

OsmoBSCNAT 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

Command

```
list
```

Parameters

list

Print command list

1.1.5 show running-config

Command

```
show running-config
```

Parameters

show

Show running system information

running-config

running configuration

1.1.6 write

Command

```
write
```

Parameters

write

Write running configuration to memory, network, or terminal

1.1.7 write file

Command

```
write file
```

Parameters

write

Write running configuration to memory, network, or terminal

file

Write to configuration file

1.1.8 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)

1.1.9 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 close bsc connection BSC_NR

Command

```
close bsc connection BSC_NR
```

Parameters

close

Close

bsc

A-link

connection

Connection

BSC_NR

Identifier of the BSC

1.2.2 enable

Command

```
enable
```

Parameters

enable

Turn on privileged mode command

1.2.3 logging color (0|1)

Command

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

Parameters

logging

Configure logging

color

Configure color-printing for log messages

0

Don't use color for printing messages

1

Use color for printing messages

1.2.4 logging disable

Command

```
logging disable
```

Parameters

logging

Configure logging

disable

Disables logging to this vty

1.2.5 logging enable

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

Command

```
logging enable
```

Parameters

logging

Configure logging

enable

Enables logging to this vty

1.2.6 logging filter all (0|1)

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

Command

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

Parameters

logging

Configure logging

filter

Filter log messages

all

Do you want to log all messages?

0

Only print messages matched by other filters

1

Bypass filter and print all messages

1.2.7 logging level (rll|cc|mm|rr|rs|nm|mncc|pag|meas|sccp|msc|mgcp|ho|db|ref|gprs|ns...

Command

```
logging level (rll|cc|mm|rr|rs|nm|mncc|pag|meas|sccp|msc|mgcp|ho|db|ref|gprs|ns|bssgp| ↵
l1c|sndcp|nat|ctrl|smpp|filter|ranap|sua|pcu|lgloba1|llapd|linp|lmux|lmi|lmib|lsms| ↵
lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro) (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)

mm	Layer3 Mobility Management (MM)
rr	Layer3 Radio Resource (RR)
rsl	A-bis Radio Siganlling Link (RSL)
nm	A-bis Network Management / O&M (NM/OML)
mncc	MNCC API for Call Control application
pag	Paging Subsystem
meas	Radio Measurement Processing
sccp	SCCP Protocol
msc	Mobile Switching Center
mgcp	Media Gateway Control Protocol
ho	Hand-Over
db	Database Layer
ref	Reference Counting
gprs	GPRS Packet Service
ns	GPRS Network Service (NS)
bssgp	GPRS BSS Gateway Protocol (BSSGP)
llc	GPRS Logical Link Control Protocol (LLC)
sndcp	GPRS Sub-Network Dependent Control Protocol (SNDCP)
nat	GSM 08.08 NAT/Multiplexer

ctrl	Control interface
smpp	SMPP interface for external SMS apps
filter	BSC/NAT IMSI based filtering
ranap	Radio Access Network Application Part Protocol
sua	SCCP User Adaptation Protocol
pcu	PCU Interface
lglobal	Library-internal global log family
llapd	LAPD in libosmogsm
linp	A-bis Input Subsystem
lmux	A-bis B-Subchannel TRAU Frame Multiplex
lmi	A-bis Input Driver for Signalling
lmib	A-bis Input Driver for B-Channels (voice)
lsms	Layer3 Short Message Service (SMS)
lctrl	Control Interface
lgtp	GPRS GTP library
lstats	Statistics messages and logging
lgsup	Generic Subscriber Update Protocol
loap	Osmocom Authentication Protocol
lss7	libosmo-sigtran Signalling System 7

lsccp	libosmo-sigtran SCCP Implementation
lsua	libosmo-sigtran SCCP User Adaptation
lm3ua	libosmo-sigtran MTP3 User Adaptation
lmgcp	libosmo-mgcp Media Gateway Control Protocol
ljibuf	libosmo-netif Jitter Buffer
lrspro	Remote SIM protocol
debug	Log debug messages and higher levels
info	Log informational messages and higher levels
notice	Log noticeable messages and higher levels
error	Log error messages and higher levels
fatal	Log only fatal messages

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 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

1.2.16 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

1.2.17 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>'

1.2.18 show access-list NAME

Command

```
show access-list NAME
```

Parameters

show

Show running system information

access-list

IMSI access list

NAME

Name of the access list

1.2.19 show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

1.2.20 show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

1.2.21 show bsc connections

Command

```
show bsc connections
```

Parameters

show

Show running system information

bsc

Information about BSCs

connections

All active connections

1.2.22 show bsc mgcp NR

Command

```
show bsc mgcp NR
```

Parameters

show

Show running system information

bsc

Information about BSCs

mgcp

MGCP related status

NR

Identifier of the BSC

1.2.23 show bsc status (nr|token|lac|all) [IDENT]

Command

```
show bsc status (nr|token|lac|all) [IDENT]
```

Parameters

show

Show running system information

bsc

Information about BSCs

status

Status of BSC

nr

Identify BSC by nr

token

Identify BSC by token

lac

Identify BSC by lac

all

Show all BSC

[IDENT]

NR/token/lac of the BSC

1.2.24 show bscs-config

Command

```
show bscs-config
```

Parameters

show

Show running system information

bscs-config

Show configured BSCs

1.2.25 show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

1.2.26 show imsi-black-list

Command

```
show imsi-black-list
```

Parameters

show

Show running system information

imsi-black-list

IMSIIs barred from the network

1.2.27 show logging vty

Command

```
show logging vty
```

Parameters

show

Show running system information

logging

Show current logging configuration

vtv

Show current logging configuration for this vty

1.2.28 show mgcp [stats]

Command

```
show mgcp [stats]
```

Parameters

show

Show running system information

mgcp

Display information about the MGCP Media Gateway

[stats]

Include Statistics

1.2.29 show msc connection

Command

```
show msc connection
```

Parameters

show

Show running system information

msc

MSC related information

connection

Status of the A-link connection

1.2.30 show nat num-bscs-configured

Command

```
show nat num-bscs-configured
```

Parameters

show

Show running system information

nat

Display NAT configuration details

num-bscs-configured

BSCs-related

1.2.31 show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

1.2.32 show prefix-tree

Command

```
show prefix-tree
```

Parameters

show

Show running system information

prefix-tree

Prefix tree for number rewriting

1.2.33 show rate-counters

Command

```
show rate-counters
```

Parameters

show

Show running system information

rate-counters

Show all rate counters

1.2.34 show sccp connections

Command

```
show sccp connections
```

Parameters

show

Show running system information

sccp

Display information about SCCP

connections

All active connections

1.2.35 show stats

Command

```
show stats
```

Parameters

show

Show running system information

stats

Show statistical values

1.2.36 show stats level (global|peer|subscriber)

Command

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

Parameters

show

Show running system information

stats

Show statistical values

level

Set the maximum group level

global

Show global groups only

peer

Show global and network peer related groups

subscriber

Show global, peer, and subscriber groups

1.2.37 show ussd-connection

Command

```
show ussd-connection
```

Parameters

show

Show running system information

ussd-connection

USSD connection related information

1.2.38 show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

1.2.39 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)

1.2.40 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

1.2.41 test regex PATTERN STRING

Command

```
test regex PATTERN STRING
```

Parameters

test

Test utilities

regex

Regex testing

PATTERN

The regexp pattern

STRING

The string to match

1.2.42 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 close bsc connection BSC_NR

Command

```
close bsc connection BSC_NR
```

Parameters

close

Close

bsc

A-link

connection

Connection

BSC_NR

Identifier of the BSC

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 free-endpoint <0-64> NUMBER

Command

```
free-endpoint <0-64> NUMBER
```

Parameters

free-endpoint

Free the given endpoint

<0-64>

Trunk number

NUMBER

Endpoint number in hex.

1.3.6 logging color (0|1)

Command

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

Parameters

logging

Configure logging

color

Configure color-printing for log messages

0

Don't use color for printing messages

1

Use color for printing messages

1.3.7 logging disable

Command

```
logging disable
```

Parameters

logging

Configure logging

disable

Disables logging to this vty

1.3.8 logging enable

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

Command

```
logging enable
```

Parameters

logging

Configure logging

enable

Enables logging to this vty

1.3.9 logging filter all (0|1)

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

Command

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

Parameters

logging

Configure logging

filter

Filter log messages

all

Do you want to log all messages?

0

Only print messages matched by other filters

1

Bypass filter and print all messages

1.3.10 logging level (rll|cc|mm|rr|rs|nm|mncc|pag|meas|sccp|msc|mgcp|ho|db|ref|gprs|ns...

Command

```
logging level (rll|cc|mm|rr|rs|nm|mncc|pag|meas|sccp|msc|mgcp|ho|db|ref|gprs|ns|bssgp| ←
l1c|sndcp|nat|ctrl|smpp|filter|ranap|sua|pcu|lgloba1|llapd|linp|lmux|lmi|lmib|lsms| ←
lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro) (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)

mm	Layer3 Mobility Management (MM)
rr	Layer3 Radio Resource (RR)
rsl	A-bis Radio Siganlling Link (RSL)
nm	A-bis Network Management / O&M (NM/OML)
mncc	MNCC API for Call Control application
pag	Paging Subsystem
meas	Radio Measurement Processing
sccp	SCCP Protocol
msc	Mobile Switching Center
mgcp	Media Gateway Control Protocol
ho	Hand-Over
db	Database Layer
ref	Reference Counting
gprs	GPRS Packet Service
ns	GPRS Network Service (NS)
bssgp	GPRS BSS Gateway Protocol (BSSGP)
llc	GPRS Logical Link Control Protocol (LLC)
sndcp	GPRS Sub-Network Dependent Control Protocol (SNDCP)
nat	GSM 08.08 NAT/Multiplexer

ctrl	Control interface
smpp	SMPP interface for external SMS apps
filter	BSC/NAT IMSI based filtering
ranap	Radio Access Network Application Part Protocol
sua	SCCP User Adaptation Protocol
pcu	PCU Interface
lglobal	Library-internal global log family
llapd	LAPD in libosmogsm
linp	A-bis Input Subsystem
lmux	A-bis B-Subchannel TRAU Frame Multiplex
lmi	A-bis Input Driver for Signalling
lmib	A-bis Input Driver for B-Channels (voice)
lsms	Layer3 Short Message Service (SMS)
lctrl	Control Interface
lgtp	GPRS GTP library
lstats	Statistics messages and logging
lgsup	Generic Subscriber Update Protocol
loap	Osmocom Authentication Protocol
lss7	libosmo-sigtran Signalling System 7

lsccp	libosmo-sigtran SCCP Implementation
lsua	libosmo-sigtran SCCP User Adaptation
lm3ua	libosmo-sigtran MTP3 User Adaptation
lmgcp	libosmo-mgcp Media Gateway Control Protocol
ljibuf	libosmo-netif Jitter Buffer
lrspro	Remote SIM protocol
debug	Log debug messages and higher levels
info	Log informational messages and higher levels
notice	Log noticeable messages and higher levels
error	Log error messages and higher levels
fatal	Log only fatal messages

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 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

1.3.19 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

1.3.20 loop-endpoint <0-64> NAME (0|1)

Command

```
loop-endpoint <0-64> NAME (0|1)
```

Parameters

loop-endpoint

Loop a given endpoint

<0-64>

Trunk number

NAME

The name in hex of the endpoint

0

Disable the loop

1

Enable the loop

1.3.21 nat-block (block|unblock)

Command

```
nat-block (block|unblock)
```

Parameters

nat-block

Block the NAT for new connections

block

Block

unblock

Unblock

1.3.22 no logging level force-all

Command

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

Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

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

1.3.23 reset-all-endpoints

Command

```
reset-all-endpoints
```

Parameters

reset-all-endpoints

Reset all endpoints

1.3.24 reset-endpoint <0-64> NUMBER

Command

```
reset-endpoint <0-64> NUMBER
```

Parameters

reset-endpoint

Reset the given endpoint

<0-64>

Trunk number

NUMBER

Endpoint number in hex.

1.3.25 set bsc last-used-endpoint <0-999999999> <0-1024>

Command

```
set bsc last-used-endpoint <0-999999999> <0-1024>
```

Parameters

set

Set a value

bsc

Operate on a BSC

last-used-endpoint

Last used endpoint for an assignment

<0-999999999>

BSC configuration number

<0-1024>

Endpoint number used

1.3.26 show access-list NAME

Command

```
show access-list NAME
```

Parameters

show

Show running system information

access-list

IMSI access list

NAME

Name of the access list

1.3.27 show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

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 connections

Command

```
show bsc connections
```

Parameters

show

Show running system information

bsc

Information about BSCs

connections

All active connections

1.3.30 show bsc mgcp NR

Command

```
show bsc mgcp NR
```

Parameters

show

Show running system information

bsc

Information about BSCs

mgcp

MGCP related status

NR

Identifier of the BSC

1.3.31 show bsc status (nr|token|lac|all) [IDENT]

Command

```
show bsc status (nr|token|lac|all) [IDENT]
```

Parameters

show

Show running system information

bsc

Information about BSCs

status

Status of BSC

nr

Identify BSC by nr

token

Identify BSC by token

lac

Identify BSC by lac

all

Show all BSC

[IDENT]

NR/token/lac of the BSC

1.3.32 show bscs-config

Command

```
show bscs-config
```

Parameters

show

Show running system information

bscs-config

Show configured BSCs

1.3.33 show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

1.3.34 show imsi-black-list

Command

```
show imsi-black-list
```

Parameters

show

Show running system information

imsi-black-list

IMSIIs barred from the network

1.3.35 show logging vty

Command

```
show logging vty
```

Parameters

show

Show running system information

logging

Show current logging configuration

vtv

Show current logging configuration for this vty

1.3.36 show mgcp [stats]

Command

```
show mgcp [stats]
```

Parameters

show

Show running system information

mgcp

Display information about the MGCP Media Gateway

[stats]

Include Statistics

1.3.37 show msc connection

Command

```
show msc connection
```

Parameters

show

Show running system information

msc

MSC related information

connection

Status of the A-link connection

1.3.38 show nat num-bscs-configured

Command

```
show nat num-bscs-configured
```

Parameters

show

Show running system information

nat

Display NAT configuration details

num-bscs-configured

BSCs-related

1.3.39 show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

1.3.40 show prefix-tree

Command

```
show prefix-tree
```

Parameters

show

Show running system information

prefix-tree

Prefix tree for number rewriting

1.3.41 show rate-counters

Command

```
show rate-counters
```

Parameters

show

Show running system information

rate-counters

Show all rate counters

1.3.42 show sccp connections

Command

```
show sccp connections
```

Parameters

show

Show running system information

sccp

Display information about SCCP

connections

All active connections

1.3.43 show startup-config

Command

```
show startup-config
```

Parameters

show

Show running system information

startup-config

Contentes of startup configuration

1.3.44 show stats

Command

```
show stats
```

Parameters

show

Show running system information

stats

Show statistical values

1.3.45 show stats level (global|peer|subscriber)

Command

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

Parameters

show

Show running system information

stats

Show statistical values

level

Set the maximum group level

global

Show global groups only

peer

Show global and network peer related groups

subscriber

Show global, peer, and subscriber groups

1.3.46 show ussd-connection

Command

```
show ussd-connection
```

Parameters

show

Show running system information

ussd-connection

USSD connection related information

1.3.47 show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

1.3.48 tap-call <0-64> ENDPOINT (bts-in|bts-out|net-in|net-out) A.B.C.D <0-65534>

Command

```
tap-call <0-64> ENDPOINT (bts-in|bts-out|net-in|net-out) A.B.C.D <0-65534>
```

Parameters

tap-call

Forward data on endpoint to a different system

<0-64>

Trunk number

ENDPOINT

The endpoint in hex

bts-in

Forward the data coming from the bts

bts-out

Forward the data coming from the bts leaving to the network

net-in

Forward the data coming from the net

net-out

Forward the data coming from the net leaving to the bts

A.B.C.D

destination IP of the data

<0-65534>

destination port

1.3.49 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)

1.3.50 terminal monitor

Command

```
terminal monitor
```

Parameters

terminal

Set terminal line parameters

monitor

Copy debug output to the current terminal line

1.3.51 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

1.3.52 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

1.3.53 test regex PATTERN STRING

Command

```
test regex PATTERN STRING
```

Parameters

test

Test utilities

regex

Regexp testing

PATTERN

The regexp pattern

STRING

The string to match

1.3.54 who

Command

```
who
```

Parameters

who

Display who is on vty

1.4 config

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

1.4.1 banner motd default

Command

```
banner motd default
```

Parameters

banner

Set banner string

motd

Strings for motd

default

Default string

1.4.2 banner motd file [FILE]

Command

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

Parameters

banner

Set banner

motd

Banner for motd

file

Banner from a file

[FILE]

Filename

1.4.3 ctrl

Command

```
ctrl
```

Parameters

ctrl

Configure the Control Interface

1.4.4 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

1.4.5 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

1.4.6 hostname WORD

Command

```
hostname WORD
```

Parameters

hostname

Set system's network name

WORD

This system's network name

1.4.7 line vty

Command

```
line vty
```

Parameters

line

Configure a terminal line

vtty

Virtual terminal

1.4.8 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

1.4.9 log file .FILENAME

Command

```
log file .FILENAME
```

Parameters

log

Configure logging sub-system

file

Logging to text file

.FILENAME

Filename

1.4.10 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)

1.4.11 log stderr

Command

```
log stderr
```

Parameters

log

Configure logging sub-system

stderr

Logging via STDERR of the process

1.4.12 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

1.4.13 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

1.4.14 mgcp

Command

```
mgcp
```

Parameters

mgcp
Configure the MGCP

1.4.15 nat

Command

```
nat
```

Parameters

nat

Configure the NAT

1.4.16 no banner motd

Command

```
no banner motd
```

Parameters

no

Negate a command or set its defaults

banner

Set banner string

motd

Strings for motd

1.4.17 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

1.4.18 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

1.4.19 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

1.4.20 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

1.4.21 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

1.4.22 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

1.4.23 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

1.4.24 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)

1.4.25 no stats reporter log

Command

```
no stats reporter log
```

Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

1.4.26 no stats reporter statsd

Command

```
no stats reporter statsd
```

Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

1.4.27 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

1.4.28 password LINE

Command

```
password LINE
```

Parameters

password

Assign the terminal connection password

LINE

The UNENCRYPTED (cleartext) line password

1.4.29 service advanced-vty

Command

```
service advanced-vty
```

Parameters

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

1.4.30 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)

1.4.31 show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

1.4.32 stats interval <1-65535>

Command

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

Parameters

stats

Configure stats sub-system

interval

Set the reporting interval

<1-65535>

Interval in seconds

1.4.33 stats reporter log

Command

```
stats reporter log
```

Parameters

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

1.4.34 stats reporter statsd

Command

```
stats reporter statsd
```

Parameters

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

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 level (rll|cc|mm|rr|rsl|nm|mncc|pag|meas|sccp|msc|mgcp|ho|db|ref|gprs|ns...

Command

```
logging level (rll|cc|mm|rr|rsl|nm|mncc|pag|meas|sccp|msc|mgcp|ho|db|ref|gprs|ns|bssgp|
llc|sndcp|nat|ctrl|smpp|filter|ranap|sua|pcu|lglobal|llapd|linp|lmux|lmi|lmib|lsms|
lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro) (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)

mm

Layer3 Mobility Management (MM)

rr

Layer3 Radio Resource (RR)

rsl

A-bis Radio Siganlling Link (RSL)

nm

A-bis Network Management / O&M (NM/OML)

mncc

MNCC API for Call Control application

pag

Paging Subsystem

meas

Radio Measurement Processing

sccp

SCCP Protocol

msc

Mobile Switching Center

mgcp

Media Gateway Control Protocol

ho

Hand-Over

db
Database Layer

ref
Reference Counting

gprs
GPRS Packet Service

ns
GPRS Network Service (NS)

bssgp
GPRS BSS Gateway Protocol (BSSGP)

llc
GPRS Logical Link Control Protocol (LLC)

sndcp
GPRS Sub-Network Dependent Control Protocol (SNDCP)

nat
GSM 08.08 NAT/Multiplexer

ctrl
Control interface

smpp
SMPP interface for external SMS apps

filter
BSC/NAT IMSI based filtering

ranap
Radio Access Network Application Part Protocol

sua
SCCP User Adaptation Protocol

pcu
PCU Interface

lglobal
Library-internal global log family

llapd
LAPD in libosmogsm

linp
A-bis Input Subsystem

lmux
A-bis B-Subchannel TRAU Frame Multiplex

lmi
A-bis Input Driver for Signalling

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

lsms
Layer3 Short Message Service (SMS)

lctrl
Control Interface

lgtp
GPRS GTP library

lstats
Statistics messages and logging

lgsup
Generic Subscriber Update Protocol

loap
Osmocom Authentication Protocol

lss7
libosmo-sigtran Signalling System 7

lsccp
libosmo-sigtran SCCP Implementation

lsua
libosmo-sigtran SCCP User Adaptation

lm3ua
libosmo-sigtran MTP3 User Adaptation

lmgcp
libosmo-mgcp Media Gateway Control Protocol

ljibuf
libosmo-netif Jitter Buffer

lrspro
Remote SIM protocol

debug
Log debug messages and higher levels

info
Log informational messages and higher levels

notice
Log noticeable messages and higher levels

error
Log error messages and higher levels

fatal
Log only fatal messages

1.5.4 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

1.5.5 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

1.5.6 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

1.5.7 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>')

1.5.8 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

1.5.9 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.

1.5.10 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

1.5.11 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

1.5.12 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 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

1.6.4 local-ip ADDR

Command

```
local-ip ADDR
```

Parameters

local-ip

Set the IP address to which we bind locally

ADDR

IP Address

1.6.5 mtu <100-65535>

Command

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

Parameters

mtu

Set the maximum packet size

<100-65535>

Size in byte

1.6.6 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

1.6.7 no mtu

Command

```
no mtu
```

Parameters

no

Negate a command or set its defaults

mtu

Set the maximum packet size

1.6.8 no prefix

Command

```
no prefix
```

Parameters

no

Negate a command or set its defaults

prefix

Set the item name prefix

1.6.9 prefix PREFIX

Command

```
prefix PREFIX
```

Parameters

prefix

Set the item name prefix

PREFIX

The prefix string

1.6.10 remote-ip ADDR

Command

```
remote-ip ADDR
```

Parameters

remote-ip

Set the remote IP address to which we connect

ADDR

IP Address

1.6.11 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

Command

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

Parameters

bind

Set bind address to listen for Control connections

A.B.C.D

Local IP address (default 127.0.0.1)

1.9 config-mgcp

1.9.1 allow-transcoding

Command

```
allow-transcoding
```

Parameters

allow-transcoding

Allow transcoding

1.9.2 bind early (0|1)

Command

```
bind early (0|1)
```

Parameters

bind

Listen/Bind related socket option

early

Bind local ports on start up

0

Bind on demand

1

Bind on startup

1.9.3 bind ip A.B.C.D

Command

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

Parameters

bind

Listen/Bind related socket option

ip

IP information

A.B.C.D

IPv4 Address to bind to

1.9.4 bind port <0-65534>

Command

```
bind port <0-65534>
```

Parameters

bind

Listen/Bind related socket option

port

Port information

<0-65534>

UDP port to listen for MGCP messages

1.9.5 bts ip A.B.C.D

Command

```
bts ip A.B.C.D
```

Parameters

bts

BTS Audio source/destination options

ip

IP information

A.B.C.D

IPv4 Address of the BTS

1.9.6 **bts-jitter-buffer**

Command

```
bts-jitter-buffer
```

Parameters

bts-jitter-buffer

Uplink Jitter Buffer

1.9.7 **bts-jitter-buffer-delay-max <1-65535>**

Command

```
bts-jitter-buffer-delay-max <1-65535>
```

Parameters

bts-jitter-buffer-delay-max

Uplink Jitter Buffer Maximum Delay in ms

<1-65535>

Maximum Delay in ms

1.9.8 **bts-jitter-buffer-delay-min <1-65535>**

Command

```
bts-jitter-buffer-delay-min <1-65535>
```

Parameters

bts-jitter-buffer-delay-min

Uplink Jitter Buffer Minimum Delay in ms

<1-65535>

Minimum Delay in ms

1.9.9 call-agent ip A.B.C.D

Command

```
call-agent ip A.B.C.D
```

Parameters

call-agent

Callagent information

ip

IP information

A.B.C.D

IPv4 Address of the callagent

1.9.10 force-realloc (0|1)

Command

```
force-realloc (0|1)
```

Parameters

force-realloc

Force endpoint reallocation when the endpoint is still seized

0

Don't force reallocation

1

force reallocation

1.9.11 local ip A.B.C.D

Command

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

Parameters

local

Local options for the SDP record

ip

IP information

A.B.C.D

IPv4 Address to use in SDP record

1.9.12 loop (0|1)

Command

```
loop (0|1)
```

Parameters

loop

Loop audio for all endpoints on main trunk

0

Don't Loop

1

Loop

1.9.13 no allow-transcoding

Command

```
no allow-transcoding
```

Parameters

no

Negate a command or set its defaults

allow-transcoding

Allow transcoding

1.9.14 no bts-jitter-buffer

Command

```
no bts-jitter-buffer
```

Parameters

no

Negate a command or set its defaults

bts-jitter-buffer

Uplink Jitter Buffer

1.9.15 no rtcp-omit

Command

```
no rtcp-omit
```

Parameters

no

Negate a command or set its defaults

rtcp-omit

Drop RTCP packets in both directions

1.9.16 no rtp bts-bind-ip

Command

```
no rtp bts-bind-ip
```

Parameters

no

Negate a command or set its defaults

rtp

RTP configuration

bts-bind-ip

Bind endpoints facing the BTS

1.9.17 no rtp force-ptime

Command

```
no rtp force-ptime
```

Parameters

no

Negate a command or set its defaults

rtp

RTP configuration

force-ptime

Force a fixed ptime for packets sent to the BTS

1.9.18 no rtp keep-alive

Command

```
no rtp keep-alive
```

Parameters

no

Negate a command or set its defaults

rtp

RTP configuration

keep-alive

Send dummy UDP packet to net RTP destination

1.9.19 no rtp net-bind-ip

Command

```
no rtp net-bind-ip
```

Parameters

no

Negate a command or set its defaults

rtp

RTP configuration

net-bind-ip

Bind endpoints facing the Network

1.9.20 no rtp-patch

Command

```
no rtp-patch
```

Parameters

no

Negate a command or set its defaults

rtp-patch

Modify RTP packet header in both directions

1.9.21 no rtp-patch ssrc

Command

```
no rtp-patch ssrc
```

Parameters

no

Negate a command or set its defaults

rtp-patch

Modify RTP packet header in both directions

ssrc

Force a fixed SSRC

1.9.22 no rtp-patch timestamp

Command

```
no rtp-patch timestamp
```

Parameters

no

Negate a command or set its defaults

rtp-patch

Modify RTP packet header in both directions

timestamp

Adjust RTP timestamp

1.9.23 no sdp audio-payload send-name

Command

```
no sdp audio-payload send-name
```

Parameters

no

Negate a command or set its defaults

sdp

SDP File related options

audio-payload

Audio payload options

send-name

Send SDP rtpmap with the audio name

1.9.24 no sdp audio-payload send-ptime

Command

```
no sdp audio-payload send-ptime
```

Parameters

no

Negate a command or set its defaults

sdp

SDP File related options

audio-payload

Audio payload options

send-ptime

Send SDP ptime (packet duration) attribute

1.9.25 no transcoder-mgw

Command

```
no transcoder-mgw
```

Parameters

no

Negate a command or set its defaults

transcoder-mgw

Disable the transcoding

1.9.26 number endpoints <0-65534>

Command

```
number endpoints <0-65534>
```

Parameters

number

Number options

endpoints

Endpoints available

<0-65534>

Number endpoints

1.9.27 osmux (on|off|only)

Command

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

Parameters

osmux

RTP multiplexing

on

Enable OSMUX

off

Disable OSMUX

only

Only use OSMUX

1.9.28 osmux batch-factor <1-8>

Command

```
osmux batch-factor <1-8>
```

Parameters

osmux

RTP multiplexing

batch-factor

Batching factor

<1-8>

Number of messages in the batch

1.9.29 osmux batch-size <1-65535>

Command

```
osmux batch-size <1-65535>
```

Parameters

osmux

RTP multiplexing

batch-size

batch size

<1-65535>

Batch size in bytes

1.9.30 osmux bind-ip A.B.C.D

Command

```
osmux bind-ip A.B.C.D
```

Parameters

osmux

RTP multiplexing

bind-ip

IP information

A.B.C.D

IPv4 Address to bind to

1.9.31 osmux dummy (on|off)

Command

```
osmux dummy (on|off)
```

Parameters

osmux

RTP multiplexing

dummy

Dummy padding

on

Enable dummy padding

off

Disable dummy padding

1.9.32 osmux port <1-65535>

Command

```
osmux port <1-65535>
```

Parameters

osmux

RTP multiplexing

port

port

<1-65535>

UDP port

1.9.33 rtcp-omit

Command

```
rtcp-omit
```

Parameters

rtcp-omit

Drop RTCP packets in both directions

1.9.34 rtp bts-base <0-65534>

Command

```
rtp bts-base <0-65534>
```

Parameters

rtp

RTP configuration

bts-base

First UDP port allocated for the BTS side

<0-65534>

UDP Port number

1.9.35 rtp bts-bind-ip A.B.C.D

Command

```
rtp bts-bind-ip A.B.C.D
```

Parameters

rtp

RTP configuration

bts-bind-ip

Bind endpoints facing the BTS

A.B.C.D

Address to bind to

1.9.36 rtp bts-range <0-65534> <0-65534>

Command

```
rtp bts-range <0-65534> <0-65534>
```

Parameters

rtp

RTP configuration

bts-range

Range of ports to use for the BTS side

<0-65534>

Start of the range of ports

<0-65534>

End of the range of ports

1.9.37 rtp force-ptime (10|20|40)

Command

```
rtp force-ptime (10|20|40)
```

Parameters

rtp

RTP configuration

force-ptime

Force a fixed ptime for packets sent to the BTS
The required ptime (packet duration) in ms

10

10 ms

20

20 ms

40

40 ms

1.9.38 rtp ip-dscp <0-255>

Command

```
rtp ip-dscp <0-255>
```

Parameters

rtp

RTP configuration

ip-dscp

Apply IP_TOS to the audio stream (including Osmux)

<0-255>

The DSCP value

1.9.39 rtp keep-alive <1-120>

Command

```
rtp keep-alive <1-120>
```

Parameters

rtp

RTP configuration

keep-alive

Send dummy UDP packet to net RTP destination

<1-120>

Keep alive interval in secs

1.9.40 rtp keep-alive once

Command

```
rtp keep-alive once
```

Parameters

rtp

RTP configuration

keep-alive

Send dummy UDP packet to net RTP destination

once

Send dummy packet only once after CRCX/MDCX

1.9.41 rtp net-base <0-65534>

Command

```
rtp net-base <0-65534>
```

Parameters

rtp

RTP configuration

net-base

First UDP port allocated for the NET side

<0-65534>

UDP Port number

1.9.42 rtp net-bind-ip A.B.C.D

Command

```
rtp net-bind-ip A.B.C.D
```

Parameters

rtp

RTP configuration

net-bind-ip

Bind endpoints facing the Network

A.B.C.D

Address to bind to

1.9.43 rtp net-range <0-65534> <0-65534>

Command

```
rtp net-range <0-65534> <0-65534>
```

Parameters

rtp

RTP configuration

net-range

Range of ports to use for the NET side

<0-65534>

Start of the range of ports

<0-65534>

End of the range of ports

1.9.44 rtp transcoder-base <0-65534>

Command

```
rtp transcoder-base <0-65534>
```

Parameters

rtp

RTP configuration

transcoder-base

First UDP port allocated for the Transcoder side

<0-65534>

UDP Port number

1.9.45 rtp transcoder-range <0-65534> <0-65534>

Command

```
rtp transcoder-range <0-65534> <0-65534>
```

Parameters

rtp

RTP configuration

transcoder-range

Range of ports to use for the Transcoder

<0-65534>

Start of the range of ports

<0-65534>

End of the range of ports

1.9.46 rtp-patch ssrc

Command

```
rtp-patch ssrc
```

Parameters

rtp-patch

Modify RTP packet header in both directions

ssrc

Force a fixed SSRC

1.9.47 rtp-patch timestamp

Command

```
rtp-patch timestamp
```

Parameters

rtp-patch

Modify RTP packet header in both directions

timestamp

Adjust RTP timestamp

1.9.48 sdp audio fntp-extra .NAME

Command

```
sdp audio fntp-extra .NAME
```

Parameters

sdp

Add extra fntp for the SDP file

audio

Audio

fntp-extra

Fntp-extra

.NAME

Extra Information

1.9.49 sdp audio-payload name NAME

Command

```
sdp audio-payload name NAME
```

Parameters

sdp

SDP File related options

audio-payload

Audio payload options

name

Name

NAME

Payload name

1.9.50 sdp audio-payload number <0-255>

Command

```
sdp audio-payload number <0-255>
```

Parameters

sdp

SDP File related options

audio-payload

Audio payload options

number

Number

<0-255>

Payload number

1.9.51 sdp audio-payload send-name

Command

```
sdp audio-payload send-name
```

Parameters

sdp

SDP File related options

audio-payload

Audio payload options

send-name

Send SDP rtpmap with the audio name

1.9.52 sdp audio-payload send-ptime

Command

```
sdp audio-payload send-ptime
```

Parameters

sdp

SDP File related options

audio-payload

Audio payload options

send-ptime

Send SDP ptime (packet duration) attribute

1.9.53 transcoder-mgw A.B.C.D

Command

```
transcoder-mgw A.B.C.D
```

Parameters

transcoder-mgw

Use a MGW to detranscoder RTP

A.B.C.D

The IP address of the MGW

1.9.54 transcoder-remote-base <0-65534>

Command

```
transcoder-remote-base <0-65534>
```

Parameters

transcoder-remote-base

Set the base port for the transcoder

<0-65534>

The RTP base port on the transcoder

1.9.55 trunk <1-64>

Command

```
trunk <1-64>
```

Parameters

trunk

Configure a SS7 trunk

<1-64>

Trunk Nr

1.10 config-nat

1.10.1 access-list NAME imsi-allow [REGEXP]

Command

```
access-list NAME imsi-allow [REGEXP]
```

Parameters

access-list

Access list commands

NAME

Name of the access list

imsi-allow

Add allowed IMSI to the list

[REGEXP]

Regexp for IMSIs

1.10.2 access-list NAME imsi-deny [REGEXP] (<0-256>) (<0-256>)

Command

```
access-list NAME imsi-deny [REGEXP] (<0-256>) (<0-256>)
```

Parameters

access-list

Access list commands

NAME

Name of the access list

imsi-deny

Add denied IMSI to the list

[REGEXP]

Regexp for IMSIs

<0-256>

CM Service Reject reason

<0-256>

LU Reject reason

1.10.3 access-list-name NAME

Command

```
access-list-name NAME
```

Parameters

access-list-name

Set the name of the access list to use.

NAME

The name of the to be used access list.

1.10.4 bsc BSC_NR

Command

```
bsc BSC_NR
```

Parameters

bsc

BSC configuration

BSC_NR

Identifier of the BSC

1.10.5 bscs-config-file NAME

Command

```
bscs-config-file NAME
```

Parameters

bscs-config-file

Set the filename of the BSC configuration to include.

NAME

The filename to be included.

1.10.6 imsi-black-list-file-name NAME

Command

```
imsi-black-list-file-name NAME
```

Parameters

imsi-black-list-file-name

IMSI black listing

NAME

Filename IMSI and reject-cause

1.10.7 ip-dscp <0-255>

Command

```
ip-dscp <0-255>
```

Parameters

ip-dscp

Set the IP DSCP for the BSCs to use

<0-255>

Set the IP_TOS attribute

1.10.8 msc ip A.B.C.D

Command

```
msc ip A.B.C.D
```

Parameters

msc

MSC related configuration

ip

Configure the IP address

A.B.C.D

IP information

1.10.9 msc port <1-65500>

Command

```
msc port <1-65500>
```

Parameters

msc

MSC related configuration

port

Configure the port

<1-65500>

Port number

1.10.10 no access-list NAME

Command

```
no access-list NAME
```

Parameters

no

Negate a command or set its defaults

access-list

Remove an access-list by name

NAME

The access-list to remove

1.10.11 no access-list-name

Command

```
no access-list-name
```

Parameters

no

Negate a command or set its defaults

access-list-name

Remove the access list from the NAT.

1.10.12 no imsi-black-list-file-name

Command

```
no imsi-black-list-file-name
```

Parameters

no

Negate a command or set its defaults

imsi-black-list-file-name

Remove the imsi-black-list

1.10.13 no number-rewrite

Command

```
no number-rewrite
```

Parameters

no

Negate a command or set its defaults

number-rewrite

Set the file with rewriting rules.

1.10.14 no number-rewrite-post

Command

```
no number-rewrite-post
```

Parameters

no

Negate a command or set its defaults

number-rewrite-post

Set the file with post-routing rewriting rules.

1.10.15 no paging-bss-forward

Command

```
no paging-bss-forward
```

Parameters

no

Negate a command or set its defaults

paging-bss-forward

Forward Paging messages with BSS as Cell Identity Discriminator

1.10.16 no paging-group <0-1000>

Command

```
no paging-group <0-1000>
```

Parameters

no

Negate a command or set its defaults

paging-group

Delete paging-group

<0-1000>

Paging-group number

1.10.17 no prefix-tree

Command

```
no prefix-tree
```

Parameters

no

Negate a command or set its defaults

prefix-tree

Prefix tree for number rewriting

1.10.18 no sdp-ensure-amr-mode-set

Command

```
no sdp-ensure-amr-mode-set
```

Parameters

no

Negate a command or set its defaults

sdp-ensure-amr-mode-set

Ensure that SDP records include a mode-set

1.10.19 no sms-clear-tp-srr

Command

```
no sms-clear-tp-srr
```

Parameters

no

Negate a command or set its defaults

sms-clear-tp-srr

SMS TPDU Sender Report Request clearing

1.10.20 no sms-number-rewrite

Command

```
no sms-number-rewrite
```

Parameters

no

Negate a command or set its defaults

sms-number-rewrite

Disable SMS TP-DA rewriting

1.10.21 number-rewrite FILENAME

Command

```
number-rewrite FILENAME
```

Parameters

number-rewrite

Set the file with rewriting rules.

FILENAME

Filename

1.10.22 number-rewrite-post FILENAME

Command

```
number-rewrite-post FILENAME
```

Parameters

number-rewrite-post

Set the file with post-routing rewriting rules.

FILENAME

Filename

1.10.23 paging-bss-forward

Command

```
paging-bss-forward
```

Parameters

paging-bss-forward

Forward Paging messages with BSS as Cell Identity Discriminator

1.10.24 paging-group <0-1000>

Command

```
paging-group <0-1000>
```

Parameters

paging-group

Create a Paging Group

<0-1000>

Number of the Group

1.10.25 prefix-tree FILENAME

Command

```
prefix-tree FILENAME
```

Parameters

prefix-tree

Prefix tree for number rewriting

FILENAME

File to load

1.10.26 rewrite-smsc addr FILENAME

Command

```
rewrite-smsc addr FILENAME
```

Parameters

rewrite-smsc

SMSC Rewriting

addr

The SMSC Address to match and replace in RP-DATA

FILENAME

File with rules for the SMSC Address replacing

1.10.27 rewrite-smsc tp-dest-match FILENAME

Command

```
rewrite-smsc tp-dest-match FILENAME
```

Parameters

rewrite-smsc

SMSC Rewriting

tp-dest-match

Match TP-Destination of a SMS.

FILENAME

File with rules for matching MSISDN and TP-DEST

1.10.28 sdp-ensure-amr-mode-set

Command

```
sdp-ensure-amr-mode-set
```

Parameters

sdp-ensure-amr-mode-set

Ensure that SDP records include a mode-set

1.10.29 sms-clear-tp-srr FILENAME

Command

```
sms-clear-tp-srr FILENAME
```

Parameters

sms-clear-tp-srr

SMS TPDU Sender Report Request clearing

FILENAME

Files with rules for matching MSISDN

1.10.30 sms-number-rewrite FILENAME

Command

```
sms-number-rewrite FILENAME
```

Parameters

sms-number-rewrite

SMS TP-DA Number rewriting

FILENAME

Files with rules for matching MSISDN

1.10.31 timeout auth <1-256>

Command

```
timeout auth <1-256>
```

Parameters

timeout

Timeout configuration

auth

Authentication timeout

<1-256>

Timeout in seconds

1.10.32 timeout ping NR

Command

```
timeout ping NR
```

Parameters

timeout

Timeout configuration

ping

Time between two pings

NR

Timeout in seconds

1.10.33 timeout pong NR

Command

```
timeout pong NR
```

Parameters

timeout

Timeout configuration

pong

Waiting for pong timeout

NR

Timeout in seconds

1.10.34 token TOKEN

Command

```
token TOKEN
```

Parameters

token

Authentication token configuration

TOKEN

Token of the BSC, currently transferred in cleartext

1.10.35 use-msc-ipa-for-mgcp

Command

```
use-msc-ipa-for-mgcp
```

Parameters

use-msc-ipa-for-mgcp

This needs to be set at start. Handle MGCP messages through the IPA protocol and not through the UDP socket.

1.10.36 ussd-list-name NAME

Command

```
ussd-list-name NAME
```

Parameters

ussd-list-name

Set the name of the access list to check for IMSIs for USSD message

NAME

The name of the access list for HLR USSD handling

1.10.37 ussd-local-ip A.B.C.D

Command

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

Parameters

ussd-local-ip

Set the IP to listen for the USSD Provider

A.B.C.D

IP Address

1.10.38 ussd-query REGEXP

Command

```
ussd-query REGEXP
```

Parameters

ussd-query

Set the USSD query to match with the ussd-list-name

REGEXP

The query to match

1.10.39 ussd-token TOKEN

Command

```
ussd-token TOKEN
```

Parameters

ussd-token

Set the token used to identify the USSD module

TOKEN

Secret key

1.11 config-nat-bsc

1.11.1 access-list-name NAME

Command

```
access-list-name NAME
```

Parameters

access-list-name

Set the name of the access list to use.

NAME

The name of the to be used access list.

1.11.2 auth-key KEY

Command

```
auth-key KEY
```

Parameters

auth-key

Authentication (secret) key configuration

KEY

Non null security key

1.11.3 bts-jitter-buffer

Command

```
bts-jitter-buffer
```

Parameters

bts-jitter-buffer

Uplink Jitter Buffer

1.11.4 bts-jitter-buffer-delay-max <1-65535>

Command

```
bts-jitter-buffer-delay-max <1-65535>
```

Parameters

bts-jitter-buffer-delay-max

Uplink Jitter Buffer Maximum Delay in ms

<1-65535>

Maximum Delay in ms

1.11.5 bts-jitter-buffer-delay-min <1-65535>

Command

```
bts-jitter-buffer-delay-min <1-65535>
```

Parameters

bts-jitter-buffer-delay-min

Uplink Jitter Buffer Minimum Delay in ms

<1-65535>

Minimum Delay in ms

1.11.6 description DESC

Command

```
description DESC
```

Parameters

description

Provide a description for the given BSC.

DESC

Description

1.11.7 location_area_code <0-65535>

Command

```
location_area_code <0-65535>
```

Parameters

location_area_code

Add the Location Area Code (LAC) of this BSC

<0-65535>

LAC

1.11.8 max-endpoints <1-1024>

Command

```
max-endpoints <1-1024>
```

Parameters

max-endpoints

Highest endpoint to use (exclusively)

<1-1024>

Number of ports

1.11.9 no access-list-name

Command

```
no access-list-name
```

Parameters

no

Negate a command or set its defaults

access-list-name

Do not use an access-list for the BSC.

1.11.10 no auth-key

Command

```
no auth-key
```

Parameters

no

Negate a command or set its defaults

auth-key

Authentication (secret) key configuration

1.11.11 no bts-jitter-buffer

Command

```
no bts-jitter-buffer
```

Parameters

no

Negate a command or set its defaults

bts-jitter-buffer

Uplink Jitter Buffer

1.11.12 no location_area_code <0-65535>

Command

```
no location_area_code <0-65535>
```

Parameters

no

Negate a command or set its defaults

location_area_code

Remove the Location Area Code (LAC) of this BSC

<0-65535>

LAC

1.11.13 no paging group

Command

```
no paging group
```

Parameters

no

Negate a command or set its defaults

paging

Paging

group

Disable the usage of a paging group.

1.11.14 osmux (on|off|only)

Command

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

Parameters

osmux

RTP multiplexing

on

Enable OSMUX

off

Disable OSMUX

only

Only OSMUX

1.11.15 paging forbidden (0|1)

Command

```
paging forbidden (0|1)
```

Parameters

paging

Paging

forbidden

Forbid sending PAGING REQUESTS to the BSC.

0

Do not forbid

1

Forbid

1.11.16 paging group <0-1000>

Command

```
paging group <0-1000>
```

Parameters

paging

Paging

group

Use a paging group

<0-1000>

Paging Group to use

1.11.17 token TOKEN

Command

```
token TOKEN
```

Parameters

token

Authentication token configuration

TOKEN

Token of the BSC, currently transferred in cleartext

1.12 config-mgcp-trunk

1.12.1 allow-transcoding

Command

```
allow-transcoding
```

Parameters

allow-transcoding

Allow transcoding

1.12.2 loop (0|1)

Command

```
loop (0|1)
```

Parameters

loop

Loop audio for all endpoints on this trunk

0

Don't Loop

1

Loop

1.12.3 no allow-transcoding

Command

```
no allow-transcoding
```

Parameters

no

Negate a command or set its defaults

allow-transcoding

Allow transcoding

1.12.4 no rtcp-omit

Command

```
no rtcp-omit
```

Parameters

no

Negate a command or set its defaults

rtcp-omit

Drop RTCP packets in both directions

1.12.5 no rtp keep-alive

Command

```
no rtp keep-alive
```

Parameters

no

Negate a command or set its defaults

rtp

RTP configuration

keep-alive

Send dummy UDP packet to net RTP destination

1.12.6 no rtp-patch

Command

```
no rtp-patch
```

Parameters

no

Negate a command or set its defaults

rtp-patch

Modify RTP packet header in both directions

1.12.7 no rtp-patch ssrc

Command

```
no rtp-patch ssrc
```

Parameters

no

Negate a command or set its defaults

rtp-patch

Modify RTP packet header in both directions

ssrc

Force a fixed SSRC

1.12.8 no rtp-patch timestamp

Command

```
no rtp-patch timestamp
```

Parameters

no

Negate a command or set its defaults

rtp-patch

Modify RTP packet header in both directions

timestamp

Adjust RTP timestamp

1.12.9 no sdp audio-payload send-name

Command

```
no sdp audio-payload send-name
```

Parameters

no

Negate a command or set its defaults

sdp

SDP File related options

audio-payload

Audio payload options

send-name

Send SDP rtpmap with the audio name

1.12.10 no sdp audio-payload send-ptime

Command

```
no sdp audio-payload send-ptime
```

Parameters

no

Negate a command or set its defaults

sdp

SDP File related options

audio-payload

Audio payload options

send-ptime

Send SDP ptime (packet duration) attribute

1.12.11 rtcp-omit

Command

```
rtcp-omit
```

Parameters

rtcp-omit

Drop RTCP packets in both directions

1.12.12 rtp keep-alive <1-120>

Command

```
rtp keep-alive <1-120>
```

Parameters

rtp

RTP configuration

keep-alive

Send dummy UDP packet to net RTP destination

<1-120>

Keep-alive interval in secs

1.12.13 rtp keep-alive once

Command

```
rtp keep-alive once
```

Parameters

rtp

RTP configuration

keep-alive

Send dummy UDP packet to net RTP destination

once

Send dummy packet only once after CRCX/MDCX

1.12.14 rtp-patch ssrc

Command

```
rtp-patch ssrc
```

Parameters

rtp-patch

Modify RTP packet header in both directions

ssrc

Force a fixed SSRC

1.12.15 rtp-patch timestamp

Command

```
rtp-patch timestamp
```

Parameters

rtp-patch

Modify RTP packet header in both directions

timestamp

Adjust RTP timestamp

1.12.16 sdp audio fmtp-extra .NAME

Command

```
sdp audio fmtp-extra .NAME
```

Parameters

sdp

Add extra fmtp for the SDP file

audio

Audio

fmtp-extra

Fmtp-extra

.NAME

Extra Information

1.12.17 sdp audio-payload name NAME

Command

```
sdp audio-payload name NAME
```

Parameters

sdp

SDP File related options

audio-payload

Audio payload options

name

Payload

NAME

Payload Name

1.12.18 sdp audio-payload number <0-255>

Command

```
sdp audio-payload number <0-255>
```

Parameters

sdp

SDP File related options

audio-payload

Audio payload options

number

Number

<0-255>

Payload Number

1.12.19 sdp audio-payload send-name

Command

```
sdp audio-payload send-name
```

Parameters

sdp

SDP File related options

audio-payload

Audio payload options

send-name

Send SDP rtpmap with the audio name

1.12.20 sdp audio-payload send-ptime

Command

```
sdp audio-payload send-ptime
```

Parameters

sdp

SDP File related options

audio-payload

Audio payload options

send-ptime

Send SDP ptime (packet duration) attribute

1.13 config-nat-paging-group

1.13.1 location_area_code <0-65535>

Command

```
location_area_code <0-65535>
```

Parameters

location_area_code

Add the Location Area Code (LAC)

<0-65535>

LAC

1.13.2 no location_area_code <0-65535>

Command

```
no location_area_code <0-65535>
```

Parameters

no

Negate a command or set its defaults

location_area_code

Remove the Location Area Code (LAC)

<0-65535>

LAC