----
Service Instance : fwa_smf
NF instance ID : 4f4738e7-41a8-4485-963e-db1124007808
Create SM Ctx Req : 1
N1 PDU Session Establishment Request : 1
N2 Handover Required : 0
N2 Path Switch Request : 0
Create SM Ctx Succ : 1
N2 PDU Session Resource Setup Request : 0
N2 Path Switch Request Acknowledge : 0
N2 Path Switch Request Unsuccessful : 0
Create SM Ctx Fail : 0
N1 PDU Session Establishment Reject : 0
N1 5GSM Status : 0
Update SM Ctx Req : 1

```

```

N1 PDU Session Modification Request           : 0
N1 PDU Session Modification Complete         : 0
N1 PDU Session Release Request              : 0
N1 PDU Session Release Complete             : 0
N1 5GSM Status                             : 0
N2 PDU Session Resource Setup Response      : 1
N2 PDU Session Resource Setup Unsuccessful : 0
N2 PDU Session Resource Notify              : 0
N2 PDU Session Resource Modify Indication   : 0
N2 PDU Session Resource Modify Response    : 0
N2 PDU Session Resource Modify Unsuccessful : 0
N2 PDU Session Resource Release Response    : 0
N2 PDU Session Resource Notify Released     : 0
N2 Path Switch Request                     : 0
N2 Path Switch Request Setup Failed         : 0
N2 Handover Required                       : 0
N2 Handover Request Acknowledge             : 0
N2 Handover Resource Allocation Unsuccessful : 0
With HoState Completed                     : 0
With HoState Cancelled                     : 0
With upCnxState Activating                  : 0
With upCnxState Deactivated                 : 0
With amfId change                           : 0
With dataForwarding True                    : 0
With dataForwarding False                   : 0
With release due to reactivation             : 0
With release due to duplicate session Id     : 0
With release due to slice not available     : 0
With AN not responding                       : 0
Update SM Ctx Succ                          : 1
N1 PDU Session Modification Command         : 0
N1 PDU Session Release Command              : 0
N1 PDU Session Establishment Reject         : 0
N2 PDU Session Resource Setup Request      : 0
N2 PDU Session Resource Modify Confirm     : 0
N2 PDU Session Resource Modify Request     : 0
N2 PDU Session Resource Release Command    : 0
N2 Path Switch Request Acknowledge         : 0
N2 Handover Command                        : 0
With upCnxState Deactivated                 : 0
Update SM Ctx Fail                          : 0
N1 PDU Session Modification Reject         : 0
N1 PDU Session Release Reject              : 0
N1 5GSM Status                             : 0
N2 PDU Session Resource Modify Indication Unsuccessful : 0
N2 Path Switch Request Unsuccessful        : 0
N2 Handover Preparation Unsuccessful       : 0
Release SM Ctx Req                          : 0
With PDU session status mismatch           : 0
Release SM Ctx Succ                        : 0
SM Ctx Stat Notif                          : 0
SM Ctx Stat Notif Fail                     : 0
Retrieve SM Ctx Req                        : 0
Retrieve SM Ctx Fail                       : 0
Release SM Ctx Fail                        : 0
SM Ctx Stat Notif Succ                     : 0
Retrieve SM Ctx Succ                       : 0
-----
Number of instances                        : 2
=====

```

### 4.2.32.75 static-predefined-pcc

#### Syntax

```
static-predefined-pcc [apn name] [default-policy-rule-base base-policy-name] [gateway gw-id]
```

#### Context

[\[Tree\]](#) show mobile-gateway pdn static-predefined-pcc

#### Description

This command displays PCC information.

#### Parameters

*name*

Specifies the APN name, up to 80 characters.

*base-policy-name*

Specifies the default base policy name, up to 64 characters.

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

#### Output

The following output example shows static predefined PCC configuration information for the specified APN and gateway.

#### Output example: Static predefined PCC information for a specified APN and gateway

```
A:MAG-c# show mobile-gateway pdn static-predefined-pcc gateway 1 apn "bngfwaapn"
=====
Static Predefined PCC
=====
Gateway ID      : 1
APN             : bngfwaapn
Policy rule base name: prb2
-----
Number of policies : 1
=====
```

### 4.2.32.76 statistics

#### Syntax

```
statistics [gw-type gw-type] [gateway gw-id | group group-number | vm vm-id] [summary] [suppress-zero]
```

```
statistics attach-failure-statistics [gateway gw-id | group group-number] [summary]
```

## Context

[\[Tree\]](#) show mobile-gateway pdn statistics

## Description

This command displays statistics for each card.

## Parameters

*gw-type*

Specifies the gateway type.

Values: sgw | pgw | upf | smf

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

*group-number*

Specifies the group number.

Values: 1 to 15

*vm-id*

Specifies the VM ID.

Values: 1 to 20

### **summary**

Keyword to display summarized information.

### **attach-failure-statistics**

Keyword to attach failure statistics.

### **suppress-zero**

Keyword to hide counters with value zero.

## 4.2.32.77 ue-context

### Syntax

**ue-context** [*imei imei* | *imsi imsi* | *mac ieee-address* | *msisdn msisdn*] [**gateway** *gw-id* | **group** *group-number* | **vm** *vm-id*] [**access-type** *access-type*]

**ue-context** {*imei imei* | *imsi imsi* | *mac ieee-address* | *msisdn msisdn*} **detail** [**gateway** *gw-id* | **group** *group-number* | **vm** *vm-id*] [**access-type** *access-type*]

**ue-context** {*gpsi gpsi* | *pei pei* | *supi supi*} [**detail**]

### Context

[\[Tree\]](#) show mobile-gateway pdn ue-context

### Description

This command displays the individual UE contexts for each session.

## Parameters

*imei imsi ieee-address msisdn gpsi pei supi*

Specifies the UE's IMSI, IMEI, MSISDN, MAC address, SUPI, GPSI, or PEI.

Values:

- *imsi* | *msisdn* | *supi* | *gpsi* – maximum 15 digits
- *imei* | *pei* – maximum 16 digits
- *ieee-address* – xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx (cannot be all zeros; broadcast/multicast is not allowed)

### detail

Keyword to display detailed summary information for the UE context.

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

*group-number*

Specifies the group number.

Values: 1 to 15

*vm-id*

Specifies the VM ID.

Values: 1 to 20 | A | B

*access-type*

Specifies the access type.

Values: eps | gprs | non-3gpp

## 4.2.32.78 def-pfcp-u-sessions

### Syntax

**def-pfcp-u-sessions** [**network-realm** *realm-name*] [**pfcp-u-peer-ip** *ip-address*] [**gateway** *gw-id* | **vm** *vm-id* | **group** *group-number*]

### Context

[\[Tree\]](#) show mobile-gateway pdn ue-context def-pfcp-u-sessions

### Description

This command displays the default PFCP-u shared tunnel session information, when PFCP-u (GTP-U) tunnels are configured to handle ICMPv6 RS/RA and NS/NA message exchange between the CP function and the UP function. When only **def-pfcp-u** is specified, results for all default PFCP-u sessions are displayed. The **network-realm** option may also be specified to identify the realm name of the network instance that has the PFCP GTP-U interface on the UP function, and is communicated in the Network-Instance IE part of the PFCP Session Establishment/Modification process. The **pfcp-u-peer-ip** option can also be used to display information for a specific PFCP-u Peer IP address.

## Parameters

### *realm-name*

Specifies the realm name of the network instance that has the PFCP GTP-U interface on the UP function, up to 80 characters.

### *ip-address*

Specifies the PFCP-u peer IP address, up to 64 characters.

Values:

- *ipv4-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

### *gw-id*

Specifies the gateway ID.

Values: 1 to 8

### *vm-id*

Specifies the VM ID.

Values: 1 to 20 | A | B

### *group-number*

Specifies the group number.

Values: 1 to 15

## 4.2.32.79 profile

### Syntax

**profile**

### Context

[\[Tree\]](#) show mobile-gateway profile

### Description

Commands in this context display configured mobile gateway profiles.

## 4.2.32.80 amf-profile

### Syntax

**amf-profile** *profile-name*

**Context**

[\[Tree\]](#) show mobile-gateway profile amf-profile

**Description**

This command displays the configuration information of the specified AMF profile.

**Parameters**

*profile-name*

Specifies the AMF profile to display, up to 32 characters.

**Output**

The following output example shows AMF profile configuration.

**Output example: AMF profile**

```
A:MAG-c# show mobile-gateway profile amf-profile "default"

=====
Namf profile
=====
Profile Name           : default

Max Peer Failover     : 1           Retry Count           : 0
FH session no response : attempt-continue
Transaction Timer (msec) : 5000

-----
Number of Namf profiles : 1
=====
```

**4.2.32.81 authentication-database****Syntax**

**authentication-database** *name*

**authentication-database** *name associations*

**authentication-database** *name entry name*

**authentication-database**

**Context**

[\[Tree\]](#) show mobile-gateway profile authentication-database

**Description**

This command displays ADB information. If no parameter is specified, the output displays the list of configured ADBs.

## Parameters

### **authentication-database** *name*

Specifies the name of the ADB, up to 32 characters.

### **entry** *name*

Specifies the name of the entry for which to display more information, up to 32 characters.

### **associations**

Keyword to display the references to the ADB.

## Output

The following output example shows ADB information.

### Output example: ADB information

```
A:MAG-c# show mobile-gateway profile authentication-database
=====
Authentication database instances
=====
Name                               Admin-state Entries Entries-up
-----
adb1                                enabled     1         1
adb2                                enabled     1         1
-----
No. of authentication database instances: 2
=====
A:BNG-SMF#
A:BNG-SMF# show mobile-gateway profile authentication-database "adb1"
=====
Authentication database "adb1"
=====
Administrative state                : enabled
Description                         : N/A
Default entry                       : 10
Last management change              : 04/22/2021 19:03:12
=====
Name                               Admin-state Oper-state   Match-count
-----
10                                 enabled     up           5533
-----
No. of entries: 1
=====
A:BNG-SMF#
A:BNG-SMF# show mobile-gateway profile authentication-database "adb1" entry "10"
=====
Authentication database "adb1" entry "10"
=====
Description                         : (Not Specified)
Administrative state                 : enabled
Operational state                   : up
Match Count                         : 5533
Fail Reason                         : N/A
Access Loop Encapsulation           : N/A
Action                               : accept
Address Assignment                  :
  AAA IPv4                          : radius
  AAA IPv6 NA                        : N/A
  AAA IPv6 PD                        : N/A
  AAA IPv6 SLAAC                     : N/A
```



```

Local IPv4          : p1
Local IPv6 NA      : p1
Local IPv6 PD      : p1
Local IPv6 SLAAC   : N/A
Lifetimes          :
  Valid            : N/A
  Preferred        : N/A
  dhcpv6-renew     : N/A
  dhcpv6-renew     : N/A
PD as Framed Route : No
Delegated Prefix Length : N/A
Unmatching Prefix  : N/A
APN                : mybngvrf
Charging           :
  BNG Charging Profile : N/A
  CP Volume Tracking   :
    Max Upstream       : N/A
    Max Downstream     : N/A
    Max Total          : N/A
CP NAT Profile     : N/A
DHCP Profile       : mydefault
DHCPv6 Profile     : N/A
IP Anti-Spoof     : N/A
Interface          :
  Group Interface Template : defaultgrp
  Link Local Address       : N/A
  Sap Template             : defaultsap
Match                 :
  Circuit ID               : N/A
  Layer-2 Access ID       :
  Remote ID                : N/A
  UP IP address            : N/A
  Username Domain         : N/A
  Vendor Class             : N/A
  C-VLAN ID range         : N/A
  S-VLAN ID range         : N/A
PPPoE                 :
  pado-delay              : N/A
Subscriber Mgmt       :
  SLA Profile              : base
  Sub Profile              : base
Router Advertisement Profile : N/A
Session Timeout       : N/A
=====
A:BNG-SMF#
A:BNG-SMF# show mobile-gateway profile authentication-database "adb1" associations
=====
BNG entry-point entry associations
=====
entry-point          entry
-----
e1                    10                    IPoE
e1                    10                    PPPoE auth
-----
No. of BNG entry-point entries: 2
=====

```

### 4.2.32.82 bng

#### Syntax

**bng**

#### Context

[\[Tree\]](#) show mobile-gateway profile bng

#### Description

Commands in this context display the configured BNG profiles.

### 4.2.32.83 cp-nat-profile

#### Syntax

**cp-nat-profile**

**cp-nat-profile** *profile-name*

#### Context

[\[Tree\]](#) show mobile-gateway profile bng cp-nat-profile

#### Description

This command displays a list of CP NAT profiles or information for the specified CP NAT profile.

#### Parameters

*profile-name*

Specifies the name of the CP NAT profile, up to 32 characters.

#### Output

The following output is an example of information for the specified CP NAT profile.

#### Output example

```
A:MAG-c# show mobile-gateway profile bng cp-nat-profile "Dut-C_pol_l2a-0-1_1"
=====
CP NAT profile
=====
Description                : Converted old nat-pool of dut Dut-C into CUPS
                             nat-cp-profile
Access mode                 : auto
Last management change     : 05/22/2023 12:29:30
-----
Pool                       : l2a-0-1
Description                 : nat-policy Dut-C_pol_l2a-0-1_1 with nat-pool
                             l2a-0-1
Mode                       : napt
```

```

Port forwarding range      : 1 - 1023
Port reservation         : 1 ports
Forwarding port limit    : (Not Specified)
Local address assignment pool
Name                     : l2a-0-1
Network realm            : 123321
UP NAT policy            : l2a-0-1_1
Last management change   : 05/22/2023 12:29:32

```

## 4.2.32.84 entry-point

### Syntax

**entry-point** *entry-point-name*

**entry-point**

**entry-point** *entry-point-name* **associations**

**entry-point** *entry-point-name* **entry** *entry-name*

### Context

[\[Tree\]](#) show mobile-gateway profile bng entry-point

### Description

This command displays BNG entry point information. If no parameter is specified, the output displays the list of the configured entry points.

### Parameters

*entry-point-name*

Specifies the name of the entry point, up to 32 characters.

*entry-name*

Specifies the name of the entry for which to display more information, up to 32 characters.

**associations**

Keyword to display the references to the entry point.

### Output

The following output examples show BNG entry point information.

#### Output example: BNG entry point information

```

A:MAG-c# show mobile-gateway profile bng entry-point
=====
BNG entry-points
=====
Name                               Admin-state Entries Entries-up
-----
e1                                 enabled      1          1
-----
No. of entry-points: 1
=====
A:BNG-SMF#

```

```

A:BNG-SMF# show mobile-gateway profile bng entry-point "e1"
=====
BNG entry-point
=====
Name                : e1
Description         :
Administrative state : enabled
Match ID           : 1
Attribute          : up-ip
Optional           : no
-----
Entry-name          Admin-state Oper-state Reason (if down)
-----
10                  enabled    up
-----
A:BNG-SMF#
A:BNG-SMF# show mobile-gateway profile bng entry-point "e1" entry "10"
=====
BNG entry-point entry
=====
Entry name          : 10
Description         : (Not Specified)
Administrative state : enabled
Operational state   : up
Per-MAC session limit : 1
Per-L2-Access-Id session limit : N/A
Per-L2-Circuit session limit : N/A
Session lockout profile : N/A
Match
UP IP address       : 172.16.10.51
Subscriber identification : per-session
PPPoE
PPPoE profile       : pppoeProf1
Session ID allocation scope : l2-circuit-mac
Session ID random    : No
ADB for PAP or CHAP no. 1 : adb1
ADB for PAP or CHAP no. 2 : adb2
IPoE
IPoE profile        : mydefault
ADB no. 1           : adb1
ADB no. 2           : adb2
=====

```

## 4.2.32.85 call-insight

### Syntax

**call-insight**

### Context

[\[Tree\]](#) show mobile-gateway profile call-insight

### Description

This command displays call-insight profiles.

## 4.2.32.86 all-ues

### Syntax

**all-ues** [*profile-name*]

### Context

[\[Tree\]](#) show mobile-gateway profile call-insight all-ues

### Description

This command displays information for the call trace profiles that are configured to trace all UEs. When the optional *profile-name* parameter is used, only information for that profile is displayed.

### Parameters

*profile-name*

Displays information about the specified profile, up to 32 characters.

### Output

The following output example shows information for the call trace profiles configured to trace all UEs.

### Output example

```
A:MAG-c# show mobile-gateway profile call-insight all-ues

=====
Call-insight all-UEs profile
=====
Profile name       : default_profile
Description        : none
Live output       : none
Reference points   : none
SBA services      : none
Events            : none
Format            : simulated-pcap
Path mgmt ref-points : none
Path mgmt SBA service: none
Size limit        : 1000 MB
Time limit        : 86400 secs
-----
Number of profiles : 1
=====
```

## 4.2.32.87 ue

### Syntax

**ue** *profile-name*

### Context

[\[Tree\]](#) show mobile-gateway profile call-insight ue

## Description

This command displays information for the call trace profile specified by the profile name.

## Parameters

*profile-name*

Displays information about the specified profile, up to 32 characters.

## Output

The following output example shows call trace UE profile information, and [Table 5: Show mobile profile call-insight UE output fields](#) describes the fields.

*Table 5: Show mobile profile call-insight UE output fields*

Label	Description
Profile name	The name of the current profile
Description	The profile, if necessary
Live output	Where to resend each captured message/event
Reference points	Which reference points are needed
User traffic	The user traffic
Events	The events that occur with the profile
Format	The format of the profile
Size limit	The space used in total
Time limit	The time used in total
User traffic capture type	The type of the captured user traffic
User traffic capture location	The location of the captured user traffic
Number of profiles	The number of profiles retrieved

## Output example: Call trace UE profile

```
A:MAG-c# show mobile-gateway profile call-insight ue "default"
=====
Call-insight UE profile
=====
Profile name       : default
Description        : none
Live output        : none
Reference points   : dhcp,dns,ga,gn,gp,gx,gxc,pi,radius,rf,ro,s1,s11,s12,s2a
                   ,s2b,s4,s5,s6b,s8,sd,swm,swu,swu-cleartext,sww,sta,sx-n4
User-traffic       : none
Events             : none
Format             : simulated-pcap
Size limit         : 10 MB
Time limit         : 86400 secs
user-traffic capture-type : packet-and-stats
user-traffic capture-location : inner-only
```

```
-----  
Number of profiles : 1  
=====
```

### 4.2.32.88 charging

#### Syntax

**charging**

#### Context

**[Tree]** show mobile-gateway profile charging

#### Description

Commands in this context display charging profile information.

### 4.2.32.89 bng-charging

#### Syntax

**bng-charging** [*name*]

#### Context

**[Tree]** show mobile-gateway profile charging bng-charging

#### Description

This command displays the BNG charging profile.

#### Parameters

*name*

Specifies the BNG charging profile name, up to 32 characters.

### 4.2.32.90 ccfh-profile

#### Syntax

**ccfh-profile** *profile-id*

#### Context

**[Tree]** show mobile-gateway profile charging ccfh-profile

#### Description

This command displays the credit control failure handling (CCFH) profile.

**Parameters***profile-id*

Specifies the CCFH profile ID.

Values: 0 to 255

**Output**

The following output example shows the profile information for the default CCFH profile 0.

**Output example: CCFH profile output**

```

A:MAG-c# show mobile-gateway profile charging ccfh-profile 0
=====
ccfh-profile
=====
ccfh-profile-id          : 0

Failure Handling
cc-failure-handling     : terminate
cc-session-failover     : enabled
fh-session-continue-timer *: 30
session-restore-retry-time*: 0
-----

nchf-cause-codes
-----
-----

nchf-http-code
-----
-----

Number of profiles : 1
=====
* indicates that the corresponding row element may have been truncated.

```

**4.2.32.91 chf-profile****Syntax****chf-profile** *profile-id***Context**[\[Tree\]](#) show mobile-gateway profile charging chf-profile**Description**

This command displays the charging function (CHF) profile.

**Parameters***profile-id*

Specifies the CHF profile ID.



Values: 0 to 255

## Output

The following output example shows the profile information for the default CHF profile 0.

### Output example: CHF profile output

```
A:MAG-c# show mobile-gateway profile charging chf-profile 0

=====
CHF profile
=====
Profile Id           : 0
Description          : default
activity-threshold   : 0          ccfh-profile           : 0
request-quota-before-traff*: disabled  unit-count-inactivity-timer: 0 (secs)

UUC Options
no-quota-initial     : suppress
no-quota-mid-session : suppress
with-quota           : none
uuc-reporting-enh    : disabled
smf-generate-charging-data*: disabled

sbi-srvc-operation
transaction-timer    : 5000      retry-count           : 0

smf-attributes-profile : 0
default-rg-list

-----
Number of profiles : 1
=====
* indicates that the corresponding row element may have been truncated.
```

## 4.2.32.92 cloud-db

### Syntax

```
cloud-db [profile-name]
```

### Context

[\[Tree\]](#) show mobile-gateway profile cloud-db

### Description

This command displays the cloud database profile.

### Parameters

*profile-name*

Specifies the cloud database profile name, up to 32 characters.

### 4.2.32.93 dns-profile

#### Syntax

**dns-profile** [*profile-name*]

#### Context

[\[Tree\]](#) show mobile-gateway profile dns-profile

#### Description

This command displays DNS profile information.

#### Parameters

*profile-name*

Displays information about the specified DNS profile.

#### Output

The following output example shows DNS profile configuration.

#### Output example: DNS profile

```
A:MAG-c# show mobile-gateway profile dns-profile "basic"
=====
DNS profile
=====
Profile                : basic
Primary DNS            :
Secondary DNS          :
Tertiary DNS           :
IP time-to-live        : 255          IP DSCP                : 56
Msg Retransmit Timeout : 5           Msg Retransmit Retry Count : 3
-----
Number of DNS profiles : 1
=====
```

### 4.2.32.94 gtp

#### Syntax

**gtp** [*profile-name*]

#### Context

[\[Tree\]](#) show mobile-gateway profile gtp

#### Description

Commands in this context display PGW and SGW charging profile information.

## Parameters

*profile-name*

Displays information about the specified existing profile name, up to 32 characters.

## Output

[GTP profile statistics](#) shows an example of PGW and SGW charging profile information, and [Table 6: Show GTP profile output fields](#) describes the output fields.

Table 6: Show GTP profile output fields

Label	Description
Profile name	The name of the profile being viewed
Description	Describes the profile, if applicable
Msg retransmit timeout	The time, in seconds, before a request message is retransmitted
Msg retransmit retry count	The number of retries until a request message to the server fails
Keep alive interval	The keep alive message interval, in seconds
Keep alive retry count	The number of retries until the path is declared to be down
Keep alive T3 response	The time, in seconds, until a message is retransmitted
IP TTL	The IP TTL value for GTP signaling messages
IP DSCP	The DSCP value in the IP header for GTP signaling messages
GTPv2 Configurable Cause Code IEs	The GTPv2 Configurable Cause Code IEs context
APN Shutdown Cause Code	The code for the Cause IE when the APN is in shutdown state
GW Suspend Cause Code	The code for the Cause IE when the gateway is in suspend state
Username Missing Cause Code	The code for the Cause IE when the PDN connection activation is rejected because a username or password is required for session activation
Sx MSG Timeout Cause Code	The code for the Cause IE in the following cases: <ul style="list-style-type: none"> <li>when the PDP Context activation is rejected because of Sx connection failure</li> <li>the PDN Connection activation is rejected because of Sx connection failure</li> </ul>
GTPv1 Configurable IEs	The GTPv1 Configurable IEs context
Recovery IE	The option to include or exclude the recovery IE from the PGW/GGSN create PDP context response, update PDP context request, and update PDP context response messages
NSAPI IE	The option to include or exclude the NSAPI IE in the PGW/GGSN create PDP context response messages

Label	Description
PCO IE	The option to include or exclude the PCO IE in the PGW/GGSN initiate PDP context request, create PDP context response, and update PDP context response messages
Charging GW Addr IE	The option to include or exclude the charging gateway address in the PGW/GGSN create PDP context response and update PDP context response messages
Common Flags IE	The option to include or exclude the common flags IE in the PGW/GGSN create PDP context response and update PDP context response messages
APN Restriction IE	The option to include or exclude the APN restriction IE in the PGW/GGSN create PDP context response, update PDP context request, and update PDP context response messages
BCM IE	The option to include or exclude the BCM IE in the PGW/GGSN messages
GTPv2 Configurable IEs	The GTPv2 Configurable IEs context
PCO IE	The option to include or exclude the PCO/ePCO IE in the GTPv2 messages
APCO IE	The option to include or exclude the APCO IE in the GTPv2 messages
Node Features IE	The option to include or exclude the node features IE in the PGW/GGSN messages
DDN IMSI IE	The option to include or exclude the DDN IMSI IE in the PGW/GGSN messages
DDN FTEID IE	The option to include or exclude the DDN FTEID IE in the PGW/GGSN
Access Point MAC Address IE	The option to cause the ePDG to send the WiFi Access Point MAC address if learned from the IDi format
ARP IE	The option to include or exclude the ARP IE in the PGW/GGSN messages
Paging Priority	The option to include or exclude of the paging and service information IE within a DDN message on an S11 interface
CSG Reporting Action	The option to include or exclude the CSG reporting action IE in GTPv2 messages
Change Reporting Action	The option to include or exclude the change reporting action IE in GTPv2 messages
Signaling Priority	The option to include or exclude the signaling priority indication IE on S5 and S8 interfaces

Label	Description
RAN/NAS Cause IE	The option to include or exclude the RAN/NAS cause IE in the GTPv2 messages
MO Exception Data Counter	The option to include or exclude the MO Exception Data Counter IE in GTPv2 messages
Serving PLMN Rate Control	The option to include or exclude the serving PLMN rate control IE in GTPv2 messages
CN Operator Selection	The option to include or exclude the sending of a CN Operator Selection Entity IE
ULI-Timestamp	The option to include or exclude the sending of a ULI Timestamp IE
TWAN Identifier	The TWAN identifier
TWAN Id Timestamp	The option to include or exclude the TWAN Timestamp ID
Origination Timestamp	The option to include or exclude the Origination Timestamp IE
Maximum Wait Time	The option to include or exclude the Maximum Wait Time IE
LCI	Load Control Indicator IE
OCI	Overload Control Indicator IE
AAA Node Identifier	The option to include or exclude the AAA node identifier IE
non-3gpp-rat-type-pref	The RAT type value that the ePDG sends to the PGW
GTPv2 Node Features	The GTPv2 Node Features context
CIOT	The option to include or exclude the CIOT flag in the Node Features IE
Number of Profiles	The number of profiles being viewed

### Output example: GTP profile statistics

```
A:MAG-c# show mobile-gateway profile gtp "default"
=====
GTP profile
=====
Profile name           : default
Description            : N/A
Msg retransmit timeout-msec: 5000 ms      Msg retransmit retry count : 3
Keep alive interval   : 60 secs          Keep alive retry count    : 4
Keep alive T3 response : 5 secs
IP TTL                : 255                IP DSCP                   : 56

GTPv1 Configurable Cause Code IEs
APN Shutdown Cause Code : 78                Username Missing Cause Code: 70
GW Suspend Cause Code   : 113               Sx MSG Timeout Cause Code : 209

GTPv2 Configurable Cause Code IEs
APN Shutdown Cause Code : 93                Username Missing Cause Code: 70
GW Suspend Cause Code   : 89                Sx MSG Timeout Cause Code : 94
```

```

GTPv1 Configurable IEs
Recovery IE           : Included   NSAPI IE              : Excluded
PCO IE                : Included   Charging GW Addr IE   : Included
Common Flags IE      : Excluded   APN Restriction IE    : Included
BCM IE                : Included

GTPv2 Configurable IEs
PCO IE                : Included   APCO IE               : Included
Node Features IE     : Included   DDN IMSI IE          : Included
DDN FTEID IE        : Included   Access Point MAC address IE: Excluded
ARP IE               : Included   Paging Priority       : Included
CSG Reporting Action : Included   Change Reporting Action : Included
Signaling Priority   : Included   RAN/NAS Cause IE     : Included
MO Exception Data Counter : Excluded   Serving PLMN Rate Control : Excluded
CN Operator Selection : Included   ULI-Timestamp        : Included
TWAN Identifier      : Included   TWAN Id TimeStamp    : Included
Origination Timestamp : Included   Maximum Wait Time    : Included
LCI IE              : Included   OCI IE                : Included
AAA Node Identifier  : Included
UP Selection Indication : Included
non-3gpp-rat-type-pref : wlan

GTPv2 Node Features
CIOT                  : Excluded
-----
Number of profiles : 1
=====

```

## 4.2.32.95 http2

### Syntax

**http2**[*profile-name*]

**http2** *profile-name* **associations**

### Context

[\[Tree\]](#) show mobile-gateway profile http2

### Description

This command displays HTTP/2 profile information.

### Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

**associations**

Keyword to show the references to this profile.

### Output

The following output example shows HTTP/2 profile configuration.

### Output example: HTTP/2 profile

```
A:MAG-c# show mobile-gateway profile http2 "basic"

=====
HTTP/2 profile
=====
Profile Name           : basic

TLS Options
Client TLS Profile    :
Server TLS Profile    :
Strict Validation      :

HTTP/2 Options
Srv Max Streams Allowed : 256          Srv Disable SNI Check      : Disabled

IP Options
IP DSCP                : 56

Connection Timers
Request Timeout (seconds) : 20          Connection Timer (seconds) : 20
Fail Num Retries         : 0              Fail Retry Interval (secs) : 5
Python policy            : N/A

-----
Number of profiles : 1
=====
```

#### 4.2.32.96 list

##### Syntax

list

##### Context

[\[Tree\]](#) show mobile-gateway profile list

##### Description

Commands in this context display information about configured lists.

#### 4.2.32.97 cell-id-list

##### Syntax

cell-id-list *name*

cell-id-list plmn-summary

cell-id-list summary

##### Context

[\[Tree\]](#) show mobile-gateway profile list cell-id-list

## Description

This command displays information about a specific list or all lists of e-UTRAN cell global identification (ECGI) and NR cell global identification (NCGI) values.

## Parameters

*name*

Specifies a list name, up to 32 characters.

**plmn-summary**

Keyword to display an overview of the PLMNs in all configured lists.

**summary**

Keyword to display an overview of all configured lists.

## Output

The following output example shows information about a specific cell ID list configuration.

### Output example: NF list

```
A:MAG-c# show mobile-gateway profile list cell-id-list "example"

=====
E-UTRAN cells
=====
MCC MNC ECI                               Description
-----
001 01  0x00000001..0x00000001           Example ECI
999 999 0x00000002..0x00000002           Internal use ECI
=====

New Radio cells
=====
MCC MNC NCI                               Description
-----
001 01  0x000000001..0x100000000 Example NCI range
=====
```

## 4.2.32.98 nf-id-list

### Syntax

**nf-id-list** [*list-name*]

### Context

[\[Tree\]](#) show mobile-gateway profile list nf-id-list

### Description

This command displays information about configured NF lists.



**Parameters***list-name*

Specifies the NF ID list name, up to 32 characters.

**Output**

The following output example shows NF list configuration.

**Output example: NF list**

```
A:MAG-c# show mobile-gateway profile list nf-id-list "nrfs"
=====
Network Function List(s)
=====
List-Name          : nrfs
NF profile Id      : 1 (enabled)
  Uuid              : ab61220b-f589-40d4-978b-d9c9f5ab742e
  Address List      : nrfs
  Priority           : 65535
  API prefix        : -
  FQDN              :
  Peer selection    : enabled
-----
Number of lists: 1
=====
```

**4.2.32.99 plmn-list****Syntax****plmn-list**[*list-name*]**Context**[\[Tree\]](#) show mobile-gateway profile list plmn-list**Description**

This command displays PLMN list information.

**Parameters***list-name*

Displays information about the specified existing list, up to 32 characters.

**Output**

The following output example shows PLMN List configuration.

**Output example: PLMN list**

```
A:MAG-c# show mobile-gateway profile list plmn-list home_plmn
=====
```

```

PLMN list
=====
List name          MCC   MNC
-----
home_plmn         001   001
-----
Number of lists : 1
=====

```

## 4.2.32.100 prioritized-ip-address-list

### Syntax

**prioritized-ip-address-list**[*list-name*]

### Context

**[Tree]** show mobile-gateway profile list prioritized-ip-address-list

### Description

This command displays prioritized IP address list information.

### Parameters

*list-name*

Specifies the prioritized IP address list name, up to 32 characters.

### Output

The following output example shows a Prioritized IP Address List configuration.

#### Output example: Prioritized IP address list

```

A:MAG-c# show mobile-gateway profile list prioritized-ip-address-list "nrfs"
=====
Prioritized IP Address List(s)
=====
-----
List Name : nrfs
-----
IP Address          Port          Priority
-----
192.168.40.1       80            8

Number of IP Addresses      : 1
-----
Number of IP Address lists : 1
=====

```

### 4.2.32.101 slice-instance-list

#### Syntax

**slice-instance-list**[*list-name*]

#### Context

[\[Tree\]](#) show mobile-gateway profile list slice-instance-list

#### Description

This command displays slice instance list information.

#### Parameters

*list-name*

Specifies the slice instance list name, up to 32 characters.

#### Output

The following output example shows a Slice Instance List.

#### Output example: Slice instance list

```
A:MAG-c# show mobile-gateway profile list slice-instance-list "fwa_slice"
=====
Network Slice Instance List(s)
=====
Slice Instance List      : fwa_slice
-----
Slice Instance              Suspended
-----
fwa_slice                  No
-----
Number of Slice Instances  : 1
-----
Nbr of Slice Instance lists: 1
=====
```

### 4.2.32.102 slice-list

#### Syntax

**slice-list** [*list-name*]

#### Context

[\[Tree\]](#) show mobile-gateway profile list slice-list

## Description

This command displays slice list information.

## Parameters

*list-name*

Specifies the slice list name, up to 32 characters.

## Output

The following output example shows a Slice List.

### Output example: Slice list

```

A:MAG-c# show mobile-gateway profile list slice-list "fwa_slices"

=====
Network Slice List(s)
=====
Slice List           : fwa_slices
-----
Slice Name           : fwa_slice
  Slice Service Type : 1
  Suspended           : No
  Slice Differentiator : 0xcafe01
  Slice Instances     : -

Number of Slices     : 1
-----
Number of Slice lists : 1
=====

```

## 4.2.32.103 tai-list

### Syntax

**tai-list** [*tai-list-name*]

### Context

[\[Tree\]](#) show mobile-gateway profile list tai-list

### Description

This command displays the TAI list profile information.

### Parameters

*tai-list-name*

Displays information about the specified existing TAI list profile, up to 32 characters.

### Output

The following output is an example of TAI list profile information.

**Output example: TAI list profile**

```

A:MAG-c# show mobile-gateway profile list tai-list "example"

=====
TAI List(s)
=====

-----
List Name : example
-----
MCC      MNC      TAC      TAC Range Start      TAC Range End      Priority
-----
001      01      0x000001      0x0000020      0x0000030      N/A
001      01      0x000001      0x0000020      0x0000030      N/A
-----
Number of TAI entries      : 2
-----
Number of TAI lists      : 1
=====

```

**4.2.32.104 n1-profile****Syntax**

**n1-profile** *profile-name*

**Context**

[\[Tree\]](#) show mobile-gateway profile n1-profile

**Description**

This command displays the N1 profile.

**Parameters**

*profile-name*

Specifies the N1 profile name, up to 32 characters.

**Output**

The following output example shows the profile information for the default N1 profile.

**Output example: N1 profile output**

```

A:MAG-c>config>mobile>profile# show mobile-gateway profile n1-profile "default"

=====
N1 profile
=====
Profile Name      : default
n1-t3591 (deciseconds) : 160      n1-t3592 (deciseconds) : 160
n1-t3591 retry count   : 4        n1-t3592 retry count   : 4
Cause Codes

```

```

APN Shutdown
  5GSM Cause Code      : 8
  HTTP Status Code     : 403
  Application Error     : DNN_NOT_SUPPORTED

DNN Subscription Removed
  5GSM Cause Code      : 29

GW Suspend
  5GSM Cause Code      : 8
  HTTP Status Code     : 500
  Application Error     : NF_FAILOVER
-----
Number of N1 profiles : 1
=====

```

### 4.2.32.105 node-selection

#### Syntax

**node-selection**

#### Context

[\[Tree\]](#) show mobile-gateway profile node-selection

#### Description

Commands in this context display node selection information.

### 4.2.32.106 client-profile

#### Syntax

**client-profile** [*profile-name*]

#### Context

[\[Tree\]](#) show mobile-gateway profile node-selection client-profile

#### Description

This command displays client profile information.

#### Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

#### Output

The following output example shows the client profile information.

## Output example

```
A:MAG-c# show mobile-gateway profile node-selection client-profile
=====
Client profile
=====
Profile name           : client_profile1
Description            : -
Default action
  Target profile       : default_prof

  Entry id             : 1
  Description          : -
  Action
    Target profile     : target_prof_0
  Match criteria
    TAI LAI list       : tai_list_0
    APN(s)
      "apn1"

  Entry id             : 2
  Description          : -
  Action
    Target profile     : target_prof_3
  Match criteria
    TAI LAI list       : tai_list_3
    APN(s)
      "apn2"

-----
Number of Client profiles : 1
=====
```

### 4.2.32.107 group-label

#### Syntax

**group-label** [*profile-name*]

#### Context

[\[Tree\]](#) show mobile-gateway profile node-selection group-label

#### Description

This command displays group label information.

#### Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

#### Output

The following output example shows the group label information.

## Output example

```
A:MAG-c# show mobile-gateway profile node-selection group-label

=====
node selection group lable profile
=====
Profile name           : label_0
Description            : (Not Specified)
-----
Profile name           : label_1
Description            : (Not Specified)
-----
Number of policies    : 2
=====
```

### 4.2.32.108 target-profile

#### Syntax

**target-profile** [*profile-name*]

#### Context

[\[Tree\]](#) show mobile-gateway profile node-selection target-profile

#### Description

This command displays target profile information.

#### Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

#### Output

The following output example shows the target profile information.

#### Output example

```
A:MAG-c# show mobile-gateway profile node-selection target-profile

=====
Target Profile
=====
Profile Name           : target_prof_tail
Description            : -
Default Action
  Reject               : disabled

  Entry Id             : 1
  Description          : -
  Threshold            : 3
  Match Criteria
    Apn                : -
    Group(s)           : -
```



```

      site1
    Action
      Reject          : disabled

    Entry Id         : 2
    Description      : -
    Threshold        : 2
    Match Criteria
      Apn             : -
      Group(s)
        site2
    Action
      Reject          : disabled

  Statistics
    UP Peer          : 30.0.1.29
      Primary        : Y
      Available      : Y
      Number Of Sessions : 0
      Load           : 0 %

    UP Peer          : 30.0.1.54
      Primary        : Y
      Available      : Y
      Number Of Sessions : 10
      Load           : 2 %

    UP Peer          : 30.0.1.68
      Primary        : N
      Available      : Y
      Number Of Sessions : 0
      Load           : 0 %

    UP Peer          : 30.0.1.124
      Primary        : Y
      Available      : Y
      Number Of Sessions : 10
      Load           : 2 %

-----
Number of Target Profiles : 1
=====

```

#### 4.2.32.109 pcf-profile

##### Syntax

**pcf-profile** *profile-name*

##### Context

**[Tree]** show mobile-gateway profile pcf-profile

##### Description

This command displays the configuration information of the specified PCF profile.

## Parameters

*profile-name*

Specifies the PCF profile to display, up to 32 characters.

## Output

The following output example shows PCF association peer list profile information.

### Output example: PCF profile

```
A:MAG-c# show mobile-gateway profile pcf-profile "default"

=====
Pcf profile
=====
Profile name           : default

Failure Handling:
fh-volume-limit (kbytes) : 0           fh-time-limit (minutes) : 0
fh-session-no-response  : terminate  ap-action-profile-no-resp :
npcf-error-mapping-profile :
ap-action               : none
supported-vendor        : none

Supported Features:
adc                     : disabled   sponsored-connectivity   : disabled
netloc                  : disabled   umc                      : disabled
tsc                     : disabled   prov-af-signal-flow     : disabled
pcscf-restoration      : disabled   pra                      : disabled
policy-update-when-ue-susp*: disabled session-rule-error-handling: disabled
eps-fallback-report     : disabled   pdu-session-rel-cause   : disabled
policy-decision-error-hand*: disabled resp-based-session-rel   : disabled
af-charging-id         : disabled
unlimited-multi-ipv6-prefix: disabled
-----
Number of profiles : 1
=====
* indicates that the corresponding row element may have been truncated.
```

## 4.2.32.110 pfcpc

### Syntax

**pfcpc**

### Context

[\[Tree\]](#) show mobile-gateway profile pfcpc

### Description

Commands in this context display PFCPC profile information.

## 4.2.32.111 pfcf-association-peer-list

### Syntax

```
pfcf-association-peer-list [profile-name]
```

### Context

[\[Tree\]](#) show mobile-gateway profile pfcf pfcf-association-peer-list

### Description

This command displays PFCF association peer list profile information.

### Parameters

*profile-name*

Displays information about the specified existing profile, up to 32 characters.

### Output

The following output example shows PFCF association peer list profile information.

#### Output example: PFCF association peer list profile

```
A:MAG-c# show mobile-gateway profile pfcf pfcf-association-peer-list
=====
PFCF association peer list profile
=====
Profile name           : pfcfAPList1
Description            : Test List
Node ID               : 310.150.PGW.1.1.1
  BFD                 : Disabled
  Partial Failure     : Enabled
  UE IP Allocation    : Disabled
  Peer [Port]         : 33.34.1.1 [8001]
  Peer [Port]         : 3ffe::2122:101 [8005]
Node ID               : 510.180.PGW.1.1.2
  BFD                 : Disabled
  Partial Failure     : Disabled
  UE IP Allocation    : Disabled
  Peer                : 33.34.1.2
  Peer                : 3ffe::2122:102
-----
Number of PFCF-peers : 4
-----
Number of profiles   : 1
=====
```

## 4.2.32.112 pfcf-profile

### Syntax

```
pfcf-profile [profile-name]
```

## Context

[\[Tree\]](#) show mobile-gateway profile pfcf pfcf-profile

## Description

This command displays PFCF profile information.

## Parameters

*profile-name*

Displays information about the specified existing profile, up to 32 characters.

## Output

[PFCF profile](#) shows an example of PFCF profile information and [Table 7: Show mobile profile PFCF output fields](#) describes the output fields.

*Table 7: Show mobile profile PFCF output fields*

Label	Description
Profile name	The name of the PFCF profile
Description	The description of the PFCF profile
Msg retransmit timeout	The time, in seconds, that the PFCF waits before resending a message if there is no response to an initial message
Msg retransmit retry count	The number of times the PFCF attempts to send a message
Heartbeat timeout	The heartbeat timeout interval, in seconds
Heartbeat retry count	The heartbeat retry count
Heartbeat response	The heartbeat response, in seconds
IP TTL	The IP TTL value used for PFCF signaling messages
IP DSCP	The DSCP value in the IP Header used for PFCF signaling messages
Association Retry Time	The association retry time
PDI Optimization	The PDI optimization status
PFCF-u Shared Tunnel Re-attempt Timer	The configured value of the re-attempt timer for failed PFCF-u tunnel session establishment between the CP function and the UP function, when ICMPv6 RS/RA and NS/NA message handling is enabled for the CP function
LCI IE	LCI information to be included or excluded
OCI IE	OCI information to be included or excluded
Number of profiles	The number of profiles retrieved

### Output example: PFCP profile

```

A:MAG-c# show mobile-gateway profile pfcf pfcf-profile
=====
PFCF profile
=====
Profile name           : pfcf_prof_1
Description            : N/A
Msg retransmit timeout : 5 secs      Msg retransmit retry count : 3
Heartbeat timeout     : 5 secs      Heartbeat retry count     : 4
Heartbeat response    : 60 secs
IP TTL                 : 255          IP DSCP                    : 56
Association Retry Time : 10 secs
PDI Optimization      : enabled

PFCF Configurable IEs
LCI IE                 : Included/Excluded      OCI IE: Included/Excluded
PFCF-u Shared Tunnel  :
Re-attempt timer      : 600 secs
-----
Number of profiles : 1
=====

```

#### 4.2.32.113 pfcf-translate-profile

##### Syntax

**pfcf-translate-profile** [*profile-name*]

##### Context

[\[Tree\]](#) show mobile-gateway profile pfcf pfcf-translate-profile

##### Description

This command displays PFCF translation profile information.

##### Parameters

*profile-name*

Displays information about the specified existing profile, up to 32 characters.

#### 4.2.32.114 up-peer-list

##### Syntax

**up-peer-list** [*profile-name*]

##### Context

[\[Tree\]](#) show mobile-gateway profile pfcf up-peer-list

## Description

This command displays user plane peer list profile information.

## Parameters

*profile-name*

Displays information about the specified existing profile, up to 32 characters.

## Output

[UP peer list profile](#) shows an example of UP peer list profile information and [Table 8: Show mobile profile PFCP UP peer list output fields](#) describes the output fields.

Table 8: Show mobile profile PFCP UP peer list output fields

Label	Description
Profile name	The name of the UP peer list
Peer	IPv4 or IPv6 address of the UP peer list peer
UPF Selection	The peer selection status is allowed (True) or not allowed (False)
upf-id	The UPF ID used by the SMF in charging records to report charging information over the Nchf SBI, to allocate quota and report usage per UPF Configured locally per peer, but is overridden by the UPF ID received in the NRF discovery, if NRF is used
Block	The blocking state of the UP peer according to the block configuration. "True" is displayed when the peer is blocked at the APN level or when all the APN prefixes for this peer are blocked
EPS interworking	The EPS interworking is enabled or disabled
Slice	The slice specifies the network slice name associated with the user plane peer

## Output example: UP peer list profile

```
A:MAG-c# show mobile-gateway profile pfc up-peer-list "listTest"
=====
UP peer list profile
=====
-----
Profile name       : listTest
Description        : N/A
-----
Peer              : 1.2.3.4
UPF Selection      : True
upf-id            : -

APN               : test
tai-lai-list      : TaiLaiListTest
Block             : true
EPS interworking   : Enabled
Slice             : (Not Specified)
```

```

-----
Number of profiles : 1
=====

A:MAG-c# show mobile-gateway profile pfcg up-peer-list "up_peer_list1"
=====
UP peer list profile
=====
-----
Profile name : up_peer_list1
Description : N/A
-----
Peer : 100.16.16.16
UPF Selection : True
upf-id : 2c341340-0f10-11ef-8cde-aa67a1e3f7e7

APN : internet.apn1
Block : False
All IP Prefixes blocked : False

APN : internet.apn1.mnc001.mcc206.gprs
Block : False
All IP Prefixes blocked : False

APN : bb4.home
Block : False
All IP Prefixes blocked : False

Peer : 30.0.1.63
UPF Selection : True
upf-id : 2c0d1a9c-0f10-11ef-8cde-aa67a1e3f7e7
-----
Number of profiles : 1
=====

```

### 4.2.32.115 policy-options

#### Syntax

**policy-options**

#### Context

[\[Tree\]](#) show mobile-gateway profile policy-options

#### Description

Commands in this context display mobile gateway policy information.

### 4.2.32.116 action-rule-unit

#### Syntax

**action-rule-unit** [*aru-name*]

## Context

[\[Tree\]](#) show mobile-gateway profile policy-options action-rule-unit

## Description

This command displays ARU information.

## Parameters

**[aru-name]**

Specifies an existing ARU name, up to 32 characters, configured using the following command.

```
configure mobile-gateway profile policy-options action-rule-unit
```

## Output

The following output examples display ARU information.

### Output example: Information for a specified ARU profile

```
A:MAG-c# show mobile-gateway profile policy-options action-rule-unit "aru1"
=====
Action Rule Unit profile
=====
Profile name       : aru1
Custom PCO        : none
Disable UBR signaling: no
Gy filter-id action : none

App profile       : testAppProfile
aa-notify-action  : none
In use            : yes           Reference count      : 1

Total Number of Action Rule Unit profiles: 1
=====
```

### Output example: Information for all ARU profiles

```
A:MAG-c# show mobile-gateway profile policy-options action-rule-unit
=====
Action Rule Unit profile
=====
Profile name       : aru1

Custom PCO        : none
Disable UBR signaling: no
Gy filter-id action : none

App profile       : testAppProfile
aa-notify-action  : none
In use            : yes           Reference count      : 1

Profile name       : aru2
Custom PCO        : none
Disable UBR signaling: no
Gy filter-id action : none
```



```

App profile          : testAppProfile2
aa-notify-action    : none
In use              : yes                Reference count      : 1

Total Number of Action Rule Unit profiles: 2
=====

```

## 4.2.32.117 qci-policy

### Syntax

```
qci-policy policy-name
```

### Context

[\[Tree\]](#) show mobile-gateway profile policy-options qci-policy

### Description

This command displays the configuration information of the specified QCI Policy.

### Parameters

*policy-name*

Specifies the QCI Policy to display, up to 32 characters.

### Output

The following output example shows QCI Policy configuration.

#### Output example: QCI Policy configuration

```
A:MAG-c# show mobile-gateway profile policy-options qci-policy "default"
```

```
=====
QCI policy
=====
```

```

Policy rule name      : default
Description           : N/A
QCI                   : 1           ARP                       : *
In-profile DSCP       : nc2         Out-profile DSCP      : nc2
DSCP preserve        : enabled     FC                     : nc
Profile               : None
QCI                   : 2           ARP                       : *
In-profile DSCP       : ef          Out-profile DSCP      : ef
DSCP preserve        : enabled     FC                     : ef
Profile               : None
QCI                   : 3           ARP                       : *
In-profile DSCP       : af41        Out-profile DSCP      : af42
DSCP preserve        : enabled     FC                     : h2
Profile               : None
QCI                   : 4           ARP                       : *
In-profile DSCP       : nc1         Out-profile DSCP      : nc1
DSCP preserve        : enabled     FC                     : h1
Profile               : None
QCI                   : 5           ARP                       : *
In-profile DSCP       : af21        Out-profile DSCP      : af22

```

```

DSCP preserve      : enabled   FC                : l1
Profile           : None
QCI               : 6          ARP                : *
In-profile DSCP   : af11      Out-profile DSCP  : af12
DSCP preserve     : enabled   FC                : af
Profile           : None
QCI               : 7          ARP                : *
In-profile DSCP   : af11      Out-profile DSCP  : af12
DSCP preserve     : enabled   FC                : af
Profile           : None
QCI               : 8          ARP                : *
In-profile DSCP   : cs1       Out-profile DSCP  : cs1
DSCP preserve     : enabled   FC                : l2
Profile           : None
QCI               : 9          ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 10         ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 11         ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 12         ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 13         ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 14         ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 15         ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 16         ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 17         ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 18         ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 19         ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 20         ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 21         ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be

```

```

DSCP preserve           : enabled   FC           : be
Profile                : None
QCI                    : 22         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 23         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 24         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 25         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 26         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 27         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 28         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 29         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 30         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 31         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 32         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 33         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 34         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 35         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 36         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 37         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be

```

```

DSCP preserve      : enabled   FC                : be
Profile           : None
QCI               : 38         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 39         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 40         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 41         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 42         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 43         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 44         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 45         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 46         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 47         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 48         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 49         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 50         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 51         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 52         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 53         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be

```

```

DSCP preserve      : enabled   FC                : be
Profile           : None
QCI               : 54         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 55         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 56         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 57         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 58         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 59         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 60         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 61         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 62         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 63         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 64         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 65         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 66         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 67         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 68         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 69         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be

```

```

DSCP preserve           : enabled   FC           : be
Profile                : None
QCI                    : 70         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 71         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 72         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 73         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 74         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 75         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 76         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 77         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 78         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 79         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 80         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 81         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 82         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 83         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 84         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 85         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be

```

```

DSCP preserve      : enabled   FC                : be
Profile           : None
QCI               : 86         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 87         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 88         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 89         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 90         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 91         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 92         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 93         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 94         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 95         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 96         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 97         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 98         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 99         ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 100        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 101        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be

```

```

DSCP preserve           : enabled   FC           : be
Profile                : None
QCI                    : 102        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 103        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 104        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 105        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 106        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 107        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 108        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 109        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 110       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 111       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 112       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 113       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 114       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 115       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 116       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 117       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be

```



```

DSCP preserve           : enabled   FC           : be
Profile                : None
QCI                    : 118       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 119       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 120       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 121       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 122       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 123       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 124       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 125       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 126       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 127       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 128       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 129       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 130       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 131       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 132       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 133       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be

```

```

DSCP preserve           : enabled   FC           : be
Profile                : None
QCI                    : 134        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 135        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 136        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 137        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 138        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 139        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 140        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 141        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 142        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 143        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 144        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 145        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 146        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 147        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 148        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 149        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be

```

```

DSCP preserve           : enabled   FC           : be
Profile                : None
QCI                    : 150        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 151        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 152        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 153        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 154        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 155        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 156        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 157        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 158        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 159        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 160        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 161        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 162        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 163        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 164        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 165        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be

```

```

DSCP preserve           : enabled   FC           : be
Profile                : None
QCI                    : 166       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 167       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 168       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 169       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 170       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 171       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 172       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 173       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 174       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 175       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 176       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 177       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 178       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 179       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 180       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve          : enabled   FC           : be
Profile                : None
QCI                    : 181       ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be

```

```

DSCP preserve           : enabled   FC           : be
Profile                : None
QCI                    : 182        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 183        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 184        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 185        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 186        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 187        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 188        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 189        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 190        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 191        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 192        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 193        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 194        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 195        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 196        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 197        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be

```

```

DSCP preserve           : enabled   FC           : be
Profile                : None
QCI                    : 198         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 199         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 200         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 201         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 202         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 203         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 204         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 205         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 206         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 207         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 208         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 209         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 210         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 211         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 212         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 213         ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be

```

```

DSCP preserve           : enabled   FC           : be
Profile                : None
QCI                    : 214        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 215        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 216        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 217        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 218        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 219        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 220        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 221        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 222        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 223        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 224        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 225        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 226        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 227        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 228        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be
DSCP preserve         : enabled   FC           : be
Profile                : None
QCI                    : 229        ARP           : *
In-profile DSCP        : be         Out-profile DSCP : be

```

```

DSCP preserve      : enabled   FC                : be
Profile           : None
QCI               : 230        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 231        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 232        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 233        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 234        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 235        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 236        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 237        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 238        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 239        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 240        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 241        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 242        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 243        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 244        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 245        ARP                : *
In-profile DSCP   : be         Out-profile DSCP  : be

```



```

DSCP preserve      : enabled   FC                : be
Profile           : None
QCI               : 246       ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 247       ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 248       ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 249       ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 250       ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 251       ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 252       ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 253       ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 254       ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None
QCI               : 255       ARP                : *
In-profile DSCP   : be        Out-profile DSCP  : be
DSCP preserve     : enabled   FC                : be
Profile           : None

```

```
-----
Number of policies : 1
```

```
Note: ARP * indicates wildcard arp and maps to arp value 0 in SNMP.
```

### 4.2.32.118 qfi-mapping-profile

#### Syntax

```
qfi-mapping-profile [profile-name]
```

#### Context

```
[Tree] show mobile-gateway profile qfi-mapping-profile
```

#### Description

This command displays the contents of the specified QFI mapping profile.

**Parameters***profile-name*

Specifies the name of the QFI mapping profile.

**Output**

The following output example shows a QFI Mapping Profile.

**Output example: QFI mapping profile**

```

A:MAG-c# show mobile-gateway profile qfi-mapping-profile "basic"
=====
Qfi Mapping Profile
=====
Profile-Name          : basic
5qi-as-qfi           : disabled

Dynamic-mapping
qnc                  : disabled      average-window       : disabled
priority-level       : disabled      max-data-burst-vol   : disabled

Static-mapping
-----
Number of Qfi-Mapping-Profile : 1
=====

```

**4.2.32.119 qos-5g-profile****Syntax****qos-5g-profile** *profile-name***Context**[\[Tree\]](#) show mobile-gateway profile qos-5g-profile**Description**

This command displays the 5G QoS profile.

**Parameters***profile-name*

Specifies the 5G QoS profile name, up to 32 characters.

**Output**

The following output example shows the profile information for a 5G QoS profile with default values.

**Output example: 5G QoS profile output**

```

A:MAG-c>config>mobile>profile>qos-5g-profile# show mobile-gateway profile qos-5g-profile
"example"

```

```

=====
5G Qos profile
=====
Profile name          : example
5qi                  : 0          arp                  : 0
ul-ambr (kbps)      : 0          dl-ambr (kbps)       : 0

Number of profiles : 1
=====

```

#### 4.2.32.120 qos-profile

##### Syntax

**qos-profile** [*profile-name*]

##### Context

[\[Tree\]](#) show mobile-gateway profile qos-profile

##### Description

This command is used to display the contents of the specified QoS profile.

##### Parameters

*profile-name*

Specifies the name of the QoS profile, up to 32 characters.

##### Output

The following output example shows QoS profile information.

##### Output example: QoS profile

```

A:MAG-c# show mobile-gateway profile qos-profile "qosProf1"
=====
Qos profile
=====
Profile name          : qosProf1
qci                  : 9          arp                  : 11
ul-ambr              : 5000000 kb* dl-ambr            : 6000000 kb*
-----
Number of profiles : 1
=====

```

#### 4.2.32.121 radius

##### Syntax

**radius** [*profile-name*]

**Context**

[\[Tree\]](#) show mobile-gateway profile radius

**Description**

This command displays RADIUS profile information.

**Parameters**

*profile-name*

Displays information about the specified existing RADIUS profile, up to 32 characters.

**Output**

The following output example shows RADIUS profile information.

**Output example: RADIUS profile**

```
A:MAG-c# show mobile-gateway profile radius
=====
Radius profile
=====
Profile name           : default
Description            : N/A
Auth Prob Interval    : 0 secs      Server Dead Time      : 300 secs
Auth Retry Timeout    : 4 secs      Auth Retry Count      : 3
Acct Retry Timeout    : 4 secs      Acct Retry Count      : 3
Apn Acct On/Off Init Intrvl: 0          Apn Acct On Retry Interval : 0
Max Peer Reselections Count: 3
NAS Port Type         : 15
-----
Number of Radius profiles : 1
=====
```

**4.2.32.122 radius-group****Syntax**

**radius-group** [*radius-group-name*]

**Context**

[\[Tree\]](#) show mobile-gateway profile radius-group

**Description**

This command displays RADIUS group information.

**Parameters**

*radius-group-name*

Displays information about the specified existing RADIUS group, up to 32 characters.

## Output

The following output example shows RADIUS group information.

### Output example: RADIUS group profile

```
A:MAG-c# show mobile-gateway profile radius-group "Radius Group"
=====
Radius Group profile
=====
Group name           : Radius Group
Description          : acctAuthBasic
Interface            : pgwicr-ra* Router           : vprn20005
Auth Server Port    : 1812      Acct Server Port      : 1813
Interim Update Interval : disabled  Server Type           : both
Radius Profile      : Profile1 Ignore Acct Resp   : disabled
Transaction Based LB : disabled
Use Acct-interim-avp-optio*: enabled      Use Disconnect-ack-avp-opt*: enabled
Use Disconnect-nak-avp-opt*: enabled
Limit User Name Length : enabled

via-up-function
APN                  : Nokia
up-peer-ip-address  : 0.0.0.0

radius-avp-options
-----
service-type        : include   framed-protocol      : include
calling-station-id  : include   nas-port-type        : include
acct-delay-time     : exclude   acct-authentic       : include
3gpp-imsi           : include   3gpp-charging-Id    : include
3gpp-pdp-type       : include   3gpp-gprs-negotiated-qos-p*: include
3gpp-sgsn-address   : include   3gpp-ggsn-address   : include
3gpp-imsi-mcc-mnc   : exclude   3gpp-ggsn-mcc-mnc   : include
3gpp-nsapi          : include   3gpp-session-stop-indicator: include
3gpp-selection-mode : include   3gpp-charging-characterist*: include
3gpp-sgsn-ipv6-address : include  3gpp-ggsn-ipv6-address : include
3gpp-sgsn-mcc-mnc   : include   3gpp-imeisv         : include
3gpp-rat-type       : include   3gpp-user-location-info : include
3gpp-ms-timezone    : include   served-mdn          : exclude
alc-subsc-id-str    : exclude   alc-subsc-prof-str   : exclude
alc-sla-prof-str    : exclude   nas-port-id         : exclude
acct-session-id     : include   event-timestamp     : exclude
user-name           : include
nas-identifier      : exclude   class                : exclude
framed-ip-address   : include   framed-ip-netmask    : include
framed-ipv6-prefix  : include   framed-interface-id  : exclude
acct-session-time   : include
acct-input-gigawords : include   acct-output-gigawords : include
acct-input-octets   : include   acct-output-octets    : include
acct-input-packets  : exclude   acct-output-packets   : exclude
called-station-id-apn-in-o*: include
acct-session-id-in-on-off-*: include
called-station-id   : include   3gpp-allocate-ip-type : include

acct-interim-avp-options
-----
service-type        : exclude   framed-protocol      : exclude
calling-station-id  : include   nas-port-type        : include
acct-delay-time     : exclude   acct-authentic       : exclude
3gpp-imsi           : include   3gpp-charging-Id    : include
3gpp-pdp-type       : include   3gpp-gprs-negotiated-qos-p*: include
```

```

3gpp-sgsn-address      : include    3gpp-ggsn-address      : include
3gpp-imsi-mcc-mnc     : exclude   3gpp-ggsn-mcc-mnc     : exclude
3gpp-nsapi            : include
3gpp-selection-mode   : include    3gpp-charging-characterist*: include
3gpp-sgsn-ipv6-address : exclude   3gpp-ggsn-ipv6-address : exclude
3gpp-sgsn-mcc-mnc     : exclude   3gpp-imeisv           : exclude
3gpp-rat-type         : exclude   3gpp-user-location-info : exclude
3gpp-ms-timezone      : exclude   nas-port-id           : exclude
user-name             : include    event-timestamp       : exclude
nas-identifier        : exclude    class                 : exclude
nas-ip-address        : include    nas-ipv6-address      : exclude
framed-ip-address     : include
framed-ipv6-prefix    : include    framed-interface-id   : exclude
acct-session-time     : include
acct-input-gigawords  : include    acct-output-gigawords  : include
acct-input-octets     : include    acct-output-octets     : include
acct-input-packets    : exclude    acct-output-packets    : exclude
called-station-id    : include

disconnect-ack-avp-options
-----
proxy-state           : include    acct-terminate-cause   : include
event-timestamp       : include

disconnect-nak-avp-options
-----
proxy-state           : include    error-cause            : include

Peer Address          : 10.23.12.2
Priority               : 3          Radius Profile          : Profile1
Auth Server Port      : 1812      Acct Server Port       : 1813
Admin State           : up          Failure Detection Time  : 10 secs

Peer Address          : 10.23.14.2
Priority               : 2          Radius Profile          : Profile1
Auth Server Port      : 1812      Acct Server Port       : 1813
Admin State           : up          Failure Detection Time  : 10 secs

Peer Address          : 10.23.11.2
Priority               : 1          Radius Profile          : Profile1
Auth Server Port      : 1812      Acct Server Port       : 1813
Admin State           : up          Failure Detection Time  : 10 secs
-----
Number of Radius Groups: 1
=====
* indicates that the corresponding row element may have been truncated.

```

### 4.2.32.123 sbi-error-mapping-profile

#### Syntax

**sbi-error-mapping-profile** *profile-name*

#### Context

[\[Tree\]](#) show mobile-gateway profile sbi-error-mapping-profile

#### Description

This command displays the SBI error mapping profile.

## Parameters

*profile-name*

Specifies the profile name, up to 32 characters.

## Output

The following output example shows the profile information for an SBI error mapping profile with default values.

### Output example: SBI error mapping profile output

```
A:MAG-c>config>mobile>profile>sbi-error-mapping# show mobile-gateway profile sbi-error-
mapping-profile "example"

=====
Sbi Error Mapping profile
=====
Profile                : example

http-to-gtp (http-status, app-error)      : gtp-code

http-to-5gsm (http-status, app-error)     : 5gsm-code
-----
Number of profiles : 1
=====
```

## 4.2.32.124 udm-sdm-profile

### Syntax

**udm-sdm-profile** *profile-name*

### Context

[\[Tree\]](#) show mobile-gateway profile udm-sdm-profile

### Description

This command displays configuration information of the specified UDM SDM Profile.

### Parameters

*profile-name*

Specifies the UDM SDM profile to display, up to 32 characters.

### Output

The following output example shows UDM SDM profile configuration.

### Output example: UDM SDM profile configuration output

```
A:MAG-c# show mobile-gateway profile udm-sdm-profile "default"

=====
UDM SDM Profile(s)
=====
```

```

Profile name           : default
max-peer-failover     : 2
retry-count           : 3
transaction-timer(ms) : 5000

get-sm-subscription-data
  retry-count         : 3
  transaction-timer(ms) : 5000

create-subscription
  retry-count         : 3
  transaction-timer(ms) : 5000

```

```

-----
Number of profiles: 1
=====

```

### 4.2.32.125 udm-uecm-profile

#### Syntax

```
udm-uecm-profile profile-name
```

#### Context

[\[Tree\]](#) show mobile-gateway profile udm-uecm-profile

#### Description

This command displays the configuration information of the specified UDM UECM Profile.

#### Parameters

*profile-name*

Specifies the UDM UECM profile to display, up to 32 characters.

#### Output

The following output example shows UDM UECM profile configuration.

#### Output example: UDM UECM profile configuration output

```

A:MAG-c# show mobile-gateway profile udm-uecm-profile "default"

=====
UDM UECM Profile(s)
=====
Profile name           : default
max-peer-failover     : 2
retry-count           : 3
transaction-timer(ms) : 5000

register-smf
  retry-count         : 3
  transaction-timer(ms) : 5000

-----
Number of profiles: 1

```



---

## 4.2.32.126 system

### Syntax

```
system [card slot-number] [summary] [vm vm-id]  
system cdbx-redundancy  
system call-insight  
system gateway gw-id [summary]  
system group group-number [summary]
```

### Context

[\[Tree\]](#) show mobile-gateway system

### Description

This command displays mobile gateway system information.

### Parameters

#### *slot-number*

Specifies the slot number.

Values: 1 to 20 | A | B

#### **summary**

Keyword to display aggregated statistics at the per-peer level.

#### *vm-id*

Specifies the VM ID.

Values: 1 to 20 | A | B

#### **cdbx-redundancy**

Keyword to display the active/standby state of the cloud database peer and the synchronization state of the database instances.

#### **call-insight**

Keyword to display global call-insight settings.

#### *gw-id*

Specifies the gateway ID.

Values: 1 to 8

#### *group-number*

Specifies the group number.

Values: 1 to 15

## Output

The following output examples display system information and [Table 9: Show mobile gateway system information](#) describes the output fields.

- [System information \(one-to-one redundancy\)](#)
- [System information \(many-to-many redundancy\)](#)
- [Database redundancy status and synchronization states of the database instances](#)

*Table 9: Show mobile gateway system information*

Label	Description
Use-fixed-udp-src-port	Indicates if a fixed UDP source port is used Enabled or disabled (default)
Ue-fragmented-packets-handling	Indicates if the IP packet reassembly of the user-level traffic for packet classification is used Enabled or disabled (default)
ttc-accuracy	TTC accuracy optimization
GTP-U Source Port Dist	Selects a UDP source port for GTP-U packets
Gateway	Gateway ID
Instance type	UP node (UPF/SGW-U/PGW-U, combined SGW-U/PGW-U) or CP node (SMF/SGW-C/PGW-C, combined SGW-C/PGW-C)
Admin State	Administrative state of the gateway or the group (Up or Down)
Oper State	Operational state of the gateway (Up or Down) or the group (Up, Down, in transition, and scale-in in progress)
Suspend	Indicates if the gateway is in a suspended state, in which it does not accept new sessions, but continues to support call-flow on existing sessions
Suspend since	Time at which the gateway was suspended
Restart counter	Restart counter value
EPC Node	EPC node name; up to 31 characters; format:: <MCC>.<MNC>.<SGW PGW ePDG TWAG>.<Region String>.<Group Id>.<Node Id>
AA-grp/Part-id	AA group/partition ID assigned to the mobile-gateway system
Def app profile	Default AA application profile assigned to the mobile-gateway system
parent-ctl-cc-na	Optional parental control ASO charging characteristic name, when the AA group and the default application profile are configured
Admin Uptime	Time at which the gateway became administratively up
Gateway Uptime	Time at which the gateway became operationally up

Label	Description
PFCP Recover Time	Time of the PFCP recovery
Group	Mobile-gateway system group number
Override profile	Indicates if an override profile is configured for each group for GTP-U redirection
Group Uptime	Time at which the group became operationally up
Red State	Redundancy state (Hot or Cold)
Switch over count	Indicates for the group, the number of switchovers (active to standby) for each transition of the VM or card
Switch over time	Time of the last switchover
Switch over state	State of the switchover
Resource pool	Resource pool assigned to the group; it defines the VM resources (cards) and the redundancy method used for the group
Redundancy	Possible values: <ul style="list-style-type: none"> <li>many-to-many (m active VMs are configured to have n standby or spares to provide hot redundancy)</li> <li>one-to-one (each group is configured to provide hot redundancy per VM or card)</li> </ul>
PCMD Profile	Indicates if the group inherits the PCMD profile: <ul style="list-style-type: none"> <li>inherit — the PCMD profile configured in the <b>config mobile profile pcmd</b> context is applied to the group</li> <li>none — PCMD records are not generated for this group</li> </ul>
PCMD Oper state	Operational state of the PCMD (up or down)
Card/VM	Card or VM slot number
Role/Red state	Indicates whether the VM or card is in the working/active or protect/standby state

### Output example: System information (one-to-one redundancy)

```
A:MAG-c# show mobile-gateway system
=====
Mobile gateway system
=====
Use-fixed-udp-src-port : Disabled
Ue-fragmented-packets-handling : Disabled
ttc-accuracy : false
GTP-U Source Port Dist : Disabled
-----
Gateway : 1 Instance-type : None
Admin State : Down Oper state : Down
Suspended : No Suspended Since : N/A
Restart counter : N/A EPC Node :
Aa-grp/Part-id : 0/0 Def app profile :
```

```

parent-ctl-cc-na*:
Admin Uptime : N/A Gateway Uptime : N/A
-----
Number of gateways : 1
=====
* indicates that the corresponding row element may have been truncated.

```

### Output example: System information (many-to-many redundancy)

```

A:MAG-c# show mobile-gateway system

=====
Mobile gateway system
=====
Gateway          : 1                Instance-type    : control
Admin State      : Up                Oper state      : Up
Suspended        : No                Suspended Since : N/A
Restart counter  : 39                EPC Node       : 206.01.pgw.antwerp.*
Aa-grp/Part-id   : 0/0              Def app profile :
parent-ctl-cc-na*:
Admin Uptime     : 09/25/2024 11:31:08 Gateway Uptime  : 09/25/2024 11:31:08
PCFP Recover Time: 09/25/2024 11:29:42 UTC 3936252582#

Resource Pool    : 1                Redundancy       : many-to-many
-----
Card/VM          Red State          Group
-----
1/3              standby            N/A
1/4              active             2
1/5              standby            N/A
1/6              active             1
1/7              standby            N/A
1/8              active             3
-----

Group           : 1
Admin State     : Up                Oper state      : Up
Group Uptime    : 09/25/2024 11:45:02
Switch over count: 1                Switch over time : 09/25/2024 11:45:02
Graceful SWO   : N/A
Resource Pool   : 1                Oper Redundancy : many-to-many

Group           : 2
Admin State     : Up                Oper state      : Up
Group Uptime    : 09/25/2024 11:31:08
Switch over count: 0                Switch over time : N/A
Graceful SWO   : N/A
Resource Pool   : 1                Oper Redundancy : many-to-many

Group           : 3
Admin State     : Up                Oper state      : Up
Group Uptime    : 09/25/2024 11:45:02
Switch over count: 2                Switch over time : 09/25/2024 11:45:02
Graceful SWO   : N/A
Resource Pool   : 1                Oper Redundancy : many-to-many
-----
Number of gateways : 1
=====
* indicates that the corresponding row element may have been truncated.
# indicates the number of seconds elapsed from epoch January 1 1900.

```

## Output example: Database redundancy status and synchronization states of the database instances

```
A:MAG-c# show mobile-gateway system cdbx-redundancy

=====
Database redundancy status
=====
Redundancy role      : active
Status               : up
IP address           : 10.10.10.1

Redundancy role      : standby
Status               : up
IP address           : 10.10.10.2

-----
Database instances
-----
Database instance    : 1
State                 : Hot
Last replication time : 01/01/2024 12:00:00
Replication ratio     : 100%

Database instance    : 2
State                 : Hot
Last replication time : 01/01/2024 12:00:00
Replication ratio     : 100%

Database instance    : 3
State                 : Warm
Last replication time : 01/01/2024 12:00:00
Replication ratio     : 100%

Database instance    : 4
State                 : Warm
Last replication time : 01/01/2024 12:00:00
Replication ratio     : 100%
```

## 4.2.33 tools mobile-gateway command descriptions

### 4.2.33.1 mobile-gateway

#### Syntax

**mobile-gateway** *gw-id*

#### Context

**[Tree]** tools dump mobile-gateway

#### Description

Commands in this context execute mobile gateway dump commands.

## Parameters

*gw-id*

Specifies a mobile gateway identifier.

Values: 1 to 8

## 4.2.33.2 bng

### Syntax

**bng**

### Context

[\[Tree\]](#) tools dump mobile-gateway bng

### Description

Commands in this context dump BNG information.

## 4.2.33.3 error-history

### Syntax

**error-history** [*l2-access-id string-64*] [*up-ip ip-address | ipv6-address*] [*mac ieee-address*] [*imsi imsi*]

### Context

[\[Tree\]](#) tools dump mobile-gateway bng error-history

### Description

This command dumps the history of BNG errors. It dumps the BNG errors that match the specified filters, or all errors if there is no parameter specified. The error history can be cleared using the **error-history** command in the **clear mobile-gateway bng** context.

### Parameters

*string-64*

Specifies the Layer 2 access ID filter, up to 64 characters.

*ip-address | ipv6-address*

Specifies the UP IP address filter.

Values:

- *ip-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*ieee-address*

Specifies the session MAC address filter.

Values: xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

*imsi*

Specifies the IMSI, up to 15 digits.

#### 4.2.33.4 local-address-assignment

##### Syntax

**local-address-assignment**

##### Context

[\[Tree\]](#) tools dump mobile-gateway bng local-address-assignment

##### Description

Commands in this context dump information about local address assignments.

#### 4.2.33.5 address-status

##### Syntax

**address-status network-realm *realm-name* pool *pool-name* type *addr-type* address *ip-address* [/prefix-length]**

##### Context

[\[Tree\]](#) tools dump mobile-gateway bng local-address-assignment address-status

##### Description

This command displays the assignment status of a specified address in a specified pool. This address can be a single address, or in case of PD or SLAAC, an IPv6 prefix.

##### Parameters

*realm-name*

Specifies the name of the network realm, up to 80 characters.

*pool-name*

Specifies the pool name, up to 32 characters.

*addr-type*

Specifies the address type.

Values: ipv4 | ipv6-na | ipv6-pd | ipv6-slaac

*ip-address*

Specifies the IPv4 or IPv6 address.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*prefix-length*

Specifies the IPv6 prefix length.

## Output

The following output is an example of the status of the specified local assignment.

### Output example

```
tools>dump>mobile>bng>laa# address-status network-realm "mybngvrf" pool "p1" type ipv4 address
20.20.20.1
Address      : 20.20.20.1/32
State       : not in use
Ue-id      : N/A
Context-pool:
Micro-net   : 20.20.20.0/24
```

## 4.2.33.6 nf-profile

### Syntax

**nf-profile**

### Context

[\[Tree\]](#) tools dump mobile-gateway nf-profile

### Description

This command displays the NF profile of the SMF that is received by the NRF after a successful registration operation.

### Output

The following output example shows output of the nf-profile tools command.

#### Output example: NF profile tools output

```
# tools dump mobile-gateway 1 nf-profile
Active Nrf Peer IP      : 192.168.40.1
Active Nrf Peer ID     : ab61220b-f589-40d4-978b-d9c9f5ab742e
Active Nrf Prof Name   : nrf_client
Registered NfProfile
NfInstanceID          : ce23c7c3-b710-49ac-9e3c-764849a012fa
NfType                : SMF
Nf Status              : Registered
PLMN List Elements (0) :
```



```

sNssai List (1) :
  sst          : 1, sd : 0xcale01
nsi List (0)   :
IPv4 addresses (1) :
  ip          : 192.168.2.1
Recovery Time  : 1692338779 (2023:08:18 - 06:06:19)
Fqdn          : mag-c.nokia.com
HeartBeat Timer : 60
SMFInfo       :
  Num of slices (1) :
    sst          : 1, sd : 0xcale01
    dnn[0]       : defaultbng
    dnn[1]       : fwa.mnc01.mcc001.gprs
    dnn[2]       : hsi
  Tai list (0)
NfServices (1) :
  NfService[0] :
  ServiceInstanceId : fwa_smf
  ServiceName      : nsmf-pdusession
  Scheme           : HTTP
  ServiceStatus    : Registered
  ApiVersionInUri  : v1
  ApiFullVersion   : 1.0.2
  Ip endpoints (1) :
    ip          : 192.168.2.1, port 80
  allowedNfTypes (0) :
  Allowed PLMN IDs List Elements (0):
  Allowed Nssais List (0) :

```

### 4.2.33.7 pfcf-audit

#### Syntax

```
pfcf-audit remote-peer ip-address | ipv6-address [router router-name]
```

#### Context

[\[Tree\]](#) tools dump mobile-gateway pfcf-audit

#### Description

This command displays the progress of the ongoing bulk audit for the paths of a specified PFCF peer.

#### Parameters

*ip-address* | *ipv6-address*

IPv4 or IPv6 address of a remote PFCF peer.

Values:

- *ip-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

*router-name*

*router-name* | *service-id*, specifies the routing context.

Values:

- *router-name* – Base | a VPRN service name
- *service-id* – 1 to 2147483647

Default: Base

**Output**

The following output example shows the progress of an ongoing PFCP audit.

**Output example: PFCP audit**

```
# tools dump mobile-gateway 1 pfcpc-audit remote-peer 10.20.1.2
=====
PFCP Audit
=====
UPF: VR: 1 Peer Address: 10.20.1.2 Local Address: 10.20.1.7
Session Audit: In Progress
Total number of sessions: 26155 Number of audited sessions: 18186
-----
No. of Entries: 1
=====
```

## 5 perform command reference

### 5.1 perform hierarchy descriptions

This section provides the following perform hierarchy descriptions:

- [tools perform command hierarchy](#)

#### 5.1.1 tools perform command hierarchy

```
tools
  - perform
    - mobile-gateway
      - pdn
        - bng
          - data-triggered-host
          - static-session
          - up-resiliency
            - lookup
            - sync
        - force-clear
          - bearer-context
        - nf-register
        - pfcf-audit
    - profile
      - authentication-database
        - lookup
      - bng
        - entry-point
          - lookup
        - radius
          - coa
            - attribute
            - debug
            - deliver-request
            - destination-ip
            - info
            - router
            - source-ip
```

### 5.2 perform command descriptions

This section provides the following perform command descriptions:

- [tools perform command descriptions](#)

## 5.2.1 tools perform command descriptions

### 5.2.1.1 mobile-gateway

#### Syntax

**mobile-gateway**

#### Context

**[Tree]** tools perform mobile-gateway

#### Description

Commands in this context execute mobile gateway performance commands.

### 5.2.1.2 pdn

#### Syntax

**pdn** *gw-id*

#### Context

**[Tree]** tools perform mobile-gateway pdn

#### Description

Commands in this context execute tools commands on a specific mobile gateway instance.

#### Parameters

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

### 5.2.1.3 bng

#### Syntax

**bng**

#### Context

**[Tree]** tools perform mobile-gateway pdn bng

#### Description

Commands in this context execute **tools** commands specific to BNG CUPS functionality.

## 5.2.1.4 data-triggered-host

### Syntax

```
data-triggered-host l2-access-id string-64 l2-access-id-mac ieee-address up-ip ip-address | ipv6-address [c-vlan tag] [s-vlan tag] ip ip-address | ipv6-address mac ieee-address [dot1q-etype hex-value] [qinq-etype hex-value]
```

### Context

[\[Tree\]](#) tools perform mobile-gateway pdn bng data-triggered-host

### Description

This command configures data-trigger options for IPoE sessions.

### Parameters

*string-64*

Specifies the Layer 2 access ID filter, up to 64 characters.

**l2-access-id-mac** *ieee-address*

Specifies the Layer 2 MAC address ID filter.

Values: xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

**up-ip** *ip-address* | *ipv6-address*

Specifies the UP IP address filter.

Values:

- *ip-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where  
x – [0..FFFF]H  
d – [0..255]D

**c-vlan tag**

Specifies the customer VLAN (inner VLAN) filter.

Values: 1 to 4094

**s-vlan tag**

Specifies the service VLAN (outer VLAN) filter.

Values: 1 to 4094

**ip** *ip-address* | *ipv6-address*

Specifies the IP address filter.

Values:

- *ip-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where

x – [0..FFFF]H

d – [0..255]D

**mac** *ieee-address*

Specifies the MAC address filter.

Values: xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx, cannot be all zeros

**dot1q-etype** *hex-value*

Specifies the Dot1Q Ethernet type HEX value.

Values: 0x8100, 0x88a8, or 0x9100

**qinq-etype** *hex-value*

Specifies the QinQ Ethernet type HEX value.

Values: 0x8100, 0x88a8, or 0x9100

### 5.2.1.5 static-session

#### Syntax

**static-session** *name action action-id*

#### Context

[\[Tree\]](#) tools perform mobile-gateway pdn bng static-session

#### Description

This command configures options for static IPoE sessions.

#### Parameters

*name*

Specifies the name, up to 64 characters.

*action-id*

Specifies the action to perform.

Values: retry

### 5.2.1.6 up-resiliency

#### Syntax

**up-resiliency**

#### Context

[\[Tree\]](#) tools perform mobile-gateway pdn bng up-resiliency

## Description

Commands in this context execute tools commands specific to UP Resiliency functionality.

### 5.2.1.7 lookup

#### Syntax

```
lookup up node-identifier I2-access-id id [s-vlan s-tag] [c-vlan c-tag]
```

#### Context

[\[Tree\]](#) tools perform mobile-gateway pdn bng up-resiliency lookup

#### Description

This command looks up the UP group and FSG to which a specific UP and Layer-2 access ID belongs . Optionally, an s-tag or c-tag can be provided if multiple UP groups are used for different VLAN ranges.

#### Parameters

*node-identifier*

Specifies the BNG-UP for which the lookup is performed , either by address or by FQDN. This is the value as passed in the Node ID Information Element in PFCP.

Values: ip-addr | fqdn

ip-addr – specifies the IPv4 or IPv6 address

Values:

- ipv4-address – a.b.c.d
- ipv6-address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where

x – [0..FFFF]H

d – [0..255]D

fqdn – specifies a fully qualified domain name, up to 255 characters

*id*

Specifies the I2-access-id, up to 64 characters.

*s-tag*

Specifies the s-tag/s-vlan value.

Values: 0 to 4094

*c-tag*

Specifies the c-tag or c-vlan value.

Values: 0 to 4094

#### Output

The following output example shows a UP group and FSG lookup for a specific UP and Layer-2 access ID.

### Output example: UP group and FSG lookup for a specific UP and Layer-2 access ID

```

/tools perform mobile-gateway pdn 1 bng up-resiliency lookup up "bng_east" l2-access-id
"to_access"

-----
Up-Group                               : basic_access
Up-Id                                   : bng_east (192.0.2.11)
Admin-State                             : enabled
S-Vlan Range                            : N/A
C-Vlan Range                            : N/A
FSG Id                                  : 1
FSG Role                                 : Active
Locked                                  : no
-----
No of Up-Groups : 1

```

#### 5.2.1.8 sync

##### Syntax

**sync fsg** *fsg-id*

**sync up-group** *group-name*

##### Context

[\[Tree\]](#) tools perform mobile-gateway pdn bng up-resiliency sync

##### Description

This command manually triggers a synchronization of the FSG state and all sessions to the active and standby UP of an FSG. It does not trigger a re-selection of active and standby UPs. If an FSG change is already ongoing when this command is executed, the **tools** command does not trigger any action.

This command can be used as a last resort in any case where the UPs and CPs are potentially out of sync and the system does not automatically triggers another FSG re-selection.

##### Parameters

*fsg-id*

Specifies the FSG ID to synchronize.

Values: 1 to 4294967295

*group-name*

Specifies the name of the UP group to synchronize, up to 32 characters.

#### 5.2.1.9 force-clear

##### Syntax

**force-clear**



## Context

[Tree] tools perform mobile-gateway pdn force-clear

## Description

Commands in this context forcefully clear system state.



**Caution:** Use the commands in this context only if necessary and as instructed by Nokia technical support.

### 5.2.1.10 bearer-context

## Syntax

```
bearer-context {imsi | imei | msisdn} string [local-only] [apn apn] [slave]
```

## Context

[Tree] tools perform mobile-gateway pdn force-clear bearer-context

## Description

This command forcefully clears the bearer context for a specific UE. The system clears all sessions of the UE at the PDN level when the APN option is not used. To apply rate limiting, the system accepts only 16 commands in parallel and allows only one command per second to proceed internally for execution.



**Caution:** This command performs an exhaustive search of the UE identity on the VMs of the mobile gateway. Use this command only if necessary and as instructed by Nokia technical support.

## Parameters

*string*

Specifies the value of the address string for the UE key (IMEI, IMSI, or MSISDN) used to locate the bearer context, up to 15 digits for IMSI or MSISDN or 16 digits for IMEI.

*apn*

Specifies the name of the APN, up to 80 characters; when used, only the UE sessions on this APN are cleared.

**local-only**

Keyword to specify an internal cleanup.

**slave**

Keyword to clear the standby system in an ICR deployment.

### 5.2.1.11 nf-register

## Syntax

```
nf-register
```

## Context

[\[Tree\]](#) tools perform mobile-gateway pdn nf-register

## Description

This command triggers an NF registration message toward the NRF as SMF.

### 5.2.1.12 pfcf-audit

## Syntax

```
pfcf-audit [remote-peer ip-address | ipv6-address]
```

## Context

[\[Tree\]](#) tools perform mobile-gateway pdn pfcf-audit

## Description

This command performs a PFCP audit for all PFCP paths or for the paths of a specified PFCP peer.

## Parameters

*ip-address* | *ipv6-address*

Specifies the IPv4 or IPv6 address of a remote PFCP peer.

Values:

- *ip4-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

### 5.2.1.13 profile

## Syntax

```
[no] profile profile-id
```

## Context

[\[Tree\]](#) tools perform mobile-gateway profile

## Description

Commands in this context execute profile performance management commands.

**Parameters***profile-id*

Specifies a profile number identifier.

Values: 0 to 255

**5.2.1.14 authentication-database****Syntax****authentication-database** *name***Context****[Tree]** tools perform mobile-gateway profile authentication-database**Description**

Commands in this context execute the tool commands for the ADB.

**Parameters***name*

Specifies the name of the ADB, up to 32 characters.

**5.2.1.15 lookup****Syntax**

**lookup** [**circuit-id-string** *string-id*] [**remote-id-string** *string-id*] [**circuit-id-hex** *hex-id*] [**remote-id-hex** *hex-id*] [**l2-access-id** *string-id*] [**up-ip** *ip-address*] [**username** *username*] [**c-vlan** *vlan-id*] [**s-vlan** *vlan-id*] [**vendor-class-string** *string-id*] [**vendor-class-hex** *hex-id*] [**apn** *apn-name*] [**imsi-mcc** *mcc value*] [**imsi-mnc** *mnc value*] [**imei-tac** *tac value*] [**up-group** *name*] [**up-group-derive**] [**up-node-id** *fqdn*] [**mac** *ieee-address*] [**client-id-string** *cid-string*] [**client-id-hex** *binary-cid*] [**source-ip** *ip-address*] [**s-nssai-sst** *sst value*] [**s-nssai-sd** *sd hex string*] [**pdn-type** *pdn-type*]

**Context****[Tree]** tools perform mobile-gateway profile authentication-database lookup**Description**

This command performs a lookup action within the authentication-database with the specified parameters and displays the resulting entry name.

**Parameters****circuit-id-string** *string-id*

Specifies the circuit ID string filter, up to 64 characters.

**remote-id-string** *string-id*

Specifies the remote ID string filter, up to 64 characters.

**circuit-id-hex** *hex-id*

Specifies the circuit ID binary value filter.

Values: 0x0 to 0xFFFFFFFF...(max 128 hex nibbles)

**remote-id-hex** *hex-id*

Specifies the remote ID binary value filter.

Values: 0x0 to 0xFFFFFFFF...(max 128 hex nibbles)

**l2-access-id** *string-id*

Specifies the Layer 2 access ID filter, up to 64 characters.

**up-ip** *ip-address*

Specifies the UP IP address filter.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

**username**

Specifies the PPP username filter, up to 253 characters.

**c-vlan** *vlan-id*

Specifies the customer VLAN (inner VLAN) filter.

Values: 1 to 4096

**s-vlan** *vlan-id*

Specifies the service VLAN (outer VLAN) filter.

Values: 1 to 4096

**vendor-class-string** *string-id*

Specifies the DHCP vendor class option ASCII string, up to 64 characters.

**vendor-class-hex** *hex-id*

Specifies the DHCP vendor class option hexadecimal string.

Values: 0x0 to 0xFFFFFFFF...(max 128 hex nibbles)

**apn-name**

Specifies the APN filter, up to 80 characters.

**mcc value**

Specifies the filter on the IMSI-based MCC value.

Values: 000 to 999 (three-digit number)

**mnc value**

Specifies the filter on the IMSI-based MNC value.

Values: 00 to 999 (two- or three-digit number)

***tac value***

Specifies the filter on the IMEI-based TAC value.

Values: eight-digit number

***name***

Specifies the UP group filter, up to 32 characters.

**up-group-derive**

Keyword to derive the UP group filter automatically based on the up-node-id, l2-access-id, and optionally s-vlan or c-vlan parameters. The parameter values are used to do a lookup in all configured UP groups, and the result is automatically used as if up-group was passed directly.

***fqdn***

Specifies the UP node ID filter, up to 255 characters.

***ieee-address***

Specifies the MAC address filter.

Values: xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

***cid-string***

Specifies the client ID filter, up to 255 characters.

***binary-cid***

Specifies the binary client ID filter.

Values: 0x0 to 0xFFFFFFFF... (maximum of 510 hex nibbles)

**source-ip *ip-address***

Specifies the source IP address filter.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

***sst value***

Specifies the S-NSSAI SST filter.

Values: 0 to 255

***sd hex string***

Specifies the S-NSSAI SD filter.

Values: 000000 to FFFFFFFF

***pdn-type***

Specifies the PDN type filter.

Values: ipv4 | ipv6 | ipv4v6

### 5.2.1.16 bng

#### Syntax

**bng**

#### Context

[\[Tree\]](#) tools perform mobile-gateway profile bng

#### Description

Commands in this context execute the tool commands for BNG CUPS.

### 5.2.1.17 entry-point

#### Syntax

**entry-point** *entry-point-name*

#### Context

[\[Tree\]](#) tools perform mobile-gateway profile bng entry-point

#### Description

Commands in this context execute the tool commands for BNG CUPS entry points.

#### Parameters

*entry-point-name*

Specifies the name of the BNG entry point, up to 32 characters.

### 5.2.1.18 lookup

#### Syntax

**lookup** [**l2-access-id** *string-64*] [**up-ip** *ip-address*] [**c-vlan** *vlan-id*] [**s-vlan** *vlan-id*] [**up-group** *name*]  
[**up-group-derive**] [**up-node-id** *fqdn*]

#### Context

[\[Tree\]](#) tools perform mobile-gateway profile bng entry-point lookup

#### Description

This command performs a lookup action within the entry point with the specified parameters. It displays the matching entry name.

## Parameters

### *string-64*

Specifies the Layer 2 access ID filter, up to 64 characters.

### *ip-address*

Specifies the UP IP address filter.

Values:

- *ipv4-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

### **c-vlan** *vlan-id*

Specifies the customer VLAN (inner VLAN) filter.

Values: 1 to 4096

### **s-vlan** *vlan-id*

Specifies the service VLAN (outer VLAN) filter.

Values: 1 to 4096

### *name*

Specifies the UP group filter, up to 32 characters.

### **up-group-derive**

Keyword to derive the UP group filter automatically based on the *up-node-id*, *l2-access-id*, and optionally *s-vlan* or *c-vlan* parameters. The parameter values are used to do a lookup in all configured UP groups, and the result is automatically used as if *up-group* was passed directly.

### *fqdn*

Specifies the fully qualified domain name (FQDN) for the UP, up to 255 characters.

## 5.2.1.19 radius

### Syntax

**radius**

### Context

[\[Tree\]](#) tools perform mobile-gateway profile bng radius

### Description

Commands in this context execute the tool commands for BNG CUPS RADIUS profiles.

## 5.2.1.20 coa

### Syntax

**coa**  
**no coa**

### Context

[\[Tree\]](#) tools perform mobile-gateway profile bng radius coa

### Description

This command creates a RADIUS CoA test action.

The action can send a CoA request to a specified destination using the following context.

```
tools perform mobile-gateway profile bng radius coa deliver-request
```

The CoA request can be customized using the following the context.

```
tools perform mobile-gateway profile bng radius coa
```

For example, using the **attribute** command to include specific RADIUS attributes in the request.

The **no** form of this command removes the CoA test action.

## 5.2.1.21 attribute

### Syntax

**no attribute** *attribute-name*  
**attribute** *attribute-name* **hex** *hex-string* [**tag** *tag-number*]  
**attribute** *attribute-name* **ip-address** *ip-address* | *ipv6-address* [**tag** *tag-number*]  
**attribute** *attribute-name* **ip-prefix** *ip-prefix/ip-prefix-length* [**tag** *tag-number*]  
**attribute** *attribute-name* **mac-address** *ieee-address* [**tag** *tag-number*]  
**attribute** *attribute-name* **number** *num* [**tag** *tag-number*]  
**attribute** *attribute-name* **string** *ascii-string* [**tag** *tag-number*]

### Context

[\[Tree\]](#) tools perform mobile-gateway profile bng radius coa attribute

### Description

This command adds an attribute to the CoA test message.

The **no** form of this command removes the specified attribute from the CoA test message.



## Parameters

### *attribute-name*

Specifies the name of a RADIUS attribute, must be a supported CoA attribute, up to 64 characters.

### *hex-string*

Specifies a hexadecimal string.

Values: 0x0 to 0xFFFFFFFF...(max 506 hex nibbles)

### *tag-number*

Specifies the RADIUS attribute tag.

Values: 1 to 31

### *ip-address* | *ipv6-address*

Specifies the IP address.

Values:

- *ipv4-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

### *ip-prefix*/*ip-prefix-length*

Specifies the IP prefix.

- *ipv4-prefix* – a.b.c.d (host bits must be 0)
- *ipv4-prefix-length* – 0 to 32
- *ipv6-prefix* – x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d where
  - x - [0..FFFF]H
  - d - [0..255]D
- *ipv6-prefix-length* – 0 to 128

### *ieee-address*

Specifies the MAC address.

Values: xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

### *num*

Specifies a number.

Values: 0 to 4294967295

### *ascii-string*

Specifies an ASCII string, up to 253 characters.

### 5.2.1.22 debug

#### Syntax

**debug**  
**no debug**

#### Context

[\[Tree\]](#) tools perform mobile-gateway profile bng radius coa debug

#### Description

This command enables debugging for the CoA test.  
The **no** form of this command disables the debugging.

### 5.2.1.23 deliver-request

#### Syntax

**deliver-request**

#### Context

[\[Tree\]](#) tools perform mobile-gateway profile bng radius coa deliver-request

#### Description

This command sends the CoA request.

### 5.2.1.24 destination-ip

#### Syntax

**destination-ip** *ip-address* | *ipv6-address*  
**no destination-ip**

#### Context

[\[Tree\]](#) tools perform mobile-gateway profile bng radius coa destination-ip

#### Description

This command sets the destination IP address for the CoA request.  
The **no** form of this command removes the destination IP address.

## Parameters

*ip-address* | *ipv6-address*

Specifies the IP address.

Values:

- *ipv4-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

### 5.2.1.25 info

#### Syntax

**info**

#### Context

[\[Tree\]](#) tools perform mobile-gateway profile bng radius coa info

#### Description

This command displays the configuration of the CoA test message; for example, the router, the destination IP address, the attributes.

### 5.2.1.26 router

#### Syntax

**no router**

**router** *router-instance*

#### Context

[\[Tree\]](#) tools perform mobile-gateway profile bng radius coa router

#### Description

This command specifies the router instance to which the request is sent.

The **no** form of this command sets the router instance to Base.

#### Parameters

*router-instance*

Specifies the router instance.

Values: *router-name* | *vprn-svc-id*

- *router-name* - Base | management

- *vprn-svc-id* - 1 to 2147483647

## 5.2.1.27 source-ip

### Syntax

**no source-ip**

**source-ip** *ip-address* | *ipv6-address*

### Context

[\[Tree\]](#) tools perform mobile-gateway profile bng radius coa source-ip

### Description

This command sets the source IP address for the CoA request.

The **no** form of this command sets the source IP address to [::]

### Parameters

*ip-address* | *ipv6-address*

Specifies the IP address.

Values:

- *ipv4-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

## 6 python command reference

### 6.1 python hierarchy descriptions

This section provides the following python hierarchy descriptions:

- [configure python command hierarchy](#)

#### 6.1.1 configure python command hierarchy

```
configure
  - python
    - python-policy
      - http2
```

### 6.2 python command descriptions

This section provides the following python command descriptions:

- [configure python command descriptions](#)

#### 6.2.1 configure python command descriptions

##### 6.2.1.1 http2

###### Syntax

**http2** *type direction direction script script-name*

**no http2** *type direction direction*

###### Context

[\[Tree\]](#) configure python python-policy http2

###### Description

This command configures a Python script for HTTP2 messages on Service Based Interfaces (SBI), such as N7, N10, N11, and N40.

The **no** form of this command removes the script for the specified direction.

## Parameters

### *type*

Specifies the message type to which the Python script is applied.

Values:

- `http2-request` – HTTP/2 request message, including GET, POST, and PUT messages
- `http2-response` – HTTP/2 response message

### *direction*

Specifies the direction of the message.

Values:

- `ingress` – the script is only applied to messages received by the MAG-c.
- `egress` – the script is only applied to messages sent by the MAG-c.

### *script-name*

Specifies the Python script name as defined using the **configure python python-script** command, up to 32 characters.

# 7 redundancy command reference

## 7.1 redundancy hierarchy descriptions

This section provides the following redundancy hierarchy descriptions:

- [admin redundancy command hierarchy](#)
- [clear redundancy command hierarchy](#)
- [configure redundancy command hierarchy](#)
- [show redundancy command hierarchy](#)

### 7.1.1 admin redundancy command hierarchy

```
admin
  - redundancy
    - cpm-switchover
    - mc-master-lock
    - mc-mobile-switchover
    - mc-slave-lock
    - mg-switchover
      - group
```

### 7.1.2 clear redundancy command hierarchy

```
clear
  - redundancy
    - multi-chassis
      - mc-mobile
```

### 7.1.3 configure redundancy command hierarchy

```
configure
  - redundancy
    - multi-chassis
      - peer
        - mc-mobile
          - bfd-enable
          - hold-on-neighbor-failure
          - keep-alive-interval
          - master-traffic-detection
          - mc-complete-ue-sync
          - mc-redirect
```

```
- mobile-gateway
  - shutdown
- peer-connect
- slave-traffic-delay-timer
- traffic-detection
- traffic-detection-poll-timer
```

## 7.1.4 show redundancy command hierarchy

```
show
- redundancy
  - multi-chassis
    - mc-mobile
```

## 7.2 redundancy command descriptions

This section provides the following redundancy command descriptions:

- [admin redundancy command descriptions](#)
- [clear redundancy command descriptions](#)
- [configure redundancy command descriptions](#)
- [show redundancy command descriptions](#)

### 7.2.1 admin redundancy command descriptions

#### 7.2.1.1 cpm-switchover

##### Syntax

```
cpm-switchover [now]
```

##### Context

[\[Tree\]](#) admin redundancy cpm-switchover

##### Description

This command triggers a controlled CPM switchover.

##### Parameters

**now**

Keyword to perform the CPM switchover without requesting confirmation.



## 7.2.1.2 mc-master-lock

### Syntax

[no] mc-master-lock

### Context

[Tree] admin redundancy mc-master-lock

### Description

This command locks the gateway in the active operational role when ICR or geo-redundancy is deployed. The gateway remains in the active operational role regardless of any ICR active/standby election criteria that may occur.

The **no** form of this command unlocks and restores the use of normal ICR active/standby election criteria.



**Note:** When enabled, the manual switchover command (**admin redundancy mc-mobile-switchover**) is also locked. An error is returned if a manual switchover is attempted while the **mc-master-lock** command is enabled.



**WARNING:** In an active/active case, the command must only be executed on one node. If executed on both nodes, the multi-chassis synchronization (MCS) fails and an alarm is issued.

### Default

no mc-master-lock

## 7.2.1.3 mc-mobile-switchover

### Syntax

mc-mobile-switchover mobile-gateway *gw-id* peer *ip-address* [{reboot | now}] [abort]

### Context

[Tree] admin redundancy mc-mobile-switchover

### Description

This command issues a manual switchover to transition the active gateway to a standby role and its peer gateway to the active role. The manual switchover is not hitless, but synchronizes the complete charging information and state for each bearer, enabling the standby system to transition with minimal disruption and data loss.

### Parameters

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

*ip-address*

Specifies the peer IP address for the manual switchover.

Values: ip-address | ipv6-address

**reboot**

Keyword to reboot the node after mc-mobile switchover.

**now**

Keyword to force the switchover without full reconciliation. If the ICR is in the up state, the manual switchover can be performed even when the synchronization state is not hot.



**WARNING:** If the **now** keyword is specified, the switchover is executed, but the new active node may have incomplete UE records. In some cases this can be service impacting.

**abort**

Keyword to abort an in-progress mc-mobile switchover. This keyword can only be specified for an ongoing switchover that is in progress for at least five minutes. The user must respond to a confirmation request to proceed. If "yes" is specified, the system issues a disconnect to the standby system, makes it active, switches the active to the standby state, and activates the MC redirect tunnel.

## 7.2.1.4 mc-slave-lock

### Syntax

[no] mc-slave-lock

### Context

[\[Tree\]](#) admin redundancy mc-slave-lock

### Description

This command locks the gateway in the standby operational role when ICR or geo-redundancy is deployed. The gateway remains in the standby operational role regardless of any ICR active/standby election criteria that may occur.

The **no** form of this command unlocks and restores the use of normal ICR active/standby election criteria.



**Note:** When enabled, the manual switchover command (**admin redundancy mc-mobile-switchover**) is also locked. An error is returned if a manual switchover is attempted while the **mc-slave-lock** command is enabled.

### Default

no mc-slave-lock

## 7.2.1.5 mg-switchover

### Syntax

**mg-switchover**

### Context

**[Tree]** admin redundancy mg-switchover

### Description

Commands in this context perform a controlled SM-VM switchover.

## 7.2.1.6 group

### Syntax

**group** *mg-group-id* [**now**] [**max-preparation-time** *max-preparation-time*]

### Context

**[Tree]** admin redundancy mg-switchover group

### Description

This command triggers an SM-VM controlled switchover.

### Parameters

*mg-group-id*

Specifies the MG group ID for which to perform the controlled switchover.

Values: 1 to 15

**now**

Keyword to perform the controlled switchover without requesting confirmation.

*max-preparation-time*

Specifies the waiting time, in seconds, that the SM-VM uses to process all charging data before the standby SM-VM becomes active. When set to 0, the switchover proceeds without a maximum preparation time, until all charging data has been processed.



**Note:** Incoming control messages are not served during the preparation phase defined by the *max-preparation-time* parameter.

Values: 0 (disabled) to 60

Default: 5

## 7.2.2 clear redundancy command descriptions

### 7.2.2.1 mc-mobile

#### Syntax

```
mc-mobile [peer ipv4-address | ipv6-address] statistics
```

#### Context

[\[Tree\]](#) clear redundancy multi-chassis mc-mobile

#### Description

This command clears mc-mobile related statistics.

#### Parameters

*ipv4-address* | *ipv6-address*

Specifies the IP address.

Values:

- *ipv4-address* – a.b.c.d
- *ipv6-address* – x:x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d where
  - x – [0..FFFF]H
  - d – [0..255]D

## 7.2.3 configure redundancy command descriptions

### 7.2.3.1 mc-mobile

#### Syntax

```
[no] mc-mobile
```

#### Context

[\[Tree\]](#) configure redundancy multi-chassis peer mc-mobile

#### Description

Commands in this context configure mc-mobile parameters.

The **no** form of this command removes the mc-mobile configuration.

**Default**

no mc-mobile

**7.2.3.2 bfd-enable****Syntax**

**bfd-enable** [**service** *service-id*] **interface** *interface-name*  
**no bfd-enable**

**Context**

[\[Tree\]](#) configure redundancy multi-chassis peer mc-mobile bfd-enable

**Description**

This command enables the use of bidirectional forwarding detection (BFD) to be associated with the peer. The mc-mobile redundancy protocol uses the BFD state to determine the health of its peer. The parameters for the BFD session are set via the BFD command under the IP interface configuration.

The **no** form of this command disables the use of BFD.

**Default**

no bfd-enable

**Parameters**

*service-id*

Specifies the service identifier string.

Values: 1 to 2148278386 or a service name, up to 64 characters

*interface-name*

Specifies the interface name, up to 32 characters.

Default: none

**7.2.3.3 hold-on-neighbor-failure****Syntax**

**hold-on-neighbor-failure** *multiplier*  
**no hold-on-neighbor-failure**

**Context**

[\[Tree\]](#) configure redundancy multi-chassis peer mc-mobile hold-on-neighbor-failure

## Description

This command configures the number of keep-alive intervals that may expire before the local node decides that the peer has failed. A peer failure is declared if no keep-alive responses are received after **hold-on-neighbor-failure** × **keep-alive-interval**.

The **no** form of this command reverts to the default.

## Default

hold-on-neighbor-failure 3

## Parameters

*multiplier*

Specifies the multiplier.

Values: 2 to 25

### 7.2.3.4 keep-alive-interval

#### Syntax

**keep-alive-interval** *interval*

**no keep-alive-interval**

#### Context

[\[Tree\]](#) configure redundancy multi-chassis peer mc-mobile keep-alive-interval

#### Description

This command sets the interval to send keep-alive messages to the peer when the BFD is not enabled or is down.

The **no** form of this command reverts to the default.

#### Default

keep-alive-interval 10

#### Parameters

*interval*

Specifies the interval, in tenths of a second.

Values: 5 to 500

### 7.2.3.5 master-traffic-detection

#### Syntax

**master-traffic-detection** {**enable** | **disable**}

**no master-traffic-detection**

## Context

[\[Tree\]](#) configure redundancy multi-chassis peer mc-mobile master-traffic-detection

## Description

This command enables or disables the mc-mobile active node to perform traffic detection before the switchover to standby.

The **no** form of this command reverts to the default.

## Default

master-traffic-detection enable

### 7.2.3.6 mc-complete-ue-sync

## Syntax

**[no] mc-complete-ue-sync**

## Context

[\[Tree\]](#) configure redundancy multi-chassis peer mc-mobile mc-complete-ue-sync

## Description

This command enables data synchronization between the active and standby nodes in MC redundancy at the call flow level (synchronization in hot state) and the UE level (synchronization in reconcile state).

When enabled, the MC mobile synchronization goes immediately into the ICR hot state and the progress of the synchronization from the active to the standby node is completed for all UE records. This allows a switchover to take place at any time if an issue arises. If a failover occurs, the number of UEs synced so far all survive.

The **no** form of this command disables the data synchronization.

## Default

no mc-complete-ue-sync

### 7.2.3.7 mc-redirect

## Syntax

**[no] mc-redirect**

## Context

[\[Tree\]](#) configure redundancy multi-chassis peer mc-mobile mc-redirect

## Description

This command enables the use of the MC redirect.

The **no** form of this command disables the use of MC redirect.

### Default

no mc-redirect

## 7.2.3.8 mobile-gateway

### Syntax

**mobile-gateway** *gw-id* **role** *role*

**no mobile-gateway** *gw-id*

### Context

[\[Tree\]](#) configure redundancy multi-chassis peer mc-mobile mobile-gateway

### Description

This command configures the administrative role of the node. If set to primary, the peer must be configured as secondary. If set to secondary, the peer must be configured as primary.

The **no** form of this command removes the configuration.

### Parameters

*gw-id*

Specifies the gateway ID.

Values: 1 to 8

*role*

Specifies the administrative role of the node.

Values: primary | secondary

## 7.2.3.9 shutdown

### Syntax

**shutdown**

**no shutdown**

### Context

[\[Tree\]](#) configure redundancy multi-chassis peer mc-mobile mobile-gateway shutdown

### Description

This command administratively disables the entity. When disabled, an entity does not change, reset, or remove any configuration settings or statistics. Many entities must be explicitly enabled using the **no shutdown** command.



The operational state of the entity is disabled as well as the operational state of any entities contained within. Many objects must be shut down before they may be deleted.

### Default

shutdown

## 7.2.3.10 peer-connect

### Syntax

```
peer-connect {enable | disable}
no peer-connect
```

### Context

[\[Tree\]](#) configure redundancy multi-chassis peer mc-mobile peer-connect

### Description

This command is configured when the ICR routing and the MC mobile are left configured on the primary node, and the secondary node is removed. For example, when the ICR is used only for ISSU and, after the ISSU process, the secondary node is removed.



**Note:** Enable this command during the normal ICR operation; that is, when both the primary and the secondary ICR nodes are deployed.

The **no** form of this command reverts to the default.

### Default

peer-connect enable

## 7.2.3.11 slave-traffic-delay-timer

### Syntax

```
slave-traffic-delay-timer delay-timer
no slave-traffic-delay-timer
```

### Context

[\[Tree\]](#) configure redundancy multi-chassis peer mc-mobile slave-traffic-delay-timer

### Description

This command configures a timer that is enabled when the multi-chassis synchronization (MCS) is detected as lost. The timer delays the start of traffic detection to prevent switchovers when the MCS link is

restored before the timer expires. If MC redirection is enabled using the following command, the standby node continues to try and route any traffic over the MC redirect tunnel.

```
configure redundancy multi-chassis peer mc-mobile mc-redirect
```

The **no** form of this command disables the timer (the timer is set to 0 seconds).



**Caution:** Before executing the command, make sure that a switchover is not in progress.

### Default

delay-timer 0

### Parameters

*delay-timer*

Specifies the delay timer, in seconds.

Values: 0 to 60 where 0 means disabled

Default: 0

## 7.2.3.12 traffic-detection

### Syntax

**traffic-detection** {**strict** | **relaxed**}

**no traffic-detection**

### Context

[\[Tree\]](#) configure redundancy multi-chassis peer mc-mobile traffic-detection

### Description

This command configures the traffic detection before an mc-mobile state change.

The **no** form of this command reverts to the default.

### Default

traffic-detection relaxed

### Parameters

**strict**

Keyword to transition from standby to active only after the standby system receives a PFCP packet and a GTP-C packet on S11 for 4G FWA, or an HTTP/2 packet on N11 for 5G SA FWA.

**relaxed**

Keyword to transition from standby to active only after the standby system has received a PFCP or IBCP packet.

### 7.2.3.13 traffic-detection-poll-timer

#### Syntax

**traffic-detection-poll-timer** *seconds*  
**no traffic-detection-poll-timer**

#### Context

[\[Tree\]](#) configure redundancy multi-chassis peer mc-mobile traffic-detection-poll-timer

#### Description

This command configures the traffic detection poll timer.

The **no** form of this command reverts to the default value.



**Note:** Nokia recommends configuring the same value for the traffic detection poll timer in the primary and secondary gateways.

#### Default

traffic-detection-poll-timer 5

#### Parameters

*seconds*

Specifies the traffic detection poll timer, in seconds.

Values: 5 to 1200

Default: 5

## 7.2.4 show redundancy command descriptions

### 7.2.4.1 mc-mobile

#### Syntax

**mc-mobile peer** *ip-address*  
**mc-mobile** [**peer** *ip-address*] **mc-red-tcp-stats**  
**mc-mobile** [**peer** *ip-address*] **statistics**

#### Context

[\[Tree\]](#) show redundancy multi-chassis mc-mobile

#### Description

This command displays the synchronization state of the node with the specified IP address.

**Parameters***ip-address*

Specifies the IP address.

Values:

- IPv4 address – a.b.c.d
- IPv6 address – x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d.d.d.d  
where  
x – [0..FFFF]H  
d – [0..255]D

**mc-red-tcp-stats**

Keyword to display TCP connection statistics for the multi-chassis redundancy.

**statistics**

Keyword to display statistics.

## 8 router command reference

### 8.1 router hierarchy descriptions

This section provides the following router hierarchy descriptions:

- [configure router command hierarchy](#)

#### 8.1.1 configure router command hierarchy

```
configure
- router
  - interface
    - ip-reassembly
    - mc-redirect-mode
    - monitor-mc-redirect
    - steering
    - track-mobile
```

### 8.2 router command descriptions

This section provides the following router command descriptions:

- [configure router command descriptions](#)

#### 8.2.1 configure router command descriptions

##### 8.2.1.1 ip-reassembly

###### Syntax

```
ip-reassembly port-name
no ip-reassembly
```

###### Context

[\[Tree\]](#) configure router interface ip-reassembly

###### Description

This command configures the virtual ISA used for IP reassembly on this interface.

The **no** form of this command removes the configuration.

### Parameters

*port-name*

Specifies the port name.

Values: *port-id* [:*context-val*] where

- *port-id*

Specifies the configured port ID.

Values: *slot/mda/port* or *lag-id* where

*id* – 1 to 200

- *context-val* – 1 to 31

## 8.2.1.2 mc-redirect-mode

### Syntax

**mc-redirect-mode**{*epdg* | *home-agent*}

**no mc-redirect-mode**

### Context

[\[Tree\]](#) configure router interface mc-redirect-mode

### Description

This command configures the multi-chassis redirect mode.

### Parameters

**epdg**

Keyword to configure ePDG multi-chassis redirect mode.

**home-agent**

Keyword to specify home agent multi-chassis redirect mode.

## 8.2.1.3 monitor-mc-redirect

### Syntax

**monitor-mc-redirect high-threshold** *high-threshold* **low-threshold** *low-threshold*

**no monitor-mc-redirect**

### Context

[\[Tree\]](#) configure router interface monitor-mc-redirect

## Description

This command configures to monitor traffic on the interface for the mc-redirect tunnel.

The **no** form of this command reverts to the default.

## Default

monitor-mc-redirect high-threshold 1000 low-threshold 500

## Parameters

### *high-threshold*

Specifies the high threshold value in number of packets.

Values: 0 to 4294967295

### *low-threshold*

Specifies the low threshold value in number of packets.

Values: 0 to 4294967295

## 8.2.1.4 steering

### Syntax

**steering {ul-from-gw | dl-from-sfc}**

### Context

[\[Tree\]](#) configure router interface steering

### Description

This command enables the steering function based on the direction of the user traffic flow and the connectivity to peering nodes.

### Parameters

#### **ul-from-gw**

Keyword to configure the interface between a standalone SSG and PGW/GGSN. The **ul-from-gw** keyword enables the source IP-based packet processing for uplink user traffic received from the PGW/GGSN. User traffic received from the PGW/GGSN is processed on the anchor ISM-MG card. Source IP-based packet processing allows locating the anchor ISM-MG card on IOM.

#### **dl-from-sfc**

Keyword to configure the interface between a standalone SSG node (or PGW/GGSN combined with SSG) and the service function chain (SFC). The **dl-from-sfc** keyword enables packet processing for downlink user traffic received from SFC. User traffic received from the SFC is processed on the anchor ISM-MG card. To avoid sending user traffic from the ISM-MG back to the SFC, a flag is required to indicate that the SFC is done and user traffic must be forwarded based on the destination IP address.

### 8.2.1.5 track-mobile

#### Syntax

[no] track-mobile

#### Context

[\[Tree\]](#) configure router interface track-mobile

#### Description

This command attaches the mc-mobile active/standby state to the interface route, so that it can be used to attract traffic to the active MAG-c.

The **no** form of this command detaches the mc-mobile state from the interface route.

#### Default

no track-mobile



## 9 service command reference

### 9.1 service hierarchy descriptions

This section provides the following service hierarchy descriptions:

- [configure service command hierarchy](#)

#### 9.1.1 configure service command hierarchy

```
configure
  - service
    - ies
      - interface
        - ipv6
          - track-mobile
        - track-mobile
        - ip-reassembly
        - monitor-mc-redirect
        - steering
        - track-mobile
```

### 9.2 service command descriptions

This section provides the following service command descriptions:

- [configure service command descriptions](#)

#### 9.2.1 configure service command descriptions

##### 9.2.1.1 track-mobile

###### Syntax

[no] track-mobile

###### Context

[\[Tree\]](#) configure service ies interface ipv6 track-mobile

## Description

This command attaches the mc-mobile active/standby state to the interface route, so that it can be used to attract traffic to the active MAG-c.

The **no** form of this command detaches the mc-mobile state from the interface route.

## Default

no track-mobile

### 9.2.1.2 track-mobile

#### Syntax

[no] track-mobile

#### Context

[\[Tree\]](#) configure service ies interface track-mobile

#### Description

This command attaches the mc-mobile active/standby state to the interface route, so that it can be used to attract traffic to the active MAG-c.

The **no** form of this command detaches the mc-mobile state from the interface route.

#### Default

no track-mobile

### 9.2.1.3 ip-reassembly

#### Syntax

ip-reassembly *port-name*

no ip-reassembly

#### Context

[\[Tree\]](#) configure service vprn interface ip-reassembly

#### Description

This command configures the virtual ISA used for IP reassembly on this interface.

The **no** form of this command removes the configuration.

#### Default

no ip-reassembly

## Parameters

*port-name*

Specifies the port name.

Values: *port-id* [:*context-val*] where

- *port-id*

Specifies the configured port ID.

Values: *slot/mda/port* or *lag-id* where

*id* – 1 to 200

- *context-val* – 1 to 31

### 9.2.1.4 monitor-mc-redirect

#### Syntax

**monitor-mc-redirect high-threshold** *high-threshold* **low-threshold** *low-threshold*  
**no monitor-mc-redirect**

#### Context

[\[Tree\]](#) configure service vprn interface monitor-mc-redirect

#### Description

This command configures to monitor traffic on the interface for the mc-redirect tunnel.

The **no** form of this command reverts to the default.

#### Default

monitor-mc-redirect high-threshold 1000 low-threshold 500

#### Parameters

*high-threshold*

Specifies the high threshold value in number of packets.

Values: 0 to 4294967295

*low-threshold*

Specifies the low threshold value in number of packets.

Values: 0 to 4294967295

### 9.2.1.5 steering

#### Syntax

**steering**{*ul-from-gw* | *dl-from-sfc*}

## Context

[\[Tree\]](#) configure service vprn interface steering

## Description

This command enables the steering function based on the direction of the user traffic flow and connectivity to peering nodes.

## Parameters

### ul-from-gw

Keyword to configure the interface between a standalone SSG and PGW/GGSN. The **ul-from-gw** keyword enables the source IP-based packet processing for uplink user traffic received from the PGW/GGSN. User traffic received from the PGW/GGSN is processed on the anchor ISM-MG card. Source IP-based packet processing allows locating the anchor ISM-MG card on IOM.

### dl-from-sfc

Keyword to configure the interface between a standalone SSG node (or PGW/GGSN combined with SSG) and the service function chain (SFC). The **dl-from-sfc** keyword enables packet processing for downlink user traffic received from SFC. User traffic received from the SFC is processed on the anchor ISM-MG card. To avoid sending user traffic from the ISM-MG back to the SFC, a flag is required to indicate that the SFC is done and user traffic must be forwarded based on the destination IP address.

## 9.2.1.6 track-mobile

### Syntax

[no] track-mobile

### Context

[\[Tree\]](#) configure service vprn interface track-mobile

### Description

This command attaches the mc-mobile active/standby state to the interface route, so that it can be used to attract traffic to the active MAG-c.

The **no** form of this command detaches the mc-mobile state from the interface route.

### Default

no track-mobile

# 10 system command reference

## 10.1 system hierarchy descriptions

This section provides the following system hierarchy descriptions:

- [configure system command hierarchy](#)
- [show system command hierarchy](#)
- [tools system command hierarchy](#)

### 10.1.1 configure system command hierarchy

```
configure
  - system
    - license
      - advanced-expiration-alarm
```

### 10.1.2 show system command hierarchy

```
show
  - system
    - virtual-fabric
```

### 10.1.3 tools system command hierarchy

```
tools
  - dump
    - system
      - virtual-fabric
```

## 10.2 system command descriptions

This section provides the following system command descriptions:

- [configure system command descriptions](#)
- [show system command descriptions](#)
- [tools system command descriptions](#)

## 10.2.1 configure system command descriptions

### 10.2.1.1 license

#### Syntax

**license**

#### Context

**[Tree]** configure system license

#### Description

The command in this context configures the license expiration alarm.

### 10.2.1.2 advanced-expiration-alarm

#### Syntax

**advanced-expiration-alarm**

#### Context

**[Tree]** configure system license advanced-expiration-alarm

#### Description

This command triggers the advanced license expiration alarm 30 days before the license expires. The alarm is raised daily and on the last day it is raised every five minutes.

The **no** form of this command reverts to the default (the license expiration alarm is raised daily seven days before the license expires).

#### Default

no advanced-expiration-alarm

## 10.2.2 show system command descriptions

### 10.2.2.1 virtual-fabric

#### Syntax

**virtual-fabric [control | data] detail [vm *vm-id*]**

### Context

[\[Tree\]](#) show system virtual-fabric

### Description

This command displays virtual fabric information.

### Parameters

#### control

Keyword to display CSF information.

#### data

Keyword to display DSF information.

#### detail

Keyword to display more information for the specified VM.



**Note:** The **detail** keyword can be used with or without the **vm** parameter and is valid only for the new fabric.

#### vm-id

Specifies the ID of the VM for which information is to be displayed.

Values: 1 to 20 | A | B



**Note:** The **vm** parameter can be used in conjunction with the **detail** keyword.

### Output

The following output examples show virtual fabric information.

- [Virtual fabric information](#)
- [Virtual fabric detail information](#)
- [Virtual fabric detail VM information](#)

### Output example: Virtual fabric information

Check for connection error.

```
# show system virtual-fabric

Data Fabric-1
                VM-ID TX
      0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 2
      1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 A B
      - - - - - - - - - - - - - - - - - - -
01 | - * . . . . . . . . . . . . . . . * * . .
02 | * - * * * * * * * * * * * * * * * * * * *
03 | . * - . . . . . . . . . . . . . . . * * . .
04 | . * . - . . . . . . . . . . . . . . . * * . .
05 | . * . . - . . . . . . . . . . . . . . . * * . .
V 06 | . * . . . - . . . . . . . . . . . . . . . * * . .
M 07 | . * . . . . - . . . . . . . . . . . . . . . * * . .
- 08 | . * . . . . - . . . . . . . . . . . . . . . * * . .
I 09 | . * . . . . . - . . . . . . . . . . . . . . . * * . .
D 10 | . * . . . . . . - . . . . . . . . . . . . . . . * * . .
```

```

R 11| . * . . . . . . . . - . . . . . * * . .
X 12| . * . . . . . . . . - . . . . . * * . .
  13| . * . . . . . . . . - . . . . . * * . .
  14| . * . . . . . . . . - . . . . . * * . .
  15| . * . . . . . . . . - . . . . . * * . .
  16| . * . . . . . . . . - . . . . . * * . .
  17| . * . . . . . . . . - . . . . . * * . .
  18| . * . . . . . . . . - . . . . . * * . .
  19| * * * * * * * * * * * * * * * * * * * * * *
  20| * * * * * * * * * * * * * * * * * * * * * *
  A | . * . . . . . . . . . . . . . . * * - .
  B | . * . . . . . . . . . . . . . . * * . -

```

Data Fabric-2

```

VM-ID
  0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 2
  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0
- - - - - - - - - - - - - - - - - -
01| - * * * * * * * * * * * * * * * * * * * *
02| * - * * * * * * * * * * * * * * * * * * *
03| * * - * * * * * * * * * * * * * * * * * *
04| * * * - * * * * * * * * * * * * * * * * *
05| * * * * - * * * * * * * * * * * * * * * *
06| * * * * * - * * * * * * * * * * * * * * *
V 07| * * * * * * - * * * * * * * * * * * * * *
M 08| * * * * * * * - * * * * * * * * * * * * *
- 09| * * * * * * * * - * * * * * * * * * * * *
I 10| * * * * * * * * * - * * * * * * * * * * *
D 11| * * * * * * * * * * - * * * * * * * * * *
  12| * * * * * * * * * * * - * * * * * * * * *
  13| * * * * * * * * * * * * - * * * * * * * *
  14| * * * * * * * * * * * * * - * * * * * * *
  15| * * * * * * * * * * * * * * - * * * * * *
  16| * * * * * * * * * * * * * * * - * * * * *
  17| * * * * * * * * * * * * * * * * - * * * *
  18| * * * * * * * * * * * * * * * * * - * * *
  19| * * * * * * * * * * * * * * * * * * - * *
  20| * * * * * * * * * * * * * * * * * * * -

```

Control Fabric

```

VM-ID
  0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 2
  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 A B
- - - - - - - - - - - - - - - - - - - -
01| - . . . * * * * * * * * * * * * * * * * . .
02| . - . . * * * * * * * * * * * * * * * * . .
03| . . - . * * * * * * * * * * * * * * * * . .
04| . . . - * * * * * * * * * * * * * * * * . .
05| * * * * - * * * * * * * * * * * * * * * *
06| * * * * * - * * * * * * * * * * * * * * *
07| * * * * * * - * * * * * * * * * * * * * *
V 08| * * * * * * * - * * * * * * * * * * * * *
M 09| * * * * * * * * - * * * * * * * * * * * *
- 10| * * * * * * * * * - * * * * * * * * * * *
I 11| * * * * * * * * * * - * * * * * * * * * *
D 12| * * * * * * * * * * * - * * * * * * * * *
  13| * * * * * * * * * * * * - * * * * * * * *
  14| * * * * * * * * * * * * * - * * * * * * *
  15| * * * * * * * * * * * * * * - * * * * * *
  16| * * * * * * * * * * * * * * * - * * * * *
  17| * * * * * * * * * * * * * * * * - * * * *
  18| * * * * * * * * * * * * * * * * * - * * *
  19| * * * * * * * * * * * * * * * * * * - * *
  20| * * * * * * * * * * * * * * * * * * * - *

```





```

Def GW : 192.168.1.254 @ fa:ac:b4:00:24:01
OAM-A : 192.168.0.21 @ fa:ac:b4:00:24:01
OAM-B : 192.168.0.22 @ fa:ac:b4:00:24:01
UDP Port: 1000 (0x03e8)
DSCP : 48 (0x30)
VM-2 Control Fabric:
MAC Addr: fa:ac:b3:00:d1:01
L2 Encap: Ethernet2
IP Addr : 192.168.1.2/24
Def GW : 192.168.1.254 @ fa:ac:b4:00:24:01
OAM-A : 192.168.0.21 @ fa:ac:b4:00:24:01
OAM-B : 192.168.0.22 @ fa:ac:b4:00:24:01
UDP Port: 1000 (0x03e8)
DSCP : 48 (0x30)
VM-3 Control Fabric:
MAC Addr: fa:ac:a9:00:25:01
L2 Encap: Ethernet2
IP Addr : 192.168.3.1/24
Def GW : 192.168.3.254 @ fa:ac:b4:00:17:01
OAM-A : 192.168.0.21 @ fa:ac:b4:00:17:01
OAM-B : 192.168.0.22 @ fa:ac:b4:00:17:01
UDP Port: 1000 (0x03e8)
DSCP : 48 (0x30)
VM-4 Control Fabric:
MAC Addr: fa:ac:b3:00:a0:01
L2 Encap: Ethernet2
IP Addr : 192.168.3.4/24
Def GW : 192.168.3.254 @ fa:ac:b4:00:17:01
OAM-A : 192.168.0.21 @ fa:ac:b4:00:17:01
OAM-B : 192.168.0.22 @ fa:ac:b4:00:17:01
UDP Port: 1000 (0x03e8)
DSCP : 48 (0x30)
VM-A Control Fabric:
MAC Addr: fa:ac:a7:00:5b:01
L2 Encap: Ethernet2
IP Addr : 192.168.0.21/24
Def GW : 192.168.0.254 @ fa:ac:b4:00:17:01
OAM-A : 192.168.0.21 @ fa:ac:a7:00:5b:01
OAM-B : 192.168.0.22 @ fa:ac:b3:00:d2:01
UDP Port: 1000 (0x03e8)
DSCP : 48 (0x30)
VM-B Control Fabric:
MAC Addr: fa:ac:b3:00:d2:01
L2 Encap: Ethernet2
IP Addr : 192.168.0.22/24
Def GW : 192.168.0.254 @ fa:ac:b4:00:17:01
OAM-A : 192.168.0.21 @ fa:ac:a7:00:5b:01
OAM-B : 192.168.0.22 @ fa:ac:b3:00:d2:01
UDP Port: 1000 (0x03e8)
DSCP : 48 (0x30)

```

### Output example: Virtual fabric detail VM information

```

# show system virtual-fabric detail vm 3

VM-3 Data Fabric-1:
MAC Addr: fa:ac:a9:00:25:02
L2 Encap: 802.1Q
VLAN ID : 12 (0x00c)
IP Addr : 192.168.203.1/24
Def GW : 192.168.203.254 @ fa:ac:b4:00:24:01
UDP Port: 1000 (0x03e8)
DSCP : 48 (0x30)

```

```

VM-3 Control Fabric:
MAC Addr: fa:ac:a9:00:25:01
L2 Encap: Ethernet2
IP Addr : 192.168.3.1/24
Def GW  : 192.168.3.254 @ fa:ac:b4:00:17:01
OAM-A   : 192.168.0.21 @ fa:ac:b4:00:17:01
OAM-B   : 192.168.0.22 @ fa:ac:b4:00:17:01
UDP Port: 1000 (0x03e8)
DSCP    : 48 (0x30)

```

## 10.2.3 tools system command descriptions

### 10.2.3.1 virtual-fabric

#### Syntax

```

virtual-fabric [control | data] detail [statistics] [vm vm-id]
virtual-fabric override-csf

```

#### Context

[\[Tree\]](#) tools dump system virtual-fabric

#### Description

This command displays virtual fabric health-related information.

#### Parameters

##### control

Keyword to display CSF information.

##### data

Keyword to display DSF information.

##### detail

Keyword to display more information for the specified VM.



**Note:** The **detail** keyword can be used with or without the **vm** parameter.

##### statistics

Keyword to display switch fabric statistics for the specified VM, or for all VMs.



**Note:** The **statistics** keyword must be used with the **detail** keyword.

##### *vm-id*

Specifies the ID of the VM for which information is to be displayed.

Values: 1 to 20 | A | B



**Note:** The **vm** parameter can only be used in conjunction with the **detail** keyword.

**override-csf**

Keyword to display the CSF override status.

**Output**

The following output examples show virtual fabric health information.

- [Virtual fabric health information](#)
- [Virtual fabric detail health information](#)
- [Virtual fabric detail VM health information \(VM 1\)](#)
- [Virtual fabric detail VM health information \(VM B\)](#)
- [Virtual fabric detail VM health information \(statistics\)](#)
- [Control fabric override status](#)

**Output example: Virtual fabric health information**

```
# tools dump system virtual-fabric

Data Fabric-1
      VM-ID TX
      0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 2
      1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 A B
      - - - - - - - - - - - - - - - - - - -
01| - * 3 2 2 1 1 3 2 1 2 1 2 2 2 2 2 * * 2 2
02| * - * * * * * * * * * * * * * * * * * *
03| 2 * - 2 2 1 1 2 2 1 2 1 2 2 2 2 1 2 * * 2 2
04| 2 * 1 - 2 1 1 2 2 1 2 1 2 2 2 2 2 * * 2 2
05| 2 * 1 2 - 1 1 2 2 1 2 1 2 2 2 1 1 2 * * 2 2
V 06| 2 * 1 2 2 - 1 2 2 1 2 1 2 2 2 2 1 2 * * 2 2
M 07| 2 * 1 2 2 1 - 2 2 1 2 3 2 2 2 1 1 2 * * 2 2
- 08| 2 * 1 2 2 1 1 - 2 1 2 1 2 2 2 1 2 2 * * 2 2
I 09| 2 * 1 2 2 1 1 2 - 1 2 1 2 2 2 2 2 2 * * 2 2
D 10| 2 * 1 2 2 2 1 2 2 - 2 1 2 2 2 1 2 2 * * 2 2
11| 2 * 1 2 2 1 1 2 2 1 - 1 2 2 3 1 2 2 * * 2 2
R 12| 2 * 1 2 2 1 1 2 2 1 2 - 2 2 2 1 1 2 * * 2 2
X 13| 2 * 1 2 2 1 1 2 2 1 2 1 - 2 2 1 1 2 * * 2 2
14| 2 * 1 2 2 2 1 2 2 1 2 1 2 - 2 1 1 2 * * 2 2
15| 2 * 1 2 2 1 1 2 2 1 2 1 2 2 - 1 2 2 * * 2 2
16| 2 * 1 2 2 2 1 2 2 1 2 1 2 2 2 - 1 2 * * 2 2
17| 2 * 1 2 2 1 1 2 2 1 2 1 2 2 2 1 - 2 * * 2 2
18| 2 * 1 2 2 1 1 2 2 1 2 1 2 2 2 1 2 - * * 2 2
19| * * * * * * * * * * * * * * * * * * * - * * *
20| * * * * * * * * * * * * * * * * * * * - * * *
A | 2 * 2 2 2 1 1 2 2 1 2 1 2 2 2 1 2 2 * * - 2
B | 2 * 1 2 2 1 1 2 2 2 2 1 2 2 2 2 2 2 * * 2 -
...

Data Fabric-2
      VM-ID
      0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 2
      1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0
      - - - - - - - - - - - - - - - - - - -
01| - * * * * * * * * * * * * * * * * * * * *
02| * - * * * * * * * * * * * * * * * * * * *
03| * * - * * * * * * * * * * * * * * * * * *
04| * * * - * * * * * * * * * * * * * * * * *
```

```

05| * * * * - * * * * * * * * * * * * * * * * *
06| * * * * * - * * * * * * * * * * * * * * * *
V 07| * * * * * * * * * * - * * * * * * * * * * * *
M 08| * * * * * * * * * * - * * * * * * * * * * * *
- 09| * * * * * * * * * * - * * * * * * * * * * * *
I 10| * * * * * * * * * * - * * * * * * * * * * * *
D 11| * * * * * * * * * * - * * * * * * * * * * * *
12| * * * * * * * * * * - * * * * * * * * * * * *
13| * * * * * * * * * * - * * * * * * * * * * * *
14| * * * * * * * * * * - * * * * * * * * * * * *
15| * * * * * * * * * * - * * * * * * * * * * * *
16| * * * * * * * * * * - * * * * * * * * * * * *
17| * * * * * * * * * * - * * * * * * * * * * * *
18| * * * * * * * * * * - * * * * * * * * * * * *
19| * * * * * * * * * * - * * * * * * * * * * * *
20| * * * * * * * * * * - * * * * * * * * * * * *
    
```

Control Fabric

```

                                VM-ID
                                0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 2
                                1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 A B
01| - - - - - - - - - - - - - - - - - - - - - -
02| - 2 2 3 * * * * * * * * * * * * * * * * * * 1 2
03| 2 - 2 3 * * * * * * * * * * * * * * * * * * 1 2
04| 1 2 - 3 * * * * * * * * * * * * * * * * * * 2 2
05| 1 2 2 - * * * * * * * * * * * * * * * * * * 2 2
06| * * * * - * * * * * * * * * * * * * * * * * *
07| * * * * * - * * * * * * * * * * * * * * * * *
V 08| * * * * * * * * * * - * * * * * * * * * * * *
M 09| * * * * * * * * * * - * * * * * * * * * * * *
- 10| * * * * * * * * * * - * * * * * * * * * * * *
I 11| * * * * * * * * * * - * * * * * * * * * * * *
D 12| * * * * * * * * * * - * * * * * * * * * * * *
13| * * * * * * * * * * - * * * * * * * * * * * *
14| * * * * * * * * * * - * * * * * * * * * * * *
15| * * * * * * * * * * - * * * * * * * * * * * *
16| * * * * * * * * * * - * * * * * * * * * * * *
17| * * * * * * * * * * - * * * * * * * * * * * *
18| * * * * * * * * * * - * * * * * * * * * * * *
19| * * * * * * * * * * - * * * * * * * * * * * *
20| * * * * * * * * * * - * * * * * * * * * * * *
A 1 2 1 3 * * * * * * * * * * * * * * * * * * - 2
B 1 2 1 3 * * * * * * * * * * * * * * * * * * 1 -
    
```

```

10 s discovery packet RX peak jitter.
'- ' same vm-id      '* ' no data      '6 ' >= 1 s
'5 ' >= 100 ms      '4 ' >= 10 ms     '3 ' >= 1 ms
'2 ' >= 100 us     '1 ' >= 10 us     '0 ' >= 1 us
    
```



**Note:**

- This example shows the virtual fabric connection status after a scale-in operation.
- Each row of the matrix represents the VM-specific view of the other VMs.
- An asterisk (\*) means that data is not available, including when a card is not present or has failed.

**Output example: Virtual fabric detail health information**

```
# tools dump system virtual-fabric detail
```

10 s discovery packet RX peak jitter, by VM-ID and source VM-ID, us

Data Fabric-1

```
01 <== 02----- 03----- 04-----
          292      86      1482
02 <== 01----- 03----- 04-----
          85      83      1510
03 <== 01----- 02----- 04-----
          71      279     1551
04 <== 01----- 02----- 03-----
          51      282      81
```

10 s discovery packet RX average jitter, by VM-ID and source VM-ID, us

Data Fabric-1

```
01 <== 02----- 03----- 04-----
          44      22      65
02 <== 01----- 03----- 04-----
          19      27      64
03 <== 01----- 02----- 04-----
          18      42      67
04 <== 01----- 02----- 03-----
          18      44      25
```

Time since the most recently lost discovery packets  
(as of Thu Apr 11 10:11:36 UTC 2019)

Control Fabric

VM-ID

```
01 -> B: 22:23:30 22:23:30 22:23:30 22:23:30 22:23:30 22:23:30
          22:23:30 22:23:20 22:23:20 22:23:20
02 -> B: 22:23:30 22:23:30 22:23:30 22:23:30 22:23:30 22:23:30
          22:23:30 22:23:20 22:23:20 22:23:20
03 -> B: 22:23:30 22:23:30 22:23:30 22:23:30 22:23:30 22:23:30
          22:23:30 22:23:20 22:23:20 22:23:20
04 -> B: 22:23:30 22:23:30 22:23:30 22:23:30 22:23:30 22:23:30
          22:23:30 22:23:20 22:23:20 22:23:20
A -> B: 22:23:30 22:23:30 22:23:30 22:23:30 22:23:30 22:23:30
          22:23:30 22:23:30 22:23:20 22:23:20
```

10 s discovery packet RX peak jitter, by VM-ID and source VM-ID, us

Control Fabric

```
01 <== 02----- 03----- 04----- A----- B-----
          320      63      1497      89      146
02 <== 01----- 03----- 04----- A----- B-----
          88      87      1524      90      98
03 <== 01----- 02----- 04----- A----- B-----
          76      292     1498      121     108
04 <== 01----- 02----- 03----- A----- B-----
          87      328      88      89      178
A <== 01----- 02----- 03----- 04----- B-----
          391     318      81     1466     1504
B <== 01----- 02----- 03----- 04----- A-----
          78      877      96     1461      78
```

10 s discovery packet RX average jitter, by VM-ID and source VM-ID, us

Control Fabric

```
01 <== 02----- 03----- 04----- A----- B-----
          44      22      65      25      29
02 <== 01----- 03----- 04----- A----- B-----
          22      27      70      29      32
03 <== 01----- 02----- 04----- A----- B-----
```

```

      26      51      67      28      30
04 <== 01----- 02----- 03----- A----- B-----
      22      44      27      24      33
A <== 01----- 02----- 03----- 04----- B-----
      28      45      27      58      115
B <== 01----- 02----- 03----- 04----- A-----
      26      66      24      66      21

```

### Output example: Virtual fabric detail VM health information (VM 1)

```

# tools dump system virtual-fabric detail vm 1

10 s discovery packet RX peak jitter, by VM-ID and source VM-ID, us

Data Fabric-1
01 <== 02----- 03----- 04-----
      349      211      76

10 s discovery packet RX average jitter, by VM-ID and source VM-ID, us

Data Fabric-1
01 <== 02----- 03----- 04-----
      42      32      22

10 s discovery packet RX peak jitter, by VM-ID and source VM-ID, us

Control Fabric
01 <== 02----- 03----- 04----- A----- B-----
      341      133      90      76      116

10 s discovery packet RX average jitter, by VM-ID and source VM-ID, us

Control Fabric
01 <== 02----- 03----- 04----- A----- B-----
      45      35      28      23      28

```

### Output example: Virtual fabric detail VM health information (VM B)

```

# tools dump system virtual-fabric detail vm "B"

10 s discovery packet RX peak jitter, by VM-ID and source VM-ID, us

10 s discovery packet RX average jitter, by VM-ID and source VM-ID, us

Control Fabric
VM-ID
01 -> B: 22:24:20 22:24:20 22:24:20 22:24:20 22:24:20 22:24:20
          22:24:20 22:24:20 22:24:20 22:24:20
02 -> B: 22:24:20 22:24:20 22:24:20 22:24:20 22:24:20 22:24:20
          22:24:20 22:24:20 22:24:20 22:24:20
03 -> B: 22:24:20 22:24:20 22:24:20 22:24:20 22:24:20 22:24:20
          22:24:20 22:24:20 22:24:20 22:24:20
04 -> B: 22:24:20 22:24:20 22:24:20 22:24:20 22:24:20 22:24:20
          22:24:20 22:24:20 22:24:20 22:24:20
A -> B: 22:24:20 22:24:20 22:24:20 22:24:20 22:24:20 22:24:20
          22:24:20 22:24:20 22:24:20 22:24:20

10 s discovery packet RX peak jitter, by VM-ID and source VM-ID, us

Control Fabric
B <== 01----- 02----- 03----- 04----- A-----

```

```

                86      290      97      128      81
10 s discovery packet RX average jitter, by VM-ID and source VM-ID, us

Control Fabric
B <== 01----- 02----- 03----- 04----- A-----
      23      41      24      30      25

```

### Output example: Virtual fabric detail VM health information (statistics)

```

# tools dump system virtual-fabric control detail statistics vm 3
...
Statistics for Control Fabric-1 at VM-ID 03:
  RX error:          0
RX discarded:      219
  RX ICMP:          0
  TX error:          0
TX discarded:      0
  TX ICMP:          0
Breakdown of RX discards by cause:
  0 The packet has an invalid/inconsistent length
  4 The packet has an invalid/unsupported Ethertype
  0 The packet has an invalid 802.1Q TPID
  0 The packet has an invalid 802.1Q VLAN ID
  0 The source slot (VM) in the swFab header is invalid
  0 The length of the swFab message is invalid/inconsistent
  0 The swFab message type is invalid
  0 The CF is down (seen on DF ports)
  0 This VM is not registered with the OAM VM's
  0 The next-hop MAC for the intended destination slot (VM) is unknown
  0 Some value in the IP header is not valid
  0 The destination address in the IP header is not valid
  0 The stated IP protocol is not valid
  0 The L3 swFab packet is an IP fragment
  0 Some value in the UDP header is not valid
215 The VM is not fully up
  0 The VM has been locked out
  0 The stated destination tap is not valid
  0 Reassembly context not found
  0 Timeout during reassembly
Discovery packet RX KPIs, current and previous periods
Control Fabric-1
=====
VM-ID      packets lost      peak jitter, us
          current previous      current previous
-----
03         0         0         10857         0
=====

```

### Output example: Control fabric override status

```

# tools dump system virtual-fabric override-csf
Control fabric override status
=====
VM-ID  active fabric  duration, s  remains, s
-----
01         2           10           5
02         2           10           5
03         2           10           5
04         2           10           5
A         2           10           5
B         2           10           5

```



# 11 vm command reference

## 11.1 vm hierarchy descriptions

This section provides the following vm hierarchy descriptions:

- [clear vm command hierarchy](#)
- [show vm command hierarchy](#)

### 11.1.1 clear vm command hierarchy

```
clear
  - vm
```

### 11.1.2 show vm command hierarchy

```
show
  - vm
    - virtual
      - cpu-scheduling
      - fp
```

## 11.2 vm command descriptions

This section provides the following vm command descriptions:

- [clear vm command descriptions](#)
- [show vm command descriptions](#)

### 11.2.1 clear vm command descriptions

#### 11.2.1.1 vm

##### Syntax

```
vm vm-id
```

```
vm vm-id fp [1..2] dist-cpu-protection
```

**vm** *vm-id* **fp** [1..2] **ingress mode** {**access** | **network**} **queue-group** *ref-point-name* **instance** *instance*  
**statistics**

**vm** *vm-id* **soft** [**hard-reset-unsupported-mdas**]

## Context

[\[Tree\]](#) clear vm

## Description

This command re-initializes the statistics for the specified VM.

## Parameters

*vm-id*

Specifies the VM ID for which information is to be cleared.

Values: 1 to 20

**soft**

Keyword to issue a soft-reset of the I/O module.

**{access | network}**

access | network

*ref-point-name*

Specifies the reference point name, up to 32 characters.

*instance*

Specifies the instance.

Values: 1 to 65535

**statistics**

Keyword to clear statistics only.

## 11.2.2 show vm command descriptions

### 11.2.2.1 vm

#### Syntax

**vm**

**vm** *vm-id* [**detail**]

**vm** *vm-id* **memory-pools**

**vm** *vm-id* **cpu** [**sample-period** *seconds*]

**vm** *vm-id* **ht-pairs**

**vm** *vm-id* **virtual fp**

## Context

**[Tree]** show vm

## Description

This command displays information for the specified VM.

In the output screens, the number of cores for the selected VM CPU is also included. The CPU Time and CPU Usage is displayed per CP Core in the VM CPU output example.

In the VM virtual FP output, the Utilization percentage is displayed per fast path Core.

## Parameters

*vm-id*

Specifies the ID of the VM for which information is to be displayed.

Values: 1 to 20 | A | B

**detail**

Keyword to display more information for the specified VM.

**memory-pools**

Keyword to display memory pool details for the specified VM.

**cpu**

Keyword to display CPU usage details for the specified VM.

*seconds*

Specifies the sampling period in seconds.

Values: 1 to 300

Default: 1

**virtual fp**

Displays the virtual FP statistics for the specified VM.



### Note:

- The Utilization value shows the current utilization of the specific core by this vFP task on the specified VM. It is the ratio of the useful versus the sum of the useful and busy-loop executions of a vFP task, all of which run in a busy-loop mode for performance reasons.
- When hyper-threading is enabled, some performance-critical tasks (for example, NIC and Scheduler) run only on one core of the hyper-thread pair, with the sibling core being idle (not used for any tasks).

**ht-pairs**

Displays hyper-threading vCPU pairs for the specified VM.



### Note:

- When the reported HT state in the output is ON, hyper-threading optimization is enabled on the VM.
- When the HT state is N/A, either hyper-threading is not supported by the CPU or hyper-threading optimization support is not available on the VM.

- When the HT state is OFF, hyper-threading optimization is disabled.

## Output

The following output examples show virtual fabric information.

- [VM statistics](#)
- [VM detail statistics](#)
- [VM memory pool statistics](#)
- [VM CPU statistics](#)
- [VM HT vCPU pairs statistics](#)
- [VM virtual forwarding plane statistics](#)

### Output example: VM statistics

```
# show vm
=====
VM Summary
=====
VM      Provisioned Type      Admin Operational  Comments
Id      Equipped Type (if different) State State
-----
1       iom-v                      up    up
2       iom-v                      up    booting
3       iom-v-mg                   up    up
4       iom-v-mg                   up    up
A       cpm-v                      up    up/active
B       cpm-v                      up    up/standby
=====
```

Table 10: Admin and operational state values

Value	Description
<b>Admin State</b>	
noop	Indicates that a query is made for a slot/VM number that is invalid
up	Administrative state up
down	Administrative state down
<b>Operational State</b>	
unknown	Indicates that a query is made for a slot/VM number that is invalid
up	Operational state up
down	Operational state down
failed	Indicates that the object has failed to become operational
booting	Indicates that the object is in booting sequence

Value	Description
empty	Indicates that the slot/VM number is empty
provisioned	Indicates that the slot/VM number is pre-provisioned, but the slot is empty or occupied by another type of card
unprovisioned	Indicates that the object is not configured

### Output example: VM detail statistics

```
# show vw 1 detail
=====
VM 1
=====
Slot      Provisioned Type      Admin Operational  Comments
          Equipped Type (if different)  State State
-----
1         iom-v
Disk - cf1:
  Administrative State      : up
  Operational state         : up
  Size                       : 1,019 MB
  Free space                 : 942,056 KB
  Percent Used               : 9 %
Disk - cf2:
  Administrative State      : up
  Operational state         : up
  Size                       : 1,019 MB
  Free space                 : 1,019 MB
  Percent Used               : 0 %
Disk - cf3:
  Administrative State      : up
  Operational state         : up
  Size                       : 1,189 MB
  Free space                 : 788,788 KB
  Percent Used               : 35 %
Virtual Machine Card Specific Data
  Hypervisor                 : (Not Specified)
  CPU                       : (Not Specified)
  Number of cores            : 0
Hardware Data
  Administrative state       : up
  Operational state         : up
  Software version           : TiMOS-MG-I-21.5.B1-25 iom/x86_64 Nokia
                             7750 SR-MG Copyright (c) 2000-2021 Nokia.
                             All rights reserved. All use subject to
                             applicable license agreements.
                             Built on Wed May 12 20:07:25 PDT 2021 by
                             builder in /builds/c/MG215B/B1-25/panos/
                             main/sros
  Time of last boot          : 2021/05/13 12:38:49
  Base MAC address           : 00:00:01:00:00:00
  Firmware revision status   : acceptable
  Memory capacity            : 8,192 MB
=====
```



#### Note:

- When an OAM-VM switchover takes place, the Time of Last Boot field is updated for both OAM-VMs (active and standby).
- The Memory capacity fields indicate the total physical memory assigned to the card/VM.

### Output example: VM memory pool statistics

```
# show vm A memory-pools
```

VM A Memory Pools				
Name	Max Allowed	Current Size	Max So Far	In Use
ACCTMGR	No limit	0	0	0
BFD	No limit	3,145,728	3,145,728	2,100,336
BGP	No limit	5,242,880	5,242,880	4,122,168
CALLTRACE	No limit	26,214,400	26,214,400	22,739,176
CDBMGR	No limit	0	0	0
CFLOWD	No limit	1,048,576	1,048,576	26,384
Cards & Ports	No limit	11,534,336	12,582,912	6,661,536
DCM	No limit	3,145,728	3,145,728	2,899,832
DHCP Server	No limit	1,048,576	1,048,576	126,720
DTH	No limit	9,437,184	9,437,184	5,828,312
ETH-CFM	No limit	5,242,880	5,242,880	4,495,776
GTP	No limit	0	0	0
GTP'	No limit	4,194,304	4,194,304	3,731,288
GXCL	No limit	0	0	0
GXL	No limit	0	0	0
ICC	167,772,160	3,145,728	3,145,728	2,924,504
IMSI Db Appl	No limit	44,040,192	53,477,376	29,275,056
IOM	No limit	10,485,760	10,485,760	9,695,816
IP Stack	No limit	26,214,400	31,457,280	24,133,304
IS-IS	No limit	2,097,152	2,097,152	1,622,512
ISA	No limit	4,194,304	4,194,304	2,963,368
LDP	No limit	18,874,368	18,874,368	17,139,808
LTE AMS	No limit	4,194,304	4,194,304	3,562,760
LTE APM	No limit	6,291,456	6,291,456	5,467,176
LTE LDNSC	No limit	0	0	0
LTE OLC	No limit	1,048,576	1,048,576	40,968
LTE RADPROXY	No limit	0	0	0
LTE SD	No limit	0	0	0
LTE SDLB	No limit	1,048,576	1,048,576	426,232
LTE SWM	No limit	0	0	0
LTE_DHCP	No limit	1,048,576	1,048,576	200
LTE_LI	No limit	1,048,576	1,048,576	3,664
Logging	243,269,632	10,485,760	10,485,760	3,333,240
LteRADIUS Appl	No limit	1,048,576	1,048,576	113,744
MBUF	536,870,912	15,728,640	15,728,640	14,587,064
MCS	No limit	1,048,576	1,048,576	97,200
MC_RED	No limit	1,048,576	1,048,576	273,504
MIP	No limit	0	0	0
MPLS/RSVP	No limit	32,505,856	32,505,856	24,496,200
MSCP_SVC	No limit	0	0	0
MSNGR	No limit	0	0	0
Management	No limit	13,631,488	23,068,672	12,334,904
OAM	No limit	1,048,576	1,048,576	298,800
OSPF	No limit	3,145,728	3,145,728	1,218,656
OpenFlow	No limit	3,145,728	3,145,728	1,116,888
PFCP	No limit	0	0	0
PKI	No limit	2,097,152	2,097,152	715,432
PMIP	No limit	0	0	0
RIP	No limit	1,048,576	1,048,576	77,128
ROL	No limit	0	0	0

RTM/Policies	No limit	11,534,336	11,534,336	9,289,336
Redundancy	No limit	23,068,672	23,068,672	1,744,712
Rf	No limit	5,242,880	5,242,880	2,136,736
S6B	No limit	0	0	0
SCTP	No limit	4,194,304	4,194,304	3,295,032
SESSMGR	No limit	0	0	0
SIM	No limit	4,194,304	4,194,304	2,534,288
Security	No limit	1,048,576	1,048,576	32,616
Services	No limit	46,137,344	46,137,344	38,841,456
Signaling	No limit	18,874,368	18,874,368	16,722,248
Stats	No limit	2,097,152	2,097,152	1,374,136
Subscriber Mgmt	No limit	17,825,792	17,825,792	11,752,760
System	No limit	380,633,088	383,778,816	365,316,168
TUNMGR	No limit	0	0	0
Traffic Eng	No limit	1,048,576	1,048,576	541,016
VRRP	No limit	1,048,576	1,048,576	147,176
WEB Redirect	8,388,608	1,048,576	1,048,576	148,680
ZFS	No limit	102,760,448	109,051,904	97,691,728
-----				
Current Total Size :		900,726,784 bytes		
Total In Use :		760,217,744 bytes		
Available Memory :		6,855,589,888 bytes		
=====				

Table 11: Memory fields

Value	Description
Current Total Size	Indicates the current size of the allocated memory for a memory pool
Total In Use	Indicates how much out of the current size is being used
Available Memory	Indicates the amount of memory available for allocation to any memory pool when necessary

**Output example: VM CPU statistics**

```
# show vm 3 cpu
=====
VM 3 CPU Utilization (Sample period: 1 second)
=====
Name                Cores      CPU Time    CPU Usage    Capacity
                    (HT=ON)    (uSec)      Usage        Usage
-----
IOM                  6          75,688      1.26%        0.58%
-----
Total                5,988,760  100.00%
  Idle               5,913,348  98.74%
  Usage              75,412     1.25%
Busiest Core Utilization 16,423     1.64%
=====
Per Core Statistics
=====
Core ID             CPU Time    CPU Usage
                    (uSec)      (uSec)
-----
0                   16,422     1.64%
1                   11,682     1.17%
```

```

2           9,742           0.97%
3          14,326           1.43%
4          11,458           1.14%
5          11,782           1.18%
=====

```

### Output example: VM HT vCPU pairs statistics

```
# show vm 3 ht-pairs
```

```

=====
VM 3 HT CPU pairs
Core id   Sibling Core id
-----
0         3
1         4
2         5
6        13
7        14
8        15
9        23
10       24
=====

```

### Output example: VM virtual forwarding plane statistics

```
# show vm 4 virtual fp
```

```

=====
VM 4 Virtual Forwarding Plane Statistics
=====
Task                vCPUs   Average   Maximum
                   (HT=ON) Utilization Utilization
-----
NIC                  1        0.00 %   0.00 %
Worker               6        0.04 %   0.04 %
Scheduler            1        0.00 %   0.00 %
=====

```

```
Per Task Statistics
```

```

=====
Task      Core id   Utilization
-----
Worker    3         0.04 %
Worker    4         0.04 %
Worker    5         0.03 %
Scheduler 6         0.00 %
NIC       7         0.00 %
Worker    11        0.04 %
Worker    12        0.04 %
Worker    13        0.04 %
=====

```

## 11.2.2.2 virtual

### Syntax

```
virtual
```



**Context**

[\[Tree\]](#) show vm virtual

**Description**

This command displays virtual VM information.

**11.2.2.3 cpu-scheduling****Syntax**

cpu-scheduling

**Context**

[\[Tree\]](#) show vm virtual cpu-scheduling

**Description**

This command displays virtual CPU scheduling information on the VM.

**11.2.2.4 fp****Syntax**

fp

**Context**

[\[Tree\]](#) show vm virtual fp

**Description**

This command displays virtual forwarding plane information on the VM.

## 12 vm-function command reference

### 12.1 vm-function hierarchy descriptions

This section provides the following vm-function hierarchy descriptions:

- [show vm-function command hierarchy](#)

#### 12.1.1 show vm-function command hierarchy

```
show
  - vm-function
    - qos
```

### 12.2 vm-function command descriptions

This section provides the following vm-function command descriptions:

- [show vm-function command descriptions](#)

#### 12.2.1 show vm-function command descriptions

##### 12.2.1.1 vm-function

###### Syntax

```
vm-function vm-id[/vm-function-id] [detail]
```

###### Context

```
[Tree] show vm-function
```

###### Description

This command displays information about the VM functions for the specified VM.

###### Parameters

*vm-id*

Specifies the ID of the VM for which information is to be displayed.

Values: 1 to 20

*vm-function-id*

Specifies the MDA number of the VM for which information is to be displayed.

Values: 1 to 4

**Output**

The following output example shows the CPU load for all configured cards.

**Output example**

```
# show vm-function 1/1
=====
VMF 1/1
=====
VM   Id   Provisioned Type           Admin   Operational
Id   Id           Equipped Type (if different) State   State
-----
1    1    m20-v                               up     up
=====
```

**12.2.1.2 qos****Syntax**

**qos {ingress | egress} buffer-allocation [detail]**

**qos {ingress | egress} orphaned-queues**

**Context**

[\[Tree\]](#) show vm-function qos

**Description**

This command displays MDA QoS information.

**Parameters****ingress | egress**

Keyword to show information for incoming or outgoing messages.

**buffer-allocation**

Keyword to display named pool buffer allocation information.

**detail**

Keyword to display more information.

**orphaned-queues**

Keyword to show configured but not defined queues.

## 13 vnf-instance command reference

### 13.1 vnf-instance hierarchy descriptions

This section provides the following vnf-instance hierarchy descriptions:

- [show vnf-instance command hierarchy](#)

#### 13.1.1 show vnf-instance command hierarchy

```
show
  - vnf-instance
```

### 13.2 vnf-instance command descriptions

This section provides the following vnf-instance command descriptions:

- [show vnf-instance command descriptions](#)

#### 13.2.1 show vnf-instance command descriptions

##### 13.2.1.1 vnf-instance

###### Syntax

```
vnf-instance [environment] [power-supply]
```

```
vnf-instance class vnf-instance-class
```

```
vnf-instance detail [class vnf-instance-class]
```

###### Context

```
[Tree] show vnf-instance
```

###### Description

This command displays general VNF instance information.

###### Parameters

###### environment

Keyword to display environment usage information for specialized configurations.

**power-supply**

Keyword to display power-supply usage information for specialized configurations.

**detail**

Keyword to display more information for all vnf-instance in the system.

*vnf-instance-class*

Displays vnf-instance information for the specified class only.

**Output**

The following output example shows VNF instance statistics.

**Output example: VNF instance statistics**

```
# show vnf-instance
=====
System Information
=====
Name                : Dut-A
Type                : MAG-c
Chassis Topology    : Standalone
Number of VMs       : 22
Oper number of VMs  : 22
Number of ports     : 42
Base MAC address    : 60:77:ff:00:00:00
=====
Chassis Summary
=====
Chassis  Role          Status
-----
1        Standalone    up
=====
```

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