OsmoSGSN VTY Reference

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COLLABORATORS

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Contents

List of Tables

Chapter 1

VTY reference

The Virtual Tele Type (VTY) has the concept of nodes and commands. This chapter lists all nodes and the commands that are available within the node. Each command can consist out of several words followed by a variable number of parameters. There are common patterns for the parameters, these include IPv4 addresses, number ranges, a word, a line of text and choice. The following will explain the commonly used patterns.

Pattern	Example	Explanation
A.B.C.D	127.0.0.1	A IPv4 address
TEXT	example01	A single string without any spaces, tabs
.TEXT	Some information	A line of text
(OptionA|OptionB|OptionC)	OptionA	A choice between a list of available options
<0-10>	5	A number from a range

Table 1.1: VTY Parameter Patterns

The application is configured through the VTY. For configuring a system one needs to enter the **enable** node and then enter the **configure terminal** command. Then the configuration can be made according to the available commands. After the system has been configured one can use the **write** command to write the new configuration to the configuration file. The new file will be used after the application has been restarted.

The following table lists the TCP port numbers of the VTY for the various Osmocom GSM related programs as used on sysmocom products:

Port Number	Software
4240	osmo-pcu
4241	osmo-bts
4242	osmo-nitb, osmo-bsc
4243	osmo-bsc_mgcp
4244	osmo-bsc_nat
4245	osmo-sgsn
4246	osmo-gbproxy

Table 1.2: VTY port numbers

1.1 Common Commands

These commands are available on all VTY nodes. They are listed here only once, to unclutter the VTY reference.

1.1.1 **end**

Command

```
end
```

Parameters

end

End current mode and change to enable mode.

1.1.2 **exit**

Command

```
exit
```

Parameters

exit

Exit current mode and down to previous mode

1.1.3 **help**

Command

```
help
```

Parameters

help

Description of the interactive help system

1.1.4 **list [with-flags]**

Command

```
list [with-flags]
```

Parameters

list

Print command list

[with-flags]

Also print the VTY attribute flags

1.1.5 show running-config

Command

```
show running-config
```

Parameters

show
>   Show running system information

running-config
>   running configuration

1.1.6 show vty-attributes

Command

```
show vty-attributes
```

Parameters

show
>   Show running system information

vty-attributes
>   List of VTY attributes

1.1.7 show vty-attributes (application|library|global)

Command

```
show vty-attributes (application|library|global)
```

Parameters

show
>   Show running system information

vty-attributes
>   List of VTY attributes

application
>   Application specific attributes only

library
>   Library specific attributes only

global
>   Global attributes only

1.1.8 write

Command

```
write
```

Parameters

write

    Write running configuration to memory, network, or terminal

1.1.9 write file [PATH]

Command

```
write file [PATH]
```

Parameters

write

    Write running configuration to memory, network, or terminal

file

    Write to configuration file

[PATH]

    Set file path to store the config, or replace if already exists

1.1.10 write memory

Command

```
write memory
```

Parameters

write

    Write running configuration to memory, network, or terminal

memory

    Write configuration to the file (same as write file)

1.1.11 write terminal

Command

```
write terminal
```

Parameters

write

    Write running configuration to memory, network, or terminal

terminal

    Write to terminal

1.2 view

The view node is the default node when connecting to the VTY interface. This node does not require any additional permission and allows to introspect the application.

1.2.1 bssgp bvc nsei <0-65535> bvci <0-65535> reset

Command

```
bssgp bvc nsei <0-65535> bvci <0-65535> reset
```

Parameters

bssgp

  Initiate BVC RESET procedure for a given NSEI and BVCI

bvc

  Filter based on BSSGP Virtual Connection

nsei

  NSEI of the BVC to be filtered

<0-65535>

  Network Service Entity Identifier (NSEI)

bvci

  BVCI of the BVC to be filtered

<0-65535>

  BSSGP Virtual Connection Identifier (BVCI)

reset

  Perform reset procedure

1.2.2 enable [expert-mode]

Command

```
enable [expert-mode]
```

Parameters

enable

  Turn on privileged mode command

[expert-mode]

  Enable the expert mode (show hidden commands)

1.2.3 logging color (0|1)

Command

```
logging color (0|1)
```

Parameters

logging
    Configure logging

color
    Configure color-printing for log messages

0
    Don't use color for printing messages

1
    Use color for printing messages

1.2.4 logging disable

Command

```
logging disable
```

Parameters

logging
    Configure logging

disable
    Disables logging to this vty

1.2.5 logging enable

This command is required to make logging commands available on the telnet VTY.

Command

```
logging enable
```

Parameters

logging
    Configure logging

enable
    Enables logging to this vty

1.2.6 logging filter all (0|1)

Disable/enable general log output on a given target. Typically, 'logging filter all 1' allows to see the usual log output on a given target. Setting to '0' can be useful when logging to the telnet VTY console: mute all log output to allow typing VTY commands on the telnet prompt without interference from log output; 'logging filter all 1' then re-enables logging in the same log output configuration as before. Some applications provide more specific filters, e.g. to log a given IMSI only. To employ such filters, set 'logging filter all 0' to disable general logging, and then enable a more specific filter instead.

Command

```
logging filter all (0|1)
```

Parameters

logging

 Configure logging

filter

 Filter log messages

all

 Do you want to log all messages?

0

 Only print messages matched by other filters

1

 Bypass filter and print all messages

1.2.7 logging filter bvc nsei <0-65535> bvci <0-65535>

Command

```
logging filter bvc nsei <0-65535> bvci <0-65535>
```

Parameters

logging

 Configure logging

filter

 Filter log messages

bvc

 Filter based on BSSGP Virtual Connection

nsei

 NSEI of the BVC to be filtered

<0-65535>

 Network Service Entity Identifier (NSEI)

bvci

 BVCI of the BVC to be filtered

<0-65535>

 BSSGP Virtual Connection Identifier (BVCI)

1.2.8   logging filter nse nsei <0-65535>

Command

```
logging filter nse nsei <0-65535>
```

Parameters

logging
>   Configure logging

filter
>   Filter log messages

nse
>   Filter based on NS Entity

nsei
>   Identify NSE by NSEI

<0-65535>
>   Numeric identifier

1.2.9   logging filter nsvc nsvci <0-65535>

Command

```
logging filter nsvc nsvci <0-65535>
```

Parameters

logging
>   Configure logging

filter
>   Filter log messages

nsvc
>   Filter based on NS Virtual Connection

nsvci
>   Identify NS-VC by NSVCI

<0-65535>
>   Numeric identifier

1.2.10 logging level (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|lglo...

Command

```
logging level (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|lglobal| ←
    llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua| ←
    lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio) (debug|info ←
    |notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

mm

Layer3 Mobility Management (MM)

pag

Paging Subsystem

meas

Radio Measurement Processing

ref

Reference Counting

gprs

GPRS Packet Service

llc

GPRS Logical Link Control Protocol (LLC)

sndcp

GPRS Sub-Network Dependent Control Protocol (SNDCP)

slhc

RFC1144 TCP/IP Header compression (SLHC)

ranap

RAN Application Part (RANAP)

sua

SCCP User Adaptation (SUA)

v42bis

V.42bis data compression (SNDCP)

gtp

GPRS Tunnelling Protocol (GTP)

rim

RAN Information Management (RIM)

lglobal

Library-internal global log family

llapd

LAPD in libosmogsm

linp

A-bis Intput Subsystem

lmux

A-bis B-Subchannel TRAU Frame Multiplex

lmi

A-bis Input Driver for Signalling

lmib

A-bis Input Driver for B-Channels (voice)

lsms

Layer3 Short Message Service (SMS)

lctrl

Control Interface

lgtp

GPRS GTP library

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

libosmo-sigtran MTP3 User Adaptation

lmgcp

libosmo-mgcp Media Gateway Control Protocol

ljibuf

libosmo-netif Jitter Buffer

lrspro

Remote SIM protocol

lns

    GPRS NS layer

lbssgp

    GPRS BSSGP layer

lnsdata

    GPRS NS layer data PDU

lnssignal

    GPRS NS layer signal PDU

liuup

    Iu UP layer

lpfcp

    libosmo-pfcp Packet Forwarding Control Protocol

lcsn1

    libosmo-csn1 Concrete Syntax Notation 1 codec

lio

    libosmocore IO Subsystem

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

1.2.11 logging level force-all (debug|info|notice|error|fatal)

Command

```
logging level force-all (debug|info|notice|error|fatal)
```

Parameters

logging

    Configure logging

level

    Set the log level for a specified category

force-all

> Globally force all logging categories to a specific level. This is released by the 'no logging level force-all' command. Note: any 'logging level <category> <level>' commands will have no visible effect after this, until the forced level is released.

debug

> Log debug messages and higher levels

info

> Log informational messages and higher levels

notice

> Log noticeable messages and higher levels

error

> Log error messages and higher levels

fatal

> Log only fatal messages

1.2.12 logging level set-all (debug|info|notice|error|fatal)

Command

```
logging level set-all (debug|info|notice|error|fatal)
```

Parameters

logging

> Configure logging

level

> Set the log level for a specified category

set-all

> Once-off set all categories to the given log level. There is no single command to take back these changes -- each category is set to the given level, period.

debug

> Log debug messages and higher levels

info

> Log informational messages and higher levels

notice

> Log noticeable messages and higher levels

error

> Log error messages and higher levels

fatal

> Log only fatal messages

1.2.13 logging print category (0|1)

Command

```
logging print category (0|1)
```

Parameters

logging

Configure logging

print

Log output settings

category

Configure log message

0

Don't prefix each log message

1

Prefix each log message with category/subsystem name

1.2.14 logging print category-hex (0|1)

Command

```
logging print category-hex (0|1)
```

Parameters

logging

Configure logging

print

Log output settings

category-hex

Configure log message

0

Don't prefix each log message

1

Prefix each log message with category/subsystem nr in hex ('<000b>')

1.2.15 logging print extended-timestamp (0|1)

Command

```
logging print extended-timestamp (0|1)
```

Parameters

logging

    Configure logging

print

    Log output settings

extended-timestamp

    Configure log message timestamping

0

    Don't prefix each log message

1

    Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

1.2.16 logging print file (0|1|basename) [last]

Command

```
logging print file (0|1|basename) [last]
```

Parameters

logging

    Configure logging

print

    Log output settings

file

    Configure log message

0

    Don't prefix each log message

1

    Prefix each log message with the source file and line

basename

    Prefix each log message with the source file's basename (strip leading paths) and line

[last]

    Log source file info at the end of a log line. If omitted, log source file info just before the log text.

1.2.17   logging print level (0|1)

Command

```
logging print level (0|1)
```

Parameters

logging

   Configure logging

print

   Log output settings

level

   Configure log message

0

   Don't prefix each log message

1

   Prefix each log message with the log level name

1.2.18   logging print thread-id (0|1)

Command

```
logging print thread-id (0|1)
```

Parameters

logging

   Configure logging

print

   Log output settings

thread-id

   Configure log message logging Thread ID

0

   Don't prefix each log message

1

   Prefix each log message with current Thread ID

1.2.19   logging set-log-mask MASK

Command

```
logging set-log-mask MASK
```

Parameters

logging

  Configure logging

set-log-mask

  Set the logmask of this logging target

MASK

  List of logging categories to log, e.g. 'abc:mno:xyz'. Available log categories depend on the specific application, refer to
  the 'logging level' command. Optionally add individual log levels like 'abc,1:mno,3:xyz,5', where the level numbers are
  LOGL_DEBUG=1 LOGL_INFO=3 LOGL_NOTICE=5 LOGL_ERROR=7 LOGL_FATAL=8

1.2.20   logging timestamp (0|1)

Command

```
logging timestamp (0|1)
```

Parameters

logging

  Configure logging

timestamp

  Configure log message timestamping

0

  Don't prefix each log message

1

  Prefix each log message with current timestamp

1.2.21   logp (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|lglobal|llapd...

Command

```
logp (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|lglobal|llapd|linp| ←
    lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf| ←
    lrspro|lns|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio) (debug|info|notice|error ←
    |fatal) .LOGMESSAGE
```

Parameters

logp

> Print a message on all log outputs; useful for placing markers in test logs

mm

> Layer3 Mobility Management (MM)

pag

> Paging Subsystem

meas

> Radio Measurement Processing

ref

> Reference Counting

gprs

> GPRS Packet Service

llc

> GPRS Logical Link Control Protocol (LLC)

sndcp

> GPRS Sub-Network Dependent Control Protocol (SNDCP)

slhc

> RFC1144 TCP/IP Header compression (SLHC)

ranap

> RAN Application Part (RANAP)

sua

> SCCP User Adaptation (SUA)

v42bis

> V.42bis data compression (SNDCP)

gtp

> GPRS Tunnelling Protocol (GTP)

rim

> RAN Information Management (RIM)

lglobal

> Library-internal global log family

llapd

> LAPD in libosmogsm

linp

> A-bis Intput Subsystem

lmux

> A-bis B-Subchannel TRAU Frame Multiplex

lmi

> A-bis Input Driver for Signalling

lmib

A-bis Input Driver for B-Channels (voice)

lsms

Layer3 Short Message Service (SMS)

lctrl

Control Interface

lgtp

GPRS GTP library

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

libosmo-sigtran MTP3 User Adaptation

lmgcp

libosmo-mgcp Media Gateway Control Protocol

ljibuf

libosmo-netif Jitter Buffer

lrspro

Remote SIM protocol

lns

GPRS NS layer

lbssgp

GPRS BSSGP layer

lnsdata

GPRS NS layer data PDU

lnssignal

GPRS NS layer signal PDU

liuup

Iu UP layer

lpfcp

    libosmo-pfcp Packet Forwarding Control Protocol

lcsn1

    libosmo-csn1 Concrete Syntax Notation 1 codec

lio

    libosmocore IO Subsystem

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

.LOGMESSAGE

    Arbitrary message to log on given category and log level

1.2.22 no logging level force-all

Command

```
no logging level force-all
```

Parameters

no

    Negate a command or set its defaults

logging

    Configure logging

level

    Set the log level for a specified category

force-all

    Release any globally forced log level set with 'logging level force-all <level>'

1.2.23 show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

1.2.24 show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

1.2.25 show bssgp

Command

```
show bssgp
```

Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

1.2.26   show bssgp nsei <0-65535> [stats]

Command

```
show bssgp nsei <0-65535> [stats]
```

Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

nsei

Show all BVCs on one NSE

<0-65535>

The NSEI

[stats]

Include Statistics

1.2.27   show bssgp stats

Command

```
show bssgp stats
```

Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

stats

Include statistics

1.2.28   show cpu-sched threads

Command

```
show cpu-sched threads
```

Parameters

show

Show running system information

cpu-sched

Show Sched section information

threads

Show information about running threads)

1.2.29   show cs7 (sua|m3ua|ipa) [<0-65534>]

Command

```
show cs7 (sua|m3ua|ipa) [<0-65534>]
```

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

[<0-65534>]

Port Number

1.2.30   show cs7 config

Command

```
show cs7 config
```

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

config

Currently running cs7 configuration

1.2.31   show cs7 instance <0-15> as (active|all|m3ua|sua)

Command

```
show cs7 instance <0-15> as (active|all|m3ua|sua)
```

Parameters

show

    Show running system information

cs7

    ITU-T Signaling System 7

instance

    An instance of the SS7 stack

<0-15>

    An instance of the SS7 stack

as

    Application Server (AS)

active

    Display all active ASs

all

    Display all ASs (default)

m3ua

    Display all m3ua ASs

sua

    Display all SUA ASs

1.2.32 show cs7 instance <0-15> asp

Command

```
show cs7 instance <0-15> asp
```

Parameters

show

    Show running system information

cs7

    ITU-T Signaling System 7

instance

    An instance of the SS7 stack

<0-15>

    An instance of the SS7 stack

asp

    Application Server Process (ASP)

1.2.33   show cs7 instance <0-15> route

Command

```
show cs7 instance <0-15> route
```

Parameters

show

  Show running system information

cs7

  ITU-T Signaling System 7

instance

  An instance of the SS7 stack

<0-15>

  An instance of the SS7 stack

route

  Routing Table

1.2.34   show cs7 instance <0-15> sccp addressbook

Command

```
show cs7 instance <0-15> sccp addressbook
```

Parameters

show

  Show running system information

cs7

  ITU-T Signaling System 7

instance

  An instance of the SS7 stack

<0-15>

  An instance of the SS7 stack

sccp

  Signalling Connection Control Part

addressbook

  List all SCCP addressbook entries

1.2.35 show cs7 instance <0-15> sccp connections

Command

```
show cs7 instance <0-15> sccp connections
```

Parameters

show

 Show running system information

cs7

 ITU-T Signaling System 7

instance

 An instance of the SS7 stack

<0-15>

 An instance of the SS7 stack

sccp

 Signalling Connection Control Part

connections

 Show List of active SCCP connections

1.2.36 show cs7 instance <0-15> sccp ssn <0-65535>

Command

```
show cs7 instance <0-15> sccp ssn <0-65535>
```

Parameters

show

 Show running system information

cs7

 ITU-T Signaling System 7

instance

 An instance of the SS7 stack

<0-15>

 An instance of the SS7 stack

sccp

 Signalling Connection Control Part

ssn

 Find an SCCP User registered for the given SSN

<0-65535>

 Subsystem Number (SSN)

1.2.37   show cs7 instance <0-15> sccp timers

Command

```
show cs7 instance <0-15> sccp timers
```

Parameters

show
> Show running system information

cs7
> ITU-T Signaling System 7

instance
> An instance of the SS7 stack

<0-15>
> An instance of the SS7 stack

sccp
> Signaling Connection Control Part

timers
> Show List of SCCP timers

1.2.38   show cs7 instance <0-15> sccp users

Command

```
show cs7 instance <0-15> sccp users
```

Parameters

show
> Show running system information

cs7
> ITU-T Signaling System 7

instance
> An instance of the SS7 stack

<0-15>
> An instance of the SS7 stack

sccp
> Signalling Connection Control Part

users
> Show List of SCCP Users registered

1.2.39   show cs7 instance <0-15> users

Command

```
show cs7 instance <0-15> users
```

Parameters

show

   Show running system information

cs7

   ITU-T Signaling System 7

instance

   An instance of the SS7 stack

<0-15>

   An instance of the SS7 stack

users

   User Table

1.2.40   show history

Command

```
show history
```

Parameters

show

   Show running system information

history

   Display the session command history

1.2.41   show llc

Command

```
show llc
```

Parameters

show

   Show running system information

llc

   Display information about the LLC protocol

1.2.42   show logging vty

Command

```
show logging vty
```

Parameters

show

   Show running system information

logging

   Show current logging configuration

vty

   Show current logging configuration for this vty

1.2.43   show mm-context all [pdp]

Command

```
show mm-context all [pdp]
```

Parameters

show

   Show running system information

mm-context

   MM Context

all

   All MM Contexts

[pdp]

   Include PDP Context Information

1.2.44   show mm-context imsi IMSI [pdp]

Command

```
show mm-context imsi IMSI [pdp]
```

Parameters

show

   Show running system information

mm-context

   MM Context

imsi

   Identify by IMSI

IMSI

   IMSI of the MM Context

[pdp]

   Include PDP Context Information

1.2.45 show ns (nsei|nsvc) <0-65535> [stats]

Command

```
show ns (nsei|nsvc) <0-65535> [stats]
```

Parameters

show

   Show running system information

ns

   Display information about the NS protocol

nsei

   Select one NSE by its NSE Identifier

nsvc

   Select one NSE by its NS-VC Identifier

<0-65535>

   The Identifier of selected type

[stats]

   Include Statistics

1.2.46 show ns binds [stats]

Command

```
show ns binds [stats]
```

Parameters

show

   Show running system information

ns

   Display information about the NS protocol

binds

   Display information about the NS protocol binds

[stats]

   Include statistic

1.2.47 show ns entities [stats]

Command

```
show ns entities [stats]
```

Parameters

show
Show running system information

ns
Display information about the NS protocol

entities
Display information about the NS protocol entities (NSEs)

[stats]
Include statistics

1.2.48 show ns persistent

Command

```
show ns persistent
```

Parameters

show
Show running system information

ns
Display information about the NS protocol

persistent
Show only persistent NS

1.2.49 show online-help

Command

```
show online-help
```

Parameters

show
Show running system information

online-help
Online help

1.2.50 **show pdp-context all**

Command

```
show pdp-context all
```

Parameters

show
    Show running system information

pdp-context
    Display information on PDP Context

all
    Show everything

1.2.51 **show pid**

Command

```
show pid
```

Parameters

show
    Show running system information

pid
    Displays the process ID

1.2.52 **show rate-counters [skip-zero]**

Command

```
show rate-counters [skip-zero]
```

Parameters

show
    Show running system information

rate-counters
    Show all rate counters

[skip-zero]
    Skip items with total count zero

1.2.53 show sgsn

Command

```
show sgsn
```

Parameters

show

Show running system information

sgsn

Display information about the SGSN

1.2.54 show sndcp

Command

```
show sndcp
```

Parameters

show

Show running system information

sndcp

Display information about the SNDCP protocol

1.2.55 show stats [skip-zero]

Command

```
show stats [skip-zero]
```

Parameters

show

Show running system information

stats

Show statistical values

[skip-zero]

Skip items with total count zero

1.2.56   show stats level (global|peer|subscriber) [skip-zero]

Command

```
show stats level (global|peer|subscriber) [skip-zero]
```

Parameters

show
    Show running system information

stats
    Show statistical values

level
    Set the maximum group level

global
    Show global groups only

peer
    Show global and network peer related groups

subscriber
    Show global, peer, and subscriber groups

[skip-zero]
    Skip items with total count zero

1.2.57   show subscriber cache

Command

```
show subscriber cache
```

Parameters

show
    Show running system information

subscriber
    Show information about subscribers

cache
    Display contents of subscriber cache

1.2.58 show talloc-context (application|global|all) (full|brief|DEPTH)

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH)
```

Parameters

show
    Show running system information

talloc-context
    Show talloc memory hierarchy

application
    Application's context

global
    Global context (OTC_GLOBAL)

all
    All contexts, if NULL-context tracking is enabled

full
    Display a full talloc memory hierarchy

brief
    Display a brief talloc memory hierarchy

DEPTH
    Specify required maximal depth value

1.2.59 show talloc-context (application|global|all) (full|brief|DEPTH) filter REGEXP

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH) filter REGEXP
```

Parameters

show
    Show running system information

talloc-context
    Show talloc memory hierarchy

application
    Application's context

global
    Global context (OTC_GLOBAL)

all
    All contexts, if NULL-context tracking is enabled

full

 Display a full talloc memory hierarchy

brief

 Display a brief talloc memory hierarchy

DEPTH

 Specify required maximal depth value

filter

 Filter chunks using regular expression

REGEXP

 Regular expression

1.2.60 show talloc-context (application|global|all) (full|brief|DEPTH) tree ADDRESS

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH) tree ADDRESS
```

Parameters

show

 Show running system information

talloc-context

 Show talloc memory hierarchy

application

 Application's context

global

 Global context (OTC_GLOBAL)

all

 All contexts, if NULL-context tracking is enabled

full

 Display a full talloc memory hierarchy

brief

 Display a brief talloc memory hierarchy

DEPTH

 Specify required maximal depth value

tree

 Display only a specific memory chunk

ADDRESS

 Chunk address (e.g. 0xdeadbeef)

1.2.61 show timer [TNNNN]

Command

```
show timer [TNNNN]
```

Parameters

show

Show running system information

timer

Show timers

[TNNNN]

T- or X-timer-number -- 3GPP compliant timer number of the format '1234' or 'T1234' or 't1234'; Osmocom-specific timer number of the format: 'X1234' or 'x1234'.

1.2.62 show timer gtp [TNNNN]

Command

```
show timer gtp [TNNNN]
```

Parameters

show

Show running system information

timer

Show timers

gtp

GTP (libgtp) timers

[TNNNN]

T- or X-timer-number -- 3GPP compliant timer number of the format '1234' or 'T1234' or 't1234'; Osmocom-specific timer number of the format: 'X1234' or 'x1234'.

1.2.63 show uptime

Command

```
show uptime
```

Parameters

show

Show running system information

uptime

Displays how long the program has been running

1.2.64   show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

1.2.65   terminal length <0-512>

Command

```
terminal length <0-512>
```

Parameters

terminal

Set terminal line parameters

length

Set number of lines on a screen

<0-512>

Number of lines on screen (0 for no pausing)

1.2.66   terminal no length

Command

```
terminal no length
```

Parameters

terminal

Set terminal line parameters

no

Negate a command or set its defaults

length

Set number of lines on a screen

1.2.67 who

Command

```
who
```

Parameters

who

Display who is on vty

1.3 enable

The enable node is a privileged node, allowing to make changes to the configuration and to access further commands like 'configure'. All commands seen on the view node are also available here.

1.3.1 bssgp bvc nsei <0-65535> bvci <0-65535> reset

Command

```
bssgp bvc nsei <0-65535> bvci <0-65535> reset
```

Parameters

bssgp

Initiate BVC RESET procedure for a given NSEI and BVCI

bvc

Filter based on BSSGP Virtual Connection

nsei

NSEI of the BVC to be filtered

<0-65535>

Network Service Entity Identifier (NSEI)

bvci

BVCI of the BVC to be filtered

<0-65535>

BSSGP Virtual Connection Identifier (BVCI)

reset

Perform reset procedure

1.3.2 configure [terminal]

Command

```
configure [terminal]
```

Parameters

configure

Configuration from vty interface

[terminal]

Configuration terminal

1.3.3 copy running-config startup-config

Command

```
copy running-config startup-config
```

Parameters

copy

Copy configuration

running-config

Copy running config to...

startup-config

Copy running config to startup config (same as write file)

1.3.4 disable

Command

```
disable
```

Parameters

disable

Turn off privileged mode command

1.3.5 logging color (0|1)

Command

```
logging color (0|1)
```

Parameters

logging
> Configure logging

color
> Configure color-printing for log messages

0
> Don't use color for printing messages

1
> Use color for printing messages

1.3.6 logging disable

Command

```
logging disable
```

Parameters

logging
> Configure logging

disable
> Disables logging to this vty

1.3.7 logging enable

This command is required to make logging commands available on the telnet VTY.

Command

```
logging enable
```

Parameters

logging
> Configure logging

enable
> Enables logging to this vty

1.3.8   logging filter all (0|1)

Disable/enable general log output on a given target. Typically, 'logging filter all 1' allows to see the usual log output on a given target. Setting to '0' can be useful when logging to the telnet VTY console: mute all log output to allow typing VTY commands on the telnet prompt without interference from log output; 'logging filter all 1' then re-enables logging in the same log output configuration as before. Some applications provide more specific filters, e.g. to log a given IMSI only. To employ such filters, set 'logging filter all 0' to disable general logging, and then enable a more specific filter instead.

Command

```
logging filter all (0|1)
```

Parameters

logging
>   Configure logging

filter
>   Filter log messages

all
>   Do you want to log all messages?

0
>   Only print messages matched by other filters

1
>   Bypass filter and print all messages

1.3.9   logging filter bvc nsei <0-65535> bvci <0-65535>

Command

```
logging filter bvc nsei <0-65535> bvci <0-65535>
```

Parameters

logging
>   Configure logging

filter
>   Filter log messages

bvc
>   Filter based on BSSGP Virtual Connection

nsei
>   NSEI of the BVC to be filtered

<0-65535>
>   Network Service Entity Identifier (NSEI)

bvci
>   BVCI of the BVC to be filtered

<0-65535>
>   BSSGP Virtual Connection Identifier (BVCI)

1.3.10 logging filter nse nsei <0-65535>

Command

```
logging filter nse nsei <0-65535>
```

Parameters

logging
    Configure logging

filter
    Filter log messages

nse
    Filter based on NS Entity

nsei
    Identify NSE by NSEI

<0-65535>
    Numeric identifier

1.3.11 logging filter nsvc nsvci <0-65535>

Command

```
logging filter nsvc nsvci <0-65535>
```

Parameters

logging
    Configure logging

filter
    Filter log messages

nsvc
    Filter based on NS Virtual Connection

nsvci
    Identify NS-VC by NSVCI

<0-65535>
    Numeric identifier

1.3.12 logging level (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|lglo...

Command

```
logging level (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|lglobal| ←
    llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua| ←
    lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio) (debug|info ←
    |notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

mm

Layer3 Mobility Management (MM)

pag

Paging Subsystem

meas

Radio Measurement Processing

ref

Reference Counting

gprs

GPRS Packet Service

llc

GPRS Logical Link Control Protocol (LLC)

sndcp

GPRS Sub-Network Dependent Control Protocol (SNDCP)

slhc

RFC1144 TCP/IP Header compression (SLHC)

ranap

RAN Application Part (RANAP)

sua

SCCP User Adaptation (SUA)

v42bis

V.42bis data compression (SNDCP)

gtp

GPRS Tunnelling Protocol (GTP)

rim

RAN Information Management (RIM)

lglobal

Library-internal global log family

llapd

LAPD in libosmogsm

linp

A-bis Intput Subsystem

lmux

A-bis B-Subchannel TRAU Frame Multiplex

lmi

A-bis Input Driver for Signalling

lmib

A-bis Input Driver for B-Channels (voice)

lsms

Layer3 Short Message Service (SMS)

lctrl

Control Interface

lgtp

GPRS GTP library

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

libosmo-sigtran MTP3 User Adaptation

lmgcp

libosmo-mgcp Media Gateway Control Protocol

ljibuf

libosmo-netif Jitter Buffer

lrspro

Remote SIM protocol

lns

    GPRS NS layer

lbssgp

    GPRS BSSGP layer

lnsdata

    GPRS NS layer data PDU

lnssignal

    GPRS NS layer signal PDU

liuup

    Iu UP layer

lpfcp

    libosmo-pfcp Packet Forwarding Control Protocol

lcsn1

    libosmo-csn1 Concrete Syntax Notation 1 codec

lio

    libosmocore IO Subsystem

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

1.3.13 logging level force-all (debug|info|notice|error|fatal)

Command

```
logging level force-all (debug|info|notice|error|fatal)
```

Parameters

logging

    Configure logging

level

    Set the log level for a specified category

force-all

> Globally force all logging categories to a specific level. This is released by the 'no logging level force-all' command. Note: any 'logging level <category> <level>' commands will have no visible effect after this, until the forced level is released.

debug

> Log debug messages and higher levels

info

> Log informational messages and higher levels

notice

> Log noticeable messages and higher levels

error

> Log error messages and higher levels

fatal

> Log only fatal messages

1.3.14 logging level set-all (debug|info|notice|error|fatal)

Command

```
logging level set-all (debug|info|notice|error|fatal)
```

Parameters

logging

> Configure logging

level

> Set the log level for a specified category

set-all

> Once-off set all categories to the given log level. There is no single command to take back these changes -- each category is set to the given level, period.

debug

> Log debug messages and higher levels

info

> Log informational messages and higher levels

notice

> Log noticeable messages and higher levels

error

> Log error messages and higher levels

fatal

> Log only fatal messages

1.3.15   logging print category (0|1)

Command

```
logging print category (0|1)
```

Parameters

logging

   Configure logging

print

   Log output settings

category

   Configure log message

0

   Don't prefix each log message

1

   Prefix each log message with category/subsystem name

1.3.16   logging print category-hex (0|1)

Command

```
logging print category-hex (0|1)
```

Parameters

logging

   Configure logging

print

   Log output settings

category-hex

   Configure log message

0

   Don't prefix each log message

1

   Prefix each log message with category/subsystem nr in hex ('<000b>')

1.3.17 logging print extended-timestamp (0|1)

Command

```
logging print extended-timestamp (0|1)
```

Parameters

logging

    Configure logging

print

    Log output settings

extended-timestamp

    Configure log message timestamping

0

    Don't prefix each log message

1

    Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

1.3.18 logging print file (0|1|basename) [last]

Command

```
logging print file (0|1|basename) [last]
```

Parameters

logging

    Configure logging

print

    Log output settings

file

    Configure log message

0

    Don't prefix each log message

1

    Prefix each log message with the source file and line

basename

    Prefix each log message with the source file's basename (strip leading paths) and line

[last]

    Log source file info at the end of a log line. If omitted, log source file info just before the log text.

1.3.19   logging print level (0|1)

Command

```
logging print level (0|1)
```

Parameters

logging

  Configure logging

print

  Log output settings

level

  Configure log message

0

  Don't prefix each log message

1

  Prefix each log message with the log level name

1.3.20   logging print thread-id (0|1)

Command

```
logging print thread-id (0|1)
```

Parameters

logging

  Configure logging

print

  Log output settings

thread-id

  Configure log message logging Thread ID

0

  Don't prefix each log message

1

  Prefix each log message with current Thread ID

1.3.21   logging set-log-mask MASK

Command

```
logging set-log-mask MASK
```

Parameters

logging

> Configure logging

set-log-mask

> Set the logmask of this logging target

MASK

> List of logging categories to log, e.g. 'abc:mno:xyz'. Available log categories depend on the specific application, refer to
> the 'logging level' command. Optionally add individual log levels like 'abc,1:mno,3:xyz,5', where the level numbers are
> LOGL_DEBUG=1 LOGL_INFO=3 LOGL_NOTICE=5 LOGL_ERROR=7 LOGL_FATAL=8

1.3.22   logging timestamp (0|1)

Command

```
logging timestamp (0|1)
```

Parameters

logging

> Configure logging

timestamp

> Configure log message timestamping

0

> Don't prefix each log message

1

> Prefix each log message with current timestamp

1.3.23   logp (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|lglobal|llapd...

Command

```
logp (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|lglobal|llapd|linp| ←
    lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf| ←
    lrspro|lns|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio) (debug|info|notice|error ←
    |fatal) .LOGMESSAGE
```

Parameters

logp

    Print a message on all log outputs; useful for placing markers in test logs

mm

    Layer3 Mobility Management (MM)

pag

    Paging Subsystem

meas

    Radio Measurement Processing

ref

    Reference Counting

gprs

    GPRS Packet Service

llc

    GPRS Logical Link Control Protocol (LLC)

sndcp

    GPRS Sub-Network Dependent Control Protocol (SNDCP)

slhc

    RFC1144 TCP/IP Header compression (SLHC)

ranap

    RAN Application Part (RANAP)

sua

    SCCP User Adaptation (SUA)

v42bis

    V.42bis data compression (SNDCP)

gtp

    GPRS Tunnelling Protocol (GTP)

rim

    RAN Information Management (RIM)

lglobal

    Library-internal global log family

llapd

    LAPD in libosmogsm

linp

    A-bis Intput Subsystem

lmux

    A-bis B-Subchannel TRAU Frame Multiplex

lmi

    A-bis Input Driver for Signalling

lmib

A-bis Input Driver for B-Channels (voice)

lsms

Layer3 Short Message Service (SMS)

lctrl

Control Interface

lgtp

GPRS GTP library

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

libosmo-sigtran MTP3 User Adaptation

lmgcp

libosmo-mgcp Media Gateway Control Protocol

ljibuf

libosmo-netif Jitter Buffer

lrspro

Remote SIM protocol

lns

GPRS NS layer

lbssgp

GPRS BSSGP layer

lnsdata

GPRS NS layer data PDU

lnssignal

GPRS NS layer signal PDU

liuup

Iu UP layer

lpfcp

    libosmo-pfcp Packet Forwarding Control Protocol

lcsn1

    libosmo-csn1 Concrete Syntax Notation 1 codec

lio

    libosmocore IO Subsystem

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

.LOGMESSAGE

    Arbitrary message to log on given category and log level

1.3.24 no logging level force-all

Command

```
no logging level force-all
```

Parameters

no

    Negate a command or set its defaults

logging

    Configure logging

level

    Set the log level for a specified category

force-all

    Release any globally forced log level set with 'logging level force-all <level>'

1.3.25 nse <0-65535> restart-sns

Command

```
nse <0-65535> restart-sns
```

Parameters

nse

    NSE specific commands

<0-65535>

    NS Entity ID (NSEI)

restart-sns

    Restart SNS procedure

1.3.26 nsvc <0-65535> (block|unblock|reset)

Command

```
nsvc <0-65535> (block|unblock|reset)
```

Parameters

nsvc

    NS Virtual Connection

<0-65535>

    NS Virtual Connection ID (NS-VCI)

block

    Block a NSVC. As cause code O&M intervention will be used.

unblock

    Unblock a NSVC. As cause code O&M intervention will be used.

reset

    Reset a NSVC. As cause code O&M intervention will be used.

1.3.27 page imsi IMSI

Command

```
page imsi IMSI
```

Parameters

page

    Send a PS paging request to subscriber

imsi

    Use the IMSI to select the subscriber

IMSI

    The IMSI

1.3.28 show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

1.3.29 show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

1.3.30 show bssgp

Command

```
show bssgp
```

Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

1.3.31   show bssgp nsei <0-65535> [stats]

Command

```
show bssgp nsei <0-65535> [stats]
```

Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

nsei

Show all BVCs on one NSE

<0-65535>

The NSEI

[stats]

Include Statistics

1.3.32   show bssgp stats

Command

```
show bssgp stats
```

Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

stats

Include statistics

1.3.33   show cpu-sched threads

Command

```
show cpu-sched threads
```

Parameters

show

Show running system information

cpu-sched

Show Sched section information

threads

Show information about running threads)

1.3.34 show cs7 (sua|m3ua|ipa) [<0-65534>]

Command

```
show cs7 (sua|m3ua|ipa) [<0-65534>]
```

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

[<0-65534>]

Port Number

1.3.35 show cs7 config

Command

```
show cs7 config
```

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

config

Currently running cs7 configuration

1.3.36 show cs7 instance <0-15> as (active|all|m3ua|sua)

Command

```
show cs7 instance <0-15> as (active|all|m3ua|sua)
```

Parameters

show

    Show running system information

cs7

    ITU-T Signaling System 7

instance

    An instance of the SS7 stack

<0-15>

    An instance of the SS7 stack

as

    Application Server (AS)

active

    Display all active ASs

all

    Display all ASs (default)

m3ua

    Display all m3ua ASs

sua

    Display all SUA ASs

1.3.37 show cs7 instance <0-15> asp

Command

```
show cs7 instance <0-15> asp
```

Parameters

show

    Show running system information

cs7

    ITU-T Signaling System 7

instance

    An instance of the SS7 stack

<0-15>

    An instance of the SS7 stack

asp

    Application Server Process (ASP)

1.3.38 show cs7 instance <0-15> route

Command

```
show cs7 instance <0-15> route
```

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

route

Routing Table

1.3.39 show cs7 instance <0-15> sccp addressbook

Command

```
show cs7 instance <0-15> sccp addressbook
```

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

addressbook

List all SCCP addressbook entries

1.3.40 show cs7 instance <0-15> sccp connections

Command

```
show cs7 instance <0-15> sccp connections
```

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

connections

Show List of active SCCP connections

1.3.41 show cs7 instance <0-15> sccp ssn <0-65535>

Command

```
show cs7 instance <0-15> sccp ssn <0-65535>
```

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

ssn

Find an SCCP User registered for the given SSN

<0-65535>

Subsystem Number (SSN)

1.3.42   show cs7 instance <0-15> sccp timers

Command

```
show cs7 instance <0-15> sccp timers
```

Parameters

show

>   Show running system information

cs7

>   ITU-T Signaling System 7

instance

>   An instance of the SS7 stack

<0-15>

>   An instance of the SS7 stack

sccp

>   Signaling Connection Control Part

timers

>   Show List of SCCP timers

1.3.43   show cs7 instance <0-15> sccp users

Command

```
show cs7 instance <0-15> sccp users
```

Parameters

show

>   Show running system information

cs7

>   ITU-T Signaling System 7

instance

>   An instance of the SS7 stack

<0-15>

>   An instance of the SS7 stack

sccp

>   Signalling Connection Control Part

users

>   Show List of SCCP Users registered

1.3.44   show cs7 instance <0-15> users

Command

```
show cs7 instance <0-15> users
```

Parameters

show

   Show running system information

cs7

   ITU-T Signaling System 7

instance

   An instance of the SS7 stack

<0-15>

   An instance of the SS7 stack

users

   User Table

1.3.45   show history

Command

```
show history
```

Parameters

show

   Show running system information

history

   Display the session command history

1.3.46   show llc

Command

```
show llc
```

Parameters

show

   Show running system information

llc

   Display information about the LLC protocol

1.3.47 **show logging vty**

Command

```
show logging vty
```

Parameters

show
    Show running system information

logging
    Show current logging configuration

vty
    Show current logging configuration for this vty

1.3.48 **show mm-context all [pdp]**

Command

```
show mm-context all [pdp]
```

Parameters

show
    Show running system information

mm-context
    MM Context

all
    All MM Contexts

[pdp]
    Include PDP Context Information

1.3.49 **show mm-context imsi IMSI [pdp]**

Command

```
show mm-context imsi IMSI [pdp]
```

Parameters

show
    Show running system information

mm-context
    MM Context

imsi

Identify by IMSI

IMSI

IMSI of the MM Context

[pdp]

Include PDP Context Information

1.3.50   show ns (nsei|nsvc) <0-65535> [stats]

Command

```
show ns (nsei|nsvc) <0-65535> [stats]
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

nsei

Select one NSE by its NSE Identifier

nsvc

Select one NSE by its NS-VC Identifier

<0-65535>

The Identifier of selected type

[stats]

Include Statistics

1.3.51   show ns binds [stats]

Command

```
show ns binds [stats]
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

binds

Display information about the NS protocol binds

[stats]

Include statistic

1.3.52   show ns entities [stats]

Command

```
show ns entities [stats]
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

entities

Display information about the NS protocol entities (NSEs)

[stats]

Include statistics

1.3.53   show ns persistent

Command

```
show ns persistent
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

persistent

Show only persistent NS

1.3.54   show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

1.3.55 show pdp-context all

Command

```
show pdp-context all
```

Parameters

show
    Show running system information

pdp-context
    Display information on PDP Context

all
    Show everything

1.3.56 show rate-counters [skip-zero]

Command

```
show rate-counters [skip-zero]
```

Parameters

show
    Show running system information

rate-counters
    Show all rate counters

[skip-zero]
    Skip items with total count zero

1.3.57 show sgsn

Command

```
show sgsn
```

Parameters

show
    Show running system information

sgsn
    Display information about the SGSN

1.3.58   show sndcp

Command

```
show sndcp
```

Parameters

show

Show running system information

sndcp

Display information about the SNDCP protocol

1.3.59   show startup-config

Command

```
show startup-config
```

Parameters

show

Show running system information

startup-config

Contentes of startup configuration

1.3.60   show stats [skip-zero]

Command

```
show stats [skip-zero]
```

Parameters

show

Show running system information

stats

Show statistical values

[skip-zero]

Skip items with total count zero

1.3.61 show stats level (global|peer|subscriber) [skip-zero]

Command

```
show stats level (global|peer|subscriber) [skip-zero]
```

Parameters

show

Show running system information

stats

Show statistical values

level

Set the maximum group level

global

Show global groups only

peer

Show global and network peer related groups

subscriber

Show global, peer, and subscriber groups

[skip-zero]

Skip items with total count zero

1.3.62 show subscriber cache

Command

```
show subscriber cache
```

Parameters

show

Show running system information

subscriber

Show information about subscribers

cache

Display contents of subscriber cache

1.3.63 show talloc-context (application|global|all) (full|brief|DEPTH)

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH)
```

Parameters

show

    Show running system information

talloc-context

    Show talloc memory hierarchy

application

    Application's context

global

    Global context (OTC_GLOBAL)

all

    All contexts, if NULL-context tracking is enabled

full

    Display a full talloc memory hierarchy

brief

    Display a brief talloc memory hierarchy

DEPTH

    Specify required maximal depth value

1.3.64 show talloc-context (application|global|all) (full|brief|DEPTH) filter REGEXP

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH) filter REGEXP
```

Parameters

show

    Show running system information

talloc-context

    Show talloc memory hierarchy

application

    Application's context

global

    Global context (OTC_GLOBAL)

all

    All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

filter

Filter chunks using regular expression

REGEXP

Regular expression

1.3.65 show talloc-context (application|global|all) (full|brief|DEPTH) tree ADDRESS

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH) tree ADDRESS
```

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

global

Global context (OTC_GLOBAL)

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

tree

Display only a specific memory chunk

ADDRESS

Chunk address (e.g. 0xdeadbeef)

1.3.66 show timer [TNNNN]

Command

```
show timer [TNNNN]
```

Parameters

show

Show running system information

timer

Show timers

[TNNNN]

T- or X-timer-number -- 3GPP compliant timer number of the format '1234' or 'T1234' or 't1234'; Osmocom-specific timer number of the format: 'X1234' or 'x1234'.

1.3.67 show timer gtp [TNNNN]

Command

```
show timer gtp [TNNNN]
```

Parameters

show

Show running system information

timer

Show timers

gtp

GTP (libgtp) timers

[TNNNN]

T- or X-timer-number -- 3GPP compliant timer number of the format '1234' or 'T1234' or 't1234'; Osmocom-specific timer number of the format: 'X1234' or 'x1234'.

1.3.68 show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

1.3.69 **shutdown**

Command

```
shutdown
```

Parameters

shutdown

    Request a shutdown of the program

1.3.70 **stats report**

Command

```
stats report
```

Parameters

stats

    Stats related commands

report

    Manurally trigger reporting of stats

1.3.71 **stats reset**

Command

```
stats reset
```

Parameters

stats

    Stats related commands

reset

    Reset all rate counter stats

1.3.72 **terminal length <0-512>**

Command

```
terminal length <0-512>
```

Parameters

terminal

    Set terminal line parameters

length

    Set number of lines on a screen

<0-512>

    Number of lines on screen (0 for no pausing)

1.3.73 terminal monitor

Command

```
terminal monitor
```

Parameters

terminal

Set terminal line parameters

monitor

Copy debug output to the current terminal line

1.3.74 terminal no length

Command

```
terminal no length
```

Parameters

terminal

Set terminal line parameters

no

Negate a command or set its defaults

length

Set number of lines on a screen

1.3.75 terminal no monitor

Command

```
terminal no monitor
```

Parameters

terminal

Set terminal line parameters

no

Negate a command or set its defaults

monitor

Copy debug output to the current terminal line

1.3.76   update-subscriber imsi IMSI cancel (update-procedure|subscription-withdraw)

Command

```
update-subscriber imsi IMSI cancel (update-procedure|subscription-withdraw)
```

Parameters

update-subscriber
    Update subscriber list

imsi
    Use the IMSI to select the subscriber

IMSI
    The IMSI

cancel
    Cancel (remove) subscriber record

update-procedure
    The MS moved to another SGSN

subscription-withdraw
    The subscription is no longer valid

1.3.77   update-subscriber imsi IMSI create

Command

```
update-subscriber imsi IMSI create
```

Parameters

update-subscriber
    Update subscriber list

imsi
    Use the IMSI to select the subscriber

IMSI
    The IMSI

create
    Create a subscriber entry

1.3.78 update-subscriber imsi IMSI destroy

Command

```
update-subscriber imsi IMSI destroy
```

Parameters

update-subscriber

    Update subscriber list

imsi

    Use the IMSI to select the subscriber

IMSI

    The IMSI

destroy

    Destroy a subscriber entry

1.3.79 update-subscriber imsi IMSI insert auth-triplet <1-5> sres SRES rand RAND kc KC

Command

```
update-subscriber imsi IMSI insert auth-triplet <1-5> sres SRES rand RAND kc KC
```

Parameters

update-subscriber

    Update subscriber list

imsi

    Use the IMSI to select the subscriber

IMSI

    The IMSI

insert

    Insert data into the subscriber record

auth-triplet

    Update authentication triplet

<1-5>

    Triplet index

sres

    Set SRES value

SRES

    SRES value (4 byte) in hex

rand

    Set RAND value

RAND

    RAND value (16 byte) in hex

kc

    Set Kc value

KC

    Kc value (8 byte) in hex

1.3.80 update-subscriber imsi IMSI update-auth-info

Command

```
update-subscriber imsi IMSI update-auth-info
```

Parameters

update-subscriber

    Update subscriber list

imsi

    Use the IMSI to select the subscriber

IMSI

    The IMSI

update-auth-info

    Complete the send authentication info procedure

1.3.81 update-subscriber imsi IMSI update-location-result (ok|system-failure|data-missi...

Command

```
update-subscriber imsi IMSI update-location-result (ok|system-failure|data-missing| ↩
    unexpected-data-value|unknown-subscriber|roaming-not-allowed)
```

Parameters

update-subscriber

    Update subscriber list

imsi

    Use the IMSI to select the subscriber

IMSI

    The IMSI

update-location-result

    Complete the update location procedure

ok

    The update location request succeeded

system-failure

>   Force error code SystemFailure

data-missing

>   Force error code DataMissing

unexpected-data-value

>   Force error code UnexpectedDataValue

unknown-subscriber

>   Force error code UnknownSubscriber

roaming-not-allowed

>   Force error code RoamingNotAllowed

1.3.82 who

Command

```
who
```

Parameters

who

>   Display who is on vty

1.4 config

The config node is the root for all configuration commands, which are identical to the config file format. Changes made on the telnet VTY can be made persistent with the 'write file' command.

1.4.1 banner motd default

Command

```
banner motd default
```

Parameters

banner

>   Set banner string

motd

>   Strings for motd

default

>   Default string

1.4.2 banner motd file [FILE]

Command

```
banner motd file [FILE]
```

Parameters

banner
> Set banner

motd
> Banner for motd

file
> Banner from a file

[FILE]
> Filename

1.4.3 bssgp

Command

```
bssgp
```

Parameters

bssgp
> Configure the GPRS BSS Gateway Protocol

1.4.4 cpu-sched

Command

```
cpu-sched
```

Parameters

cpu-sched
> Configure CPU Scheduler related settings

1.4.5 cs7 instance <0-15>

Command

```
cs7 instance <0-15>
```

Global attributes

Flag: !

This command applies immediately

Parameters

cs7

ITU-T Signaling System 7

instance

Configure a SS7 Instance

<0-15>

An instance of the SS7 stack

1.4.6 ctrl

Command

```
ctrl
```

Parameters

ctrl

Configure the Control Interface

1.4.7 enable password (8|) WORD

Command

```
enable password (8|) WORD
```

Parameters

enable

Modify enable password parameters

password

Assign the privileged level password

8

Specifies a HIDDEN password will follow

dummy string

WORD

The HIDDEN 'enable' password string

1.4.8 enable password LINE

Command

```
enable password LINE
```

Parameters

enable

  Modify enable password parameters

password

  Assign the privileged level password

LINE

  The UNENCRYPTED (cleartext) 'enable' password

1.4.9 hostname WORD

Command

```
hostname WORD
```

Parameters

hostname

  Set system's network name

WORD

  This system's network name

1.4.10 line vty

Command

```
line vty
```

Parameters

line

  Configure a terminal line

vty

  Virtual terminal

1.4.11 log alarms <2-32700>

Command

```
log alarms <2-32700>
```

Parameters

log

Configure logging sub-system

alarms

Logging alarms to osmo_strrb

<2-32700>

Maximum number of messages to log

1.4.12 log file FILENAME [blocking-io]

Command

```
log file FILENAME [blocking-io]
```

Parameters

log

Configure logging sub-system

file

Logging to text file

FILENAME

Filename

[blocking-io]

Use blocking, synchronous I/O

1.4.13 log gsmtap [HOSTNAME]

Command

```
log gsmtap [HOSTNAME]
```

Parameters

log

Configure logging sub-system

gsmtap

Logging via GSMTAP

[HOSTNAME]

Host name to send the GSMTAP logging to (UDP port 4729)

1.4.14   log stderr [blocking-io]

Command

```
log stderr [blocking-io]
```

Parameters

log

Configure logging sub-system

stderr

Logging via STDERR of the process

[blocking-io]

Use blocking, synchronous I/O

1.4.15   log syslog (authpriv|cron|daemon|ftp|lpr|mail|news|user|uucp)

Command

```
log syslog (authpriv|cron|daemon|ftp|lpr|mail|news|user|uucp)
```

Parameters

log

Configure logging sub-system

syslog

Logging via syslog

authpriv

Security/authorization messages facility

cron

Clock daemon (cron/at) facility

daemon

General system daemon facility

ftp

Ftp daemon facility

lpr

Line printer facility

mail

Mail facility

news

News facility

user

Generic facility

uucp

UUCP facility

1.4.16 log syslog local <0-7>

Command

```
log syslog local <0-7>
```

Parameters

log

Configure logging sub-system

syslog

Logging via syslog

local

Syslog LOCAL facility

<0-7>

Local facility number

1.4.17 log systemd-journal [raw]

Command

```
log systemd-journal [raw]
```

Parameters

log

Configure logging sub-system

systemd-journal

Logging to systemd-journal

[raw]

Offload rendering of the meta information (location, category) to systemd

1.4.18 no banner motd

Command

```
no banner motd
```

Parameters

no

Negate a command or set its defaults

banner

Set banner string

motd

Strings for motd

1.4.19 no enable password

Command

```
no enable password
```

Parameters

no

Negate a command or set its defaults

enable

Modify enable password parameters

password

Assign the privileged level password

1.4.20 no hostname [HOSTNAME]

Command

```
no hostname [HOSTNAME]
```

Parameters

no

Negate a command or set its defaults

hostname

Reset system's network name

[HOSTNAME]

Host name of this router

1.4.21 no log alarms

Command

```
no log alarms
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

alarms

Logging alarms to osmo_strrb

1.4.22 no log file FILENAME

Command

```
no log file FILENAME
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

file

Logging to text file

FILENAME

Filename

1.4.23 no log gsmtap [HOSTNAME]

Command

```
no log gsmtap [HOSTNAME]
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

gsmtap

Logging via GSMTAP

[HOSTNAME]

Host name to send the GSMTAP logging to (UDP port 4729)

1.4.24 no log stderr

Command

```
no log stderr
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

stderr

Logging via STDERR of the process

1.4.25 no log syslog

Command

```
no log syslog
```

Parameters

no
  Negate a command or set its defaults
log
  Configure logging sub-system
syslog
  Logging via syslog

1.4.26 no log systemd-journal

Command

```
no log systemd-journal
```

Parameters

no
  Negate a command or set its defaults
log
  Configure logging sub-system
systemd-journal
  Logging to systemd-journal

1.4.27 no service advanced-vty

Command

```
no service advanced-vty
```

Parameters

no
  Negate a command or set its defaults
service
  Set up miscellaneous service
advanced-vty
  Enable advanced mode vty interface

1.4.28 no service terminal-length [<0-512>]

Command

```
no service terminal-length [<0-512>]
```

Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

terminal-length

System wide terminal length configuration

[<0-512>]

Number of lines of VTY (0 means no line control)

1.4.29 no stats reporter log [NAME]

Command

```
no stats reporter log [NAME]
```

Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

[NAME]

Name of the reporter

1.4.30 no stats reporter statsd [NAME]

Command

```
no stats reporter statsd [NAME]
```

Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

[NAME]

Name of the reporter

1.4.31 ns

Command

```
ns
```

Parameters

ns

Configure the GPRS Network Service

1.4.32 password (8|) WORD

Command

```
password (8|) WORD
```

Parameters

password

Assign the terminal connection password

8

Specifies a HIDDEN password will follow

dummy string

WORD

The HIDDEN line password string

1.4.33 password LINE

Command

```
password LINE
```

Parameters

password

   Assign the terminal connection password

LINE

   The UNENCRYPTED (cleartext) line password

1.4.34 service advanced-vty

Command

```
service advanced-vty
```

Parameters

service

   Set up miscellaneous service

advanced-vty

   Enable advanced mode vty interface

1.4.35 service terminal-length <0-512>

Command

```
service terminal-length <0-512>
```

Parameters

service

   Set up miscellaneous service

terminal-length

   System wide terminal length configuration

<0-512>

   Number of lines of VTY (0 means no line control)

1.4.36 sgsn

Command

```
sgsn
```

Parameters

sgsn
>   Configure the SGSN

1.4.37 show history

Command

```
show history
```

Parameters

show
>   Show running system information

history
>   Display the session command history

1.4.38 stats interval <0-65535>

Command

```
stats interval <0-65535>
```

Parameters

stats
>   Configure stats sub-system

interval
>   Set the reporting interval

<0-65535>
>   Interval in seconds (0 disables the reporting interval)

1.4.39   stats reporter log [NAME]

Command

```
stats reporter log [NAME]
```

Parameters

stats

>   Configure stats sub-system

reporter

>   Configure a stats reporter

log

>   Report to the logger

[NAME]

>   Name of the reporter

1.4.40   stats reporter statsd [NAME]

Command

```
stats reporter statsd [NAME]
```

Parameters

stats

>   Configure stats sub-system

reporter

>   Configure a stats reporter

statsd

>   Report to a STATSD server

[NAME]

>   Name of the reporter

1.4.41   stats-tcp batch-size <1-65535>

Command

```
stats-tcp batch-size <1-65535>
```

Parameters

stats-tcp

>   Configure stats sub-system

batch-size

>   Set the number of tcp sockets that are processed per stats polling interval

<1-65535>

>   Number of sockets per interval

1.4.42 stats-tcp interval <0-65535>

Command

```
stats-tcp interval <0-65535>
```

Parameters

stats-tcp

　　Configure stats sub-system

interval

　　Set the tcp socket stats polling interval

<0-65535>

　　Interval in seconds (0 disables the polling interval)

1.5 config-log

The log node is commonly available in all Osmocom programs and allows configuring logging to stderr and/or log files, including logging category and level filtering as well as output formatting options. Note that the 'logging enable' command is required to make logging commands available on the telnet VTY.

1.5.1 logging color (0|1)

Command

```
logging color (0|1)
```

Parameters

logging

　　Configure logging

color

　　Configure color-printing for log messages

0

　　Don't use color for printing messages

1

　　Use color for printing messages

1.5.2 logging filter all (0|1)

Disable/enable general log output on a given target. Typically, 'logging filter all 1' allows to see the usual log output on a given target. Setting to '0' can be useful when logging to the telnet VTY console: mute all log output to allow typing VTY commands on the telnet prompt without interference from log output; 'logging filter all 1' then re-enables logging in the same log output configuration as before. Some applications provide more specific filters, e.g. to log a given IMSI only. To employ such filters, set 'logging filter all 0' to disable general logging, and then enable a more specific filter instead.

Command

```
logging filter all (0|1)
```

Parameters

logging
    Configure logging

filter
    Filter log messages

all
    Do you want to log all messages?

0
    Only print messages matched by other filters

1
    Bypass filter and print all messages

1.5.3 logging filter bvc nsei <0-65535> bvci <0-65535>

Command

```
logging filter bvc nsei <0-65535> bvci <0-65535>
```

Parameters

logging
    Configure logging

filter
    Filter log messages

bvc
    Filter based on BSSGP Virtual Connection

nsei
    NSEI of the BVC to be filtered

<0-65535>
    Network Service Entity Identifier (NSEI)

bvci
    BVCI of the BVC to be filtered

<0-65535>
    BSSGP Virtual Connection Identifier (BVCI)

1.5.4   logging filter nse nsei <0-65535>

Command

```
logging filter nse nsei <0-65535>
```

Parameters

logging
>   Configure logging

filter
>   Filter log messages

nse
>   Filter based on NS Entity

nsei
>   Identify NSE by NSEI

<0-65535>
>   Numeric identifier

1.5.5   logging filter nsvc nsvci <0-65535>

Command

```
logging filter nsvc nsvci <0-65535>
```

Parameters

logging
>   Configure logging

filter
>   Filter log messages

nsvc
>   Filter based on NS Virtual Connection

nsvci
>   Identify NS-VC by NSVCI

<0-65535>
>   Numeric identifier

1.5.6 logging level (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|lglo...

Command

```
logging level (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|lglobal| ←
    llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua| ←
    lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio) (debug|info ←
    |notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

mm

Layer3 Mobility Management (MM)

pag

Paging Subsystem

meas

Radio Measurement Processing

ref

Reference Counting

gprs

GPRS Packet Service

llc

GPRS Logical Link Control Protocol (LLC)

sndcp

GPRS Sub-Network Dependent Control Protocol (SNDCP)

slhc

RFC1144 TCP/IP Header compression (SLHC)

ranap

RAN Application Part (RANAP)

sua

SCCP User Adaptation (SUA)

v42bis

V.42bis data compression (SNDCP)

gtp

GPRS Tunnelling Protocol (GTP)

rim

RAN Information Management (RIM)

lglobal

Library-internal global log family

llapd

LAPD in libosmogsm

linp

A-bis Intput Subsystem

lmux

A-bis B-Subchannel TRAU Frame Multiplex

lmi

A-bis Input Driver for Signalling

lmib

A-bis Input Driver for B-Channels (voice)

lsms

Layer3 Short Message Service (SMS)

lctrl

Control Interface

lgtp

GPRS GTP library

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

libosmo-sigtran MTP3 User Adaptation

lmgcp

libosmo-mgcp Media Gateway Control Protocol

ljibuf

libosmo-netif Jitter Buffer

lrspro

Remote SIM protocol

lns

GPRS NS layer

lbssgp

GPRS BSSGP layer

lnsdata

GPRS NS layer data PDU

lnssignal

GPRS NS layer signal PDU

liuup

Iu UP layer

lpfcp

libosmo-pfcp Packet Forwarding Control Protocol

lcsn1

libosmo-csn1 Concrete Syntax Notation 1 codec

lio

libosmocore IO Subsystem

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

1.5.7 logging level force-all (debug|info|notice|error|fatal)

Command

```
logging level force-all (debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

force-all

> Globally force all logging categories to a specific level. This is released by the 'no logging level force-all' command. Note: any 'logging level <category> <level>' commands will have no visible effect after this, until the forced level is released.

debug

> Log debug messages and higher levels

info

> Log informational messages and higher levels

notice

> Log noticeable messages and higher levels

error

> Log error messages and higher levels

fatal

> Log only fatal messages

1.5.8 logging level set-all (debug|info|notice|error|fatal)

Command

```
logging level set-all (debug|info|notice|error|fatal)
```

Parameters

logging

> Configure logging

level

> Set the log level for a specified category

set-all

> Once-off set all categories to the given log level. There is no single command to take back these changes -- each category is set to the given level, period.

debug

> Log debug messages and higher levels

info

> Log informational messages and higher levels

notice

> Log noticeable messages and higher levels

error

> Log error messages and higher levels

fatal

> Log only fatal messages

1.5.9   logging print category (0|1)

Command

```
logging print category (0|1)
```

Parameters

logging
    Configure logging

print
    Log output settings

category
    Configure log message

0
    Don't prefix each log message

1
    Prefix each log message with category/subsystem name

1.5.10   logging print category-hex (0|1)

Command

```
logging print category-hex (0|1)
```

Parameters

logging
    Configure logging

print
    Log output settings

category-hex
    Configure log message

0
    Don't prefix each log message

1
    Prefix each log message with category/subsystem nr in hex ('<000b>')

1.5.11   logging print extended-timestamp (0|1)

Command

```
logging print extended-timestamp (0|1)
```

Parameters

logging

Configure logging

print

Log output settings

extended-timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

1.5.12   logging print file (0|1|basename) [last]

Command

```
logging print file (0|1|basename) [last]
```

Parameters

logging

Configure logging

print

Log output settings

file

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the source file and line

basename

Prefix each log message with the source file's basename (strip leading paths) and line

[last]

Log source file info at the end of a log line. If omitted, log source file info just before the log text.

1.5.13 logging print level (0|1)

Command

```
logging print level (0|1)
```

Parameters

logging
> Configure logging

print
> Log output settings

level
> Configure log message

0
> Don't prefix each log message

1
> Prefix each log message with the log level name

1.5.14 logging print thread-id (0|1)

Command

```
logging print thread-id (0|1)
```

Parameters

logging
> Configure logging

print
> Log output settings

thread-id
> Configure log message logging Thread ID

0
> Don't prefix each log message

1
> Prefix each log message with current Thread ID

1.5.15 logging timestamp (0|1)

Command

```
logging timestamp (0|1)
```

Parameters

logging

Configure logging

timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

1.5.16 no logging level force-all

Command

```
no logging level force-all
```

Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

Release any globally forced log level set with 'logging level force-all <level>'

1.6 config-stats

1.6.1 disable

Command

```
disable
```

Parameters

disable

Disable the reporter

1.6.2 enable

Command

```
enable
```

Parameters

enable

> Enable the reporter

1.6.3 flush-period <0-65535>

Command

```
flush-period <0-65535>
```

Parameters

flush-period

> Configure stats sub-system

<0-65535>

> Send all stats even if they have not changed (i.e. force the flush)every N-th reporting interval. Set to 0 to disable regular flush (default).

1.6.4 level (global|peer|subscriber)

Command

```
level (global|peer|subscriber)
```

Parameters

level

> Set the maximum group level

global

> Report global groups only

peer

> Report global and network peer related groups

subscriber

> Report global, peer, and subscriber groups

1.6.5 local-ip ADDR

Command

```
local-ip ADDR
```

Parameters

local-ip
    Set the IP address to which we bind locally

ADDR
    IP Address

1.6.6 mtu <100-65535>

Command

```
mtu <100-65535>
```

Parameters

mtu
    Set the maximum packet size

<100-65535>
    Size in byte

1.6.7 no local-ip

Command

```
no local-ip
```

Parameters

no
    Negate a command or set its defaults

local-ip
    Set the IP address to which we bind locally

1.6.8 no mtu

Command

```
no mtu
```

Parameters

no
    Negate a command or set its defaults

mtu
    Set the maximum packet size

1.6.9 no prefix

Command

```
no prefix
```

Parameters

no

Negate a command or set its defaults

prefix

Set the item name prefix

1.6.10 prefix PREFIX

Command

```
prefix PREFIX
```

Parameters

prefix

Set the item name prefix

PREFIX

The prefix string

1.6.11 remote-ip ADDR

Command

```
remote-ip ADDR
```

Parameters

remote-ip

Set the remote IP address to which we connect

ADDR

IP Address

1.6.12 remote-port <1-65535>

Command

```
remote-port <1-65535>
```

Parameters

remote-port

Set the remote port to which we connect

<1-65535>

Remote port number

1.7   config-line

1.7.1   bind A.B.C.D [<0-65535>]

Command

```
bind A.B.C.D [<0-65535>]
```

Parameters

bind
    Accept VTY telnet connections on local interface

A.B.C.D
    Local interface IP address (default: 127.0.0.1)

[<0-65535>]
    Local TCP port number

1.7.2   login

Command

```
login
```

Parameters

login
    Enable password checking

1.7.3   no login

Command

```
no login
```

Parameters

no
    Negate a command or set its defaults

login
    Enable password checking

1.8 config-ns

1.8.1 bind (fr|udp) ID

Command

```
bind (fr|udp) ID
```

Parameters

bind

Configure local Bind

fr

Frame Relay

udp

UDP/IP

ID

Unique identifier for this bind (to reference from NS-VCs, NSEs, ...)

1.8.2 ip-sns-default bind ID

Command

```
ip-sns-default bind ID
```

Parameters

ip-sns-default

Defaults for dynamically created NSEs created by IP-SNS in SGSN role

bind

IP SNS binds

ID

Name of NS udp bind whose IP endpoint will be used as IP-SNS local endpoint. Can be given multiple times.

1.8.3 no bind ID

Command

```
no bind ID
```

Parameters

no

Negate a command or set its defaults

bind

Delete a bind

ID

Unique identifier for this bind

1.8.4 no ip-sns-default bind ID

Command

```
no ip-sns-default bind ID
```

Parameters

no

Negate a command or set its defaults

ip-sns-default

Defaults for dynamically created NSEs created by IP-SNS in SGSN role

bind

IP SNS binds

ID

Name of NS udp bind whose IP endpoint will be removed as IP-SNS local endpoint.

1.8.5 no nse <0-65535>

Command

```
no nse <0-65535>
```

Parameters

no

Negate a command or set its defaults

nse

Delete a Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

1.8.6 nse <0-65535> [ip-sns-role-sgsn]

Command

```
nse <0-65535> [ip-sns-role-sgsn]
```

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

[ip-sns-role-sgsn]

Create NSE in SGSN role (default: BSS)

1.8.7 timer (tns-block|tns-block-retries|tns-reset|tns-reset-retries|tns-test|tns-aliv...

Command

```
timer (tns-block|tns-block-retries|tns-reset|tns-reset-retries|tns-test|tns-alive|tns- ←
    alive-retries|tsns-prov|tsns-size-retries|tsns-config-retries|tsns-procedures- ←
    retries) <0-65535>
```

Parameters

timer

Network Service Timer

tns-block

(un)blocking Timer (Tns-block) timeout

tns-block-retries

(un)blocking Timer (Tns-block) number of retries

tns-reset

Reset Timer (Tns-reset) timeout

tns-reset-retries

Reset Timer (Tns-reset) number of retries

tns-test

Test Timer (Tns-test) timeout

tns-alive

Alive Timer (Tns-alive) timeout

tns-alive-retries

Alive Timer (Tns-alive) number of retries

tsns-prov

SNS Provision Timer (Tsns-prov) timeout

tsns-size-retries

SNS Size number of retries

tsns-config-retries

SNS Config number of retries

tsns-procedures-retries

SNS Procedures number of retries

<0-65535>

Timer Value

1.8.8 txqueue-max-length <1-4096>

Command

```
txqueue-max-length <1-4096>
```

Parameters

txqueue-max-length

Set the maximum length of the txqueue (for UDP)

<1-4096>

Maximum length of the txqueue

1.9 config-bssgp

1.10 config-ctrl

1.10.1 bind A.B.C.D [<0-65535>]

Command

```
bind A.B.C.D [<0-65535>]
```

Parameters

bind

Set bind address to listen for Control connections

A.B.C.D

Local IP address (default 127.0.0.1)

[<0-65535>]

Local TCP port number

1.11 config-cs7

1.11.1 as NAME (sua|m3ua|ipa)

Command

```
as NAME (sua|m3ua|ipa)
```

Global attributes

Flag: !

This command applies immediately

Parameters

as

Configure an Application Server

NAME

Name of the Application Server

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

1.11.2 asp NAME <0-65535> <0-65535> (sua|m3ua|ipa)

Command

```
asp NAME <0-65535> <0-65535> (sua|m3ua|ipa)
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

asp

Configure Application Server Process

NAME

Name of ASP

<0-65535>

Remote SCTP port number

<0-65535>

Local SCTP port number

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

1.11.3 description .TEXT

Command

```
description .TEXT
```

Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line

1.11.4 network-indicator (international | national | reserved | spare)

Command

```
network-indicator (international | national | reserved | spare)
```

Global attributes

Flag: !

This command applies immediately

Parameters

network-indicator

Configure the Network Indicator

international

International Network

national

National Network

reserved

Reserved Network

spare

Spare Network

1.11.5 no as NAME

Command

```
no as NAME
```

Global attributes

Flag: !
    This command applies immediately

Parameters

no
    Negate a command or set its defaults
as
    Disable Application Server
NAME
    Name of AS

1.11.6   no asp NAME

Command

```
no asp NAME
```

Global attributes

Flag: !
    This command applies immediately

Parameters

no
    Negate a command or set its defaults
asp
    Disable Application Server Process
NAME
    Name of ASP

1.11.7   no sccp-address NAME

Command

```
no sccp-address NAME
```

Global attributes

Flag: !
    This command applies immediately

Parameters

no
    Negate a command or set its defaults
sccp-address
    Delete an SCCP addressbook entry
NAME
    Name of the SCCP Address

1.11.8 point-code POINT_CODE

Command

```
point-code POINT_CODE
```

Global attributes

Flag: !

This command applies immediately

Parameters

point-code

Configure the local Point Code

POINT_CODE

Point Code

1.11.9 point-code delimiter (default|dash)

Command

```
point-code delimiter (default|dash)
```

Global attributes

Flag: !

This command applies immediately

Parameters

point-code

Point Code

delimiter

Configure Point Code Delimiter

default

Use dot as delimiter

dash

User dash as delimiter

1.11.10   point-code format <1-24> [<1-23>] [<1-22>]

Command

```
point-code format <1-24> [<1-23>] [<1-22>]
```

Global attributes

Flag: !

    This command applies immediately

Parameters

point-code

    Point Code

format

    Configure Point Code Format

<1-24>

    Length of first PC component

[<1-23>]

    Length of second PC component

[<1-22>]

    Length of third PC component

1.11.11   point-code format default

Command

```
point-code format default
```

Global attributes

Flag: !

    This command applies immediately

Parameters

point-code

    Point Code

format

    Configure Point Code Format

default

    Default Point Code Format (3.8.3)

1.11.12 sccp max-optional-data (<0-999999>|standard)

Command

```
sccp max-optional-data (<0-999999>|standard)
```

Global attributes

Flag: !

This command applies immediately

Parameters

sccp

Configure SCCP behavior

max-optional-data

Adjust the upper bound for the optional data length (the payload) for CR, CC, CREF and RLSD messages. For any Optional Data part larger than this value in octets, send CR, CC, CREF and RLSD messages without any payload, and send the data payload in a separate Data Form 1 message. ITU-T Q.713 sections 4.2 thru 4.5 define a limit of 130 bytes for the 'Data' parameter. This limit can be adjusted here. May be useful for interop with nonstandard SCCP peers.

<0-999999>

Set a non-standard maximum allowed number of bytes

standard

Use the ITU-T Q.713 4.2 to 4.5 standard value of 130

1.11.13 sccp-address NAME

Command

```
sccp-address NAME
```

Global attributes

Flag: !

This command applies immediately

Parameters

sccp-address

Create/Modify an SCCP addressbook entry

NAME

Name of the SCCP Address

1.11.14 sccp-timer (conn_est|ias|iar|rel|repeat_rel|int|guard|reset|reassembly) <1-99999...

Command

```
sccp-timer (conn_est|ias|iar|rel|repeat_rel|int|guard|reset|reassembly) <1-999999>
```

Global attributes

Flag: !

   This command applies immediately

Parameters

sccp-timer

   Configure SCCP timer values, see ITU-T Q.714

conn_est

   Waiting for connection confirm message, 1 to 2 minutes (default: 60)

ias

   Send keep-alive: on an idle connection, delay before sending an Idle Timer message, 5 to 10 minutes (default: 420)

iar

   Receive keep-alive: on an idle connection, delay until considering a connection as stale, 11 to 21 minutes (default: 900)

rel

   Waiting for release complete message, 10 to 20 seconds (default: 10)

repeat_rel

   Waiting for release complete message; or to repeat sending released message after the initial expiry, 10 to 20 seconds (default: 10)

int

   Waiting for release complete message; or to release connection resources, freeze the LRN and alert a maintenance function after the initial expiry, extending to 1 minute (default: 60)

guard

   Waiting to resume normal procedure for temporary connection sections during the restart procedure, 23 to 25 minutes (default: 1380)

reset

   Waiting to release temporary connection section or alert maintenance function after reset request message is sent, 10 to 20 seconds (default: 10)

reassembly

   Waiting to receive all the segments of the remaining segments, single segmented message after receiving the first segment, 10 to 20 seconds (default: 10)

<1-999999>

   Timer value, in seconds

1.11.15 xua rkm routing-key-allocation (static-only|dynamic-permitted)

Command

```
xua rkm routing-key-allocation (static-only|dynamic-permitted)
```

Global attributes

Flag: !

This command applies immediately

Parameters

xua

SIGTRAN xxxUA related

rkm

Routing Key Management

routing-key-allocation

Routing Key Management Allocation Policy

static-only

Only static (pre-configured) Routing Keys permitted

dynamic-permitted

Dynamically allocate Routing Keys for what ASPs request

1.12 config-cs7-as

1.12.1 asp NAME

Command

```
asp NAME
```

Global attributes

Flag: !

This command applies immediately

Parameters

asp

Specify that a given ASP is part of this AS

NAME

Name of ASP to be added to AS

1.12.2 description .TEXT

Command

```
description .TEXT
```

Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line

1.12.3 no asp NAME

Command

```
no asp NAME
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

asp

Specify ASP to be removed from this AS

NAME

Name of ASP to be removed

1.12.4 no traffic-mode

Command

```
no traffic-mode
```

Parameters

no

Negate a command or set its defaults

traffic-mode

Remove explicit traffic mode of operation of this AS

1.12.5 point-code override dpc PC

Command

```
point-code override dpc PC
```

Global attributes

Flag: !
    This command applies immediately

Parameters

point-code
    Point Code Specific Features

override
    Override (force) a point-code to hard-coded value

dpc
    Override Source Point Code

PC
    Override Destination Point Code

1.12.6 point-code override patch-sccp (disabled|both)

Command

```
point-code override patch-sccp (disabled|both)
```

Global attributes

Flag: !
    This command applies immediately

Parameters

point-code
    Point Code Specific Features

override
    Override (force) a point-code to hard-coded value

patch-sccp
    Patch point code values into SCCP called/calling address

disabled
    Don't patch any point codes into SCCP called/calling address

both
    Patch both origin and destination point codes into SCCP called/calling address

1.12.7   qos-class <0-255>

Command

```
qos-class <0-255>
```

Global attributes

Flag: !

This command applies immediately

Parameters

qos-class

Specity QoS Class of AS

<0-255>

QoS Class of AS

1.12.8   recovery-timeout <1-2000>

Command

```
recovery-timeout <1-2000>
```

Global attributes

Flag: !

This command applies immediately

Parameters

recovery-timeout

Specifies the recovery timeout value in milliseconds

<1-2000>

Recovery Timeout in Milliseconds

1.12.9   routing-key RCONTEXT DPC

Command

```
routing-key RCONTEXT DPC
```

Global attributes

Flag: !

This command applies immediately

Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

1.12.10 routing-key RCONTEXT DPC si (aal2|bicc|b-isup|h248|isup|sat-isup|sccp|tup)

Command

```
routing-key RCONTEXT DPC si (aal2|bicc|b-isup|h248|isup|sat-isup|sccp|tup)
```

Global attributes

Flag: !

This command applies immediately

Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

si

Match on Service Indicator

aal2

ATM Adaption Layer 2

bicc

Bearer Independent Call Control

b-isup

Broadband ISDN User Part

h248

H.248

isup

ISDN User Part

sat-isup

Sattelite ISDN User Part

sccp

Signalling Connection Control Part

tup

Telephony User Part

1.12.11 routing-key RCONTEXT DPC si (aal2|bicc|b-isup|h248|isup|sat-isup|sccp|tup) ssn S...

Command

```
routing-key RCONTEXT DPC si (aal2|bicc|b-isup|h248|isup|sat-isup|sccp|tup) ssn SSN
```

Global attributes

Flag: !

This command applies immediately

Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

si

Match on Service Indicator

aal2

ATM Adaption Layer 2

bicc

Bearer Independent Call Control

b-isup

Broadband ISDN User Part

h248

H.248

isup

ISDN User Part

sat-isup

Sattelite ISDN User Part

sccp

Signalling Connection Control Part

tup

Telephony User Part

ssn

Match on Sub-System Number

SSN

Sub-System Number to match on

1.12.12 routing-key RCONTEXT DPC ssn SSN

Command

```
routing-key RCONTEXT DPC ssn SSN
```

Global attributes

Flag: !

This command applies immediately

Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

ssn

Match on Sub-System Number

SSN

Sub-System Number to match on

1.12.13 traffic-mode (broadcast | loadshare | roundrobin | override)

Command

```
traffic-mode (broadcast | loadshare | roundrobin | override)
```

Parameters

traffic-mode

Specifies traffic mode of operation of the ASP within the AS

broadcast

Broadcast to all ASP within AS

loadshare

Share Load among all ASP within AS

roundrobin

Round-Robin between all ASP within AS

override

Override

1.13 config-cs7-asp

1.13.1 block

Command

```
block
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

block

Allows a SCTP Association with ASP, but doesn't let it become active

1.13.2 description .TEXT

Command

```
description .TEXT
```

Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line

1.13.3 local-ip (A.B.C.D|X:X::X:X) [primary]

Command

```
local-ip (A.B.C.D|X:X::X:X) [primary]
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

local-ip

Specify Local IP Address from which to contact ASP

A.B.C.D

Local IPv4 Address from which to contact of ASP

X:X::X:X

Local IPv6 Address from which to contact of ASP

[primary]

Signal the SCTP peer to use this address as Primary Address

1.13.4 no local-ip (A.B.C.D|X:X::X:X)

Command

```
no local-ip (A.B.C.D|X:X::X:X)
```

Global attributes

Flag: @

> This command applies on VTY node exit

Parameters

no

> Negate a command or set its defaults

local-ip

> Specify Local IP Address from which to contact ASP

A.B.C.D

> Local IPv4 Address from which to contact of ASP

X:X::X:X

> Local IPv6 Address from which to contact of ASP

1.13.5 no quirk (no_notify|daud_in_asp|snm_inactive)

Command

```
no quirk (no_notify|daud_in_asp|snm_inactive)
```

Global attributes

Flag: !

> This command applies immediately

Parameters

no

> Negate a command or set its defaults

quirk

> Disable quirk to work around interop issues

no_notify

> Peer SG doesn't send NTFY(AS-INACTIVE) after ASP-UP

daud_in_asp

> Allow Rx of DAUD in ASP role

snm_inactive

> Allow Rx of [S]SNM in AS-INACTIVE state

1.13.6 no remote-ip (A.B.C.D|X:X::X:X)

Command

```
no remote-ip (A.B.C.D|X:X::X:X)
```

Global attributes

Flag: @

   This command applies on VTY node exit

Parameters

no

   Negate a command or set its defaults

remote-ip

   Specify Remote IP Address of ASP

A.B.C.D

   Remote IPv4 Address of ASP

X:X::X:X

   Remote IPv6 Address of ASP

1.13.7 no sctp-param init (num-ostreams|max-instreams|max-attempts|timeout)

Command

```
no sctp-param init (num-ostreams|max-instreams|max-attempts|timeout)
```

Global attributes

Flag: @

   This command applies on VTY node exit

Parameters

no

   Negate a command or set its defaults

sctp-param

   Configure SCTP parameters

init

   Configure INIT related parameters

num-ostreams

   Configure INIT Number of Outbound Streams

max-instreams

   Configure INIT Maximum Inboud Streams

max-attempts

   Configure INIT Maximum Attempts

timeout

   Configure INIT Timeout (milliseconds)

1.13.8 qos-class <0-255>

Command

```
qos-class <0-255>
```

Global attributes

Flag: @
  This command applies on VTY node exit

Parameters

qos-class
  Specify QoS Class of ASP

<0-255>
  QoS Class of ASP

1.13.9 quirk (no_notify|daud_in_asp|snm_inactive)

Command

```
quirk (no_notify|daud_in_asp|snm_inactive)
```

Global attributes

Flag: !
  This command applies immediately

Parameters

quirk
  Enable quirk to work around interop issues

no_notify
  Peer SG doesn't send NTFY(AS-INACTIVE) after ASP-UP

daud_in_asp
  Allow Rx of DAUD in ASP role

snm_inactive
  Allow Rx of [S]SNM in AS-INACTIVE state

1.13.10   remote-ip (A.B.C.D|X:X::X:X) [primary]

Command

```
remote-ip (A.B.C.D|X:X::X:X) [primary]
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

remote-ip

Specify Remote IP Address of ASP

A.B.C.D

Remote IPv4 Address of ASP

X:X::X:X

Remote IPv6 Address of ASP

[primary]

Set remote address as SCTP Primary Address

1.13.11   role (sg|asp|ipsp)

Command

```
role (sg|asp|ipsp)
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

role

Specify the xUA role for this ASP

sg

SG (Signaling Gateway)

asp

ASP (Application Server Process)

ipsp

IPSP (IP Signalling Point)

1.13.12   sctp-param init (num-ostreams|max-instreams|max-attempts|timeout) <0-65535>

Command

```
sctp-param init (num-ostreams|max-instreams|max-attempts|timeout) <0-65535>
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

sctp-param

Configure SCTP parameters

init

Configure INIT related parameters

num-ostreams

Configure INIT Number of Outbound Streams

max-instreams

Configure INIT Maximum Inboud Streams

max-attempts

Configure INIT Maximum Attempts

timeout

Configure INIT Timeout (milliseconds)

<0-65535>

Value of the parameter

1.13.13   sctp-role (client|server)

Command

```
sctp-role (client|server)
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

sctp-role

Specify the SCTP role for this ASP

client

Operate as SCTP client; connect to a server

server

Operate as SCTP server; wait for client connections

1.13.14 shutdown

Command

```
shutdown
```

Global attributes

Flag: @

   This command applies on VTY node exit

Parameters

shutdown

   Terminates SCTP association; New associations will be rejected

1.13.15 timer lm (wait_asp_up|wait_notify|wait_notify_rkm|wait_rk_reg_resp) <1-999999>

Command

```
timer lm (wait_asp_up|wait_notify|wait_notify_rkm|wait_rk_reg_resp) <1-999999>
```

Global attributes

Flag: !

   This command applies immediately

Parameters

timer

   Configure ASP default timer values

lm

   Configure ASP default lm timer values

wait_asp_up

   Restart ASP after timeout waiting for ASP UP (SG role) / ASP UP ACK (ASP role) (s) (default: 20)

wait_notify

   Restart ASP after timeout waiting for NOTIFY (s) (default: 2)

wait_notify_rkm

   Restart ASP after timeout waiting for NOTIFY after RKM registration (s) (default: 20)

wait_rk_reg_resp

   Restart ASP after timeout waiting for RK_REG_RESP (s) (default: 10)

<1-999999>

   Timer value, in seconds

1.14 config-cs7-sccpaddr

1.14.1 global-title

Command

```
global-title
```

Global attributes

Flag: !

   This command applies immediately

Parameters

global-title

   Add/Modify Global Title

1.14.2 no global-title

Command

```
no global-title
```

Global attributes

Flag: !

   This command applies immediately

Parameters

no

   Negate a command or set its defaults

global-title

   Remove Global Title

1.14.3 no point-code

Command

```
no point-code
```

Global attributes

Flag: !

   This command applies immediately

Parameters

no

   Negate a command or set its defaults

point-code

   Remove point-code Number

1.14.4 no subsystem-number

Command

```
no subsystem-number
```

Global attributes

Flag: !

> This command applies immediately

Parameters

no

> Negate a command or set its defaults

subsystem-number

> Remove Subsystem Number

1.14.5 point-code POINT_CODE

Command

```
point-code POINT_CODE
```

Global attributes

Flag: !

> This command applies immediately

Parameters

point-code

> Add point-code Number

POINT_CODE

> PC

1.14.6 routing-indicator (GT|PC|IP)

Command

```
routing-indicator (GT|PC|IP)
```

Global attributes

Flag: !

> This command applies immediately

Parameters

routing-indicator

    Add Routing Indicator

GT

    by global-title

PC

    by point-code

IP

    by ip-address

1.14.7 subsystem-number <0-4294967295>

Command

```
subsystem-number <0-4294967295>
```

Global attributes

Flag: !

    This command applies immediately

Parameters

subsystem-number

    Add Subsystem Number

<0-4294967295>

    SSN

1.15 config-cs7-sccpaddr-gt

1.15.1 digits DIGITS

Command

```
digits DIGITS
```

Global attributes

Flag: !

    This command applies immediately

Parameters

digits

    Set Global Title Digits

DIGITS

    Number digits

1.15.2 global-title-indicator <0-15>

Command

```
global-title-indicator <0-15>
```

Global attributes

Flag: !

This command applies immediately

Parameters

global-title-indicator

Set Global Title Indicator

<0-15>

GTI

1.15.3 nature-of-address-indicator <0-127>

Command

```
nature-of-address-indicator <0-127>
```

Global attributes

Flag: !

This command applies immediately

Parameters

nature-of-address-indicator

Set Global Title Nature of Address Indicator

<0-127>

NAI

1.15.4 numbering-plan-indicator <0-15>

Command

```
numbering-plan-indicator <0-15>
```

Global attributes

Flag: !

This command applies immediately

Parameters

numbering-plan-indicator

Set Global Title Numbering Plan Indicator

<0-15>

NPI

1.15.5 translation-type <0-255>

Command

```
translation-type <0-255>
```

Global attributes

Flag: !

This command applies immediately

Parameters

translation-type

Set Global Title Translation Type

<0-255>

TT

1.16 config-cpu-sched

1.16.1 cpu-affinity (self|all|<0-4294967295>|THREADNAME) CPUHEXMASK [delay]

Command

```
cpu-affinity (self|all|<0-4294967295>|THREADNAME) CPUHEXMASK [delay]
```

Global attributes

Flag: !

This command applies immediately

Parameters

cpu-affinity

Set CPU affinity mask on a (group of) thread(s)

self

Set CPU affinity mask on thread running the VTY

all

Set CPU affinity mask on all process' threads

<0-4294967295>

Set CPU affinity mask on a thread with specified PID

THREADNAME

Set CPU affinity mask on a thread with specified thread name

CPUHEXMASK

CPU affinity mask

[delay]

If set, delay applying the affinity mask now and let the app handle it at a later point

1.16.2 policy rr <1-32>

Command

```
policy rr <1-32>
```

Global attributes

Flag: !

This command applies immediately

Parameters

policy

Set the scheduling policy to use for the process

rr

Use the SCHED_RR real-time scheduling algorithm

<1-32>

Set the SCHED_RR real-time priority

1.17 config-ns-bind

1.17.1 accept-dynamic-ip-sns

Command

```
accept-dynamic-ip-sns
```

Parameters

accept-dynamic-ip-sns

Allow to create dynamic NS Entities by IP-SNS PDUs

1.17.2 accept-ipaccess

Command

```
accept-ipaccess
```

Parameters

accept-ipaccess

Allow to create dynamic NS Entity by NS Reset PDU on UDP (ip.access style)

1.17.3 dscp <0-63>

Command

```
dscp <0-63>
```

Parameters

dscp

   Set DSCP/TOS on the UDP socket

<0-63>

   DSCP Value

1.17.4 fr NETIF (fr|frnet)

Command

```
fr NETIF (fr|frnet)
```

Parameters

fr

   frame relay

NETIF

   Interface name(e.g. ep0)

fr

   fr (user) is used by BSS or SGSN attached to UNI of a FR network

frnet

   frnet (network) is used by SGSN if BSS is directly attached

1.17.5 ip-sns signalling-weight <0-254> data-weight <0-254>

Command

```
ip-sns signalling-weight <0-254> data-weight <0-254>
```

Parameters

ip-sns

   IP SNS

signalling-weight

   signalling weight used by IP-SNS dynamic configuration

<0-254>

   signalling weight used by IP-SNS dynamic configuration

data-weight

   data weight used by IP-SNS dynamic configuration

<0-254>

   data weight used by IP-SNS dynamic configuration

1.17.6 listen (A.B.C.D|X:X::X:X) <1-65535>

Command

```
listen (A.B.C.D|X:X::X:X) <1-65535>
```

Parameters

listen

> Configure local IP + Port of this bind

A.B.C.D

> Local IPv4 Address

X:X::X:X

> Local IPv6 Address

<1-65535>

> Local UDP Port

1.17.7 no accept-dynamic-ip-sns

Command

```
no accept-dynamic-ip-sns
```

Parameters

no

> Negate a command or set its defaults

accept-dynamic-ip-sns

> Disable dynamic creation of NS Entities by IP-SNS PDUs

1.17.8 no accept-ipaccess

Command

```
no accept-ipaccess
```

Parameters

no

> Negate a command or set its defaults

accept-ipaccess

> Reject NS Reset PDU on UDP (ip.access style)

1.17.9   no dscp

Command

```
no dscp
```

Parameters

no

Set DSCP/TOS on the UDP socket

dscp

DSCP Value

1.17.10   no fr NETIF

Command

```
no fr NETIF
```

Parameters

no

Negate a command or set its defaults

fr

Delete a frame relay link

NETIF

Delete a frame relay link

1.17.11   no listen

Command

```
no listen
```

Parameters

no

Negate a command or set its defaults

listen

Delete a IP/Port assignment

1.17.12 socket-priority <0-255>

Command

```
socket-priority <0-255>
```

Parameters

socket-priority

Set socket priority on the UDP socket

<0-255>

Priority Value (>6 requires CAP_NET_ADMIN)

1.18 config-ns-nse

1.18.1 ip-sns-bind BINDID

Command

```
ip-sns-bind BINDID
```

Parameters

ip-sns-bind

IP SNS binds

BINDID

Name of NS udp bind whose IP endpoint will be used as IP-SNS local endpoint. Can be given multiple times.

1.18.2 ip-sns-remote (A.B.C.D|X:X::X:X) <1-65535>

Command

```
ip-sns-remote (A.B.C.D|X:X::X:X) <1-65535>
```

Parameters

ip-sns-remote

SNS Initial Endpoint

A.B.C.D

SGSN IPv4 Address

X:X::X:X

SGSN IPv6 Address

<1-65535>

SGSN UDP Port

1.18.3   no ip-sns-bind BINDID

Command

```
no ip-sns-bind BINDID
```

Parameters

no

   Negate a command or set its defaults

ip-sns-bind

   IP SNS binds

BINDID

   Name of NS udp bind whose IP endpoint will not be used as IP-SNS local endpoint

1.18.4   no ip-sns-remote (A.B.C.D|X:X::X:X) <1-65535>

Command

```
no ip-sns-remote (A.B.C.D|X:X::X:X) <1-65535>
```

Parameters

no

   Negate a command or set its defaults

ip-sns-remote

   Delete a SNS Initial Endpoint

A.B.C.D

   SGSN IPv4 Address

X:X::X:X

   SGSN IPv6 Address

<1-65535>

   SGSN UDP Port

1.18.5   no nsvc fr NETIF dlci <16-1007>

Command

```
no nsvc fr NETIF dlci <16-1007>
```

Parameters

no

   Negate a command or set its defaults

nsvc

>   Delete frame relay NS-VC

fr

>   frame relay

NETIF

>   frame relay interface. Must be registered via fr vty

dlci

>   Data Link connection identifier

<16-1007>

>   Data Link connection identifier

1.18.6 no nsvc ipa BIND (A.B.C.D|X:X::X:X) <1-65535> nsvci <0-65535>

Command

```
no nsvc ipa BIND (A.B.C.D|X:X::X:X) <1-65535> nsvci <0-65535>
```

Parameters

no

>   Negate a command or set its defaults

nsvc

>   Delete a NS Virtual Connection

ipa

>   NS over UDP

BIND

>   A unique bind identifier created by ns bind

A.B.C.D

>   Remote IPv4 Address

X:X::X:X

>   Remote IPv6 Address

<1-65535>

>   Remote UDP Port

nsvci

>   NS Virtual Connection ID (NS-VCI)

<0-65535>

>   NS Virtual Connection ID (NS-VCI)

1.18.7 no nsvc nsvci <0-65535>

Command

```
no nsvc nsvci <0-65535>
```

Parameters

no

Negate a command or set its defaults

nsvc

Delete NSVC

nsvci

NS Virtual Connection ID (NS-VCI)

<0-65535>

NS Virtual Connection ID (NS-VCI)

1.18.8 no nsvc udp BIND (A.B.C.D|X:X::X:X) <1-65535>

Command

```
no nsvc udp BIND (A.B.C.D|X:X::X:X) <1-65535>
```

Parameters

no

Negate a command or set its defaults

nsvc

Delete a NS Virtual Connection

udp

NS over UDP

BIND

A unique bind identifier created by ns bind

A.B.C.D

Remote IPv4 Address

X:X::X:X

Remote IPv6 Address

<1-65535>

Remote UDP Port

1.18.9 nsvc fr NETIF dlci <16-1007> nsvci <0-65535>

Command

```
nsvc fr NETIF dlci <16-1007> nsvci <0-65535>
```

Parameters

nsvc

NS Virtual Connection

fr

frame relay

NETIF

frame relay interface. Must be registered via fr vty

dlci

NS Virtual Connection ID (NS-VCI)

<16-1007>

NS Virtual Connection ID (NS-VCI)

nsvci

Data Link connection identifier

<0-65535>

Data Link connection identifier

1.18.10 nsvc ipa BIND (A.B.C.D|X:X::X:X) <1-65535> nsvci <0-65535>

Command

```
nsvc ipa BIND (A.B.C.D|X:X::X:X) <1-65535> nsvci <0-65535>
```

Parameters

nsvc

NS Virtual Connection

ipa

NS over UDP ip.access style (uses RESET/BLOCK)

BIND

A unique bind identifier created by ns bind

A.B.C.D

Remote IPv4 Address

X:X::X:X

Remote IPv6 Address

<1-65535>

Remote UDP Port

nsvci

    NS Virtual Connection ID (NS-VCI)

<0-65535>

    NS Virtual Connection ID (NS-VCI)

1.18.11   nsvc udp BIND (A.B.C.D|X:X::X:X) <1-65535>

Command

```
nsvc udp BIND (A.B.C.D|X:X::X:X) <1-65535>
```

Parameters

nsvc

    NS Virtual Connection

udp

    NS over UDP

BIND

    A unique bind identifier created by ns bind

A.B.C.D

    Remote IPv4 Address

X:X::X:X

    Remote IPv6 Address

<1-65535>

    Remote UDP Port

1.18.12   nsvc udp BIND (A.B.C.D|X:X::X:X) <1-65535> signalling-weight <0-254> data-weight...

Command

```
nsvc udp BIND (A.B.C.D|X:X::X:X) <1-65535> signalling-weight <0-254> data-weight  ←
    <0-254>
```

Parameters

nsvc

    NS Virtual Connection

udp

    NS over UDP

BIND

    A unique bind identifier created by ns bind

A.B.C.D

    Remote IPv4 Address

X:X::X:X

> Remote IPv6 Address

<1-65535>

> Remote UDP Port

signalling-weight

> Signalling weight of the NSVC (default = 1)

<0-254>

> Signalling weight of the NSVC (default = 1)

data-weight

> Data weight of the NSVC (default = 1)

<0-254>

> Data weight of the NSVC (default = 1)

1.19 config-sgsn

Configure the remote GGSN, access-control and other attributes of the SGSN

1.19.1 access-point-name NAME

Command

```
access-point-name NAME
```

Parameters

access-point-name

> Globally allow the given APN name for all subscribers.

NAME

> Add this NAME to the list

1.19.2 apn APNAME ggsn <0-255>

Command

```
apn APNAME ggsn <0-255>
```

Parameters

apn

> Configure the information per APN

APNAME

> The APN gateway name optionally prefixed by '*' (wildcard)

ggsn

> Select the GGSN to use for the given APN gateway prefix

<0-255>

> The GGSN id

1.19.3   apn APNAME imsi-prefix IMSIPRE ggsn <0-255>

Command

```
apn APNAME imsi-prefix IMSIPRE ggsn <0-255>
```

Parameters

apn

> Configure the information per APN

APNAME

> The APN gateway name optionally prefixed by '*' (wildcard)

imsi-prefix

> Select the GGSN to use for the given APN gateway prefix if and only if the IMSI matches the given prefix.

IMSIPRE

> An IMSI prefix

ggsn

> Select the GGSN to use when APN gateway and IMSI prefix match

<0-255>

> The GGSN id

1.19.4   asn1 debug (1|0)

Command

```
asn1 debug (1|0)
```

Parameters

asn1

> ASN.1 settings

debug

> Enable ASN.1 debug messages

1

> Log ASN.1 debug messages to stderr

0

> Do not log ASN.1 debug messages to stderr

1.19.5 asn1 xer-print (1|0)

Command

```
asn1 xer-print (1|0)
```

Parameters

asn1

>   ASN.1 settings

xer-print

>   Log human readable representations of all ASN.1 messages to stderr

1

>   Log XML representation of all ASN.1 messages to stderr

0

>   Do not log decoded ASN.1 messages to stderr

1.19.6 auth-policy (accept-all|closed|acl-only|remote)

Command

```
auth-policy (accept-all|closed|acl-only|remote)
```

Parameters

auth-policy

>   Configure the Authorization policy of the SGSN. This setting determines which subscribers are permitted to register to the network.

accept-all

>   Accept all IMSIs (DANGEROUS)

closed

>   Accept only home network subscribers or those in the ACL

acl-only

>   Accept only subscribers in the ACL

remote

>   Use remote subscription data only (HLR)

1.19.7 authentication (optional|required)

Command

```
authentication (optional|required)
```

Parameters

authentication

> Whether to enforce MS authentication in GERAN (only with auth-policy remote)

optional

> Allow MS to attach via GERAN without authentication (default and only possible value for non-remote auth-policy)

required

> Always require authentication (only available for auth-policy remote, default with that auth-policy)

1.19.8 cdr filename NAME

Command

```
cdr filename NAME
```

Parameters

cdr

> CDR

filename

> Set the file name for the call-data-record file, logging the data usage of each subscriber.

NAME

> filename

1.19.9 cdr interval <1-2147483647>

Command

```
cdr interval <1-2147483647>
```

Parameters

cdr

> CDR

interval

> Set the interval for the call-data-record file

<1-2147483647>

> interval in seconds

1.19.10 cdr trap

Command

```
cdr trap
```

Parameters

cdr

  CDR

trap

  Enable sending CDR via TRAP CTRL messages

1.19.11 compression rfc1144 active slots <1-256>

Command

```
compression rfc1144 active slots <1-256>
```

Parameters

compression

  Configure compression

rfc1144

  RFC1144 Header compression scheme

active

  Compression is actively proposed

slots

  Number of compression state slots

<1-256>

  Number of compression state slots

1.19.12 compression rfc1144 passive

Command

```
compression rfc1144 passive
```

Parameters

compression

  Configure compression

rfc1144

  RFC1144 Header compression scheme

passive

  Compression is available on request

1.19.13   compression v42bis active direction (ms|sgsn|both) codewords <512-65535> strlen ...

Command

```
compression v42bis active direction (ms|sgsn|both) codewords <512-65535> strlen <6-250>
```

Parameters

compression

    Configure compression

v42bis

    V.42bis data compression scheme

active

    Compression is actively proposed

direction

    Direction in which the compression shall be active (p0)

ms

    Compress ms->sgsn direction only

sgsn

    Compress sgsn->ms direction only

both

    Both directions

codewords

    Number of codewords (p1)

<512-65535>

    Number of codewords

strlen

    Maximum string length (p2)

<6-250>

    Maximum string length

1.19.14   compression v42bis passive

Command

```
compression v42bis passive
```

Parameters

compression

    Configure compression

v42bis

    V.42bis data compression scheme

passive

    Compression is available on request

1.19.15   cs7-instance-iu <0-15>

Command

```
cs7-instance-iu <0-15>
```

Parameters

cs7-instance-iu

Set SS7 to be used by the Iu-Interface.

<0-15>

SS7 instance reference number (default: 0)

1.19.16   encryption cipher-plugin-path PATH

Command

```
encryption cipher-plugin-path PATH
```

Parameters

encryption

Set encryption algorithms for SGSN

cipher-plugin-path

Path to gprs encryption cipher plugin directory

PATH

Plugin path

1.19.17   encryption gea <0-4> [<0-4>] [<0-4>] [<0-4>] [<0-4>]

Command

```
encryption gea <0-4> [<0-4>] [<0-4>] [<0-4>] [<0-4>]
```

Parameters

encryption

Set encryption algorithms for SGSN

gea

GPRS Encryption Algorithm

<0-4>

GEAn Algorithm Number

[<0-4>]

GEAn Algorithm Number

[<0-4>]

GEAn Algorithm Number

[<0-4>]

GEAn Algorithm Number

[<0-4>]

GEAn Algorithm Number

1.19.18   encryption uea <0-2> [<0-2>] [<0-2>]

Command

```
encryption uea <0-2> [<0-2>] [<0-2>]
```

Parameters

encryption

Set encryption algorithms for SGSN

uea

UTRAN (3G) encryption algorithms to allow: 0 = UEA0 (no encryption), 1 = UEA1, 2 = UEA2.

<0-2>

UEAn Algorithm Number

[<0-2>]

UEAn Algorithm Number

[<0-2>]

UEAn Algorithm Number

1.19.19   ggsn <0-255> echo-interval <1-36000>

Command

```
ggsn <0-255> echo-interval <1-36000>
```

Parameters

ggsn

Configure the GGSN information

<0-255>

GGSN Number

echo-interval

Send an echo request to this static GGSN every interval.

<1-36000>

Interval between echo requests in seconds.

1.19.20 ggsn <0-255> gtp-version (0|1)

Command

```
ggsn <0-255> gtp-version (0|1)
```

Parameters

ggsn
Configure the GGSN information

<0-255>
GGSN Number

gtp-version
GTP Version

0
Version 0

1
Version 1

1.19.21 ggsn <0-255> no echo-interval

Command

```
ggsn <0-255> no echo-interval
```

Parameters

ggsn
Configure the GGSN information

<0-255>
GGSN Number

no
Negate a command or set its defaults

echo-interval
Send an echo request to this static GGSN every interval.

1.19.22 ggsn <0-255> remote-ip A.B.C.D

Command

```
ggsn <0-255> remote-ip A.B.C.D
```

Parameters

ggsn

Configure the GGSN information

<0-255>

GGSN Number

remote-ip

Configure this static GGSN to use the specified remote IP address.

A.B.C.D

IPv4 Address

1.19.23 ggsn dynamic

Command

```
ggsn dynamic
```

Parameters

ggsn

Configure the GGSN information

dynamic

Enable dynamic resolving of GGSNs based on DNS resolving the APN name like in a GRX-style setup. Changing this setting requires a restart.

1.19.24 grx-dns-add A.B.C.D

Command

```
grx-dns-add A.B.C.D
```

Parameters

grx-dns-add

Use the specified IP address for DNS-resolving the AP names to GGSN IP addresses

A.B.C.D

IPv4 address

1.19.25 gsup ipa-name NAME

Command

```
gsup ipa-name NAME
```

Parameters

gsup

   GSUP Parameters

ipa-name

   Set the IPA name of this SGSN

NAME

   A unique name for this SGSN. For example: PLMN + redundancy server number: SGSN-901-70-0. This name is used for
   GSUP routing and must be set if more than one SGSN is connected to the network. The default is 'SGSN-00-00-00-00-
   00-00'.

1.19.26   gsup oap-id <0-65535>

Command

```
gsup oap-id <0-65535>
```

Parameters

gsup

   GSUP Parameters

oap-id

   Set the OAP client ID for authentication on the GSUP protocol. This setting only applies if 'auth-policy remote' is used.

<0-65535>

   OAP client ID (0 == disabled)

1.19.27   gsup oap-k K

Command

```
gsup oap-k K
```

Parameters

gsup

   GSUP Parameters

oap-k

   Set the OAP shared secret key K for authentication on the GSUP protocol. This setting only applies if auth-policy remote
   is used.

K

   K value (16 byte) hex

1.19.28 gsup oap-opc OPC

Command

```
gsup oap-opc OPC
```

Parameters

gsup

> GSUP Parameters

oap-opc

> Set the OAP shared secret OPC for authentication on the GSUP protocol. This setting only applies if auth-policy remote is used.

OPC

> OPC value (16 byte) hex

1.19.29 gsup remote-ip A.B.C.D

Command

```
gsup remote-ip A.B.C.D
```

Parameters

gsup

> GSUP Parameters

remote-ip

> Set the IP address of the remote GSUP server (e.g. OsmoHLR). This setting only applies if 'auth-policy remote' is used.

A.B.C.D

> IPv4 Address

1.19.30 gsup remote-port <0-65535>

Command

```
gsup remote-port <0-65535>
```

Parameters

gsup

> GSUP Parameters

remote-port

> Set the TCP port of the remote GSUP server, see also 'gsup remote-ip'

<0-65535>

> Remote TCP port

1.19.31 gtp local-ip A.B.C.D

Command

```
gtp local-ip A.B.C.D
```

Parameters

gtp

> GTP Parameters

local-ip

> Set the IP address for the local GTP bind for the Gp interface (towards the GGSNs). Note: in case you would like to run the GGSN on the same machine as the SGSN, you can not run both on the same IP address, since both sides are specified to use the same GTP port numbers (2123 and 2152). For example, you could use 127.0.0.1 for the SGSN and 127.0.0.2 for the GGSN in such situations.

A.B.C.D

> IPv4 Address

1.19.32 gtp state-dir PATH

Command

```
gtp state-dir PATH
```

Parameters

gtp

> GTP Parameters

state-dir

> Set the directory for the GTP State file

PATH

> Local Directory

1.19.33 imsi-acl (add|del) IMSI

Command

```
imsi-acl (add|del) IMSI
```

Parameters

imsi-acl

> Access Control List of foreign IMSIs

add

> Add IMSI to ACL

del

> Remove IMSI from ACL

IMSI

> IMSI of subscriber

1.19.34   iu rab-assign-addr-enc (x213|v4raw)

Command

```
iu rab-assign-addr-enc (x213|v4raw)
```

Parameters

iu

   Iu interface protocol options

rab-assign-addr-enc

   Choose RAB Assignment's Transport Layer Address encoding

x213

   ITU-T X.213 compliant address encoding (default)

v4raw

   32bit length raw IPv4 address (for ip.access nano3G)

1.19.35   mme NAME

Command

```
mme NAME
```

Parameters

mme

   Configure an MME peer

NAME

   Name identifying the MME peer

1.19.36   no access-point-name NAME

Command

```
no access-point-name NAME
```

Parameters

no

   Negate a command or set its defaults

access-point-name

   Configure a global list of allowed APNs

NAME

   Remove entry with NAME

1.19.37 no cdr filename

Command

```
no cdr filename
```

Parameters

no

Negate a command or set its defaults

cdr

CDR

filename

Disable saving CDR to file

1.19.38 no cdr trap

Command

```
no cdr trap
```

Parameters

no

Negate a command or set its defaults

cdr

CDR

trap

Disable sending CDR via TRAP CTRL messages

1.19.39 no compression rfc1144

Command

```
no compression rfc1144
```

Parameters

no

Negate a command or set its defaults

compression

Configure compression

rfc1144

disable rfc1144 TCP/IP header compression

1.19.40 no compression v42bis

Command

```
no compression v42bis
```

Parameters

no

Negate a command or set its defaults

compression

Configure compression

v42bis

disable V.42bis data compression

1.19.41 no encryption cipher-plugin-path PATH

Command

```
no encryption cipher-plugin-path PATH
```

Parameters

no

Negate a command or set its defaults

encryption

Set encryption algorithms for SGSN

cipher-plugin-path

Path to gprs encryption cipher plugin directory

PATH

Plugin path

1.19.42 no mme NAME

Command

```
no mme NAME
```

Parameters

no

Negate a command or set its defaults

mme

Delete an MME peer configuration

NAME

Name identifying the MME peer

1.19.43   timer [TNNNN] [(<0-2147483647>|default)]

Command

```
timer [TNNNN] [(<0-2147483647>|default)]
```

Parameters

timer

> Configure or show timers

[TNNNN]

> T- or X-timer-number -- 3GPP compliant timer number of the format '1234' or 'T1234' or 't1234'; Osmocom-specific
> timer number of the format: 'X1234' or 'x1234'.

[<0-2147483647>]

> New timer value

[default]

> Set to default timer value

1.19.44   timer gtp [TNNNN] [(<0-2147483647>|default)]

Command

```
timer gtp [TNNNN] [(<0-2147483647>|default)]
```

Parameters

timer

> Configure or show timers

gtp

> GTP (libgtp) timers

[TNNNN]

> T- or X-timer-number -- 3GPP compliant timer number of the format '1234' or 'T1234' or 't1234'; Osmocom-specific
> timer number of the format: 'X1234' or 'x1234'.

[<0-2147483647>]

> New timer value

[default]

> Set to default timer value

1.20 config-sgsn-mme

1.20.1 gtp ran-info-relay <0-999> <0-999> <0-65535>

Command

```
gtp ran-info-relay <0-999> <0-999> <0-65535>
```

Parameters

gtp
    Configure GTP connection

ran-info-relay
    Configure RAN Information Relay routing

<0-999>
    MCC

<0-999>
    MNC

<0-65535>
    TAC

1.20.2 gtp ran-info-relay default

Command

```
gtp ran-info-relay default
```

Parameters

gtp
    Configure GTP connection

ran-info-relay
    Configure RAN Information Relay routing

default
    Set as default route

1.20.3 gtp remote-ip A.B.C.D

Command

```
gtp remote-ip A.B.C.D
```

Parameters

gtp

    Configure GTP connection

remote-ip

    Set Remote GTP IP address

A.B.C.D

    IP information

1.20.4   no gtp ran-info-relay <0-999> <0-999> <0-65535>

Command

```
no gtp ran-info-relay <0-999> <0-999> <0-65535>
```

Parameters

no

    Negate a command or set its defaults

gtp

    Configure GTP connection

ran-info-relay

    Configure RAN Information Relay routing

<0-999>

    MCC

<0-999>

    MNC

<0-65535>

    TAC

1.20.5   no gtp ran-info-relay default

Command

```
no gtp ran-info-relay default
```

Parameters

no

    Negate a command or set its defaults

gtp

    Configure GTP connection

ran-info-relay

    Configure RAN Information Relay routing

default

    Set as default route