

# **OsmoMSC VTY Reference**

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**COLLABORATORS**

	<i>TITLE :</i> OsmoMSC VTY Reference		
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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

vtty-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

vtty-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|asci|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|↵
lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal|↵
liuup|lpfcp|lcsn1|lio) (debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

---

rl	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

lms  
GPRS NS layer

lbssgp  
GPRS BSSGP layer

lmsdata  
GPRS NS layer data PDU

lmsignal  
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|global|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7 ↵
    |lscpp|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

lgtp  
GPRS GTP library

lstats  
Statistics messages and logging

lgsup  
Generic Subscriber Update Protocol

---

---

loap  
Osmocom Authentication Protocol

lss7  
libosmo-sigtran Signalling System 7

lsccp  
libosmo-sigtran SCCP Implementation

lsua  
libosmo-sigtran SCCP User Adaptation

lm3ua  
libosmo-sigtran MTP3 User Adaptation

lmgcp  
libosmo-mgcp Media Gateway Control Protocol

ljibuf  
libosmo-netif Jitter Buffer

lrspro  
Remote SIM protocol

lns  
GPRS NS layer

lbssgp  
GPRS BSSGP layer

lnsdata  
GPRS NS layer data PDU

lnssignal  
GPRS NS layer signal PDU

liuup  
Iu UP layer

lpfcp  
libosmo-pfcp Packet Forwarding Control Protocol

lcsn1  
libosmo-csn1 Concrete Syntax Notation 1 codec

lio  
libosmocore IO Subsystem

debug  
Log debug messages and higher levels

info  
Log informational messages and higher levels

notice  
Log noticeable messages and higher levels

---

error

Log error messages and higher levels

fatal

Log only fatal messages

.LOGMESSAGE

Arbitrary message to log on given category and log level

### 1.2.19 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) [<0-65534>]

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

---

sua  
    SCCP User Adaptation

m3ua  
    MTP3 User Adaptation

ipa  
    IPA Multiplex (SCCP Lite)

[<0-65534>]  
    Port Number

### 1.2.27 show cs7 config

Command

```
show cs7 config
```

Parameters

show  
    Show running system information

cs7  
    ITU-T Signaling System 7

config  
    Currently running cs7 configuration

### 1.2.28 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

### 1.2.29 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)

### 1.2.30 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

### 1.2.31 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

### 1.2.32 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

### 1.2.33 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)

---

### 1.2.34 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

### 1.2.35 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

---

### 1.2.36 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

### 1.2.37 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

### 1.2.38 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

### 1.2.39 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

### 1.2.40 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

### 1.2.41 show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

### 1.2.42 show logging vty

Command

```
show logging vty
```

Parameters

show

Show running system information

logging

Show current logging configuration

vtty

Show current logging configuration for this vty

### 1.2.43 show mgw-pool

Command

```
show mgw-pool
```

Parameters

show

Show running system information

mgw-pool

Display information about the MGW-Pool

### 1.2.44 show neighbor

Command

```
show neighbor
```

Parameters

show

Show running system information

neighbor

Show Handover targets

### 1.2.45 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

### 1.2.46 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

### 1.2.47 **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

### 1.2.48 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

### 1.2.49 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



### 1.2.50 **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

### 1.2.51 **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

### 1.2.52 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

### 1.2.53 show nri

#### Command

```
show nri
```

#### Parameters

show

Show running system information

nri

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

### 1.2.54 show online-help

#### Command

```
show online-help
```

#### Parameters

show

Show running system information

online-help

Online help

### 1.2.55 show pid

Command

```
show pid
```

Parameters

show

Show running system information

pid

Displays the process ID

### 1.2.56 show rate-counters [skip-zero]

Command

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

Parameters

show

Show running system information

rate-counters

Show all rate counters

[skip-zero]

Skip items with total count zero

### 1.2.57 show sgs-connections

Command

```
show sgs-connections
```

Parameters

show

Show running system information

sgs-connections

Show SGs interface connections / MMEs

### 1.2.58 show sms-queue

#### Command

```
show sms-queue
```

#### Parameters

show

Show running system information

sms-queue

Display SMSQueue statistics

### 1.2.59 show statistics

#### Command

```
show statistics
```

#### Parameters

show

Show running system information

statistics

Display network statistics

### 1.2.60 show stats [skip-zero]

#### Command

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

#### Parameters

show

Show running system information

stats

Show statistical values

[skip-zero]

Skip items with total count zero

---

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

#### Command

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

#### Parameters

##### show

Show running system information

##### stats

Show statistical values

##### level

Set the maximum group level

##### global

Show global groups only

##### peer

Show global and network peer related groups

##### subscriber

Show global, peer, and subscriber groups

##### [skip-zero]

Skip items with total count zero

### 1.2.62 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

### 1.2.63 **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

### 1.2.64 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

### 1.2.65 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

### 1.2.66 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)



### 1.2.67 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'.

### 1.2.68 show transaction

#### Command

```
show transaction
```

#### Parameters

##### show

Show running system information

##### transaction

Transactions

### 1.2.69 show uptime

#### Command

```
show uptime
```

#### Parameters

##### show

Show running system information

##### uptime

Displays how long the program has been running

### 1.2.70 show version

#### Command

```
show version
```

#### Parameters

##### show

Show running system information

##### version

Displays program version

### 1.2.71 sms delete expired

#### Command

```
sms delete expired
```

#### Parameters

##### sms

SMS related commands

##### delete

SMS Database related commands

##### expired

Delete all expired SMS

### 1.2.72 sms send pending

Command

```
sms send pending
```

Parameters

sms

SMS related commands

send

SMS Sending related commands

pending

Send all pending SMS

### 1.2.73 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

### 1.2.74 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

### 1.2.75 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)

### 1.2.76 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|sdcc) (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)

---

### 1.2.77 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

### 1.2.78 subscriber (msisdn|extension|imsi|tmsi|id) ID silent-sms sender (msisdn|extension|imsi|tmsi|id) SENDER\_ID send .LINE

#### 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

### 1.2.79 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

---

### 1.2.80 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

### 1.2.81 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)

### 1.2.82 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

### 1.2.83 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 **asci (initiate|terminate) (vgc|vbc) CALLREF**

Command

```
asci (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 disable

Command

```
disable
```

Parameters

disable

Turn off privileged mode command

### 1.3.5 logging color (0|1)

Command

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

Parameters

logging

Configure logging

color

Configure color-printing for log messages

0

Don't use color for printing messages

1

Use color for printing messages

### 1.3.6 logging disable

Command

```
logging disable
```

Parameters

logging

Configure logging

disable

Disables logging to this vty

### 1.3.7 logging enable

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

Command

```
logging enable
```

Parameters

logging

Configure logging

enable

Enables logging to this vty

### 1.3.8 logging filter all (0|1)

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

Command

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

Parameters

logging

Configure logging

filter

Filter log messages

all

Do you want to log all messages?

0

Only print messages matched by other filters

1

Bypass filter and print all messages

---

### 1.3.9 logging filter 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

### 1.3.10 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|global|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats| ↔  
lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal| ↔  
liuup|lpfcp|lcsn1|lio) (debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

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

---

Insdata

GPRS NS layer data PDU

Inssignal

GPRS NS layer signal PDU

Iuuup

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

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

force-all

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

debug

Log debug messages and higher levels

---

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

set-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

---

### 1.3.13 logging print category (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

category

Configure log message

0

Don't prefix each log message

1

Prefix each log message with category/subsystem name

### 1.3.14 logging print category-hex (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

category-hex

Configure log message

0

Don't prefix each log message

1

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

---

### 1.3.15 logging print extended-timestamp (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

extended-timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

Command

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

Parameters

logging

Configure logging

print

Log output settings

file

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the source file and line

basename

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

[last]

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

---

### 1.3.17 logging print level (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

level

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the log level name

### 1.3.18 logging print thread-id (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

thread-id

Configure log message logging Thread ID

0

Don't prefix each log message

1

Prefix each log message with current Thread ID

### 1.3.19 logging set-log-mask MASK

Command

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

Parameters

logging

Configure logging

set-log-mask

Set the logmask of this logging target

MASK

List of logging categories to log, e.g. 'abc:mno:xyz'. Available log categories depend on the specific application, refer to the 'logging level' command. Optionally add individual log levels like 'abc,1:mno,3:xyz,5', where the level numbers are LOGL\_DEBUG=1 LOGL\_INFO=3 LOGL\_NOTICE=5 LOGL\_ERROR=7 LOGL\_FATAL=8

### 1.3.20 logging timestamp (0|1)

Command

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

Parameters

logging

Configure logging

timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

### 1.3.21 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 ↵
    |lscpp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|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  
libosmocore IO Subsystem

debug  
Log debug messages and higher levels

info  
Log informational messages and higher levels

notice  
Log noticeable messages and higher levels

error  
Log error messages and higher levels

fatal  
Log only fatal messages

.LOGMESSAGE  
Arbitrary message to log on given category and log level

---

### 1.3.22 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

### 1.3.23 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

### 1.3.24 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

### 1.3.25 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>'

### 1.3.26 show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

### 1.3.27 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

### 1.3.28 show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

### 1.3.29 show bsc

Command

```
show bsc
```

Parameters

show

Show running system information

bsc

BSC

### 1.3.30 show connection [trans]

Command

```
show connection [trans]
```

Parameters

show

Show running system information

connection

Subscriber Connections

[trans]

Show child transactions of each connection

### 1.3.31 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)

---

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

[<0-65534>]

Port Number

### 1.3.33 show cs7 config

Command

```
show cs7 config
```

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

config

Currently running cs7 configuration

### 1.3.34 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

### 1.3.35 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)



### 1.3.36 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

### 1.3.37 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

---

### 1.3.38 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

### 1.3.39 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)

---

### 1.3.40 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

### 1.3.41 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

---

### 1.3.42 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

### 1.3.43 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

### 1.3.44 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

### 1.3.45 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

### 1.3.46 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

### 1.3.47 show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

### 1.3.48 show logging vty

Command

```
show logging vty
```

Parameters

show

Show running system information

logging

Show current logging configuration

vtty

Show current logging configuration for this vty

### 1.3.49 show mgw-pool

Command

```
show mgw-pool
```

Parameters

show

Show running system information

mgw-pool

Display information about the MGW-Pool

### 1.3.50 show neighbor

Command

```
show neighbor
```

Parameters

show

Show running system information

neighbor

Show Handover targets

### 1.3.51 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

### 1.3.52 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

### 1.3.53 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



### 1.3.54 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

### 1.3.55 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

### 1.3.56 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

### 1.3.57 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

### 1.3.58 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

### 1.3.59 show nri

#### Command

```
show nri
```

#### Parameters

show

Show running system information

nri

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

### 1.3.60 show online-help

#### Command

```
show online-help
```

#### Parameters

show

Show running system information

online-help

Online help

### 1.3.61 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

### 1.3.62 show sgs-connections

#### Command

```
show sgs-connections
```

#### Parameters

show

Show running system information

sgs-connections

Show SGs interface connections / MMEs

### 1.3.63 show sms-queue

#### Command

```
show sms-queue
```

#### Parameters

show

Show running system information

sms-queue

Display SMSQueue statistics

### 1.3.64 show startup-config

Command

```
show startup-config
```

Parameters

show

Show running system information

startup-config

Contentes of startup configuration

### 1.3.65 show statistics

Command

```
show statistics
```

Parameters

show

Show running system information

statistics

Display network statistics

### 1.3.66 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

---

### 1.3.67 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

### 1.3.68 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

### 1.3.69 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

### 1.3.70 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

### 1.3.71 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

### 1.3.72 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)

### 1.3.73 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'.

### 1.3.74 show transaction

#### Command

```
show transaction
```

#### Parameters

##### show

Show running system information

##### transaction

Transactions

---

### 1.3.75 show version

#### Command

```
show version
```

#### Parameters

##### show

Show running system information

##### version

Displays program version

### 1.3.76 shutdown

#### Command

```
shutdown
```

#### Parameters

##### shutdown

Request a shutdown of the program

### 1.3.77 sms delete expired

#### Command

```
sms delete expired
```

#### Parameters

##### sms

SMS related commands

##### delete

SMS Database related commands

##### expired

Delete all expired SMS

### 1.3.78 sms send pending

Command

```
sms send pending
```

Parameters

sms

SMS related commands

send

SMS Sending related commands

pending

Send all pending SMS

### 1.3.79 sms-queue clear

Command

```
sms-queue clear
```

Parameters

sms-queue

SMS Queue

clear

Clear the queue of pending SMS

### 1.3.80 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

### 1.3.81 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

### 1.3.82 sms-queue trigger

Command

```
sms-queue trigger
```

Parameters

sms-queue

SMS Queue

trigger

Trigger sending messages

### 1.3.83 stats report

Command

```
stats report
```

Parameters

stats

Stats related commands

report

Manurally trigger reporting of stats

### 1.3.84 stats reset

#### Command

```
stats reset
```

#### Parameters

##### stats

Stats related commands

##### reset

Reset all rate counter stats

### 1.3.85 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

### 1.3.86 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

---

### 1.3.87 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

### 1.3.88 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)

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

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)

### 1.3.90 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

### 1.3.91 subscriber (msisdn|extension|imsi|tmsi|id) ID silent-sms sender (msisdn|extension|imsi|tmsi|id) SENDER\_ID send .LINE

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

### 1.3.92 **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.

### 1.3.93 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

### 1.3.94 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

### 1.3.95 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

### 1.3.96 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)

### 1.3.97 terminal monitor

Command

```
terminal monitor
```

Parameters

terminal

Set terminal line parameters

monitor

Copy debug output to the current terminal line

### 1.3.98 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

### 1.3.99 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

---



### 1.3.100 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|global|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats| ↔
lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal| ↔
liuup|lpfcp|lcsn1|lio) (debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

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

---

Insdata

GPRS NS layer data PDU

Inssignal

GPRS NS layer signal PDU

Iuuup

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 SCTP port number

<0-65535>

Local SCTP port number

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

### 1.9.3 description .TEXT

Command

```
description .TEXT
```

Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line

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

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

network-indicator

Configure the Network Indicator

international

International Network

national

National Network

reserved

Reserved Network

spare

Spare Network

### 1.9.5 no as NAME

Command

```
no as NAME
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

as

Disable Application Server

NAME

Name of AS

### 1.9.6 no asp NAME

Command

```
no asp NAME
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

asp

Disable Application Server Process

NAME

Name of ASP

### 1.9.7 no sccp-address NAME

Command

```
no sccp-address NAME
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

sccp-address

Delete an SCCP addressbook entry

NAME

Name of the SCCP Address

### 1.9.8 point-code POINT\_CODE

Command

```
point-code POINT_CODE
```

Global attributes

Flag: !

This command applies immediately

Parameters

point-code

Configure the local Point Code

POINT\_CODE

Point Code

### 1.9.9 point-code delimiter (default|dash)

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

point-code

Point Code

delimiter

Configure Point Code Delimiter

default

Use dot as delimiter

dash

User dash as delimiter

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

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

point-code

Point Code

format

Configure Point Code Format

<1-24>

Length of first PC component

[<1-23>]

Length of second PC component

[<1-22>]

Length of third PC component

### 1.9.11 point-code format default

Command

```
point-code format default
```

Global attributes

Flag: !

This command applies immediately

Parameters

point-code

Point Code

format

Configure Point Code Format

default

Default Point Code Format (3.8.3)

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

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

sccp

Configure SCCP behavior

max-optional-data

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

<0-999999>

Set a non-standard maximum allowed number of bytes

standard

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

---

### 1.9.13 sccp-address NAME

Command

```
sccp-address NAME
```

Global attributes

Flag: !

This command applies immediately

Parameters

sccp-address

Create/Modify an SCCP addressbook entry

NAME

Name of the SCCP Address

### 1.9.14 sccp-timer (conn\_est|ias|iar|rel|repeat\_rel|int|guard|reset|reassembly) <1-99999...

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

sccp-timer

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

conn\_est

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

ias

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

iar

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

rel

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

repeat\_rel

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

---

**int**

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

**guard**

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

**reset**

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

**reassembly**

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

**<1-999999>**

Timer value, in seconds

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

**Command**

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

**Global attributes****Flag: !**

This command applies immediately

**Parameters****xua**

SIGTRAN xxxUA related

**rkm**

Routing Key Management

**routing-key-allocation**

Routing Key Management Allocation Policy

**static-only**

Only static (pre-configured) Routing Keys permitted

**dynamic-permitted**

Dynamically allocate Routing Keys for what ASPs request

---



## 1.10 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 sctp-role (client|server)

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

sctp-role

Specify the SCTP role for this ASP

client

Operate as SCTP client; connect to a server

server

Operate as SCTP server; wait for client connections

### 1.11.14 shutdown

Command

```
shutdown
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

shutdown

Terminates SCTP association; New associations will be rejected

### 1.11.15 timer lm (wait\_asp\_up|wait\_notify|wait\_notify\_rkm|wait\_rk\_reg\_resp) <1-999999>

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

timer

Configure ASP default timer values

lm

Configure ASP default lm timer values

wait\_asp\_up

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

wait\_notify

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

wait\_notify\_rkm

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

wait\_rk\_reg\_resp

Restart ASP after timeout waiting for RK\_REG\_RESP (s) (default: 10)

<1-999999>

Timer value, in seconds

## 1.12 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 ncsc guard-timeout <0-255>

Command

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

Parameters

ncsc

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

&lt;0-65535&gt;

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

&lt;0-65535&gt;

LAC

&lt;0-65535&gt;

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 'MSC-00-00-00-00-00-00'.

### 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