

OsmoBTS VTY Reference



osmo-bts-virtual

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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 sismocom 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 l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|pac...

Command

```
logging filter l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|pacch| ←  
pagch|pbccch|pch|pdtch|pnch|ppch|prach|ptcch|rach|sacch|sch|sdcch|tch/f|tch/h)
```

Parameters

logging

Configure logging

filter

Filter log messages

l1-sapi

L1 SAPI

unknown

UNKNOWN

agch

AGCH

bcch

BCCH

cbch

CBCH

facch/f

FACCH/F

facch/h

FACCH/H

fcch

FCCH

idle

IDLE

nch

NCH

pacch
PACCH

pagch
PAGCH

pbccch
PBCCH

pch
PCH

pdтч
PDTCH

pnch
PNCH

ppch
PPCH

prach
PRACH

ptcch
PTCCH

rach
RACH

sacch
SACCH

sch
SCH

sdccch
SDCCH

tch/f
TCH/F

tch/h
TCH/H

1.2.7 logging level (rs|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmu...

Command

```
logging level (rs|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmux|asci| ↔  
lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtpl|lstats|lgsup|loap|lss7|lscpp|lsua| ↔  
lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio|ltcap) ↔  
(debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

rsl

A-bis Radio Signalling Link (RSL)

oml

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

rll

A-bis Radio Link Layer (RLL)

rr

Layer3 Radio Resource (RR)

meas

Radio Measurement Processing

pag

Paging Subsystem

llc

Layer 1 Control (MPH)

llp

Layer 1 Primitives (PH)

dsp

DSP Trace Messages

pcu

PCU interface

ho

Handover

trx

TRX interface

loop

Control loops

abis

A-bis Input Subsystem

rtp

Realtime Transfer Protocol

osmux

Osmux (Osmocom RTP multiplexing)

asci

ASCI (Advanced Speech Call Items: VGCS/VBS)

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

ltcap
TCAP

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 (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmux|ascii|lg...

Command

```
logp (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmux|ascii|lglobal| ↵
l1lapd|l1inp|l1mux|l1mi|l1mib|l1sms|l1ctrl|l1gtp|l1stats|l1gsup|l1oap|l1ss7|l1sccp|l1sua|l1m3ua| ↵
l1mgcp|l1jibuf|l1rspro|l1ns|l1bssgp|l1nsdata|l1nssignal|l1iuup|l1pfcpl1csn1|l1io|l1tcap) ( ↵
debug|info|notice|error|fatal) .LOGMESSAGE
```

Parameters

logp

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

rsl

A-bis Radio Signalling Link (RSL)

oml

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

rll

A-bis Radio Link Layer (RLL)

rr

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llapd
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lstats
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loap
Osmocom Authentication Protocol

lss7
libosmo-sigtran Signalling System 7

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libosmo-sigtran SCCP Implementation

lsua
libosmo-sigtran SCCP User Adaptation

lm3ua
libosmo-sigtran MTP3 User Adaptation

lmgcp
libosmo-mgcp Media Gateway Control Protocol

ljibuf
libosmo-netif Jitter Buffer

lrspro
Remote SIM protocol

lns
GPRS NS layer

lbssgp
 GPRS BSSGP layer

lndata
 GPRS NS layer data PDU

lnsignal
 GPRS NS layer signal PDU

liuup
 Iu UP layer

lpfcp
 libosmo-pfcp Packet Forwarding Control Protocol

lcsn1
 libosmo-csn1 Concrete Syntax Notation 1 codec

lio
 libosmocore IO Subsystem

ltcap
 TCAP

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 filter l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|...

Command

```
no logging filter l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|pacch| ←
pagch|pbch|pch|pdtch|pnch|ppch|prach|ptcch|rach|sacch|sch|sdch|tch/f|tch/h)
```

Parameters

no
 Negate a command or set its defaults

logging

Configure logging

filter

Filter log messages

l1-sapi

L1 SAPI

unknown

UNKNOWN

agch

AGCH

bcch

BCCH

cbch

CBCH

facch/f

FACCH/F

facch/h

FACCH/H

fcch

FCCH

idle

IDLE

nch

NCH

pacch

PACCH

pagch

PAGCH

pbccch

PBCCH

pch

PCH

pdtech

PDTCH

pnch

PNCH

ppch

PPCH

prach
 PRACH

ptcch
 PTCCH

rach
 RACH

sacch
 SACCH

sch
 SCH

sdccch
 SDCCH

tch/f
 TCH/F

tch/h
 TCH/H

1.2.20 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>'

1.2.21 show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

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 bts <0-255> gprs

Command

```
show bts <0-255> gprs
```

Parameters

show

Show running system information

bts

Display information about a BTS

<0-255>

BTS Number

gprs

GPRS/EGPRS configuration

1.2.24 show bts <0-255> rtp

Command

```
show bts <0-255> rtp
```

Parameters

show

Show running system information

bts

Display information about a BTS

<0-255>

BTS Number

rtp

RTP library selection

1.2.25 show bts [<0-255>]

Command

```
show bts [<0-255>]
```

Parameters

show

Show running system information

bts

Display information about a BTS

[<0-255>]

BTS Number

1.2.26 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)

1.2.27 show e1_driver

Command

```
show e1_driver
```

Parameters

show

Show running system information

e1_driver

Display information about available E1 drivers

1.2.28 show e1_line [<0-255>] [stats]

Command

```
show e1_line [<0-255>] [stats]
```

Parameters

show

Show running system information

e1_line

Display information about a E1 line

[<0-255>]

E1 Line Number

[stats]

Include statistics

1.2.29 show e1_timeslot [<0-255>] [<0-31>]

Command

```
show e1_timeslot [<0-255>] [<0-31>]
```

Parameters

show

Show running system information

e1_timeslot

Display information about a E1 timeslot

[<0-255>]

E1 Line Number

[<0-31>]

E1 Timeslot Number

1.2.30 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

1.2.31 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

1.2.32 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

1.2.33 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

1.2.34 show fsm-state-graph NAME

Command

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

Parameters

show

Show running system information

fsm-state-graph

Generate a state transition graph (using DOT language)

NAME

FSM name

1.2.35 show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

1.2.36 show lchan [<0-255>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan [<0-255>] [<0-255>] [<0-7>] [<0-7>]
```

Parameters

show

Show running system information

lchan

Display information about a logical channel

<0-255>

BTS Number

<0-255>

TRX Number

<0-7>

Timeslot Number

<0-7>

Logical Channel Number

1.2.37 show lchan summary [<0-255>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan summary [<0-255>] [<0-255>] [<0-7>] [<0-7>]
```

Parameters

show

Show running system information

lchan

Display information about a logical channel

summary

Short summary

[<0-255>]

BTS Number

[<0-255>]

TRX Number

[<0-7>]

Timeslot Number

[<0-7>]

Logical Channel Number

1.2.38 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

1.2.39 show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

1.2.40 show pid

Command

```
show pid
```

Parameters

show

Show running system information

pid

Displays the process ID

1.2.41 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

1.2.42 show runtime

Command

```
show runtime
```

Parameters

show

Show running system information

runtime

Display runtime information

1.2.43 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

1.2.44 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

1.2.45 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

1.2.46 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

1.2.47 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)

1.2.48 show timer [(bts|abis)] [TNNNN]

Command

```
show timer [(bts|abis)] [TNNNN]
```

Parameters

show

Show running system information

timer

Show timers

[bts]

BTS process timers

[abis]

Abis (RSL) related timers

[TNNNN]

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

1.2.49 show timeslot [<0-255>] [<0-255>] [<0-7>]

Command

```
show timeslot [<0-255>] [<0-255>] [<0-7>]
```

Parameters

show

Show running system information

timeslot

Display information about a TS

[<0-255>]

BTS Number

[<0-255>]

TRX Number

[<0-7>]

Timeslot Number

1.2.50 show trx [<0-255>] [<0-255>]

Command

```
show trx [<0-255>] [<0-255>]
```

Parameters

show

Show running system information

trx

Display information about a TRX

[<0-255>]

BTS Number

[<0-255>]

TRX Number

1.2.51 show uptime

Command

```
show uptime
```

Parameters

show

Show running system information

uptime

Displays how long the program has been running

1.2.52 show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

1.2.53 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)

1.2.54 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

1.2.55 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 bts <0-0> c0-power-red <0-6>

Command

```
bts <0-0> c0-power-red <0-6>
```

Parameters

bts

BTS Specific Commands

<0-0>

BTS Number

c0-power-red

BCCH carrier power reduction operation

<0-6>

Power reduction value (in dB, even numbers only)

1.3.2 bts <0-0> trx <0-255> ts <0-7> (lchan|shadow-lchan) <0-7> rtp jitter-buffer <0-1...

Command

```
bts <0-0> trx <0-255> ts <0-7> (lchan|shadow-lchan) <0-7> rtp jitter-buffer <0-10000>
```

Parameters

bts

BTS related commands

<0-0>

BTS number

trx

TRX related commands

<0-255>

TRX number

ts

timeslot related commands

<0-7>

timeslot number

lchan

Primary logical channel commands

shadow-lchan

Shadow logical channel commands

<0-7>

logical channel number

rtp

RTP settings

jitter-buffer

Jitter buffer

<0-10000>

Size of jitter buffer in (ms)

1.3.3 configure [terminal]

Command

```
configure [terminal]
```

Parameters

configure

Configuration from vty interface

[terminal]

Configuration terminal

1.3.4 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)

1.3.5 disable

Command

```
disable
```

Parameters

disable

Turn off privileged mode command

1.3.6 logging color (0|1)

Command

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

Parameters

logging

Configure logging

color

Configure color-printing for log messages

0

Don't use color for printing messages

1

Use color for printing messages

1.3.7 logging disable

Command

```
logging disable
```

Parameters

logging

Configure logging

disable

Disables logging to this vty

1.3.8 logging enable

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

Command

```
logging enable
```

Parameters

logging

Configure logging

enable

Enables logging to this vty

1.3.9 logging filter all (0|1)

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

Command

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

Parameters

logging

Configure logging

filter

Filter log messages

all

Do you want to log all messages?

0

Only print messages matched by other filters

1

Bypass filter and print all messages

1.3.10 logging filter l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|pac...

Command

```
logging filter l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|pacch| ←
pagch|pbccch|pch|pdtch|pnch|ppch|prach|ptcch|rach|sacch|sch|sdcch|tch/f|tch/h)
```

Parameters

logging

Configure logging

filter

Filter log messages

l1-sapi

L1 SAPI

unknown

UNKNOWN

agch

AGCH

bcch

BCCH

cbch

CBCH

facch/f

FACCH/F

facch/h

FACCH/H

fcch

FCCH

idle

IDLE

nch

NCH

pacch
PACCH

pagch
PAGCH

pbccch
PBCCH

pch
PCH

pdтч
PDTCH

pnch
PNCH

ppch
PPCH

prach
PRACH

ptчч
PTCCH

rach
RACH

sacch
SACCH

sch
SCH

sdчч
SDCCH

tч/f
TCH/F

tч/h
TCH/H

1.3.11 logging level (rs|oml|rl|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmu...

Command

```
logging level (rs|oml|rl|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmux|asci| ↔  
lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtп|lstats|lgsup|loap|lss7|lscсp|lsua| ↔  
lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio|ltcap) ↔  
(debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

rsl

A-bis Radio Signalling Link (RSL)

oml

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

rll

A-bis Radio Link Layer (RLL)

rr

Layer3 Radio Resource (RR)

meas

Radio Measurement Processing

pag

Paging Subsystem

llc

Layer 1 Control (MPH)

llp

Layer 1 Primitives (PH)

dsp

DSP Trace Messages

pcu

PCU interface

ho

Handover

trx

TRX interface

loop

Control loops

abis

A-bis Input Subsystem

rtp

Realtime Transfer Protocol

osmux

Osmux (Osmocom RTP multiplexing)

asci

ASCI (Advanced Speech Call Items: VGCS/VBS)

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

lrcap
TCAP

debug
Log debug messages and higher levels

info
Log informational messages and higher levels

notice
Log noticeable messages and higher levels

error
Log error messages and higher levels

fatal
Log only fatal messages

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

force-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

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

Command

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

Parameters**logging**

Configure logging

level

Set the log level for a specified category

set-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

1.3.14 logging print category (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

category

Configure log message

0

Don't prefix each log message

1

Prefix each log message with category/subsystem name

1.3.15 logging print category-hex (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

category-hex

Configure log message

0

Don't prefix each log message

1

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

1.3.16 logging print extended-timestamp (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

extended-timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

Command

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

Parameters

logging

Configure logging

print

Log output settings

file

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the source file and line

basename

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

[last]

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

1.3.18 logging print level (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

level

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the log level name

1.3.19 logging print thread-id (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

thread-id

Configure log message logging Thread ID

0

Don't prefix each log message

1

Prefix each log message with current Thread ID

1.3.20 logging set-log-mask MASK

Command

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

Parameters

logging

Configure logging

set-log-mask

Set the logmask of this logging target

MASK

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

1.3.21 logging timestamp (0|1)

Command

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

Parameters

logging

Configure logging

timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

1.3.22 logp (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmux|ascii|lg...

Command

```
logp (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmux|ascii|lglobal| ↵
l1lapd|l1inp|l1mux|l1mi|l1mib|l1sms|l1ctrl|l1gtp|l1stats|l1gsup|loap|l1ss7|l1sccp|l1sua|l1m3ua| ↵
l1mgcp|l1jibuf|l1rspro|l1ns|l1bssgp|l1nsdata|l1nssignal|l1iuup|l1pfcpl1csn1|l1io|l1tcap) ( ↵
debug|info|notice|error|fatal) .LOGMESSAGE
```

Parameters

logp

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

rsl

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oml

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

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

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Layer3 Short Message Service (SMS)

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lgtp
GPRS GTP library

lstats
Statistics messages and logging

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Generic Subscriber Update Protocol

loap
Osmocom Authentication Protocol

lss7
libosmo-sigtran Signalling System 7

lsccp
libosmo-sigtran SCCP Implementation

lsua
libosmo-sigtran SCCP User Adaptation

lm3ua
libosmo-sigtran MTP3 User Adaptation

lmgcp
libosmo-mgcp Media Gateway Control Protocol

ljibuf
libosmo-netif Jitter Buffer

lrspro
Remote SIM protocol

lns
GPRS NS layer

lbssgp
GPRS BSSGP layer

lndata
GPRS NS layer data PDU

lnsignal
GPRS NS layer signal PDU

liuup
Iu UP layer

lpfcp
libosmo-pfcp Packet Forwarding Control Protocol

lcsn1
libosmo-csn1 Concrete Syntax Notation 1 codec

lio
libosmocore IO Subsystem

ltcap
TCAP

debug
Log debug messages and higher levels

info
Log informational messages and higher levels

notice
Log noticeable messages and higher levels

error
Log error messages and higher levels

fatal
Log only fatal messages

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

1.3.23 no logging filter l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|...

Command

```
no logging filter l1-sapi (unknown|agch|bcch|cbch|facch/f|facch/h|fcch|idle|nch|pacch| ←  
pagch|pbch|pch|pdtch|pnch|ppch|prach|ptcch|rach|sacch|sch|sdch|tch/f|tch/h)
```

Parameters

no
Negate a command or set its defaults

logging

Configure logging

filter

Filter log messages

l1-sapi

L1 SAPI

unknown

UNKNOWN

agch

AGCH

bcch

BCCH

cbch

CBCH

facch/f

FACCH/F

facch/h

FACCH/H

fcch

FCCH

idle

IDLE

nch

NCH

pacch

PACCH

pagch

PAGCH

pbccch

PBCCH

pch

PCH

pdtech

PDTCH

pnch

PNCH

ppch

PPCH

prach
 PRACH

ptcch
 PTCCH

rach
 RACH

sacch
 SACCH

sch
 SCH

sdccch
 SDCCH

tch/f
 TCH/F

tch/h
 TCH/H

1.3.24 no logging level force-all

Command

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

Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

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

1.3.25 show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

1.3.26 show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

1.3.27 show bts <0-255> gprs

Command

```
show bts <0-255> gprs
```

Parameters

show

Show running system information

bts

Display information about a BTS

<0-255>

BTS Number

gprs

GPRS/EGPRS configuration

1.3.28 show bts <0-255> rtp

Command

```
show bts <0-255> rtp
```

Parameters

show

Show running system information

bts

Display information about a BTS

<0-255>

BTS Number

rtp

RTP library selection

1.3.29 show bts [<0-255>]

Command

```
show bts [<0-255>]
```

Parameters

show

Show running system information

bts

Display information about a BTS

[<0-255>]

BTS Number

1.3.30 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)

1.3.31 show e1_driver

Command

```
show e1_driver
```

Parameters

show

Show running system information

e1_driver

Display information about available E1 drivers

1.3.32 show e1_line [<0-255>] [stats]

Command

```
show e1_line [<0-255>] [stats]
```

Parameters

show

Show running system information

e1_line

Display information about a E1 line

[<0-255>]

E1 Line Number

[stats]

Include statistics

1.3.33 show e1_timeslot [<0-255>] [<0-31>]

Command

```
show e1_timeslot [<0-255>] [<0-31>]
```

Parameters

show

Show running system information

e1_timeslot

Display information about a E1 timeslot

[<0-255>]

E1 Line Number

[<0-31>]

E1 Timeslot Number

1.3.34 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

1.3.35 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

1.3.36 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

1.3.37 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

1.3.38 show fsm-state-graph NAME

Command

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

Parameters

show

Show running system information

fsm-state-graph

Generate a state transition graph (using DOT language)

NAME

FSM name

1.3.39 show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

1.3.40 show lchan [<0-255>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan [<0-255>] [<0-255>] [<0-7>] [<0-7>]
```

Parameters

show

Show running system information

lchan

Display information about a logical channel

<0-255>

BTS Number

<0-255>

TRX Number

<0-7>

Timeslot Number

<0-7>

Logical Channel Number

1.3.41 show lchan summary [<0-255>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan summary [<0-255>] [<0-255>] [<0-7>] [<0-7>]
```

Parameters

show

Show running system information

lchan

Display information about a logical channel

summary

Short summary

[<0-255>]

BTS Number

[<0-255>]

TRX Number

[<0-7>]

Timeslot Number

[<0-7>]

Logical Channel Number

1.3.42 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

1.3.43 show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

1.3.44 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

1.3.45 show runtime

Command

```
show runtime
```

Parameters

show

Show running system information

runtime

Display runtime information

1.3.46 show startup-config

Command

```
show startup-config
```

Parameters

show

Show running system information

startup-config

Contentes of startup configuration

1.3.47 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

1.3.48 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

1.3.49 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

1.3.50 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

1.3.51 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)

1.3.52 show timer [(bts|abis)] [TNNNN]

Command

```
show timer [(bts|abis)] [TNNNN]
```

Parameters

show

Show running system information

timer

Show timers

[bts]

BTS process timers

[abis]

Abis (RSL) related timers

[TNNNN]

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

1.3.53 show timeslot [<0-255>] [<0-255>] [<0-7>]

Command

```
show timeslot [<0-255>] [<0-255>] [<0-7>]
```

Parameters

show

Show running system information

timeslot

Display information about a TS

[<0-255>]

BTS Number

[<0-255>]

TRX Number

[<0-7>]

Timeslot Number

1.3.54 show trx [<0-255>] [<0-255>]

Command

```
show trx [<0-255>] [<0-255>]
```

Parameters

show

Show running system information

trx

Display information about a TRX

[<0-255>]

BTS Number

[<0-255>]

TRX Number

1.3.55 show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

1.3.56 shutdown

Command

```
shutdown
```

Parameters

shutdown

Request a shutdown of the program

1.3.57 stats report

Command

```
stats report
```

Parameters

stats

Stats related commands

report

Manurally trigger reporting of stats

1.3.58 stats reset

Command

```
stats reset
```

Parameters

stats

Stats related commands

reset

Reset all rate counter stats

1.3.59 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)

1.3.60 terminal monitor

Command

```
terminal monitor
```

Parameters

terminal

Set terminal line parameters

monitor

Copy debug output to the current terminal line

1.3.61 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

1.3.62 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

1.3.63 test send-failure-event-report <0-255>

Command

```
test send-failure-event-report <0-255>
```

Parameters

test

Various testing commands

send-failure-event-report

Send a test OML failure event report to the BSC

<0-255>

BTS Number

1.3.64 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 bts BTS_NR

Command

```
bts BTS_NR
```

Global attributes

Flag: !

This command applies immediately

Parameters

bts

Select a BTS to configure

BTS_NR

BTS Number

1.4.4 cpu-sched

Command

```
cpu-sched
```

Parameters

cpu-sched

Configure CPU Scheduler related settings

1.4.5 ctrl

Command

```
ctrl
```

Parameters

ctrl

Configure the Control Interface

1.4.6 e1_input

Command

```
e1_input
```

Global attributes

Flag: !

This command applies immediately

Parameters

e1_input

Configure E1/T1/J1 TDM input

1.4.7 enable password (8|) WORD

Command

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

Parameters

enable

Modify enable password parameters

password

Assign the privileged level password

8

Specifies a HIDDEN password will follow

dummy string

WORD

The HIDDEN 'enable' password string

1.4.8 enable password LINE

Command

```
enable password LINE
```

Parameters

enable

Modify enable password parameters

password

Assign the privileged level password

LINE

The UNENCRYPTED (cleartext) 'enable' password

1.4.9 hostname WORD

Command

```
hostname WORD
```

Parameters

hostname

Set system's network name

WORD

This system's network name

1.4.10 line vty

Command

```
line vty
```

Parameters

line

Configure a terminal line

vtty

Virtual terminal

1.4.11 log alarms <2-32700>

Command

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

Parameters

log

Configure logging sub-system

alarms

Logging alarms to osmo_strrb

<2-32700>

Maximum number of messages to log

1.4.12 log file FILENAME [(nonblocking-io|blocking-io|wq)]

Command

```
log file FILENAME [(nonblocking-io|blocking-io|wq)]
```

Parameters

log

Configure logging sub-system

file

Logging to text file

FILENAME

Filename

[nonblocking-io]

Use non-blocking, synchronous I/O (may lose msgs if file write buffer becomes full) (default)

[blocking-io]

Use blocking, synchronous I/O (only for debug purposes or when blocking is acceptable)

[wq]

Use Tx workqueue, asynchronous I/O (may lose msgs if queue becomes full)

1.4.13 log gsmtap [HOSTNAME] [(nonblocking-io|blocking-io|wq)]

Command

```
log gsmtap [HOSTNAME] [(nonblocking-io|blocking-io|wq)]
```

Parameters

log

Configure logging sub-system

gsmtap

Logging via GSMTAP

[HOSTNAME]

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

[nonblocking-io]

Use non-blocking, synchronous I/O (may lose msgs if UDP socket send buffer becomes full) (default)

[blocking-io]

Use blocking, synchronous I/O (only for debug purposes or when blocking is acceptable)

[wq]

Use Tx workqueue, asynchronous I/O (may lose msgs if queue becomes full)

1.4.14 log stderr [(nonblocking-io|blocking-io|wq)]

Command

```
log stderr [(nonblocking-io|blocking-io|wq)]
```

Parameters

log

Configure logging sub-system

stderr

Logging via STDERR of the process

[nonblocking-io]

Use non-blocking, synchronous I/O (may lose msgs if file write buffer becomes full) (default)

[blocking-io]

Use blocking, synchronous I/O (only for debug purposes or when blocking is acceptable)

[wq]

Use Tx workqueue, asynchronous I/O (may lose msgs if queue becomes full)

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

Command

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

Parameters

log

Configure logging sub-system

syslog

Logging via syslog

authpriv

Security/authorization messages facility

cron

Clock daemon (cron/at) facility

daemon

General system daemon facility

ftp

Ftp daemon facility

lpr

Line printer facility

mail

Mail facility

news

News facility

user

Generic facility

uucp

UUCP facility

1.4.16 log syslog local <0-7>

Command

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

Parameters

log

Configure logging sub-system

syslog

Logging via syslog

local

Syslog LOCAL facility

<0-7>

Local facility number

1.4.17 log systemd-journal [raw]

Command

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

Parameters

log

Configure logging sub-system

systemd-journal

Logging to systemd-journal

[raw]

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

1.4.18 no banner motd

Command

```
no banner motd
```

Parameters

no

Negate a command or set its defaults

banner

Set banner string

motd

Strings for motd

1.4.19 no enable password

Command

```
no enable password
```

Parameters

no

Negate a command or set its defaults

enable

Modify enable password parameters

password

Assign the privileged level password

1.4.20 no hostname [HOSTNAME]

Command

```
no hostname [HOSTNAME]
```

Parameters

no

Negate a command or set its defaults

hostname

Reset system's network name

[HOSTNAME]

Host name of this router

1.4.21 no log alarms

Command

```
no log alarms
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

alarms

Logging alarms to osmo_strrb

1.4.22 no log file FILENAME

Command

```
no log file FILENAME
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

file

Logging to text file

FILENAME

Filename

1.4.23 no log gsmtap [HOSTNAME]

Command

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

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

gsmtap

Logging via GSMTAP

[HOSTNAME]

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

1.4.24 no log stderr

Command

```
no log stderr
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

stderr

Logging via STDERR of the process

1.4.25 no log syslog

Command

```
no log syslog
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

syslog

Logging via syslog

1.4.26 no log systemd-journal

Command

```
no log systemd-journal
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

systemd-journal

Logging to systemd-journal

1.4.27 no service advanced-vty

Command

```
no service advanced-vty
```

Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

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

Command

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

Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

terminal-length

System wide terminal length configuration

[<0-512>]

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

1.4.29 no stats reporter log [NAME]

Command

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

Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

[NAME]

Name of the reporter

1.4.30 no stats reporter statsd [NAME]

Command

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

Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

[NAME]

Name of the reporter

1.4.31 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

1.4.32 password LINE

Command

```
password LINE
```

Parameters

password

Assign the terminal connection password

LINE

The UNENCRYPTED (cleartext) line password

1.4.33 phy <0-255>

Command

```
phy <0-255>
```

Global attributes

Flag: !

This command applies immediately

Parameters

phy

Select a PHY to configure

<0-255>

PHY number

1.4.34 service advanced-vty

Command

```
service advanced-vty
```

Parameters

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

1.4.35 service terminal-length <0-512>

Command

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

Parameters

service

Set up miscellaneous service

terminal-length

System wide terminal length configuration

<0-512>

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

1.4.36 show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

1.4.37 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)

1.4.38 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

1.4.39 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

1.4.40 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

1.4.41 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)

1.4.42 timer [(bts|abis)] [TNNNN] [(<0-2147483647>|default)]

Command

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

Parameters

timer

Configure or show timers

[bts]

BTS process timers

[abis]

Abis (RSL) related timers

[TNNNN]

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

[<0-2147483647>]

New timer value

[default]

Set to default timer value

1.4.43 vty telnet-port <0-65535>

Command

```
vtty telnet-port <0-65535>
```

Parameters

vtty

Configure the VTY

telnet-port

Set the VTY telnet port

<0-65535>

TCP Port number

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 (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmu...

Command

```
logging level (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmux|asci| ↵
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|lcsn1|lio|ltcap) ↵
(debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

rsl

A-bis Radio Signalling Link (RSL)

oml

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

rl1
A-bis Radio Link Layer (RLL)

rr
Layer3 Radio Resource (RR)

meas
Radio Measurement Processing

pag
Paging Subsystem

llc
Layer 1 Control (MPH)

llp
Layer 1 Primitives (PH)

dsp
DSP Trace Messages

pcu
PCU interface

ho
Handover

trx
TRX interface

loop
Control loops

abis
A-bis Input Subsystem

rtp
Realtime Transfer Protocol

osmux
Osmux (Osmocom RTP multiplexing)

asci
ASCI (Advanced Speech Call Items: VGCS/VBS)

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

lscpp
libosmo-sigtran SCCP Implementation

lsua
libosmo-sigtran SCCP User Adaptation

lm3ua
libosmo-sigtran MTP3 User Adaptation

lmgcp
libosmo-mgcp Media Gateway Control Protocol

ljibuf
libosmo-netif Jitter Buffer

lrspro
Remote SIM protocol

lns
GPRS NS layer

lbssgp
GPRS BSSGP layer

lndata
GPRS NS layer data PDU

lnsignal
GPRS NS layer signal PDU

liuup

Iu UP layer

lpfcp

libosmo-pfcp Packet Forwarding Control Protocol

lcsn1

libosmo-csn1 Concrete Syntax Notation 1 codec

lio

libosmocore IO Subsystem

ltcap

TCAP

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 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

1.5.12 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

1.5.13 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-e1_input

1.8.1 e1_line <0-255> connect-timeout <0-60>

Command

```
e1_line <0-255> connect-timeout <0-60>
```

Global attributes

Flag: !

This command applies immediately

Parameters

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

connect-timeout

Set connect timeout

<0-60>

Connect timeout in seconds (0 to disable)

1.8.2 e1_line <0-255> driver (misdn|misdn_lapd|dahdi|e1d|ipa|unixsocket)

Command

```
e1_line <0-255> driver (misdn|misdn_lapd|dahdi|e1d|ipa|unixsocket)
```

Parameters

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

driver

Set driver for this line

misdn

mISDN supported E1 Card (kernel LAPD)

misdn_lapd

mISDN supported E1 Card (userspace LAPD)

dahdi

DAHDI supported E1/T1/J1 Card

e1d

osmo-e1d supported E1 interface

ipa

IPA TCP/IP input

unixsocket

Unix socket input

1.8.3 e1_line <0-255> ipa-keepalive <1-300> <1-300>

Command

```
e1_line <0-255> ipa-keepalive <1-300> <1-300>
```

Global attributes

Flag: !

This command applies immediately

Parameters

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

ipa-keepalive

Enable IPA PING/PONG keep-alive

<1-300>

Idle interval in seconds before probes are sent

<1-300>

Time to wait for PONG response

1.8.4 e1_line <0-255> keepalive

Command

```
e1_line <0-255> keepalive
```

Library specific attributes

Flag: I

This command applies on IPA link establishment

Parameters

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

keepalive

Enable keep-alive probing

1.8.5 e1_line <0-255> keepalive <1-300> <1-20> <1-300>

Command

```
e1_line <0-255> keepalive <1-300> <1-20> <1-300>
```

Library specific attributes

Flag: I

This command applies on IPA link establishment

Parameters

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

keepalive

Enable keep-alive probing

<1-300>

Idle interval in seconds before probes are sent

<1-20>

Number of probes to sent

<1-300>

Delay between probe packets in seconds

1.8.6 e1_line <0-255> name .LINE

Command

```
e1_line <0-255> name .LINE
```

Global attributes

Flag: !

This command applies immediately

Parameters

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

name

Set name for this line

.LINE

Human readable name

1.8.7 e1_line <0-255> pcap .FILE

Command

```
e1_line <0-255> pcap .FILE
```

Global attributes

Flag: !

This command applies immediately

Parameters

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

pcap

Setup a pcap recording of E1 traffic for line

.FILE

Filename to save the packets to

1.8.8 e1_line <0-255> port <0-255>

Command

```
e1_line <0-255> port <0-255>
```

Library specific attributes

Flag: L

This command applies on E1 line update

Parameters

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

port

Set physical port/span/card number

<0-255>

E1/T1 Port/Span/Card number

1.8.9 e1_line <0-255> socket .SOCKET

Command

```
e1_line <0-255> socket .SOCKET
```

Library specific attributes

Flag: L

This command applies on E1 line update

Parameters

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

socket

Set socket path for unixsocket

.SOCKET

socket path

1.8.10 ipa bind A.B.C.D

Command

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

Library specific attributes

Flag: L

This command applies on E1 line update

Parameters

ipa

ipa driver config

bind

Set ipa local bind address

A.B.C.D

Listen on this IP address (default 0.0.0.0)

1.8.11 ipa ip-dscp (oml|rsl) <0-63>

Command

```
ipa ip-dscp (oml|rsl) <0-63>
```

Library specific attributes

Flag: I

This command applies on IPA link establishment

Parameters

ipa

ipa driver config

ip-dscp

Set IP DSCP value for outbound packets

oml

Set IP DSCP for OML link

rsl

Set IP DSCP for RSL link

<0-63>

IP DSCP Value to use

1.8.12 ipa socket-priority (oml|rsl) <0-255>

Command

```
ipa socket-priority (oml|rsl) <0-255>
```

Library specific attributes

Flag: I

This command applies on IPA link establishment

Parameters

ipa

ipa driver config

socket-priority

Set socket priority value for outbound packets

oml

Set socket priority for OML link

rsl

Set socket priority for RSL link

<0-255>

socket priority value to use (>6 requires CAP_NET_ADMIN)

1.8.13 no e1_line <0-255> ipa-keepalive

Command

```
no e1_line <0-255> ipa-keepalive
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

ipa-keepalive

Enable IPA PING/PONG keep-alive

1.8.14 no e1_line <0-255> keepalive

Command

```
no e1_line <0-255> keepalive
```

Library specific attributes

Flag: I

This command applies on IPA link establishment

Parameters

no

Negate a command or set its defaults

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

keepalive

Enable keep-alive probing

1.8.15 no e1_line <0-255> pcap

Command

```
no e1_line <0-255> pcap
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

pcap

Disable pcap recording of E1 traffic for line

1.9 config-ctrl

1.9.1 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

1.10 config-cpu-sched

1.10.1 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

1.10.2 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

1.11 phy

1.11.1 instance <0-255>

Command

```
instance <0-255>
```

Global attributes

Flag: !

This command applies immediately

Parameters

instance

Select a PHY instance to configure

<0-255>

PHY Instance number

1.11.2 no instance <0-255>

Command

```
no instance <0-255>
```

Parameters

no

Negate a command or set its defaults

instance

Select a PHY instance to remove

<0-255>

PHY Instance number

1.11.3 virtual-um bts-multicast-group GROUP

Command

```
virtual-um bts-multicast-group GROUP
```

Parameters

virtual-um

Virtual Um layer

bts-multicast-group

Configure the BTS multicast group

GROUP

(null)

1.11.4 virtual-um bts-udp-port <0-65535>

Command

```
virtual-um bts-udp-port <0-65535>
```

Parameters

virtual-um

Virtual Um layer

bts-udp-port

Configure the BTS UDP port

<0-65535>

(null)

1.11.5 virtual-um ms-multicast-group GROUP

Command

```
virtual-um ms-multicast-group GROUP
```

Parameters

virtual-um

Virtual Um layer

ms-multicast-group

Configure the MS multicast group

GROUP

(null)

1.11.6 virtual-um ms-udp-port <0-65535>

Command

```
virtual-um ms-udp-port <0-65535>
```

Parameters

virtual-um

Virtual Um layer

ms-udp-port

Configure the MS UDP port

<0-65535>

(null)

1.11.7 virtual-um net-device NETDEV

Command

```
virtual-um net-device NETDEV
```

Parameters

virtual-um

Virtual Um layer

net-device

Configure the network device

NETDEV

(null)

1.11.8 virtual-um ttl <0-255>

Command

```
virtual-um ttl <0-255>
```

Parameters

virtual-um

Virtual Um layer

ttl

Configure the TTL for transmitted multicast GSMTAP packets

<0-255>

(null)

1.12 phy-inst

1.12.1 osmotrx maxdly <0-63>

Access Burst is the first burst a mobile transmits in order to establish a connection and it is used to estimate Timing Advance (TA) which is then applied to Normal Bursts to compensate for signal delay due to distance. So changing this setting effectively changes maximum range of the cell, because Access Bursts with a delay higher than this value will be ignored.

Command

```
osmotrx maxdly <0-63>
```

Parameters

1.12.2 osmotrx maxdlynb <0-63>

USE FOR TESTING ONLY, DO NOT CHANGE IN PRODUCTION USE! During the normal operation, delay of Normal Bursts is controlled by the Timing Advance loop and thus Normal Bursts arrive to a BTS with no more than a couple GSM symbols, which is already taken into account in osmo-trx. Changing this setting will have no effect in production installations except increasing osmo-trx CPU load. This setting is only useful when testing with a transmitter which cannot precisely synchronize to the BTS downlink signal, like R&S CMD57.

Command

```
osmotrx maxdlynb <0-63>
```

Parameters

1.13 bts

1.13.1 agch-queue-mgmt default

Command

```
agch-queue-mgmt default
```

Global attributes

Flag: !

This command applies immediately

Parameters

agch-queue-mgmt

AGCH queue mgmt

default

Reset clean parameters to default values

1.13.2 agch-queue-mgmt threshold <0-100> low <0-100> high <0-100000>

Command

```
agch-queue-mgmt threshold <0-100> low <0-100> high <0-100000>
```

Global attributes

Flag: !

This command applies immediately

Parameters

agch-queue-mgmt

AGCH queue mgmt

threshold

Threshold to start cleanup

<0-100>

in % of the maximum queue length

low

Low water mark for cleanup

<0-100>

in % of the maximum queue length

high

High water mark for cleanup

<0-100000>

in % of the maximum queue length

1.13.3 band (450|GSM450|480|GSM480|750|GSM750|810|GSM810|850|GSM850|900|GSM900|1800|DCS...)

Command

```
band (450|GSM450|480|GSM480|750|GSM750|810|GSM810|850|GSM850|900|GSM900|1800|DCS1800 ↔  
|1900|PCS1900)
```

Parameters

band

Set the frequency band of this BTS

450

Alias for GSM450

GSM450

450Mhz

480

Alias for GSM480

GSM480

480Mhz

750

Alias for GSM750

GSM750

750Mhz

810

Alias for GSM810

GSM810

810Mhz

850

Alias for GSM850

GSM850

850Mhz

900

Alias for GSM900

GSM900

900Mhz

1800

Alias for DCS1800

DCS1800

1800Mhz

1900

Alias for PCS1900

PCS1900

1900Mhz

1.13.4 description .TEXT

Command

```
description .TEXT
```

Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line

1.13.5 gsmtap-local-host HOSTNAME

Command

```
gsmtap-local-host HOSTNAME
```

Parameters

gsmtap-local-host

Enable local bind for GSMTAP Um logging (see also 'gsmtap-sapi')

HOSTNAME

Local IP address or hostname

1.13.6 gsmtap-remote-host [HOSTNAME]

Command

```
gsmtap-remote-host [HOSTNAME]
```

Parameters

gsmtap-remote-host

Enable GSMTAP Um logging (see also 'gsmtap-sapi')

[HOSTNAME]

Remote IP address or hostname ('localhost' if omitted)

1.13.7 gsmtap-rlp [skip-null]

Command

```
gsmtap-rlp [skip-null]
```

Parameters

gsmtap-rlp

Enable generation of GSMTAP frames for RLP (non-transparent CSD)

[skip-null]

Skip the generation of GSMTAP for RLP NULL frames

1.13.8 gsmtap-sapi (bcch|ccch|rach|agch|pch|sdcch|tch/f|tch/h|pacch|pdtch|ptcch|cbch|sa...

Command

```
gsmtap-sapi (bcch|ccch|rach|agch|pch|sdcch|tch/f|tch/h|pacch|pdtch|ptcch|cbch|sacch)
```

Parameters

gsmtap-sapi

Enable sending of UL/DL messages over GSMTAP

bcch

BCCH

ccch

CCCH

rach

RACH

agch

AGCH

pch

PCH

sdcch

SDCCH

tch/f

TCH/F

tch/h

TCH/H

pacch

PACCH

pdtch

PDTCH

ptcch

PTCCH

cbch

CBCH

sacch

SACCH

1.13.9 gsmtap-sapi (enable-all|disable-all)

Command

```
gsmtap-sapi (enable-all|disable-all)
```

Parameters

gsmtap-sapi

Enable/disable sending of UL/DL messages over GSMTAP

enable-all

Enable all kinds of messages (all SAPI)

disable-all

Disable all kinds of messages (all SAPI)

1.13.10 ipa unit-id <0-65534> <0-255>

Command

```
ipa unit-id <0-65534> <0-255>
```

Parameters

ipa

ip.access RSL commands

unit-id

Set the Unit ID of this BTS

<0-65534>

Site ID

<0-255>

Unit ID

1.13.11 max-ber10k-rach <0-10000>

Command

```
max-ber10k-rach <0-10000>
```

Global attributes

Flag: !

This command applies immediately

Parameters

max-ber10k-rach

Set the maximum BER for valid RACH requests

<0-10000>

BER in 1/10000 units (0=no BER; 100=1% BER)

1.13.12 min-qual-norm <-100-100>

Command

```
min-qual-norm <-100-100>
```

Global attributes

Flag: !

This command applies immediately

Parameters

min-qual-norm

Set the minimum link quality level of Normal Bursts to be accepted

<-100-100>

C/I (Carrier-to-Interference) ratio in centiBels (10e-2 B or 10e-1 dB)

1.13.13 min-qual-rach <-100-100>

Command

```
min-qual-rach <-100-100>
```

Global attributes

Flag: !

This command applies immediately

Parameters

min-qual-rach

Set the minimum link quality level of Access Bursts to be accepted

<-100-100>

C/I (Carrier-to-Interference) ratio in centiBels (10e-2 B or 10e-1 dB)

1.13.14 no description

Command

```
no description
```

Parameters

no

Negate a command or set its defaults

description

Remove description of the object

1.13.15 no gsmtap-local-host

Command

```
no gsmtap-local-host
```

Parameters

no

Negate a command or set its defaults

gsmtap-local-host

Disable local bind for GSMTAP Um logging

1.13.16 no gsmtap-remote-host

Command

```
no gsmtap-remote-host
```

Parameters

no

Negate a command or set its defaults

gsmtap-remote-host

Disable GSMTAP Um logging

1.13.17 no gsmtap-rlp

Command

```
no gsmtap-rlp
```

Parameters

no

Negate a command or set its defaults

gsmtap-rlp

Disable generation of GSMTAP frames for RLP (non-transparent CSD)

1.13.18 no gsmtap-sapi (bcch|ccch|rach|agch|pch|sdcch|tch/f|tch/h|pacch|pdtch|ptcch|cbch...

Command

```
no gsmtap-sapi (bcch|ccch|rach|agch|pch|sdcch|tch/f|tch/h|pacch|pdtch|ptcch|cbch|sacch)
```

Parameters

no

Negate a command or set its defaults

gsmtap-sapi

Disable sending of UL/DL messages over GSMTAP

bcch

BCCH

ccch

CCCH

rach

RACH

agch

AGCH

pch

PCH

sdcch

SDCCH

tch/f

TCH/F

tch/h

TCH/H

pacch

PACCH

pdtch

PDTCH

ptcch

PTCCH

cbch

CBCH

sacch

SACCH

1.13.19 no oml remote-ip A.B.C.D

Command

```
no oml remote-ip A.B.C.D
```

Parameters

no

Negate a command or set its defaults

oml

OML Parameters

remote-ip

OML IP Address

A.B.C.D

OML IP Address

1.13.20 no rtp continuous-streaming

Command

```
no rtp continuous-streaming
```

Parameters

no

Negate a command or set its defaults

rtp

RTP parameters

continuous-streaming

Always emit an RTP packet every 20 ms

1.13.21 no rtp internal-uplink-ecu

Command

```
no rtp internal-uplink-ecu
```

Parameters

no

Negate a command or set its defaults

rtp

RTP parameters

internal-uplink-ecu

Apply a BTS-internal ECU to the uplink traffic frame stream

1.13.22 no supp-meas-info toa256

Command

```
no supp-meas-info toa256
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

supp-meas-info

Configure the RSL Supplementary Measurement Info

toa256

Report the TOA in 1/256th symbol periods

1.13.23 oml remote-ip A.B.C.D

Command

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

Parameters

oml

OML Parameters

remote-ip

OML IP Address

A.B.C.D

OML IP Address

1.13.24 osmux

Command

```
osmux
```

Global attributes

Flag: !

This command applies immediately

Parameters

osmux

Configure Osmux

1.13.25 paging lifetime <0-60>

Command

```
paging lifetime <0-60>
```

Global attributes

Flag: !

This command applies immediately

Parameters

paging

Paging related parameters

lifetime

Maximum lifetime of a paging record

<0-60>

Maximum lifetime of a paging record (seconds)

1.13.26 paging queue-size <1-1024>

Command

```
paging queue-size <1-1024>
```

Global attributes

Flag: !

This command applies immediately

Parameters

paging

Paging related parameters

queue-size

Maximum length of BTS-internal paging queue

<1-1024>

Maximum length of BTS-internal paging queue (default 200)

1.13.27 **pcu-socket PATH**

Command

```
pcu-socket PATH
```

Parameters

pcu-socket

Configure the PCU socket file/path name

PATH

UNIX socket path

1.13.28 **pcu-socket-wqueue-length <1-2147483647>**

Command

```
pcu-socket-wqueue-length <1-2147483647>
```

Parameters

pcu-socket-wqueue-length

Configure the PCU socket queue length

<1-2147483647>

Queue length

1.13.29 **rtp continuous-streaming**

Command

```
rtp continuous-streaming
```

Parameters

rtp

RTP parameters

continuous-streaming

Always emit an RTP packet every 20 ms

1.13.30 rtp hr-format (rfc5993|ts101318)

Command

```
rtp hr-format (rfc5993|ts101318)
```

Global attributes

Flag: !

This command applies immediately

Parameters

rtp

RTP parameters

hr-format

HRv1 codec output format

rfc5993

RFC 5993

ts101318

TS 101 318

1.13.31 rtp internal-uplink-ecu

Command

```
rtp internal-uplink-ecu
```

Parameters

rtp

RTP parameters

internal-uplink-ecu

Apply a BTS-internal ECU to the uplink traffic frame stream

1.13.32 rtp ip-dscp <0-63>

Command

```
rtp ip-dscp <0-63>
```

Application specific attributes

Flag: 1

This command applies for newly created lchans

Parameters

rtp

RTP parameters

ip-dscp

Specify DSCP for RTP/IP packets

<0-63>

The DSCP value (upper 6 bits of TOS)

1.13.33 rtp jitter-buffer <0-10000> [adaptive]

Command

```
rtp jitter-buffer <0-10000> [adaptive]
```

Application specific attributes

Flag: 1

This command applies for newly created lchans

Parameters

rtp

RTP parameters

jitter-buffer

RTP jitter buffer

<0-10000>

Jitter buffer in ms

[adaptive]

Enable adaptive RTP jitter buffering

1.13.34 rtp library (ortp|twrtp)

Command

```
rtp library (ortp|twrtp)
```

Parameters

rtp
RTP parameters

library
RTP library selection

ortp
Belledonne ortp

twrtp
Themyscira twrtp

1.13.35 rtp port-range <1-65534> <1-65534>

Command

```
rtp port-range <1-65534> <1-65534>
```

Parameters

rtp
RTP parameters

port-range
Range of local ports to use for RTP/RTCP traffic

<1-65534>
Port range start (inclusive)

<1-65534>
Port range end (inclusive)

1.13.36 rtp socket-priority <0-255>

Command

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

Application specific attributes

Flag: 1
This command applies for newly created lchans

Parameters

rtp
RTP parameters

socket-priority
Specify socket priority for RTP/IP packets

<0-255>
The socket priority value (> 6 requires CAP_NET_ADMIN)

1.13.37 smscb queue-hysteresis <0-30>

Command

```
smscb queue-hysteresis <0-30>
```

Global attributes

Flag: !

This command applies immediately

Parameters

smscb

SMSCB (SMS Cell Broadcast) / CBCH configuration

queue-hysteresis

Hysteresis of the SMSCB (CBCH) queue

<0-30>

In count of messages/pages (default: 2)

1.13.38 smscb queue-max-length <1-60>

Command

```
smscb queue-max-length <1-60>
```

Global attributes

Flag: !

This command applies immediately

Parameters

smscb

SMSCB (SMS Cell Broadcast) / CBCH configuration

queue-max-length

Maximum length of the SMSCB (CBCH) queue

<1-60>

Length in count of messages/pages (default: 15)

1.13.39 smscb queue-target-length <1-30>

Command

```
smscb queue-target-length <1-30>
```

Global attributes

Flag: !

This command applies immediately

Parameters

smscb

SMSCB (SMS Cell Broadcast) / CBCH configuration

queue-target-length

Target length of the SMSCB (CBCH) queue

<1-30>

Length in count of messages/pages (default: 2)

1.13.40 supp-meas-info toa256

Command

```
supp-meas-info toa256
```

Global attributes

Flag: !

This command applies immediately

Parameters

supp-meas-info

Configure the RSL Supplementary Measurement Info

toa256

Report the TOA in 1/256th symbol periods

1.13.41 **trx <0-254>**

Command

```
trx <0-254>
```

Global attributes

Flag: !

This command applies immediately

Parameters

trx

Select a TRX to configure

<0-254>

TRX number

1.13.42 **twjit**

Command

```
twjit
```

Global attributes

Flag: !

This command applies immediately

Parameters

twjit

Configure TW jitter buffer

1.14 **trx**

1.14.1 **ms-power-control (dsp|osmo)**

Command

```
ms-power-control (dsp|osmo)
```

Parameters

ms-power-control

Mobile Station Power Level Control

dsp

Handled by DSP

osmo

Handled by OsmoBTS

1.14.2 phy <0-255> instance <0-255>

Command

```
phy <0-255> instance <0-255>
```

Parameters

phy

Configure PHY Link+Instance for this TRX

<0-255>

PHY Link number

instance

PHY instance

<0-255>

PHY Instance number

1.14.3 power-ramp max-initial <-10000-100000> (dBm|mdBm)

Command

```
power-ramp max-initial <-10000-100000> (dBm|mdBm)
```

Parameters

power-ramp

Power-Ramp settings

max-initial

Maximum initial power

<-10000-100000>

Value

dBm

Unit is dB (decibels)

mdBm

Unit is mdB (milli-decibels, or rather 1/10000 bel)

1.14.4 power-ramp step-interval <1-100>

Command

```
power-ramp step-interval <1-100>
```

Parameters

power-ramp

Power-Ramp settings

step-interval

Power increase by step

<1-100>

Step time in seconds

1.14.5 power-ramp step-size <1-100000> (dB|mdB)

Command

```
power-ramp step-size <1-100000> (dB|mdB)
```

Parameters

power-ramp

Power-Ramp settings

step-size

Power increase by step

<1-100000>

Step size

dB

Unit is dB (decibels)

mdB

Unit is mdB (milli-decibels, or rather 1/10000 bel)

1.14.6 ta-control interval <0-31>

Command

```
ta-control interval <0-31>
```

Parameters

ta-control

Timing Advance Control Parameters

interval

Set TA control loop interval

<0-31>

As in P_CON_INTERVAL, in units of 2 SACCH periods (0.96 seconds) (default=0, every SACCH block)

1.14.7 user-gain <-100000-100000> (dB|mdB)

Command

```
user-gain <-100000-100000> (dB|mdB)
```

Global attributes

Flag: !

This command applies immediately

Parameters

user-gain

Inform BTS about additional, user-provided gain or attenuation at TRX output

<-100000-100000>

Value of user-provided external gain(+)/attenuation(-)

dB

Unit is dB (decibels)

mdB

Unit is mdB (milli-decibels, or rather 1/10000 bel)

1.15 osmux

1.15.1 batch-factor <1-8>

Command

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

Parameters

batch-factor

Batching factor

<1-8>

Number of messages in the batch

1.15.2 batch-size <1-65535>

Command

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

Parameters

batch-size

Batch size

<1-65535>

Batch size in bytes

1.15.3 dummy-padding (on|off)

Command

```
dummy-padding (on|off)
```

Parameters

dummy-padding

Dummy padding

on

Enable dummy padding

off

Disable dummy padding (default)

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

Command

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

Parameters

local-ip

IP information

A.B.C.D

IPv4 Address to bind to

X:X::X:X

IPv6 Address to bind to

1.15.5 local-port <1-65535>

Command

```
local-port <1-65535>
```

Parameters

local-port

Osmux port

<1-65535>

UDP port

1.15.6 use (off|on|only)

Command

```
use (off|on|only)
```

Global attributes

Flag: !

This command applies immediately

Parameters

use

Configure Osmux usage

off

Never use Osmux

on

Use Osmux if requested by BSC (default)

only

Always use Osmux, reject non-Osmux BSC requests

1.16 twjit

1.16.1 buffer-depth <1-65535> <1-65535>

Command

```
buffer-depth <1-65535> <1-65535>
```

Parameters

buffer-depth

Buffer depth configuration

<1-65535>

Minimum fill required to start flow

<1-65535>

High water mark fill level

1.16.2 marker-handling (handover|ignore)

Command

```
marker-handling (handover|ignore)
```

Parameters

marker-handling

How to handle RTP packets with marker bit set

handover

Invoke handover handling, same as SSRC change

ignore

Ignore marker bit

1.16.3 max-future-sec <1-65535>

Command

```
max-future-sec <1-65535>
```

Parameters

max-future-sec

Guard against time traveler packets

<1-65535>

Maximum permissible number of seconds into the future

1.16.4 no start-max-delta

Command

```
no start-max-delta
```

Parameters

no

Negate a command or set its defaults

start-max-delta

Maximum permitted gap in time-of-arrival in starting state

1.16.5 no start-min-delta

Command

```
no start-min-delta
```

Parameters

no

Negate a command or set its defaults

start-min-delta

Minimum required delta in time-of-arrival to start flow

1.16.6 no underrun-extension

Command

```
no underrun-extension
```

Parameters

no

Negate a command or set its defaults

underrun-extension

Underrun extension for intentional gaps

1.16.7 start-max-delta <1-65535>

Command

```
start-max-delta <1-65535>
```

Parameters

start-max-delta

Maximum permitted gap in time-of-arrival in starting state

<1-65535>

Time delta value in ms

1.16.8 start-min-delta <1-65535>

Command

```
start-min-delta <1-65535>
```

Parameters

start-min-delta

Minimum required delta in time-of-arrival to start flow

<1-65535>

Time delta value in ms

1.16.9 thinning-interval <2-65535>

Command

```
thinning-interval <2-65535>
```

Parameters

thinning-interval

Standing queue thinning configuration

<2-65535>

Drop every Nth packet

1.16.10 underrun-extension <1-65535>

Command

```
underrun-extension <1-65535>
```

Parameters

underrun-extension

Underrun extension for intentional gaps (DTX)

<1-65535>

Maximum number of consecutive omitted packets
