

## **OsmoMSC VTY Reference**

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<b>COLLABORATORS</b>
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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

### 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 enable [expert-mode]

Command

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

Parameters

enable

Turn on privileged mode command

[expert-mode]

Enable the expert mode (show hidden commands)

### 1.2.2 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

### 1.2.3 logging disable

Command

```
logging disable
```

Parameters

logging

Configure logging

disable

Disables logging to this vty

---

### 1.2.4 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

### 1.2.5 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

### 1.2.6 logging filter imsi IMSI

#### Command

```
logging filter imsi IMSI
```

#### Parameters

---

**logging**

Configure logging

**filter**

Filter log messages

**imsi**

Filter log messages by IMSI

**IMSI**

IMSI to be used as filter

**1.2.7 logging level (rll|cc|bcc|gcc|mm|rr|mncc|pag|msc|mgcp|ho|db|ref|ctrl|smpp|ranap|...****Command**

```
logging level (rll|cc|bcc|gcc|mm|rr|mncc|pag|msc|mgcp|ho|db|ref|ctrl|smpp|ranap|vlr| ↵
iucs|bssap|sgs|ss|ascii|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats| ↵
lgsup|loap|lss7|lscdp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lndata|lnsignal| ↵
liuup|lpfcp|lcsn1|lio) (debug|info|notice|error|fatal)
```

**Parameters****logging**

Configure logging

**level**

Set the log level for a specified category

**rll**

A-bis Radio Link Layer (RLL)

**cc**

Layer3 Call Control (CC)

**bcc**

Layer3 Broadcast Call Control (BCC)

**gcc**

Layer3 Group Call Control (GCC)

**mm**

Layer3 Mobility Management (MM)

**rr**

Layer3 Radio Resource (RR)

**mncc**

MNCC API for Call Control application

**pag**

Paging Subsystem

**msc**

Mobile Switching Center

---

mgcp	Media Gateway Control Protocol
ho	Hand-Over
db	Database Layer
ref	Reference Counting
ctrl	Control interface
smpp	SMPP interface for external SMS apps
ranap	Radio Access Network Application Part Protocol
vlr	Visitor Location Register
iucs	Iu-CS Protocol
bssap	BSSAP Protocol (A Interface)
sgs	SGs Interface (SGsAP)
ss	Supplementary Services
asci	Advanced Speech Call Items
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

lns

GPRS NS layer

lbssgp

GPRS BSSGP layer

lndata

GPRS NS layer data PDU

lnsignal

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

### 1.2.8 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

---

### 1.2.9 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

### 1.2.10 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

---

### 1.2.11 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>')

### 1.2.12 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

### 1.2.13 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.

### 1.2.14 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

### 1.2.15 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

### 1.2.16 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

### 1.2.17 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

**1.2.18 logp (rll|cc|bcc|gcc|mm|rr|mncc|pag|msc|mgcp|ho|db|ref|ctrl|smpp|ranap|vlr|iucs|...****Command**

```
logp (rll|cc|bcc|gcc|mm|rr|mncc|pag|msc|mgcp|ho|db|ref|ctrl|smpp|ranap|vlr|iucs|bssap| ↵
sgs|ss|ascii|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7 ↵
|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lndata|lnsignal|liuup|lpfcp| ↵
lcsnl|lio) (debug|info|notice|error|fatal) .LOGMESSAGE
```

**Parameters****logp**

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

**rll**

A-bis Radio Link Layer (RLL)

**cc**

Layer3 Call Control (CC)

**bcc**

Layer3 Broadcast Call Control (BCC)

**gcc**

Layer3 Group Call Control (GCC)

**mm**

Layer3 Mobility Management (MM)

**rr**

Layer3 Radio Resource (RR)

**mncc**

MNCC API for Call Control application

**pag**

Paging Subsystem

**msc**

Mobile Switching Center

**mgcp**

Media Gateway Control Protocol

---

ho	Hand-Over
db	Database Layer
ref	Reference Counting
ctrl	Control interface
smpp	SMPP interface for external SMS apps
ranap	Radio Access Network Application Part Protocol
vlr	Visitor Location Register
iucs	Iu-CS Protocol
bssap	BSSAP Protocol (A Interface)
sgs	SGs Interface (SGsAP)
ss	Supplementary Services
asci	Advanced Speech Call Items
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

lgtplib  
GPRS GTP library

lstats  
Statistics messages and logging

lgsub  
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

lndata  
GPRS NS layer data PDU

lnsignal  
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

libosmcore 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

### 1.2.19 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>'

### 1.2.20 show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

### 1.2.21 show asci calls

#### Command

```
show asci calls
```

#### Parameters

show

Show running system information

asci

Advanced Speech Call Items

calls

Show all Voice Group/Broadcast Calls

### 1.2.22 show asciidoc counters

#### Command

```
show asciidoc counters
```

#### Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

### 1.2.23 show bsc

#### Command

```
show bsc
```

#### Parameters

show

Show running system information

bsc

BSC

### 1.2.24 show connection [trans]

#### Command

```
show connection [trans]
```

#### Parameters

##### show

Show running system information

##### connection

Subscriber Connections

##### [trans]

Show child transactions of each connection

### 1.2.25 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)

### 1.2.26 show cs7 (sua|m3ua|ipa) (sctp|tcp) [<0-65534>]

#### Command

```
show cs7 (sua|m3ua|ipa) (sctp|tcp) [<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)

sctp

SCTP (Stream Control Transmission Protocol)

tcp

TCP (Transmission Control Protocol)

[<0-65534>]

Local Port Number

### 1.2.27 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>]

Local Port Number

### 1.2.28 show cs7 config

Command

```
show cs7 config
```

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

config

Currently running cs7 configuration

### 1.2.29 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

### 1.2.30 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)

### 1.2.31 show cs7 instance <0-15> asp name ASP\_NAME

#### Command

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

#### 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)

name

Lookup ASP with a given name

ASP\_NAME

Name of the Application Server Process (ASP)

### 1.2.32 show cs7 instance <0-15> asp-assoc-status

#### Command

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

#### 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-assoc-status

Application Server Process (ASP) SCTP association status

### 1.2.33 show cs7 instance <0-15> asp-assoc-status name ASP\_NAME

#### Command

```
show cs7 instance <0-15> asp-assoc-status name ASP_NAME
```

#### 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-assoc-status

Application Server Process (ASP) SCTP association information

##### name

Lookup ASP with a given name

##### ASP\_NAME

Name of the Application Server Process (ASP)

### 1.2.34 show cs7 instance <0-15> asp-remaddr

#### Command

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

#### 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-remaddr

Application Server Process (ASP) remote addresses information

---



### 1.2.35 show cs7 instance <0-15> asp-remaddr name ASP\_NAME

#### Command

```
show cs7 instance <0-15> asp-remaddr name ASP_NAME
```

#### 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-remaddr

Application Server Process (ASP) remote addresses information

##### name

Lookup ASP with a given name

##### ASP\_NAME

Name of the Application Server Process (ASP)

### 1.2.36 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

---

### 1.2.37 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

### 1.2.38 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

---

### 1.2.39 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)

### 1.2.40 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

### 1.2.41 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

### 1.2.42 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

---

### 1.2.43 show fsm NAME

#### Command

```
show fsm NAME
```

#### Parameters

##### show

Show running system information

##### fsm

Show information about finite state machines

##### NAME

Display information about a single named finite state machine

### 1.2.44 show fsm all

#### Command

```
show fsm all
```

#### Parameters

##### show

Show running system information

##### fsm

Show information about finite state machines

##### all

Display a list of all registered finite state machines

### 1.2.45 show fsm-instances NAME

#### Command

```
show fsm-instances NAME
```

#### Parameters

##### show

Show running system information

##### fsm-instances

Show information about finite state machine instances

##### NAME

Display a list of all FSM instances of the named finite state machine

---

### 1.2.46 show fsm-instances all

#### Command

```
show fsm-instances all
```

#### Parameters

##### show

Show running system information

##### fsm-instances

Show information about finite state machine instances

##### all

Display a list of all FSM instances of all finite state machine

### 1.2.47 show fsm-state-graph NAME

#### Command

```
show fsm-state-graph NAME
```

#### Parameters

##### show

Show running system information

##### fsm-state-graph

Generate a state transition graph (using DOT language)

##### NAME

FSM name

### 1.2.48 show history

#### Command

```
show history
```

#### Parameters

##### show

Show running system information

##### history

Display the session command history

---

### 1.2.49 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

### 1.2.50 show mgw-pool

#### Command

```
show mgw-pool
```

#### Parameters

##### show

Show running system information

##### mgw-pool

Display information about the MGW-Pool

### 1.2.51 show neighbor

#### Command

```
show neighbor
```

#### Parameters

##### show

Show running system information

##### neighbor

Show Handover targets

### 1.2.52 show neighbor (a|iu)

#### Command

```
show neighbor (a|iu)
```

#### Parameters

##### show

Show running system information

##### neighbor

Show Handover targets

##### a

Neighbor on GERAN-A

##### iu

Neighbor on UTRAN-Iu

### 1.2.53 show neighbor (a|iu) (ran-pc|msc-ipa-name) RAN\_PC\_OR\_MSC\_IPA\_NAME

#### Command

```
show neighbor (a|iu) (ran-pc|msc-ipa-name) RAN_PC_OR_MSC_IPA_NAME
```

#### Parameters

##### show

Show running system information

##### neighbor

Show Handover targets

##### a

Neighbor on GERAN-A

##### iu

Neighbor on UTRAN-Iu

##### ran-pc

SCCP point code of RAN peer

##### msc-ipa-name

GSUP IPA name of target MSC

##### RAN\_PC\_OR\_MSC\_IPA\_NAME

Point code or MSC IPA name value

---



### 1.2.54 show neighbor (a|iu) cgi <0-999> <0-999> <0-65535> <0-65535>

#### Command

```
show neighbor (a|iu) cgi <0-999> <0-999> <0-65535> <0-65535>
```

#### Parameters

show

Show running system information

neighbor

Show Handover targets

a

Neighbor on GERAN-A

iu

Neighbor on UTRAN-Iu

cgi

Handover target cell by Cell-Global Identifier (MCC, MNC, LAC, CI)

<0-999>

MCC

<0-999>

MNC

<0-65535>

LAC

<0-65535>

CI

### 1.2.55 show neighbor (a|iu) lac <0-65535>

#### Command

```
show neighbor (a|iu) lac <0-65535>
```

#### Parameters

show

Show running system information

neighbor

Show Handover targets

a

Neighbor on GERAN-A

iu

Neighbor on UTRAN-Iu

lac

Handover target cell by LAC

<0-65535>

LAC

### 1.2.56 show neighbor (a|iu) lac-ci <0-65535> <0-65535>

Command

```
show neighbor (a|iu) lac-ci <0-65535> <0-65535>
```

Parameters

show

Show running system information

neighbor

Show Handover targets

a

Neighbor on GERAN-A

iu

Neighbor on UTRAN-Iu

lac-ci

Handover target cell by LAC and CI

<0-65535>

LAC

<0-65535>

CI

### 1.2.57 show neighbor cgi <0-999> <0-999> <0-65535> <0-65535>

Command

```
show neighbor cgi <0-999> <0-999> <0-65535> <0-65535>
```

Parameters

show

Show running system information

neighbor

Show Handover targets

cgi

Handover target cell by Cell-Global Identifier (MCC, MNC, LAC, CI)

<0-999>

MCC

<0-999>

MNC

<0-65535>

LAC

<0-65535>

CI

### 1.2.58 show neighbor lac <0-65535>

Command

```
show neighbor lac <0-65535>
```

Parameters

show

Show running system information

neighbor

Show Handover targets

lac

Handover target cell by LAC

<0-65535>

LAC

### 1.2.59 show neighbor lac-ci <0-65535> <0-65535>

Command

```
show neighbor lac-ci <0-65535> <0-65535>
```

Parameters

show

Show running system information

neighbor

Show Handover targets

lac-ci

Handover target cell by LAC and CI

<0-65535>

LAC

<0-65535>

CI

### 1.2.60 show nri

#### Command

```
show nri
```

#### Parameters

##### show

Show running system information

##### nri

Mapping of Network Resource Indicators to this MSC, for MSC pooling

### 1.2.61 show online-help

#### Command

```
show online-help
```

#### Parameters

##### show

Show running system information

##### online-help

Online help

### 1.2.62 show pid

#### Command

```
show pid
```

#### Parameters

##### show

Show running system information

##### pid

Displays the process ID

### 1.2.63 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

### 1.2.64 show sgs-connections

#### Command

```
show sgs-connections
```

#### Parameters

##### show

Show running system information

##### sgs-connections

Show SGs interface connections / MMEs

### 1.2.65 show sms-queue

#### Command

```
show sms-queue
```

#### Parameters

##### show

Show running system information

##### sms-queue

Display SMSQueue statistics

### 1.2.66 show statistics

#### Command

```
show statistics
```

#### Parameters

##### show

Show running system information

##### statistics

Display network statistics

### 1.2.67 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

### 1.2.68 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

### 1.2.69 show subscriber (msisdn|extension|imsi|tmsi|id) ID [(conn|trans|conn+trans)]

Command

```
show subscriber (msisdn|extension|imsi|tmsi|id) ID [(conn|trans|conn+trans)]
```

Parameters

show

Show running system information

subscriber

Operations on a Subscriber

msisdn

Identify subscriber by MSISDN (phone number)

extension

Legacy alias for 'msisdn'

imsi

Identify subscriber by IMSI

tmsi

Identify subscriber by TMSI

id

Legacy alias for 'imsi'

ID

Identifier for the subscriber

[conn]

Show child connections

[trans]

Show child transactions

[conn+trans]

Show child connections and transactions

### 1.2.70 show subscriber cache [(conn|trans|conn+trans)]

#### Command

```
show subscriber cache [(conn|trans|conn+trans)]
```

#### Parameters

##### show

Show running system information

##### subscriber

Show information about subscribers

##### cache

Display contents of subscriber cache

##### [conn]

Show child connections

##### [trans]

Show child transactions

##### [conn+trans]

Show child connections and transactions

### 1.2.71 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



### 1.2.72 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

### 1.2.73 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)

### 1.2.74 **show timer [(vlr|mgw|mncc|sccp|geran|utran|sgs)] [TNNNN]**

Command

```
show timer [(vlr|mgw|mncc|sccp|geran|utran|sgs)] [TNNNN]
```

Parameters

show

Show running system information

timer

Show timers

[vlr]

VLR (Visitors Location Register)

[mgw]

MGW (Media Gateway) interface

[mncc]

MNCC (Mobile Network Call Control) interface

[sccp]

SCCP (Signalling Connection Control Part)

[geran]

GERAN (GSM EDGE Radio Access Network)

[utran]

UTRAN (UMTS Terrestrial Radio Access Network)

[sgs]

SGs interface towards MME

[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'.

### 1.2.75 show transaction

#### Command

```
show transaction
```

#### Parameters

##### show

Show running system information

##### transaction

Transactions

### 1.2.76 show uptime

#### Command

```
show uptime
```

#### Parameters

##### show

Show running system information

##### uptime

Displays how long the program has been running

### 1.2.77 show version

#### Command

```
show version
```

#### Parameters

##### show

Show running system information

##### version

Displays program version

### 1.2.78 sms delete expired

#### Command

```
sms delete expired
```

#### Parameters

sms

SMS related commands

delete

SMS Database related commands

expired

Delete all expired SMS

### 1.2.79 sms send pending

#### Command

```
sms send pending
```

#### Parameters

sms

SMS related commands

send

SMS Sending related commands

pending

Send all pending SMS

### 1.2.80 subscriber (msisdn|extension|imsi|tmsi|id) ID ms-test close-loop (a|b|c|d|e|f|i)

#### Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID ms-test close-loop (a|b|c|d|e|f|i)
```

#### Parameters

subscriber

Operations on a Subscriber

msisdn

Identify subscriber by MSISDN (phone number)

extension

Legacy alias for 'msisdn'

imsi	Identify subscriber by IMSI
tmsi	Identify subscriber by TMSI
id	Legacy alias for 'imsi'
ID	Identifier for the subscriber
ms-test	Send a TS 04.14 MS Test Command to subscriber
close-loop	Close a TCH Loop inside the MS
a	Loop Type A
b	Loop Type B
c	Loop Type C
d	Loop Type D
e	Loop Type E
f	Loop Type F
i	Loop Type I

### 1.2.81 subscriber (msisdn|extension|imsi|tmsi|id) ID ms-test open-loop

#### Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID ms-test open-loop
```

#### Parameters

##### subscriber

Operations on a Subscriber

##### msisdn

Identify subscriber by MSISDN (phone number)

##### extension

Legacy alias for 'msisdn'

imsi

Identify subscriber by IMSI

tmsi

Identify subscriber by TMSI

id

Legacy alias for 'imsi'

ID

Identifier for the subscriber

ms-test

Send a TS 04.14 MS Test Command to subscriber

open-loop

Open a TCH Loop inside the MS

### 1.2.82 subscriber (msisdn|extension|imsi|tmsi|id) ID paging

Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID paging
```

Parameters

subscriber

Operations on a Subscriber

msisdn

Identify subscriber by MSISDN (phone number)

extension

Legacy alias for 'msisdn'

imsi

Identify subscriber by IMSI

tmsi

Identify subscriber by TMSI

id

Legacy alias for 'imsi'

ID

Identifier for the subscriber

paging

Issue an empty Paging for the subscriber (for debugging)

---

### 1.2.83 subscriber (msisdn|extension|imsi|tmsi|id) ID silent-call start (any|tch/f|tch/h|tch/ ↔ any|sdccch) (signalling|speech-hr|speech-fr|speech-efr|speech-amr) [IP] [<0-65535>]

#### Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID silent-call start (any|tch/f|tch/h|tch/ ↔  
any|sdccch) (signalling|speech-hr|speech-fr|speech-efr|speech-amr) [IP] [<0-65535>]
```

#### Parameters

##### subscriber

Operations on a Subscriber

##### msisdn

Identify subscriber by MSISDN (phone number)

##### extension

Legacy alias for 'msisdn'

##### imsi

Identify subscriber by IMSI

##### tmsi

Identify subscriber by TMSI

##### id

Legacy alias for 'imsi'

##### ID

Identifier for the subscriber

##### silent-call

Silent call operation

##### start

Start silent call

##### any

Any channel

##### tch/f

TCH/F channel

##### tch/h

TCH/H channel

##### tch/any

Any TCH channel

##### sdccch

SDCCH channel

##### signalling

Signalling only

##### speech-hr

Speech with HR codec

speech-fr

Speech with FR codec

speech-efr

Speech with EFR codec

speech-amr

Speech with AMR codec

[IP]

Target IP for RTP traffic (default 127.0.0.1)

[<0-65535>]

Target port for RTP traffic (default: 4000)

### 1.2.84 subscriber (msisdn|extension|imsi|tmsi|id) ID silent-call stop

Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID silent-call stop
```

Parameters

subscriber

Operations on a Subscriber

msisdn

Identify subscriber by MSISDN (phone number)

extension

Legacy alias for 'msisdn'

imsi

Identify subscriber by IMSI

tmsi

Identify subscriber by TMSI

id

Legacy alias for 'imsi'

ID

Identifier for the subscriber

silent-call

Silent call operation

stop

Stop silent call



### 1.2.85 subscriber (msisdn|extension|imsi|tmsi|id) ID silent-sms sender (msisdn|extensio...

#### Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID silent-sms sender (msisdn|extension|imsi| ↵  
tmsi|id) SENDER_ID send .LINE
```

#### Parameters

##### subscriber

Operations on a Subscriber

##### msisdn

Identify subscriber by MSISDN (phone number)

##### extension

Legacy alias for 'msisdn'

##### imsi

Identify subscriber by IMSI

##### tmsi

Identify subscriber by TMSI

##### id

Legacy alias for 'imsi'

##### ID

Identifier for the subscriber

##### silent-sms

Silent SMS Operations

##### sender

Operations on a Subscriber

##### msisdn

Identify subscriber by MSISDN (phone number)

##### extension

Legacy alias for 'msisdn'

##### imsi

Identify subscriber by IMSI

##### tmsi

Identify subscriber by TMSI

##### id

Legacy alias for 'imsi'

##### SENDER\_ID

Identifier for the subscriber

##### send

Send SMS

##### .LINE

Actual SMS Text

### 1.2.86 subscriber (msisdn|extension|imsi|tmsi|id) ID sms sender (msisdn|extension|imsi|...

#### Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID sms sender (msisdn|extension|imsi|tmsi|id ↵  
) SENDER_ID send .LINE
```

#### Parameters

##### subscriber

Operations on a Subscriber

##### msisdn

Identify subscriber by MSISDN (phone number)

##### extension

Legacy alias for 'msisdn'

##### imsi

Identify subscriber by IMSI

##### tmsi

Identify subscriber by TMSI

##### id

Legacy alias for 'imsi'

##### ID

Identifier for the subscriber

##### sms

SMS Operations

##### sender

Operations on a Subscriber

##### msisdn

Identify subscriber by MSISDN (phone number)

##### extension

Legacy alias for 'msisdn'

##### imsi

Identify subscriber by IMSI

##### tmsi

Identify subscriber by TMSI

##### id

Legacy alias for 'imsi'

##### SENDER\_ID

Identifier for the subscriber

##### send

Send SMS

##### .LINE

Actual SMS Text

### 1.2.87 subscriber (msisdn|extension|imsi|tmsi|id) ID ussd-notify (0|1|2) .TEXT

#### Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID ussd-notify (0|1|2) .TEXT
```

#### Parameters

##### subscriber

Operations on a Subscriber

##### msisdn

Identify subscriber by MSISDN (phone number)

##### extension

Legacy alias for 'msisdn'

##### imsi

Identify subscriber by IMSI

##### tmsi

Identify subscriber by TMSI

##### id

Legacy alias for 'imsi'

##### ID

Identifier for the subscriber

##### ussd-notify

Send a USSD notify to the subscriber

##### 0

Alerting Level 0

##### 1

Alerting Level 1

##### 2

Alerting Level 2

##### .TEXT

Text of USSD message to send

### 1.2.88 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)

### 1.2.89 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

### 1.2.90 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 ascii (initiate|terminate) (vgc|vbc) CALLREF

Command

```
ascii (initiate|terminate) (vgc|vbc) CALLREF
```

Parameters

asci

Advanced Speech Call Items

initiate

Initiate a call

terminate

Terminate a call

vgc

Voice Group Call

vbc

Voice Broadcast Call

CALLREF

Call reference

### 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 cs7 instance <0-15> asp NAME disconnect

#### Command

```
cs7 instance <0-15> asp NAME disconnect
```

#### Parameters

cs7

ITU-T Signaling System 7

instance

Instance related commands

<0-15>

SS7 Instance Number

asp

ASP related commands

NAME

Name of ASP

disconnect

Disconnect the ASP (client will reconnect)

### 1.3.5 disable

#### Command

```
disable
```

#### Parameters

disable

Turn off privileged mode command

### 1.3.6 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

---

### 1.3.7 logging disable

#### Command

```
logging disable
```

#### Parameters

##### logging

Configure logging

##### disable

Disables logging to this vty

### 1.3.8 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

### 1.3.9 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

### 1.3.10 logging filter imsi IMSI

#### Command

```
logging filter imsi IMSI
```

#### Parameters

##### logging

Configure logging

##### filter

Filter log messages

##### imsi

Filter log messages by IMSI

##### IMSI

IMSI to be used as filter

### 1.3.11 logging level (rll|cc|bcc|gcc|mm|rr|mncc|pag|msc|mgcp|ho|db|ref|ctrl|smpp|ranap|...

#### Command

```
logging level (rll|cc|bcc|gcc|mm|rr|mncc|pag|msc|mgcp|ho|db|ref|ctrl|smpp|ranap|vlr| ↵
iucs|bssap|sgs|ss|asci|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats| ↵
lgsup|loap|lss7|lscpp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lms|lbssgp|lmsdata|lmsignal| ↵
liuup|lpfcp|lcsn1|lio) (debug|info|notice|error|fatal)
```

#### Parameters

##### logging

Configure logging

##### level

Set the log level for a specified category

##### rll

A-bis Radio Link Layer (RLL)

##### cc

Layer3 Call Control (CC)

##### bcc

Layer3 Broadcast Call Control (BCC)

##### gcc

Layer3 Group Call Control (GCC)

##### mm

Layer3 Mobility Management (MM)

##### rr

Layer3 Radio Resource (RR)



---

mncc	MNCC API for Call Control application
pag	Paging Subsystem
msc	Mobile Switching Center
mgcp	Media Gateway Control Protocol
ho	Hand-Over
db	Database Layer
ref	Reference Counting
ctrl	Control interface
smpp	SMPP interface for external SMS apps
ranap	Radio Access Network Application Part Protocol
vlr	Visitor Location Register
iucs	Iu-CS Protocol
bssap	BSSAP Protocol (A Interface)
sgs	SGs Interface (SGsAP)
ss	Supplementary Services
asci	Advanced Speech Call Items
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

lndata  
GPRS NS layer data PDU

---

**Inssignal**

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

### 1.3.12 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

### 1.3.13 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

### 1.3.14 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

### 1.3.15 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>')

### 1.3.16 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

### 1.3.17 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.

### 1.3.18 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

### 1.3.19 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

### 1.3.20 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

### 1.3.21 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

**1.3.22 logp (rll|cc|bcc|gcc|mm|rr|mncc|pag|msc|mgcp|ho|db|ref|ctrl|smpp|ranap|vlr|iucs|...****Command**

```
logp (rll|cc|bcc|gcc|mm|rr|mncc|pag|msc|mgcp|ho|db|ref|ctrl|smpp|ranap|vlr|iucs|bssap| ↵
sgs|ss|asci|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7 ↵
|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lndata|lnssignal|liuup|lpfcp| ↵
lcsnl|lio) (debug|info|notice|error|fatal) .LOGMESSAGE
```

**Parameters****logp**

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

**rll**

A-bis Radio Link Layer (RLL)

**cc**

Layer3 Call Control (CC)

**bcc**

Layer3 Broadcast Call Control (BCC)

**gcc**

Layer3 Group Call Control (GCC)

**mm**

Layer3 Mobility Management (MM)

**rr**

Layer3 Radio Resource (RR)

**mncc**

MNCC API for Call Control application

**pag**

Paging Subsystem

**msc**

Mobile Switching Center

**mgcp**

Media Gateway Control Protocol



---

ho	Hand-Over
db	Database Layer
ref	Reference Counting
ctrl	Control interface
smpp	SMPP interface for external SMS apps
ranap	Radio Access Network Application Part Protocol
vlr	Visitor Location Register
iucs	Iu-CS Protocol
bssap	BSSAP Protocol (A Interface)
sgs	SGs Interface (SGsAP)
ss	Supplementary Services
asci	Advanced Speech Call Items
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

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

libosmcore 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

### 1.3.23 mgw <0-255> block

Command

```
mgw <0-255> block
```

Global attributes

Flag: !

This command applies immediately

Parameters

mgw

Configure MGCP connection to Media Gateway

<0-255>

reference number

block

block MGCP client so that it won't be used for new calls

### 1.3.24 mgw <0-255> reconnect

Command

```
mgw <0-255> reconnect
```

Global attributes

---

Flag: !

This command applies immediately

Parameters

mgw

Configure MGCP connection to Media Gateway

<0-255>

reference number

reconnect

reconfigure and reconnect MGCP client

### 1.3.25 mgw <0-255> unblock

Command

```
mgw <0-255> unblock
```

Global attributes

Flag: !

This command applies immediately

Parameters

mgw

Configure MGCP connection to Media Gateway

<0-255>

reference number

unblock

unblock MGCP client so that it will be available for new calls

### 1.3.26 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>'

### 1.3.27 show alarms

#### Command

```
show alarms
```

#### Parameters

##### show

Show running system information

##### alarms

Show current logging configuration

### 1.3.28 show ascii calls

#### Command

```
show ascii calls
```

#### Parameters

##### show

Show running system information

##### ascii

Advanced Speech Call Items

##### calls

Show all Voice Group/Broadcast Calls

### 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 bsc

#### Command

```
show bsc
```

#### Parameters

##### show

Show running system information

##### bsc

BSC

### 1.3.31 show connection [trans]

#### Command

```
show connection [trans]
```

#### Parameters

##### show

Show running system information

##### connection

Subscriber Connections

##### [trans]

Show child transactions of each connection

### 1.3.32 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)

---

### 1.3.33 show cs7 (sua|m3ua|ipa) (sctp|tcp) [<0-65534>]

#### Command

```
show cs7 (sua|m3ua|ipa) (sctp|tcp) [<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)

##### sctp

SCTP (Stream Control Transmission Protocol)

##### tcp

TCP (Transmission Control Protocol)

##### [<0-65534>]

Local Port Number

### 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>]

Local 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> asp name ASP\_NAME

#### Command

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

#### 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)

##### name

Lookup ASP with a given name

##### ASP\_NAME

Name of the Application Server Process (ASP)

---

### 1.3.39 show cs7 instance <0-15> asp-assoc-status

#### Command

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

#### 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-assoc-status

Application Server Process (ASP) SCTP association status

### 1.3.40 show cs7 instance <0-15> asp-assoc-status name ASP\_NAME

#### Command

```
show cs7 instance <0-15> asp-assoc-status name ASP_NAME
```

#### 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-assoc-status

Application Server Process (ASP) SCTP association information

name

Lookup ASP with a given name

ASP\_NAME

Name of the Application Server Process (ASP)

---

### 1.3.41 show cs7 instance <0-15> asp-remaddr

#### Command

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

#### 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-remaddr

Application Server Process (ASP) remote addresses information

### 1.3.42 show cs7 instance <0-15> asp-remaddr name ASP\_NAME

#### Command

```
show cs7 instance <0-15> asp-remaddr name ASP_NAME
```

#### 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-remaddr

Application Server Process (ASP) remote addresses information

name

Lookup ASP with a given name

ASP\_NAME

Name of the Application Server Process (ASP)

---

### 1.3.43 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

### 1.3.44 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

### 1.3.45 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

### 1.3.46 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)

---

### 1.3.47 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

### 1.3.48 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

### 1.3.49 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

### 1.3.50 show fsm NAME

#### Command

```
show fsm NAME
```

#### Parameters

show

Show running system information

fsm

Show information about finite state machines

NAME

Display information about a single named finite state machine

### 1.3.51 show fsm all

#### Command

```
show fsm all
```

#### Parameters

show

Show running system information

fsm

Show information about finite state machines

all

Display a list of all registered finite state machines

---

### 1.3.52 show fsm-instances NAME

#### Command

```
show fsm-instances NAME
```

#### Parameters

##### show

Show running system information

##### fsm-instances

Show information about finite state machine instances

##### NAME

Display a list of all FSM instances of the named finite state machine

### 1.3.53 show fsm-instances all

#### Command

```
show fsm-instances all
```

#### Parameters

##### show

Show running system information

##### fsm-instances

Show information about finite state machine instances

##### all

Display a list of all FSM instances of all finite state machine

### 1.3.54 show fsm-state-graph NAME

#### Command

```
show fsm-state-graph NAME
```

#### Parameters

##### show

Show running system information

##### fsm-state-graph

Generate a state transition graph (using DOT language)

##### NAME

FSM name

---



### 1.3.55 show history

#### Command

```
show history
```

#### Parameters

##### show

Show running system information

##### history

Display the session command history

### 1.3.56 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

### 1.3.57 show mgw-pool

#### Command

```
show mgw-pool
```

#### Parameters

##### show

Show running system information

##### mgw-pool

Display information about the MGW-Pool

### 1.3.58 show neighbor

#### Command

```
show neighbor
```

#### Parameters

show

Show running system information

neighbor

Show Handover targets

### 1.3.59 show neighbor (a|iu)

#### Command

```
show neighbor (a|iu)
```

#### Parameters

show

Show running system information

neighbor

Show Handover targets

a

Neighbor on GERAN-A

iu

Neighbor on UTRAN-Iu

### 1.3.60 show neighbor (a|iu) (ran-pc|msc-ipa-name) RAN\_PC\_OR\_MSC\_IPA\_NAME

#### Command

```
show neighbor (a|iu) (ran-pc|msc-ipa-name) RAN_PC_OR_MSC_IPA_NAME
```

#### Parameters

show

Show running system information

neighbor

Show Handover targets

a

Neighbor on GERAN-A

iu

Neighbor on UTRAN-Iu

ran-pc

SCCP point code of RAN peer

msc-ipa-name

GSUP IPA name of target MSC

RAN\_PC\_OR\_MSC\_IPA\_NAME

Point code or MSC IPA name value

### 1.3.61 **show neighbor (a|iu) cgi <0-999> <0-999> <0-65535> <0-65535>**

Command

```
show neighbor (a|iu) cgi <0-999> <0-999> <0-65535> <0-65535>
```

Parameters

show

Show running system information

neighbor

Show Handover targets

a

Neighbor on GERAN-A

iu

Neighbor on UTRAN-Iu

cgi

Handover target cell by Cell-Global Identifier (MCC, MNC, LAC, CI)

<0-999>

MCC

<0-999>

MNC

<0-65535>

LAC

<0-65535>

CI

### 1.3.62 show neighbor (a|iu) lac <0-65535>

#### Command

```
show neighbor (a|iu) lac <0-65535>
```

#### Parameters

show

Show running system information

neighbor

Show Handover targets

a

Neighbor on GERAN-A

iu

Neighbor on UTRAN-Iu

lac

Handover target cell by LAC

<0-65535>

LAC

### 1.3.63 show neighbor (a|iu) lac-ci <0-65535> <0-65535>

#### Command

```
show neighbor (a|iu) lac-ci <0-65535> <0-65535>
```

#### Parameters

show

Show running system information

neighbor

Show Handover targets

a

Neighbor on GERAN-A

iu

Neighbor on UTRAN-Iu

lac-ci

Handover target cell by LAC and CI

<0-65535>

LAC

<0-65535>

CI

### 1.3.64 show neighbor cgi <0-999> <0-999> <0-65535> <0-65535>

#### Command

```
show neighbor cgi <0-999> <0-999> <0-65535> <0-65535>
```

#### Parameters

##### show

Show running system information

##### neighbor

Show Handover targets

##### cgi

Handover target cell by Cell-Global Identifier (MCC, MNC, LAC, CI)

##### <0-999>

MCC

##### <0-999>

MNC

##### <0-65535>

LAC

##### <0-65535>

CI

### 1.3.65 show neighbor lac <0-65535>

#### Command

```
show neighbor lac <0-65535>
```

#### Parameters

##### show

Show running system information

##### neighbor

Show Handover targets

##### lac

Handover target cell by LAC

##### <0-65535>

LAC

### 1.3.66 show neighbor lac-ci <0-65535> <0-65535>

#### Command

```
show neighbor lac-ci <0-65535> <0-65535>
```

#### Parameters

##### show

Show running system information

##### neighbor

Show Handover targets

##### lac-ci

Handover target cell by LAC and CI

<0-65535>

LAC

<0-65535>

CI

### 1.3.67 show nri

#### Command

```
show nri
```

#### Parameters

##### show

Show running system information

##### nri

Mapping of Network Resource Indicators to this MSC, for MSC pooling

### 1.3.68 show online-help

#### Command

```
show online-help
```

#### Parameters

##### show

Show running system information

##### online-help

Online help

---

### 1.3.69 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

### 1.3.70 show sgs-connections

#### Command

```
show sgs-connections
```

#### Parameters

##### show

Show running system information

##### sgs-connections

Show SGs interface connections / MMEs

### 1.3.71 show sms-queue

#### Command

```
show sms-queue
```

#### Parameters

##### show

Show running system information

##### sms-queue

Display SMSQueue statistics

### 1.3.72 show startup-config

#### Command

```
show startup-config
```

#### Parameters

##### show

Show running system information

##### startup-config

Contentes of startup configuration

### 1.3.73 show statistics

#### Command

```
show statistics
```

#### Parameters

##### show

Show running system information

##### statistics

Display network statistics

### 1.3.74 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

---



### 1.3.75 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

### 1.3.76 show subscriber (msisdn|extension|imsi|tmsi|id) ID [(conn|trans|conn+trans)]

#### Command

```
show subscriber (msisdn|extension|imsi|tmsi|id) ID [(conn|trans|conn+trans)]
```

#### Parameters

show

Show running system information

subscriber

Operations on a Subscriber

msisdn

Identify subscriber by MSISDN (phone number)

extension

Legacy alias for 'msisdn'

imsi

Identify subscriber by IMSI

tmsi

Identify subscriber by TMSI

id

Legacy alias for 'imsi'

ID

Identifier for the subscriber

[conn]

Show child connections

[trans]

Show child transactions

[conn+trans]

Show child connections and transactions

### 1.3.77 show subscriber cache [(conn|trans|conn+trans)]

Command

```
show subscriber cache [(conn|trans|conn+trans)]
```

Parameters

show

Show running system information

subscriber

Show information about subscribers

cache

Display contents of subscriber cache

[conn]

Show child connections

[trans]

Show child transactions

[conn+trans]

Show child connections and transactions

### 1.3.78 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

### 1.3.79 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

### 1.3.80 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)

### 1.3.81 show timer [(vlr|mgw|mncc|sccp|geran|utran|sgs)] [TNNNN]

#### Command

```
show timer [(vlr|mgw|mncc|sccp|geran|utran|sgs)] [TNNNN]
```

#### Parameters

##### show

Show running system information

##### timer

Show timers

##### [vlr]

VLR (Visitors Location Register)

[mgw]

MGW (Media Gateway) interface

[mncc]

MNCC (Mobile Network Call Control) interface

[sccp]

SCCP (Signalling Connection Control Part)

[geran]

GERAN (GSM EDGE Radio Access Network)

[utran]

UTRAN (UMTS Terrestrial Radio Access Network)

[sgs]

SGs interface towards MME

[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'.

### 1.3.82 show transaction

Command

```
show transaction
```

Parameters

show

Show running system information

transaction

Transactions

### 1.3.83 show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

### 1.3.84 shutdown

#### Command

```
shutdown
```

#### Parameters

##### shutdown

Request a shutdown of the program

### 1.3.85 sms delete expired

#### Command

```
sms delete expired
```

#### Parameters

##### sms

SMS related commands

##### delete

SMS Database related commands

##### expired

Delete all expired SMS

### 1.3.86 sms send pending

#### Command

```
sms send pending
```

#### Parameters

##### sms

SMS related commands

##### send

SMS Sending related commands

##### pending

Send all pending SMS

### 1.3.87 sms-queue clear

#### Command

```
sms-queue clear
```

#### Parameters

sms-queue

SMS Queue

clear

Clear the queue of pending SMS

### 1.3.88 sms-queue max-failure <1-500>

#### Command

```
sms-queue max-failure <1-500>
```

#### Parameters

sms-queue

SMS Queue

max-failure

Maximum amount of delivery failures

<1-500>

Amount

### 1.3.89 sms-queue max-pending <1-500>

#### Command

```
sms-queue max-pending <1-500>
```

#### Parameters

sms-queue

SMS Queue

max-pending

SMS to deliver in parallel

<1-500>

Amount

### 1.3.90 sms-queue trigger

#### Command

```
sms-queue trigger
```

#### Parameters

sms-queue

SMS Queue

trigger

Trigger sending messages

### 1.3.91 stats report

#### Command

```
stats report
```

#### Parameters

stats

Stats related commands

report

Manurally trigger reporting of stats

### 1.3.92 stats reset

#### Command

```
stats reset
```

#### Parameters

stats

Stats related commands

reset

Reset all rate counter stats



### 1.3.93 subscriber (msisdn|extension|imsi|tmsi|id) ID expire

#### Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID expire
```

#### Parameters

##### subscriber

Operations on a Subscriber

##### msisdn

Identify subscriber by MSISDN (phone number)

##### extension

Legacy alias for 'msisdn'

##### imsi

Identify subscriber by IMSI

##### tmsi

Identify subscriber by TMSI

##### id

Legacy alias for 'imsi'

##### ID

Identifier for the subscriber

##### expire

Expire the subscriber Now

### 1.3.94 subscriber (msisdn|extension|imsi|tmsi|id) ID ms-test close-loop (a|b|c|d|e|f|i)

#### Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID ms-test close-loop (a|b|c|d|e|f|i)
```

#### Parameters

##### subscriber

Operations on a Subscriber

##### msisdn

Identify subscriber by MSISDN (phone number)

##### extension

Legacy alias for 'msisdn'

##### imsi

Identify subscriber by IMSI

##### tmsi

Identify subscriber by TMSI

id	Legacy alias for 'imsi'
ID	Identifier for the subscriber
ms-test	Send a TS 04.14 MS Test Command to subscriber
close-loop	Close a TCH Loop inside the MS
a	Loop Type A
b	Loop Type B
c	Loop Type C
d	Loop Type D
e	Loop Type E
f	Loop Type F
i	Loop Type I

### 1.3.95 subscriber (msisdn|extension|imsi|tmsi|id) ID ms-test open-loop

#### Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID ms-test open-loop
```

#### Parameters

##### subscriber

Operations on a Subscriber

##### msisdn

Identify subscriber by MSISDN (phone number)

##### extension

Legacy alias for 'msisdn'

##### imsi

Identify subscriber by IMSI

##### tmsi

Identify subscriber by TMSI

id

Legacy alias for 'imsi'

ID

Identifier for the subscriber

ms-test

Send a TS 04.14 MS Test Command to subscriber

open-loop

Open a TCH Loop inside the MS

### 1.3.96 subscriber (msisdn|extension|imsi|tmsi|id) ID paging

Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID paging
```

Parameters

subscriber

Operations on a Subscriber

msisdn

Identify subscriber by MSISDN (phone number)

extension

Legacy alias for 'msisdn'

imsi

Identify subscriber by IMSI

tmsi

Identify subscriber by TMSI

id

Legacy alias for 'imsi'

ID

Identifier for the subscriber

paging

Issue an empty Paging for the subscriber (for debugging)

### 1.3.97 subscriber (msisdn|extension|imsi|tmsi|id) ID silent-call start (any|tch/f|tch/h...

Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID silent-call start (any|tch/f|tch/h|tch/ ↔  
any|sdcch) (signalling|speech-hr|speech-fr|speech-efr|speech-amr) [IP] [<0-65535>]
```

Parameters

subscriber

Operations on a Subscriber

msisdn

Identify subscriber by MSISDN (phone number)

extension

Legacy alias for 'msisdn'

imsi

Identify subscriber by IMSI

tmsi

Identify subscriber by TMSI

id

Legacy alias for 'imsi'

ID

Identifier for the subscriber

silent-call

Silent call operation

start

Start silent call

any

Any channel

tch/f

TCH/F channel

tch/h

TCH/H channel

tch/any

Any TCH channel

sdccch

SDCCH channel

signalling

Signalling only

speech-hr

Speech with HR codec

speech-fr

Speech with FR codec

speech-efr

Speech with EFR codec

speech-amr

Speech with AMR codec

---

[IP]

Target IP for RTP traffic (default 127.0.0.1)

[<0-65535>]

Target port for RTP traffic (default: 4000)

### 1.3.98 subscriber (msisdn|extension|imsi|tmsi|id) ID silent-call stop

Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID silent-call stop
```

Parameters

subscriber

Operations on a Subscriber

msisdn

Identify subscriber by MSISDN (phone number)

extension

Legacy alias for 'msisdn'

imsi

Identify subscriber by IMSI

tmsi

Identify subscriber by TMSI

id

Legacy alias for 'imsi'

ID

Identifier for the subscriber

silent-call

Silent call operation

stop

Stop silent call

### 1.3.99 subscriber (msisdn|extension|imsi|tmsi|id) ID silent-sms sender (msisdn|extension...

Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID silent-sms sender (msisdn|extension|imsi|  
tmsi|id) SENDER_ID send .LINE
```

Parameters

subscriber

Operations on a Subscriber

msisdn

Identify subscriber by MSISDN (phone number)

extension

Legacy alias for 'msisdn'

imsi

Identify subscriber by IMSI

tmsi

Identify subscriber by TMSI

id

Legacy alias for 'imsi'

ID

Identifier for the subscriber

silent-sms

Silent SMS Operations

sender

Operations on a Subscriber

msisdn

Identify subscriber by MSISDN (phone number)

extension

Legacy alias for 'msisdn'

imsi

Identify subscriber by IMSI

tmsi

Identify subscriber by TMSI

id

Legacy alias for 'imsi'

SENDER\_ID

Identifier for the subscriber

send

Send SMS

.LINE

Actual SMS Text

---

### 1.3.100 subscriber (msisdn|extension|imsi|tmsi|id) ID sms delete-all

#### Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID sms delete-all
```

#### Parameters

##### subscriber

Operations on a Subscriber

##### msisdn

Identify subscriber by MSISDN (phone number)

##### extension

Legacy alias for 'msisdn'

##### imsi

Identify subscriber by IMSI

##### tmsi

Identify subscriber by TMSI

##### id

Legacy alias for 'imsi'

##### ID

Identifier for the subscriber

##### sms

SMS Operations

##### delete-all

Delete all SMS to be delivered to this subscriber -- WARNING: the SMS data for all unsent SMS for this subscriber WILL BE LOST.

### 1.3.101 subscriber (msisdn|extension|imsi|tmsi|id) ID sms pending-send

#### Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID sms pending-send
```

#### Parameters

##### subscriber

Operations on a Subscriber

##### msisdn

Identify subscriber by MSISDN (phone number)

##### extension

Legacy alias for 'msisdn'

imsi	Identify subscriber by IMSI
tmsi	Identify subscriber by TMSI
id	Legacy alias for 'imsi'
ID	Identifier for the subscriber
sms	SMS Operations
pending-send	Send pending SMS

### 1.3.102 subscriber (msisdn|extension|imsi|tmsi|id) ID sms sender (msisdn|extension|imsi|...

#### Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID sms sender (msisdn|extension|imsi|tmsi|id ←  
) SENDER_ID send .LINE
```

#### Parameters

subscriber  
Operations on a Subscriber

msisdn  
Identify subscriber by MSISDN (phone number)

extension  
Legacy alias for 'msisdn'

imsi  
Identify subscriber by IMSI

tmsi  
Identify subscriber by TMSI

id  
Legacy alias for 'imsi'

ID  
Identifier for the subscriber

sms  
SMS Operations

sender  
Operations on a Subscriber



msisdn

Identify subscriber by MSISDN (phone number)

extension

Legacy alias for 'msisdn'

imsi

Identify subscriber by IMSI

tmsi

Identify subscriber by TMSI

id

Legacy alias for 'imsi'

SENDER\_ID

Identifier for the subscriber

send

Send SMS

.LINE

Actual SMS Text

### 1.3.103 subscriber (msisdn|extension|imsi|tmsi|id) ID ussd-notify (0|1|2) .TEXT

Command

```
subscriber (msisdn|extension|imsi|tmsi|id) ID ussd-notify (0|1|2) .TEXT
```

Parameters

subscriber

Operations on a Subscriber

msisdn

Identify subscriber by MSISDN (phone number)

extension

Legacy alias for 'msisdn'

imsi

Identify subscriber by IMSI

tmsi

Identify subscriber by TMSI

id

Legacy alias for 'imsi'

ID

Identifier for the subscriber

ussd-notify

Send a USSD notify to the subscriber

0

Alerting Level 0

1

Alerting Level 1

2

Alerting Level 2

.TEXT

Text of USSD message to send

### 1.3.104 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)

### 1.3.105 terminal monitor

Command

```
terminal monitor
```

Parameters

terminal

Set terminal line parameters

monitor

Copy debug output to the current terminal line

### 1.3.106 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

### 1.3.107 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

### 1.3.108 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 asci

#### Command

```
asci
```

#### Parameters

asci

Enable and configure Advanced Speech Call Items

### 1.4.2 banner motd default

#### Command

```
banner motd default
```

#### Parameters

banner

Set banner string

motd

Strings for motd

default

Default string

### 1.4.3 banner motd file [FILE]

#### Command

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

#### Parameters

banner

Set banner

motd

Banner for motd

file

Banner from a file

[FILE]

Filename

### 1.4.4 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 hlr

#### Command

```
hlr
```

#### Parameters

##### hlr

Configure connection to the HLR

### 1.4.10 hostname WORD

#### Command

```
hostname WORD
```

#### Parameters

##### hostname

Set system's network name

##### WORD

This system's network name

### 1.4.11 line vty

#### Command

```
line vty
```

#### Parameters

##### line

Configure a terminal line

##### vtty

Virtual terminal

### 1.4.12 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

---

### 1.4.13 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

### 1.4.14 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)

### 1.4.15 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

---



### 1.4.16 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

### 1.4.17 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

#### 1.4.18 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

#### 1.4.19 mncc-int

Command

```
mncc-int
```

Parameters

mncc-int

Configure internal MNCC handler

#### 1.4.20 msc

Command

```
msc
```

Parameters

msc

Configure MSC options

### 1.4.21 network

#### Command

```
network
```

#### Parameters

network

Configure the GSM network

### 1.4.22 no banner motd

#### Command

```
no banner motd
```

#### Parameters

no

Negate a command or set its defaults

banner

Set banner string

motd

Strings for motd

### 1.4.23 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

### 1.4.24 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

### 1.4.25 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

### 1.4.26 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

---

### 1.4.27 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)

### 1.4.28 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

### 1.4.29 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

### 1.4.30 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

### 1.4.31 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

### 1.4.32 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)

---

### 1.4.33 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

### 1.4.34 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

### 1.4.35 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

### 1.4.36 password LINE

#### Command

```
password LINE
```

#### Parameters

##### password

Assign the terminal connection password

##### LINE

The UNENCRYPTED (cleartext) line password

### 1.4.37 service advanced-vty

#### Command

```
service advanced-vty
```

#### Parameters

##### service

Set up miscellaneous service

##### advanced-vty

Enable advanced mode vty interface



### 1.4.38 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)

### 1.4.39 sgs

#### Command

```
sgs
```

#### Parameters

##### sgs

Configure the SGs interface

### 1.4.40 show history

#### Command

```
show history
```

#### Parameters

##### show

Show running system information

##### history

Display the session command history

### 1.4.41 smsc

#### Command

```
smsc
```

#### Parameters

##### smsc

Configure SMSC options

---

### 1.4.42 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)

### 1.4.43 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

### 1.4.44 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

---

### 1.4.45 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

### 1.4.46 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 imsi IMSI

#### Command

```
logging filter imsi IMSI
```

#### Parameters

## logging

Configure logging

**filter**

Filter log messages

**imsi**

Filter log messages by IMSI

**IMSI**

IMSI to be used as filter

**1.5.4 logging level (rll|cc|bcc|gcc|mm|rr|mncc|pag|msc|mgcp|ho|db|ref|ctrl|smpp|ranap|...****Command**

```
logging level (rll|cc|bcc|gcc|mm|rr|mncc|pag|msc|mgcp|ho|db|ref|ctrl|smpp|ranap|vlr| ↵
iucs|bssap|sgs|ss|ascii|lgloba|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats| ↵
lgsup|loap|lss7|lscdp|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

**rll**

A-bis Radio Link Layer (RLL)

**cc**

Layer3 Call Control (CC)

**bcc**

Layer3 Broadcast Call Control (BCC)

**gcc**

Layer3 Group Call Control (GCC)

**mm**

Layer3 Mobility Management (MM)

**rr**

Layer3 Radio Resource (RR)

**mncc**

MNCC API for Call Control application

**pag**

Paging Subsystem

**msc**

Mobile Switching Center

**mgcp**

Media Gateway Control Protocol

---

ho	Hand-Over
db	Database Layer
ref	Reference Counting
ctrl	Control interface
smpp	SMPP interface for external SMS apps
ranap	Radio Access Network Application Part Protocol
vlr	Visitor Location Register
iucs	Iu-CS Protocol
bssap	BSSAP Protocol (A Interface)
sgs	SGs Interface (SGsAP)
ss	Supplementary Services
asci	Advanced Speech Call Items
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

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

### 1.5.5 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



### 1.5.6 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

### 1.5.7 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

---

### 1.5.8 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>')

### 1.5.9 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

### 1.5.10 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.

### 1.5.11 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

### 1.5.12 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

### 1.5.13 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

### 1.5.14 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-ctrl

### 1.8.1 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

---

## 1.9 config-cs7

### 1.9.1 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)

### 1.9.2 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 port number

<0-65535>

Local port number

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

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

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

asp

Configure Application Server Process

NAME

Name of ASP

<0-65535>

Remote port number

<0-65535>

Local port number

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

sctp

SCTP (Stream Control Transmission Protocol)

tcp

TCP (Transmission Control Protocol)

### 1.9.4 description .TEXT

#### Command

```
description .TEXT
```

#### Parameters

##### description

Save human-readable description of the object

##### .TEXT

Text until the end of the line

### 1.9.5 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

### 1.9.6 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

### 1.9.7 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

### 1.9.8 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

### 1.9.9 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

### 1.9.10 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

### 1.9.11 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

### 1.9.12 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)

### 1.9.13 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

### 1.9.14 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



### 1.9.15 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

---

### 1.9.16 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

## 1.10 config-cs7-as

### 1.10.1 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

### 1.10.2 description .TEXT

#### Command

```
description .TEXT
```

#### Parameters

##### description

Save human-readable description of the object

##### .TEXT

Text until the end of the line

### 1.10.3 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

### 1.10.4 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

---

### 1.10.5 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

### 1.10.6 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

---

### 1.10.7 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

### 1.10.8 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

### 1.10.9 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

### 1.10.10 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

### 1.10.11 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

### 1.10.12 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

### 1.10.13 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



## 1.11 config-cs7-asp

### 1.11.1 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

### 1.11.2 description .TEXT

Command

```
description .TEXT
```

Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line

### 1.11.3 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

---

### 1.11.4 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

### 1.11.5 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

### 1.11.6 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

### 1.11.7 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)

---

### 1.11.8 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

### 1.11.9 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

### 1.11.10 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

### 1.11.11 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)

### 1.11.12 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

### 1.11.13 shutdown

#### Command

```
shutdown
```

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

shutdown

Terminates SCTP association; New associations will be rejected

### 1.11.14 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

### 1.11.15 transport-role (client|server)

#### Command

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

#### Global attributes

#### Flag: @

This command applies on VTY node exit

#### Parameters

##### transport-role

Specify the transport layer role for this ASP

##### client

Operate as a client; connect to a server

##### server

Operate as a server; wait for client connections

## 1.12 config-cs7-sccpaddr

### 1.12.1 global-title

Command

```
global-title
```

Global attributes

Flag: !

This command applies immediately

Parameters

global-title

Add/Modify Global Title

### 1.12.2 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

### 1.12.3 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



### 1.12.4 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

### 1.12.5 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

### 1.12.6 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

### 1.12.7 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

## 1.13 config-cs7-sccpaddr-gt

### 1.13.1 digits DIGITS

#### Command

```
digits DIGITS
```

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

digits

Set Global Title Digits

DIGITS

Number digits

### 1.13.2 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

### 1.13.3 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

### 1.13.4 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

### 1.13.5 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

## 1.14 config-cpu-sched

### 1.14.1 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

---

### 1.14.2 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

## 1.15 config-net

### 1.15.1 authentication (optional|required)

#### Command

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

#### Parameters

##### authentication

Whether to enforce MS authentication in 2G

##### optional

Allow MS to attach via 2G BSC without authentication

##### required

Always do authentication

### 1.15.2 call-waiting

#### Command

```
call-waiting
```

#### Parameters

##### call-waiting

Enable Call Waiting on the Network

---

### 1.15.3 encryption a5 <0-4> [<0-4>] [<0-4>] [<0-4>] [<0-4>]

#### Command

```
encryption a5 <0-4> [<0-4>] [<0-4>] [<0-4>] [<0-4>]
```

#### Parameters

##### encryption

Encryption options

##### a5

GSM A5 Air Interface Encryption.

##### <0-4>

A5/n Algorithm Number

##### [<0-4>]

A5/n Algorithm Number

##### [<0-4>]

A5/n Algorithm Number

##### [<0-4>]

A5/n Algorithm Number

##### [<0-4>]

A5/n Algorithm Number

### 1.15.4 encryption uea <0-2> [<0-2>] [<0-2>]

#### Command

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

#### Parameters

##### encryption

Encryption options

##### 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

### 1.15.5 long name .NAME

#### Command

```
long name .NAME
```

#### Parameters

##### long

Set the long GSM network name

##### name

Name Commands

##### .NAME

Name to use

### 1.15.6 mgw <0-255>

#### Command

```
mgw <0-255>
```

#### Global attributes

##### Flag: !

This command applies immediately

#### Parameters

##### mgw

Select a MGCP client config to setup

##### <0-255>

reference number

### 1.15.7 mm info (0|1)

#### Command

```
mm info (0|1)
```

#### Parameters

##### mm

Mobility Management

##### info

Send MM INFO after LOC UPD ACCEPT

##### 0

Disable

##### 1

Enable

### 1.15.8 mobile network code <0-999>

#### Command

```
mobile network code <0-999>
```

#### Parameters

##### mobile

Set the GSM mobile network code

##### network

Network Commands

##### code

Code commands

##### <0-999>

Mobile Network Code to use

### 1.15.9 network country code <1-999>

#### Command

```
network country code <1-999>
```

#### Parameters

##### network

Set the GSM network country code

##### country

Country commands

##### code

Code commands

##### <1-999>

Network Country Code to use

### 1.15.10 no call-waiting

#### Command

```
no call-waiting
```

#### Parameters

##### no

Negate a command or set its defaults

##### call-waiting

Disable Call Waiting on the Network

---



### 1.15.11 no mgw <0-255>

#### Command

```
no mgw <0-255>
```

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

no

Negate a command or set its defaults

mgw

Select a MGCP client config to remove

<0-255>

reference number

### 1.15.12 no timezone

#### Command

```
no timezone
```

#### Parameters

no

Negate a command or set its defaults

timezone

Disable network timezone override, use system tz

### 1.15.13 rrlp mode (none|ms-based|ms-preferred|ass-preferred)

#### Command

```
rrlp mode (none|ms-based|ms-preferred|ass-preferred)
```

#### Parameters

rrlp

Radio Resource Location Protocol

mode

Set the Radio Resource Location Protocol Mode

none

Don't send RRLP request

ms-based

Request MS-based location

ms-preferred

Request any location, prefer MS-based

ass-preferred

Request any location, prefer MS-assisted

### 1.15.14 short name .NAME

Command

```
short name .NAME
```

Parameters

short

Set the short GSM network name

name

Name Commands

.NAME

Name to use

### 1.15.15 timezone <-19-19> (0|15|30|45)

Command

```
timezone <-19-19> (0|15|30|45)
```

Parameters

timezone

Set the Timezone Offset of the network

<-19-19>

Timezone offset (hours)

0

Timezone offset (00 minutes)

15

Timezone offset (15 minutes)

30

Timezone offset (30 minutes)

45

Timezone offset (45 minutes)

### 1.15.16 **timezone** <-19-19> (0|15|30|45) <0-2>

#### Command

```
timezone <-19-19> (0|15|30|45) <0-2>
```

#### Parameters

##### timezone

Set the Timezone Offset of the network

##### <-19-19>

Timezone offset (hours)

##### 0

Timezone offset (00 minutes)

##### 15

Timezone offset (15 minutes)

##### 30

Timezone offset (30 minutes)

##### 45

Timezone offset (45 minutes)

##### <0-2>

DST offset (hours)

## 1.16 **config-mgw**

### 1.16.1 **description** .TEXT

#### Command

```
description .TEXT
```

#### Parameters

##### description

Save human-readable description of the object

##### .TEXT

Text until the end of the line

---

### 1.16.2 endpoint-domain NAME

#### Command

```
endpoint-domain NAME
```

#### Parameters

##### endpoint-domain

Set the domain name to send in MGCP messages, e.g. the part 'foo' in 'rtpbridge/\*@foo'.

##### NAME

Domain name, should be alphanumeric.

### 1.16.3 keepalive request-endpoint NAME

#### Command

```
keepalive request-endpoint NAME
```

#### Parameters

##### keepalive

Monitor if the MGCP link against MGW is still usable

##### request-endpoint

Use a given endpoint name when sending an MGCP command to the MGW for keepalive purposes

##### NAME

The name of the endpoint to use

### 1.16.4 keepalive request-interval <0-4294967295>

#### Command

```
keepalive request-interval <0-4294967295>
```

#### Parameters

##### keepalive

Monitor if the MGCP link against MGW is still usable

##### request-interval

Send an MGCP command to the MGW at given interval if no other commands are sent

##### <0-4294967295>

The interval at which send MGCP commands (s), 0 to disable

---

### 1.16.5 keepalive timeout <0-4294967295>

#### Command

```
keepalive timeout <0-4294967295>
```

#### Parameters

##### keepalive

Monitor if the MGCP link against MGW is still usable

##### timeout

Consider the link to the MGW to be down after time without receiving any message from it

<0-4294967295>

The timeout (s), 0 to disable

### 1.16.6 local-ip (A.B.C.D|X:X::X:X)

#### Command

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

#### Parameters

##### local-ip

local bind to connect to MGW from

##### A.B.C.D

local bind IPv4 address

##### X:X::X:X

local bind IPv6 address

### 1.16.7 local-port <0-65535>

#### Command

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

#### Parameters

##### local-port

local port to connect to MGW from

<0-65535>

local bind port

### 1.16.8 no reset-endpoint NAME

#### Command

```
no reset-endpoint NAME
```

#### Parameters

no

Negate a command or set its defaults

reset-endpoint

remove an endpoint name from the reset-endpoint list, e.g. 'rtpbridge/\*'

NAME

Endpoint name, e.g. 'rtpbridge/\*' or 'ds/e1-0/s-3/su16-4'.

### 1.16.9 remote-ip (A.B.C.D|X:X::X:X)

#### Command

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

#### Parameters

remote-ip

remote IP address to reach the MGW at

A.B.C.D

remote IPv4 address

X:X::X:X

remote IPv6 address

### 1.16.10 remote-port <0-65535>

#### Command

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

#### Parameters

remote-port

remote port to reach the MGW at

<0-65535>

remote port

---

### 1.16.11 reset-endpoint NAME

#### Command

```
reset-endpoint NAME
```

#### Parameters

##### reset-endpoint

Add an endpoint name that should be reset (DLCX) on connect to the reset-endpoint list, e.g. 'rtpbridge/\*'

##### NAME

Endpoint name, e.g. 'rtpbridge/\*' or 'ds/e1-0/s-3/su16-4'.

## 1.17 config-msc

### 1.17.1 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

### 1.17.2 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

### 1.17.3 assign-tmsi

#### Command

```
assign-tmsi
```

#### Parameters

assign-tmsi

Assign TMSI during Location Updating.

### 1.17.4 auth-tuple-max-reuse-count <-1-2147483647>

#### Command

```
auth-tuple-max-reuse-count <-1-2147483647>
```

#### Parameters

auth-tuple-max-reuse-count

Configure authentication tuple re-use

<-1-2147483647>

0 to use each auth tuple at most once (default), >0 to limit re-use, -1 to re-use infinitely (vulnerable!).

### 1.17.5 auth-tuple-reuse-on-error (0|1)

#### Command

```
auth-tuple-reuse-on-error (0|1)
```

#### Parameters

auth-tuple-reuse-on-error

Configure authentication tuple re-use when HLR is not responsive

0

Never re-use auth tuples beyond auth-tuple-max-reuse-count (default)

1

If the HLR does not deliver new tuples, do re-use already available old ones.

---



### 1.17.6 check-imei-rqd (0|1|early)

#### Command

```
check-imei-rqd (0|1|early)
```

#### Parameters

##### check-imei-rqd

Send each IMEI to the EIR to ask if it is permitted or not. The EIR is implemented as part of OsmoHLR, and can optionally save the IMEI in the HLR.

0

Do not send IMEIs to the EIR

1

Send each IMEI to the EIR

early

Send each IMEI to the EIR, and do it at the start of the location update. This allows the EIR to receive the IMEI, even if the MS would get rejected when the MSC sends the location update request to the HLR.

### 1.17.7 cs7-instance-a <0-15>

#### Command

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

#### Parameters

##### cs7-instance-a

Set SS7 to be used by the A-Interface.

<0-15>

SS7 instance reference number

### 1.17.8 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

### 1.17.9 emergency-call route-to-msisdn MSISDN

#### Command

```
emergency-call route-to-msisdn MSISDN
```

#### Parameters

##### emergency-call

Configure Emergency Call Behaviour

##### route-to-msisdn

MSISDN to which Emergency Calls are Dispatched

##### MSISDN

MSISDN (E.164 Phone Number)

### 1.17.10 handover-number range MSISDN\_FIRST MSISDN\_LAST

#### Command

```
handover-number range MSISDN_FIRST MSISDN_LAST
```

#### Parameters

##### handover-number

Configure a range of MSISDN to be assigned to incoming inter-MSC Handovers for call forwarding.

##### range

Configure a handover number range

##### MSISDN\_FIRST

First Handover Number MSISDN

##### MSISDN\_LAST

Last Handover Number MSISDN

### 1.17.11 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)

### 1.17.12 **keepalive request-endpoint NAME**

#### Command

```
keepalive request-endpoint NAME
```

#### Parameters

##### keepalive

Monitor if the MGCP link against MGW is still usable

##### request-endpoint

Use a given endpoint name when sending an MGCP command to the MGW for keepalive purposes

##### NAME

The name of the endpoint to use

### 1.17.13 **keepalive request-interval <0-4294967295>**

#### Command

```
keepalive request-interval <0-4294967295>
```

#### Parameters

##### keepalive

Monitor if the MGCP link against MGW is still usable

##### request-interval

Send an MGCP command to the MGW at given interval if no other commands are sent

##### <0-4294967295>

The interval at which send MGCP commands (s), 0 to disable

### 1.17.14 **keepalive timeout <0-4294967295>**

#### Command

```
keepalive timeout <0-4294967295>
```

#### Parameters

##### keepalive

Monitor if the MGCP link against MGW is still usable

##### timeout

Consider the link to the MGW to be down after time without receiving any message from it

##### <0-4294967295>

The timeout (s), 0 to disable

---

### 1.17.15 lcls-permitted

#### Command

```
lcls-permitted
```

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

lcls-permitted

Globally allow LCLS (Local Call Local Switch) for all calls on this MSC.

### 1.17.16 mncc external MNCC\_SOCKET\_PATH

#### Command

```
mncc external MNCC_SOCKET_PATH
```

#### Parameters

mncc

Configure Mobile Network Call Control

external

Use external MNCC handler (changes need a program restart)

MNCC\_SOCKET\_PATH

File system path to create the MNCC unix domain socket at

### 1.17.17 mncc guard-timeout <0-255>

#### Command

```
mncc guard-timeout <0-255>
```

#### Parameters

mncc

Configure Mobile Network Call Control

guard-timeout

Set global guard timer for mncc interface activity

<0-255>

guard timer value (sec.)

---

### 1.17.18 mncc internal

#### Command

```
mncc internal
```

#### Parameters

##### mncc

Configure Mobile Network Call Control

##### internal

Use internal MNCC handler (default; changes need a program restart)

### 1.17.19 ncss guard-timeout <0-255>

#### Command

```
ncss guard-timeout <0-255>
```

#### Parameters

##### ncss

Configure call independent Supplementary Services

##### guard-timeout

Set guard timer for session activity

##### <0-255>

guard timer value (sec.), or 0 to disable

### 1.17.20 neighbor (a|iu) cgi <0-999> <0-999> <0-65535> <0-65535> (ran-pc|msc-ipa-name) RA...

#### Command

```
neighbor (a|iu) cgi <0-999> <0-999> <0-65535> <0-65535> (ran-pc|msc-ipa-name) ↔  
RAN_PC_OR_MSC_IPA_NAME
```

#### Parameters

##### neighbor

Add Handover target configuration

##### a

Neighbor on GERAN-A

##### iu

Neighbor on UTRAN-Iu

##### cgi

Handover target cell by Cell-Global Identifier (MCC, MNC, LAC, CI)

<0-999>

MCC

<0-999>

MNC

<0-65535>

LAC

<0-65535>

CI

ran-pc

SCCP point code of RAN peer

msc-ipa-name

GSUP IPA name of target MSC

RAN\_PC\_OR\_MSC\_IPA\_NAME

Point code or MSC IPA name value

### 1.17.21 neighbor (a|iu) lac <0-65535> (ran-pc|msc-ipa-name) RAN\_PC\_OR\_MSC\_IPA\_NAME

Command

```
neighbor (a|iu) lac <0-65535> (ran-pc|msc-ipa-name) RAN_PC_OR_MSC_IPA_NAME
```

Parameters

neighbor

Add Handover target configuration

a

Neighbor on GERAN-A

iu

Neighbor on UTRAN-Iu

lac

Handover target cell by LAC

<0-65535>

LAC

ran-pc

SCCP point code of RAN peer

msc-ipa-name

GSUP IPA name of target MSC

RAN\_PC\_OR\_MSC\_IPA\_NAME

Point code or MSC IPA name value

### 1.17.22 neighbor (a|iu) lac-ci <0-65535> <0-65535> (ran-pc|msc-ipa-name) RAN\_PC\_OR\_MSC\_I...

#### Command

```
neighbor (a|iu) lac-ci <0-65535> <0-65535> (ran-pc|msc-ipa-name) RAN_PC_OR_MSC_IPA_NAME
```

#### Parameters

##### neighbor

Add Handover target configuration

##### a

Neighbor on GERAN-A

##### iu

Neighbor on UTRAN-Iu

##### lac-ci

Handover target cell by LAC and CI

##### <0-65535>

LAC

##### <0-65535>

CI

##### ran-pc

SCCP point code of RAN peer

##### msc-ipa-name

GSUP IPA name of target MSC

##### RAN\_PC\_OR\_MSC\_IPA\_NAME

Point code or MSC IPA name value

### 1.17.23 no assign-tmsi

#### Command

```
no assign-tmsi
```

#### Parameters

##### no

Negate a command or set its defaults

##### assign-tmsi

Assign TMSI during Location Updating.

### 1.17.24 no lcls-permitted

#### Command

```
no lcls-permitted
```

#### Global attributes

#### Flag: !

This command applies immediately

#### Parameters

##### no

Negate a command or set its defaults

##### lcls-permitted

Globally disable LCLS (Local Call Local Switch) for all calls on this MSC.

### 1.17.25 no neighbor (a|iu) (ran-pc|msc-ipa-name) RAN\_PC\_OR\_MSC\_IPA\_NAME

#### Command

```
no neighbor (a|iu) (ran-pc|msc-ipa-name) RAN_PC_OR_MSC_IPA_NAME
```

#### Parameters

##### no

Negate a command or set its defaults

##### neighbor

Remove Handover target

##### a

Neighbor on GERAN-A

##### iu

Neighbor on UTRAN-Iu

##### ran-pc

SCCP point code of RAN peer

##### msc-ipa-name

GSUP IPA name of target MSC

##### RAN\_PC\_OR\_MSC\_IPA\_NAME

Point code or MSC IPA name value

---



### 1.17.26 no sms-over-gsup

#### Command

```
no sms-over-gsup
```

#### Parameters

no

Negate a command or set its defaults

sms-over-gsup

Disable routing of SMS messages over GSUP

### 1.17.27 nri add <0-32767> [<0-32767>]

#### Command

```
nri add <0-32767> [<0-32767>]
```

#### Parameters

nri

Mapping of Network Resource Indicators to this MSC, for MSC pooling

add

Add NRI value or range to the NRI mapping for this MSC

<0-32767>

First value of the NRI value range, should not surpass the configured 'nri bitlen'.

[<0-32767>]

Last value of the NRI value range, should not surpass the configured 'nri bitlen' and be larger than the first value; if omitted, apply only the first value.

### 1.17.28 nri bitlen <0-15>

#### Command

```
nri bitlen <0-15>
```

#### Parameters

nri

Mapping of Network Resource Indicators to this MSC, for MSC pooling

bitlen

Set number of NRI bits to place in TMSI identities (always starting just after the most significant octet)

<0-15>

bit count (default: NRI\_BITLEN\_DEFAULT)

---

### 1.17.29 nri del <0-32767> [<0-32767>]

#### Command

```
nri del <0-32767> [<0-32767>]
```

#### Parameters

nri

Mapping of Network Resource Indicators to this MSC, for MSC pooling

del

Remove NRI value or range from the NRI mapping for this MSC

<0-32767>

First value of the NRI value range, should not surpass the configured 'nri bitlen'.

[<0-32767>]

Last value of the NRI value range, should not surpass the configured 'nri bitlen' and be larger than the first value; if omitted, apply only the first value.

### 1.17.30 osmux (on|off|only)

#### Command

```
osmux (on|off|only)
```

#### Parameters

osmux

RTP multiplexing

on

Enable OSMUX

off

Disable OSMUX

only

Only use OSMUX

### 1.17.31 sms-over-gsup

#### Command

```
sms-over-gsup
```

#### Parameters

sms-over-gsup

Enable routing of SMS messages over GSUP

---

### 1.17.32 timer [(vlr|mgw|mncc|sccp|geran|utran|sgs)] [TNNNN] [<0-2147483647>|default]

#### Command

```
timer [ (vlr|mgw|mncc|sccp|geran|utran|sgs) ] [TNNNN] [ (<0-2147483647>|default) ]
```

#### Parameters

##### timer

Configure or show timers

##### [vlr]

VLR (Visitors Location Register)

##### [mgw]

MGW (Media Gateway) interface

##### [mncc]

MNCC (Mobile Network Call Control) interface

##### [sccp]

SCCP (Signalling Connection Control Part)

##### [geran]

GERAN (GSM EDGE Radio Access Network)

##### [utran]

UTRAN (UMTS Terrestrial Radio Access Network)

##### [sgs]

SGs interface towards MME

##### [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

## 1.18 config-mncc-int

This node allows to configure the default codecs for the internal call control handling.

### 1.18.1 default-codec tch-f (fr|efr|amr)

#### Command

```
default-codec tch-f (fr|efr|amr)
```

#### Parameters

##### default-codec

Set default codec

##### tch-f

Codec for TCH/F

##### fr

Full-Rate

##### efr

Enhanced Full-Rate

##### amr

Adaptive Multi-Rate

### 1.18.2 default-codec tch-h (hr|amr)

#### Command

```
default-codec tch-h (hr|amr)
```

#### Parameters

##### default-codec

Set default codec

##### tch-h

Codec for TCH/H

##### hr

Half-Rate

##### amr

Adaptive Multi-Rate

## 1.19 config-hlr

### 1.19.1 ipa-name NAME

#### Command

```
ipa-name NAME
```

#### Parameters

##### ipa-name

Set the IPA name of this MSC

##### NAME

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

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

#### Command

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

#### Parameters

##### remote-ip

Remote GSUP address of the HLR

##### A.B.C.D

Remote GSUP address (default: 127.0.0.1)

### 1.19.3 remote-port <1-65535>

#### Command

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

#### Parameters

##### remote-port

Remote GSUP port of the HLR

##### <1-65535>

Remote GSUP port (default: MSC\_HLR\_REMOTE\_PORT\_DEFAULT)

## 1.20 config-sgs

### 1.20.1 counter (ns7|ns11) <0-255>

#### Command

```
counter (ns7|ns11) <0-255>
```

#### Parameters

##### counter

Configure SGs Counter

---

ns7

Non-EPS alert request retry counter

ns11

VLR reset retry counter

<0-255>

Counter value

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

Command

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

Parameters

local-ip

Set the Local IP Address of the SGs interface

A.B.C.D

Local IP Address of the SGs interface

### 1.20.3 local-port <0-65535>

Command

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

Parameters

local-port

Set the local SCTP port of the SGs interface

<0-65535>

Local SCTP port of the SGs interface

### 1.20.4 timer (ts5|ts6-2|ts7|ts11|ts14|ts15) <1-120>

Command

```
timer (ts5|ts6-2|ts7|ts11|ts14|ts15) <1-120>
```

Parameters

timer

Configure SGs Timer

ts5

Paging procedure guard timer

ts6-2

TMSI reallocation guard timer

ts7

Non-EPS alert procedure guard timer

ts11

VLR reset guard timer

ts14

UE fallback procedure timer

ts15

MO UE fallback procedure guard timer

<1-120>

Time in seconds

### 1.20.5 vlr-name FQDN

Command

```
vlr-name FQDN
```

Parameters

vlr-name

Set the SGs VLR Name as per TS 29.118 9.4.22

FQDN

Fully-Qualified Domain Name of this VLR

## 1.21 config-smsc

### 1.21.1 database PATH

Command

```
database PATH
```

Parameters

database

Set the path to the MSC-SMS database file

PATH

Relative or absolute file system path to the database file (default is 'sms.db')

### 1.21.2 database delete-delivered (0|1)

#### Command

```
database delete-delivered (0|1)
```

#### Parameters

##### database

SMS Database Configuration

##### delete-delivered

Configure if delivered SMS are deleted from DB

0

Do not delete SMS after delivery

1

Delete SMS after delivery

### 1.21.3 database delete-expired (0|1)

#### Command

```
database delete-expired (0|1)
```

#### Parameters

##### database

SMS Database Configuration

##### delete-expired

Configure if expired SMS are deleted from DB

0

Do not delete SMS after expiration of validity period

1

Delete SMS after expiration of validity period

### 1.21.4 queue max-failure <1-500>

#### Command

```
queue max-failure <1-500>
```

#### Parameters

##### queue

SMS Queue

##### max-failure

Maximum number of delivery failures before giving up

<1-500>

Amount



### 1.21.5 queue max-pending <1-500>

#### Command

```
queue max-pending <1-500>
```

#### Parameters

queue

SMS Queue

max-pending

SMS to deliver in parallel

<1-500>

Amount

### 1.21.6 validity-period (minimum|default) <1-5256000>

#### Command

```
validity-period (minimum|default) <1-5256000>
```

#### Parameters

validity-period

Configure validity period for SMS

minimum

Minimum SMS validity period in minutes

default

Default SMS validity period in minutes

<1-5256000>

Validity period in minutes

## 1.22 config-asci

### 1.22.1 (enable|disable)

#### Command

```
(enable|disable)
```

#### Parameters

enable

Enable Advanced Speech Call Items

disable

Disable Advanced Speech Call Items

### 1.22.2 gcr

#### Command

```
gcr
```

#### Parameters

gcr

Configure Group Call Register

## 1.23 config-gcr

### 1.23.1 no vbc ID

#### Command

```
no vbc ID
```

#### Parameters

no

Negate a command or set its defaults

vbc

Configure Voice Broadcast Call

ID

Group ID

### 1.23.2 no vgc ID

#### Command

```
no vgc ID
```

#### Parameters

no

Negate a command or set its defaults

vgc

Configure Voice Group Call

ID

Group ID

### 1.23.3 vbc ID

#### Command

```
vbc ID
```

#### Parameters

vbc

Configure Voice Broadcast Call

ID

Group ID

### 1.23.4 vgc ID

#### Command

```
vgc ID
```

#### Parameters

vgc

Configure Voice Group Call

ID

Group ID

## 1.24

### 1.24.1 cell POINT\_CODE <0-65535>

#### Command

```
cell POINT_CODE <0-65535>
```

#### Parameters

cell

Add cell to current group

POINT\_CODE

Point code of MSC

<0-65535>

Cell ID of BTS

---

### 1.24.2 mute-talker

#### Command

```
mute-talker
```

#### Parameters

mute-talker

Mute talker's downlink

### 1.24.3 no cell POINT\_CODE [<0-65535>]

#### Command

```
no cell POINT_CODE [<0-65535>]
```

#### Parameters

no

Negate a command or set its defaults

cell

Remove BSS/cell from current group

POINT\_CODE

Point code of MSC

[<0-65535>]

Cell ID of BTS

### 1.24.4 no timeout

#### Command

```
no timeout
```

#### Parameters

no

Negate a command or set its defaults

timeout

Unset inactivity timer

### 1.24.5 timeout <1-65535>

#### Command

```
timeout <1-65535>
```

#### Parameters

##### timeout

Set inactivity timer

##### <1-65535>

Timeout in seconds

### 1.24.6 unmute-talker

#### Command

```
unmute-talker
```

#### Parameters

##### unmute-talker

Unmute talker's downlink

## 1.25

### 1.25.1 cell POINT\_CODE <0-65535>

#### Command

```
cell POINT_CODE <0-65535>
```

#### Parameters

##### cell

Add cell to current group

##### POINT\_CODE

Point code of MSC

##### <0-65535>

Cell ID of BTS

---

### 1.25.2 mute-talker

#### Command

```
mute-talker
```

#### Parameters

mute-talker

Mute talker's downlink

### 1.25.3 no cell POINT\_CODE [<0-65535>]

#### Command

```
no cell POINT_CODE [<0-65535>]
```

#### Parameters

no

Negate a command or set its defaults

cell

Remove BSS/cell from current group

POINT\_CODE

Point code of MSC

[<0-65535>]

Cell ID of BTS

### 1.25.4 unmute-talker

#### Command

```
unmute-talker
```

#### Parameters

unmute-talker

Unmute talker's downlink