

# **OsmoSGSN VTY Reference**

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**COLLABORATORS**

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## 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

## Common Commands

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

## end

### Command

```
end
```

### Parameters

end

End current mode and change to enable mode.

## exit

### Command

```
exit
```

### Parameters

exit

Exit current mode and down to previous mode

## help

### Command

```
help
```

### Parameters

help

Description of the interactive help system

## list

### Command

```
list
```

### Parameters

list

Print command list

---

## show running-config

### Command

```
show running-config
```

### Parameters

#### show

Show running system information

#### running-config

running configuration

## write

### Command

```
write
```

### Parameters

#### write

Write running configuration to memory, network, or terminal

## write file

### Command

```
write file
```

### Parameters

#### write

Write running configuration to memory, network, or terminal

#### file

Write to configuration file

## 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)

---



## write terminal

### Command

```
write terminal
```

### Parameters

#### write

Write running configuration to memory, network, or terminal

#### terminal

Write to terminal

## 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.

## 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

---

## enable

### Command

```
enable
```

### Parameters

#### enable

Turn on privileged mode command

## 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

## logging disable

### Command

```
logging disable
```

### Parameters

#### logging

Configure logging

#### disable

Disables logging to this vty

---

## 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

## 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

## 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)

**logging filter nsvc (nsei|nsvci) <0-65535>****Command**

```
logging filter nsvc (nsei|nsvci) <0-65535>
```

**Parameters****logging**

Configure logging

**filter**

Filter log messages

**nsvc**

Filter based on NS Virtual Connection

**nsei**

Identify NS-VC by NSEI

**nsvci**

Identify NS-VC by NSVCI

<0-65535>

Numeric identifier

**logging level (|mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|lg...**

## Command

```
logging level (|mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|lglobal| ↵  
llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscdp|lsua|lm3ua| ↵  
lmgcp|ljibuf|lrspro) (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

## ns

GPRS Network Service (NS)

## bssgp

GPRS BSS Gateway Protocol (BSSGP)

## llc

GPRS Logical Link Control Protocol (LLC)

## sndcp

GPRS Sub-Network Dependent Control Protocol (SND CP)

## slhc

RFC1144 TCP/IP Header compression (SLHC)

## ranap

RAN Application Part (RANAP)

## sua

SCCP User Adaptation (SUA)

## v42bis

V.42bis data compression (SND CP)

lglobal

Library-internal global log family

llapd

LAPD in libosmogsm

linp

A-bis Input 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

---

**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

**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

---

## 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

## 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

---



## 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>')

## 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

---

## 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.

## 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

## 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

## 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

## 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>'

## show alarms

### Command

```
show alarms
```

### Parameters

#### show

Show running system information

#### alarms

Show current logging configuration

## show asciidoc counters

### Command

```
show asciidoc counters
```

### Parameters

#### show

Show running system information

#### asciidoc

Asciidoc generation

#### counters

Generate table of all registered counters

## show bssgp

### Command

```
show bssgp
```

### Parameters

#### show

Show running system information

#### bssgp

Show information about the BSSGP protocol

**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

&lt;0-65535&gt;

The NSEI

[stats]

Include Statistics

**show bssgp stats**

## Command

```
show bssgp stats
```

## Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

stats

Include statistics

**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

### **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

**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

## &lt;0-15&gt;

An instance of the SS7 stack

## asp

Application Server Process (ASP)

**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

## &lt;0-15&gt;

An instance of the SS7 stack

## sccp

Signalling Connection Control Part

## addressbook

List all SCCP addressbook entries

---

**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

&lt;0-15&gt;

An instance of the SS7 stack

sccp

Signalling Connection Control Part

connections

Show List of active SCCP connections

**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

&lt;0-15&gt;

An instance of the SS7 stack

sccp

Signalling Connection Control Part

ssn

Find an SCCP User registered for the given SSN

&lt;0-65535&gt;

Subsystem Number (SSN)



**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

## &lt;0-15&gt;

An instance of the SS7 stack

## sccp

Signaling Connection Control Part

## timers

Show List of SCCP timers

**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

## &lt;0-15&gt;

An instance of the SS7 stack

## sccp

Signalling Connection Control Part

## users

Show List of SCCP Users registered

---

## 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

## show history

### Command

```
show history
```

### Parameters

show

Show running system information

history

Display the session command history

## show llc

### Command

```
show llc
```

### Parameters

show

Show running system information

llc

Display information about the LLC protocol

---

## 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

## 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

## 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

## show ns

Command

```
show ns
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

## 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

## 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

## show ns stats

### Command

```
show ns stats
```

### Parameters

show

Show running system information

ns

Display information about the NS protocol

stats

Include statistics

## show online-help

### Command

```
show online-help
```

### Parameters

show

Show running system information

online-help

Online help

## 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

## show rate-counters

### Command

```
show rate-counters
```

### Parameters

#### show

Show running system information

#### rate-counters

Show all rate counters

## show sgsn

### Command

```
show sgsn
```

### Parameters

#### show

Show running system information

#### sgsn

Display information about the SGSN

---

## show sndcp

### Command

```
show sndcp
```

### Parameters

#### show

Show running system information

#### sndcp

Display information about the SNDCP protocol

## show stats

### Command

```
show stats
```

### Parameters

#### show

Show running system information

#### stats

Show statistical values

## show stats level (global|peer|subscriber)

### Command

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

### 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

---

## show subscriber cache

### Command

```
show subscriber cache
```

### Parameters

show

Show running system information

subscriber

Show information about subscribers

cache

Display contents of subscriber cache

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

### Command

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

### Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

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

---



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

## Command

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

## Parameters

## show

Show running system information

## talloc-context

Show talloc memory hierarchy

## application

Application's context

## 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

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

## Command

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

## Parameters

## show

Show running system information

## talloc-context

Show talloc memory hierarchy

## application

Application's context

## 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)

## show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

## 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)

---

## 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

## who

### Command

```
who
```

### Parameters

#### who

Display who is on vty

## 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.

## 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

## configure terminal

Command

```
configure terminal
```

Parameters

configure

Configuration from vty interface

terminal

Configuration terminal

## 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)

## disable

Command

```
disable
```

Parameters

disable

Turn off privileged mode command

---

## 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

## logging disable

### Command

```
logging disable
```

### Parameters

#### logging

Configure logging

#### disable

Disables logging to this vty

## 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

---

## 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

## 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)

---

## logging filter nsvc (nsei|nsvci) <0-65535>

### Command

```
logging filter nsvc (nsei|nsvci) <0-65535>
```

### Parameters

#### logging

Configure logging

#### filter

Filter log messages

#### nsvc

Filter based on NS Virtual Connection

#### nsei

Identify NS-VC by NSEI

#### nsvci

Identify NS-VC by NSVCI

#### <0-65535>

Numeric identifier

## logging level (|mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|lg...

### Command

```
logging level (|mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|lglobal| ↔  
llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtpl|lstats|lgsup|loap|lss7|lscpp|lsua|lm3ua| ↔  
lmgcp|ljibuf|lrspro) (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

ns  
GPRS Network Service (NS)

bssgp  
GPRS BSS Gateway Protocol (BSSGP)

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)

lglobal  
Library-internal global log family

llapd  
LAPD in libosmogsm

linp  
A-bis Input 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

**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

**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

**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

---

## 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

## 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>')

## 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

## 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.

## 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

## 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

## 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

## 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>'

## nsvc (nsei|nsvci) <0-65535> (block|unblock|reset)

### Command

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

### Parameters

nsvc

Perform an operation on a NSVC

nsei

NSEI to identify NS-VC Identifier (NS-VCI)

nsvci

NS-VC Identifier (NS-VCI)

<0-65535>

The NSEI

block

Initiate BLOCK procedure

unblock

Initiate UNBLOCK procedure

reset

Initiate RESET procedure

## show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

## show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

## show bssgp

Command

```
show bssgp
```

Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

## 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

## show bssgp stats

### Command

```
show bssgp stats
```

### Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

stats

Include statistics

## 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

### **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

**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

## &lt;0-15&gt;

An instance of the SS7 stack

## asp

Application Server Process (ASP)

**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

## &lt;0-15&gt;

An instance of the SS7 stack

## sccp

Signalling Connection Control Part

## addressbook

List all SCCP addressbook entries

---

**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

&lt;0-15&gt;

An instance of the SS7 stack

sccp

Signalling Connection Control Part

connections

Show List of active SCCP connections

**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

&lt;0-15&gt;

An instance of the SS7 stack

sccp

Signalling Connection Control Part

ssn

Find an SCCP User registered for the given SSN

&lt;0-65535&gt;

Subsystem Number (SSN)

**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

&lt;0-15&gt;

An instance of the SS7 stack

sccp

Signaling Connection Control Part

timers

Show List of SCCP timers

**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

&lt;0-15&gt;

An instance of the SS7 stack

sccp

Signalling Connection Control Part

users

Show List of SCCP Users registered

## 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

## show history

### Command

```
show history
```

### Parameters

show

Show running system information

history

Display the session command history

## show llc

### Command

```
show llc
```

### Parameters

show

Show running system information

llc

Display information about the LLC protocol

---

## show logging vty

### Command

```
show logging vty
```

### Parameters

#### show

Show running system information

#### logging

Show current logging configuration

#### vtty

Show current logging configuration for this vty

## 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

## 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

## show ns

Command

```
show ns
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

## 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

## 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

## show ns stats

### Command

```
show ns stats
```

### Parameters

show

Show running system information

ns

Display information about the NS protocol

stats

Include statistics

## show online-help

### Command

```
show online-help
```

### Parameters

show

Show running system information

online-help

Online help



## 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

## show rate-counters

### Command

```
show rate-counters
```

### Parameters

show

Show running system information

rate-counters

Show all rate counters

## show sgsn

### Command

```
show sgsn
```

### Parameters

show

Show running system information

sgsn

Display information about the SGSN

## show sndcp

### Command

```
show sndcp
```

### Parameters

#### show

Show running system information

#### sndcp

Display information about the Sndcp protocol

## show startup-config

### Command

```
show startup-config
```

### Parameters

#### show

Show running system information

#### startup-config

Content of startup configuration

## show stats

### Command

```
show stats
```

### Parameters

#### show

Show running system information

#### stats

Show statistical values

## show stats level (global|peer|subscriber)

### Command

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

### 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

## show subscriber cache

### Command

```
show subscriber cache
```

### Parameters

#### show

Show running system information

#### subscriber

Show information about subscribers

#### cache

Display contents of subscriber cache

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

### Command

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

### Parameters

---

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

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

## **show talloc-context (application|all) (full|brief|DEPTH) filter REGEXP**

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

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

---

## **show talloc-context (application|all) (full|brief|DEPTH) tree ADDRESS**

### Command

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

### Parameters

#### show

Show running system information

#### talloc-context

Show talloc memory hierarchy

#### application

Application's context

#### 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)

## **show version**

### Command

```
show version
```

### Parameters

#### show

Show running system information

#### version

Displays program version

## 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)

## terminal monitor

### Command

```
terminal monitor
```

### Parameters

#### terminal

Set terminal line parameters

#### monitor

Copy debug output to the current terminal line

## 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

---

## 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

## 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

## 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

### **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

### **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

## 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

## 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

## who

Command

```
who
```

Parameters

who

Display who is on vty

## 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.

## banner motd default

### Command

```
banner motd default
```

### Parameters

#### banner

Set banner string

#### motd

Strings for motd

#### default

Default string

## banner motd file [FILE]

### Command

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

### Parameters

#### banner

Set banner

#### motd

Banner for motd

#### file

Banner from a file

#### [FILE]

Filename

## bssgp

### Command

```
bssgp
```

### Parameters

#### bssgp

Configure the GPRS BSS Gateway Protocol

## cs7 instance <0-15>

### Command

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

### Parameters

cs7

ITU-T Signaling System 7

instance

Configure a SS7 Instance

<0-15>

An instance of the SS7 stack

## ctrl

### Command

```
ctrl
```

### Parameters

ctrl

Configure the Control Interface

## 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

---

## 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

## hostname WORD

### Command

```
hostname WORD
```

### Parameters

#### hostname

Set system's network name

#### WORD

This system's network name

## line vty

### Command

```
line vty
```

### Parameters

#### line

Configure a terminal line

#### vtty

Virtual terminal

## 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

## log file .FILENAME

### Command

```
log file .FILENAME
```

### Parameters

log

Configure logging sub-system

file

Logging to text file

.FILENAME

Filename

## 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)

---

## log stderr

### Command

```
log stderr
```

### Parameters

log

Configure logging sub-system

stderr

Logging via STDERR of the process

## 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

---

## 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

## no banner motd

### Command

```
no banner motd
```

### Parameters

no

Negate a command or set its defaults

banner

Set banner string

motd

Strings for motd

## 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

---



## 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

## 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

## 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

---

## 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

## 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

## 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

---

## 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)

## no stats reporter log

### Command

```
no stats reporter log
```

### Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

## no stats reporter statsd

### Command

```
no stats reporter statsd
```

### 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

## ns

Command

```
ns
```

Parameters

ns

Configure the GPRS Network Service

## 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

## password LINE

Command

```
password LINE
```

Parameters

password

Assign the terminal connection password

LINE

The UNENCRYPTED (cleartext) line password

## service advanced-vty

### Command

```
service advanced-vty
```

### Parameters

#### service

Set up miscellaneous service

#### advanced-vty

Enable advanced mode vty interface

## 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)

## sgsn

### Command

```
sgsn
```

### Parameters

#### sgsn

Configure the SGSN

## show history

### Command

```
show history
```

### Parameters

#### show

Show running system information

#### history

Display the session command history

---

## stats interval <1-65535>

### Command

```
stats interval <1-65535>
```

### Parameters

stats

Configure stats sub-system

interval

Set the reporting interval

<1-65535>

Interval in seconds

## stats reporter log

### Command

```
stats reporter log
```

### Parameters

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

## stats reporter statsd

### Command

```
stats reporter statsd
```

### Parameters

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

---

## 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.

### 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

### 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

---

**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)

**logging filter nsvc (nsei|nsvci) <0-65535>**

## Command

```
logging filter nsvc (nsei|nsvci) <0-65535>
```

## Parameters

## logging

Configure logging

## filter

Filter log messages

## nsvc

Filter based on NS Virtual Connection

## nsei

Identify NS-VC by NSEI

## nsvci

Identify NS-VC by NSVCI

<0-65535>

Numeric identifier

---



**logging level (|mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|lg...**

## Command

```
logging level (|mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|lglobal| ↵  
llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscdp|lsua|lm3ua| ↵  
lmgcp|ljibuf|lrspro) (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

## ns

GPRS Network Service (NS)

## bssgp

GPRS BSS Gateway Protocol (BSSGP)

## llc

GPRS Logical Link Control Protocol (LLC)

## sndcp

GPRS Sub-Network Dependent Control Protocol (SND CP)

## slhc

RFC1144 TCP/IP Header compression (SLHC)

## ranap

RAN Application Part (RANAP)

## sua

SCCP User Adaptation (SUA)

## v42bis

V.42bis data compression (SND CP)

---

lglobal  
Library-internal global log family

llapd  
LAPD in libosmogsm

linp  
A-bis Input 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

---

**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

**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

---

## 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

## 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

---

## 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>')

## 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

---

## 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.

## 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

## 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

## 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>'

## config-stats

### disable

### Command

```
disable
```

### Parameters

#### disable

Disable the reporter

---

## enable

### Command

```
enable
```

### Parameters

#### enable

Enable the reporter

## 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

## local-ip ADDR

### Command

```
local-ip ADDR
```

### Parameters

#### local-ip

Set the IP address to which we bind locally

#### ADDR

IP Address

---



**mtu <100-65535>**

## Command

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

## Parameters

mtu

Set the maximum packet size

<100-65535>

Size in byte

**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

**no mtu**

## Command

```
no mtu
```

## Parameters

no

Negate a command or set its defaults

mtu

Set the maximum packet size

**no prefix**

## Command

```
no prefix
```

## Parameters

no

Negate a command or set its defaults

prefix

Set the item name prefix

---

## prefix PREFIX

### Command

```
prefix PREFIX
```

### Parameters

#### prefix

Set the item name prefix

#### PREFIX

The prefix string

## remote-ip ADDR

### Command

```
remote-ip ADDR
```

### Parameters

#### remote-ip

Set the remote IP address to which we connect

#### ADDR

IP Address

## 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

---

## config-line

### 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

## login

#### Command

```
login
```

#### Parameters

##### login

Enable password checking

## no login

#### Command

```
no login
```

#### Parameters

##### no

Negate a command or set its defaults

##### login

Enable password checking

## config-ns

### encapsulation framerelay-gre enabled (1|0)

#### Command

```
encapsulation framerelay-gre enabled (1|0)
```

#### Parameters

##### encapsulation

NS encapsulation options

##### framerelay-gre

NS over Frame Relay over GRE Encapsulation

##### enabled

Enable or disable Frame Relay over GRE

1

Enable

0

Disable

### encapsulation framerelay-gre local-ip A.B.C.D

#### Command

```
encapsulation framerelay-gre local-ip A.B.C.D
```

#### Parameters

##### encapsulation

NS encapsulation options

##### framerelay-gre

NS over Frame Relay over GRE Encapsulation

##### local-ip

Set the IP address on which we listen for NS/FR/GRE

A.B.C.D

IP Address

## encapsulation udp dscp <0-255>

### Command

```
encapsulation udp dscp <0-255>
```

### Parameters

#### encapsulation

NS encapsulation options

#### udp

NS over UDP Encapsulation

#### dscp

Set DSCP/TOS on the UDP socket

#### <0-255>

DSCP Value

## encapsulation udp local-ip A.B.C.D

### Command

```
encapsulation udp local-ip A.B.C.D
```

### Parameters

#### encapsulation

NS encapsulation options

#### udp

NS over UDP Encapsulation

#### local-ip

Set the IP address on which we listen for NS/UDP

#### A.B.C.D

IP Address

## encapsulation udp local-port <0-65535>

### Command

```
encapsulation udp local-port <0-65535>
```

### Parameters

#### encapsulation

NS encapsulation options

---

udp

NS over UDP Encapsulation

local-port

Set the UDP port on which we listen for NS/UDP

<0-65535>

UDP port number

## **no nse <0-65535>**

Command

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

Parameters

no

Delete Persistent NS Entity

nse

Delete Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

## **nse <0-65535> encapsulation (udp|framerelay-gre)**

Command

```
nse <0-65535> encapsulation (udp|framerelay-gre)
```

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

encapsulation

Encapsulation for NS

udp

UDP/IP Encapsulation

framerelay-gre

Frame-Relay/GRE/IP Encapsulation

**nse <0-65535> fr-dlci <16-1007>**

## Command

```
nse <0-65535> fr-dlci <16-1007>
```

## Parameters

nse

Persistent NS Entity

&lt;0-65535&gt;

NS Entity ID (NSEI)

fr-dlci

Frame Relay DLCI

&lt;16-1007&gt;

Frame Relay DLCI Number

**nse <0-65535> nsvci <0-65534>**

## Command

```
nse <0-65535> nsvci <0-65534>
```

## Parameters

nse

Persistent NS Entity

&lt;0-65535&gt;

NS Entity ID (NSEI)

nsvci

NS Virtual Connection

&lt;0-65534&gt;

NS Virtual Connection ID (NSVCI)

**nse <0-65535> remote-ip A.B.C.D**

## Command

```
nse <0-65535> remote-ip A.B.C.D
```

## Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

remote-ip

Remote IP Address

A.B.C.D

Remote IP Address

## **nse <0-65535> remote-port <0-65535>**

Command

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

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

remote-port

Remote UDP Port

<0-65535>

Remote UDP Port Number

## **nse <0-65535> remote-role (sgsn|bss)**

Command

```
nse <0-65535> remote-role (sgsn|bss)
```

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

remote-role

Remote NSE Role

sgsn

Remote Peer is SGSN

bss

Remote Peer is BSS



**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) <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

## &lt;0-65535&gt;

Timer Value

**config-bssgp****config-ctrl****bind A.B.C.D**

## Command

```
bind A.B.C.D
```

## Parameters

## bind

Set bind address to listen for Control connections

## A.B.C.D

Local IP address (default 127.0.0.1)

## config-cs7

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

#### Command

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

#### 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)

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

#### Command

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

#### 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)

---

## description .TEXT

### Command

```
description .TEXT
```

### Parameters

#### description

Save human-readable description of the object

#### .TEXT

Text until the end of the line

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

### Command

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

### Parameters

#### network-indicator

Configure the Network Indicator

#### international

International Network

#### national

National Network

#### reserved

Reserved Network

#### spare

Spare Network

## no as NAME

### Command

```
no as NAME
```

### Parameters

#### no

Negate a command or set its defaults

#### as

Disable Application Server

#### NAME

Name of AS

---

## **no asp NAME**

### Command

```
no asp NAME
```

### Parameters

no

Negate a command or set its defaults

asp

Disable Application Server Process

NAME

Name of ASP

## **no sccp-address NAME**

### Command

```
no sccp-address NAME
```

### Parameters

no

Negate a command or set its defaults

sccp-address

Delete an SCCP addressbook entry

NAME

Name of the SCCP Address

## **point-code POINT\_CODE**

### Command

```
point-code POINT_CODE
```

### Parameters

point-code

Configure the local Point Code

POINT\_CODE

Point Code

## point-code delimiter (default|dash)

### Command

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

### Parameters

#### point-code

Point Code

#### delimiter

Configure Point Code Delimiter

#### default

Use dot as delimiter

#### dash

User dash as delimiter

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

### Command

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

### 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

## point-code format default

### Command

```
point-code format default
```

### Parameters

---

point-code

Point Code

format

Configure Point Code Format

default

Default Point Code Format (3.8.3)

## sccp-address NAME

Command

```
sccp-address NAME
```

Parameters

sccp-address

Create/Modify an SCCP addressbook entry

NAME

Name of the SCCP Address

## 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) <1-99999>
```

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

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

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

**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

**config-cs7-as****asp NAME****Command**

```
asp NAME
```

**Parameters****asp**

Specify that a given ASP is part of this AS

**NAME**

Name of ASP to be added to AS

---

## description .TEXT

### Command

```
description .TEXT
```

### Parameters

#### description

Save human-readable description of the object

#### .TEXT

Text until the end of the line

## no asp NAME

### Command

```
no asp NAME
```

### 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

## point-code override dpc PC

### Command

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

### 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

---



**qos-class <0-255>**

## Command

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

## Parameters

## qos-class

Specify QoS Class of AS

## &lt;0-255&gt;

QoS Class of AS

**recovery-timeout <1-2000>**

## Command

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

## Parameters

## recovery-timeout

Specifies the recovery timeout value in milliseconds

## &lt;1-2000&gt;

Recovery Timeout in Milliseconds

**routing-key RCONTEXT DPC**

## Command

```
routing-key RCONTEXT DPC
```

## Parameters

## routing-key

Define a routing key

## RCONTEXT

Routing context number

## DPC

Destination Point Code

---

**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)
```

## 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

**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
```

## 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

**routing-key RCONTEXT DPC ssn SSN****Command**

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

**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

## **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

## **config-cs7-asp**

### **block**

Command

```
block
```

Parameters

block

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

### **description .TEXT**

Command

```
description .TEXT
```

Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line

---

## local-ip A.B.C.D

### Command

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

### Parameters

#### local-ip

Specify Local IP Address from which to contact ASP

#### A.B.C.D

Local IP Address from which to contact of ASP

## qos-class <0-255>

### Command

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

### Parameters

#### qos-class

Specify QoS Class of ASP

#### <0-255>

QoS Class of ASP

## remote-ip A.B.C.D

### Command

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

### Parameters

#### remote-ip

Specify Remote IP Address of ASP

#### A.B.C.D

Remote IP Address of ASP

## shutdown

### Command

```
shutdown
```

### Parameters

#### shutdown

Terminates SCTP association; New associations will be rejected

---

## config-cs7-sccpaddr

### global-title

#### Command

```
global-title
```

#### Parameters

global-title

Add/Modify Global Title

### no global-title

#### Command

```
no global-title
```

#### Parameters

no

Negate a command or set its defaults

global-title

Remove Global Title

### no point-code

#### Command

```
no point-code
```

#### Parameters

no

Negate a command or set its defaults

point-code

Remove point-code Number

### no subsystem-number

#### Command

```
no subsystem-number
```

#### Parameters

no

Negate a command or set its defaults

subsystem-number

Remove Subsystem Number

---

## point-code POINT\_CODE

### Command

```
point-code POINT_CODE
```

### Parameters

point-code

Add point-code Number

POINT\_CODE

PC

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

### Command

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

### Parameters

routing-indicator

Add Routing Indicator

GT

by global-title

PC

by point-code

IP

by ip-address

## subsystem-number <0-4294967295>

### Command

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

### Parameters

subsystem-number

Add Subsystem Number

<0-4294967295>

SSN

---

## config-cs7-sccpaddr-gt

### digits DIGITS

#### Command

```
digits DIGITS
```

#### Parameters

digits

Set Global Title Digits

DIGITS

Number digits

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

#### Command

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

#### Parameters

global-title-indicator

Set Global Title Indicator

<0-15>

GTI

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

#### Command

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

#### Parameters

nature-of-address-indicator

Set Global Title Nature of Address Indicator

<0-127>

NAI



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

### Command

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

### Parameters

numbering-plan-indicator

Set Global Title Numbering Plan Indicator

<0-15>

NPI

## translation-type <0-255>

### Command

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

### Parameters

translation-type

Set Global Title Translation Type

<0-255>

TT

## config-sgsn

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

## 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

---

**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

## &lt;0-255&gt;

The GGSN id

**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

## &lt;0-255&gt;

The GGSN id

---

## 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

## 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

## 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)

## 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)

## 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

---

**cdr interval <1-2147483647>**

## Command

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

## Parameters

cdr

CDR

interval

Set the interval for the call-data-record file

&lt;1-2147483647&gt;

interval in seconds

**cdr trap**

## Command

```
cdr trap
```

## Parameters

cdr

CDR

trap

Enable sending CDR via TRAP CTRL messages

**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

&lt;1-256&gt;

Number of compression state slots

---

## compression rfc1144 passive

### Command

```
compression rfc1144 passive
```

### Parameters

#### compression

Configure compression

#### rfc1144

RFC1144 Header compression scheme

#### passive

Compression is available on request

## 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

---

## compression v42bis passive

### Command

```
compression v42bis passive
```

### Parameters

#### compression

Configure compression

#### v42bis

V.42bis data compression scheme

#### passive

Compression is available on request

## 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)

## encryption (GEA0|GEA1|GEA2|GEA3|GEA4)

### Command

```
encryption (GEA0|GEA1|GEA2|GEA3|GEA4)
```

### Parameters

#### encryption

Set encryption algorithm for SGSN

#### GEA0

Use GEA0 (no encryption)

#### GEA1

Use GEA1

#### GEA2

Use GEA2

#### GEA3

Use GEA3

#### GEA4

Use GEA4

---

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

## Command

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

## Parameters

## ggsn

Configure the GGSN information

## &lt;0-255&gt;

GGSN Number

## echo-interval

Send an echo request to this static GGSN every interval.

## &lt;1-36000&gt;

Interval between echo requests in seconds.

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

## Command

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

## Parameters

## ggsn

Configure the GGSN information

## &lt;0-255&gt;

GGSN Number

## gtp-version

GTP Version

## 0

Version 0

## 1

Version 1

**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.

### **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

### **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.

---

## 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

## 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'.

## 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)

---

## 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

## 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

## 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

---

## 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

## 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

## 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

---

## **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)

## **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

## **no cdr filename**

### Command

```
no cdr filename
```

### Parameters

no

Negate a command or set its defaults

cdr

CDR

filename

Disable saving CDR to file

---

## 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

## 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

## 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

---

**timer t3312 <0-65535>**

## Command

```
timer t3312 <0-65535>
```

## Parameters

timer

Configure GPRS Timers

t3312

Periodic RA Update timer (s)

&lt;0-65535&gt;

Timer Value in seconds

**timer t3313 <0-65535>**

## Command

```
timer t3313 <0-65535>
```

## Parameters

timer

Configure GPRS Timers

t3313

Waiting for paging response timer (s)

&lt;0-65535&gt;

Timer Value in seconds

**timer t3314 <0-65535>**

## Command

```
timer t3314 <0-65535>
```

## Parameters

timer

Configure GPRS Timers

t3314

Force to STANDBY on expiry timer (s)

&lt;0-65535&gt;

Timer Value in seconds

**timer t3316 <0-65535>**

## Command

```
timer t3316 <0-65535>
```

## Parameters

timer

Configure GPRS Timers

t3316

AA-Ready timer (s)

&lt;0-65535&gt;

Timer Value in seconds

**timer t3322 <0-65535>**

## Command

```
timer t3322 <0-65535>
```

## Parameters

timer

Configure GPRS Timers

t3322

Detach request -&gt; accept timer (s)

&lt;0-65535&gt;

Timer Value in seconds

**timer t3350 <0-65535>**

## Command

```
timer t3350 <0-65535>
```

## Parameters

timer

Configure GPRS Timers

t3350

Waiting for ATT/RAU/TMSI\_COMPL timer (s)

&lt;0-65535&gt;

Timer Value in seconds



**timer t3360 <0-65535>**

## Command

```
timer t3360 <0-65535>
```

## Parameters

timer

Configure GPRS Timers

t3360

Waiting for AUTH/CIPH response timer (s)

&lt;0-65535&gt;

Timer Value in seconds

**timer t3370 <0-65535>**

## Command

```
timer t3370 <0-65535>
```

## Parameters

timer

Configure GPRS Timers

t3370

Waiting for IDENTITY response timer (s)

&lt;0-65535&gt;

Timer Value in seconds

**timer t3385 <0-65535>**

## Command

```
timer t3385 <0-65535>
```

## Parameters

timer

Configure GPRS Timers

t3385

Wait for ACT PDP CTX REQ timer (s)

&lt;0-65535&gt;

Timer Value in seconds

**timer t3386 <0-65535>**

## Command

```
timer t3386 <0-65535>
```

## Parameters

timer

Configure GPRS Timers

t3386

Wait for MODIFY PDP CTX ACK timer (s)

&lt;0-65535&gt;

Timer Value in seconds

**timer t3395 <0-65535>**

## Command

```
timer t3395 <0-65535>
```

## Parameters

timer

Configure GPRS Timers

t3395

Wait for DEACT PDP CTX ACK timer (s)

&lt;0-65535&gt;

Timer Value in seconds

**timer t3397 <0-65535>**

## Command

```
timer t3397 <0-65535>
```

## Parameters

timer

Configure GPRS Timers

t3397

Wait for DEACT AA PDP CTX ACK timer (s)

&lt;0-65535&gt;

Timer Value in seconds