OsmoBTS VTY Reference

Copyright © 2016

		COLLABORATORS		
	TITLE : OsmoBTS VTY Reference			
ACTION	*NAME*	*DATE*	*SIGNATURE*	
WRITTEN BY		October 29, 2020		

	REVISION HISTORY		

NUMBER	DATE	DESCRIPTION	NAME
v1	13th October 2016	Initial	hw

Contents

List of Tables

Chapter 1

VTY reference

The Virtual Tele Type (VTY) has the concept of nodes and commands. This chapter lists all nodes and the commands that are available within the node. Each command can consist out of several words followed by a variable number of parameters. There are common patterns for the parameters, these include IPv4 addresses, number ranges, a word, a line of text and choice. The following will explain the commonly used patterns.

Pattern	Example	Explanation
A.B.C.D	127.0.0.1	A IPv4 address
TEXT	example01	A single string without any spaces, tabs
.TEXT	Some information	A line of text
(OptionA|OptionB|OptionC)	OptionA	A choice between a list of available options
<0-10>	5	A number from a range

Table 1.1: VTY Parameter Patterns

The application is configured through the VTY. For configuring a system one needs to enter the **enable** node and then enter the **configure terminal** command. Then the configuration can be made according to the available commands. After the system has been configured one can use the **write** command to write the new configuration to the configuration file. The new file will be used after the application has been restarted.

The following table lists the TCP port numbers of the VTY for the various Osmocom GSM related programs as used on sysmocom products:

Port Number	Software
4240	osmo-pcu
4241	osmo-bts
4242	osmo-nitb, osmo-bsc
4243	osmo-bsc_mgcp
4244	osmo-bsc_nat
4245	osmo-sgsn
4246	osmo-gbproxy

Table 1.2: VTY port numbers

Common Commands

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

end

Command

```
end
```

Parameters

end

    End current mode and change to enable mode.

exit

Command

```
exit
```

Parameters

exit

    Exit current mode and down to previous mode

help

Command

```
help
```

Parameters

help

    Description of the interactive help system

list

Command

```
list
```

Parameters

list

    Print command list

show running-config

Command

```
show running-config
```

Parameters

show

    Show running system information

running-config

    running configuration

write

Command

```
write
```

Parameters

write

    Write running configuration to memory, network, or terminal

write file [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

write memory

Command

```
write memory
```

Parameters

write

    Write running configuration to memory, network, or terminal

memory

    Write configuration to the file (same as write file)

write terminal

Command

```
write terminal
```

Parameters

write

Write running configuration to memory, network, or terminal

terminal

Write to terminal

view

The view node is the default node when connecting to the VTY interface. This node does not require any additional permission and allows to introspect the application.

enable

Command

```
enable
```

Parameters

enable

Turn on privileged mode command

logging color (0|1)

Command

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

Parameters

logging

Configure logging

color

Configure color-printing for log messages

0

Don't use color for printing messages

1

Use color for printing messages

logging disable

Command

```
logging disable
```

Parameters

logging
> Configure logging

disable
> Disables logging to this vty

logging enable

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

Command

```
logging enable
```

Parameters

logging
> Configure logging

enable
> Enables logging to this vty

logging filter all (0|1)

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

Command

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

Parameters

logging
> Configure logging

filter
> Filter log messages

all
> Do you want to log all messages?

0
> Only print messages matched by other filters

1
> Bypass filter and print all messages

logging filter 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|pbcch|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

pbcch
    PBCCH

pch
    PCH

pdtch

   PDTCH

pnch

   PNCH

ppch

   PPCH

prach

   PRACH

ptcch

   PTCCH

rach

   RACH

sacch

   SACCH

sch

   SCH

sdcch

   SDCCH

tch/f

   TCH/F

tch/h

   TCH/H

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

Command

```
logging level (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|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

rsl

   A-bis Radio Siganlling 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

l1c

>Layer 1 Control (MPH)

l1p

>Layer 1 Primitives (PH)

dsp

>DSP Trace Messages

pcu

>PCU interface

ho

>Handover

trx

>TRX interface

loop

>Control loops

abis

>A-bis Intput Subsystem

rtp

>Realtime Transfer Protocol

sum

>DSUM

lglobal

>Library-internal global log family

llapd

>LAPD in libosmogsm

linp

>A-bis Intput Subsystem

lmux

>A-bis B-Subchannel TRAU Frame Multiplex

lmi

>A-bis Input Driver for Signalling

lmib

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

lsms

Layer3 Short Message Service (SMS)

lctrl

Control Interface

lgtp

GPRS GTP library

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

libosmo-sigtran MTP3 User Adaptation

lmgcp

libosmo-mgcp Media Gateway Control Protocol

ljibuf

libosmo-netif Jitter Buffer

lrspro

Remote SIM protocol

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

force-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

set-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

logging print category (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

category

Configure log message

0

Don't prefix each log message

1

Prefix each log message with category/subsystem name

logging print category-hex (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

category-hex

Configure log message

0

Don't prefix each log message

1

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

logging print extended-timestamp (0|1)

Command

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

Parameters

logging
>   Configure logging

print
>   Log output settings

extended-timestamp
>   Configure log message timestamping

0
>   Don't prefix each log message

1
>   Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

Command

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

Parameters

logging
>   Configure logging

print
>   Log output settings

file
>   Configure log message

0
>   Don't prefix each log message

1
>   Prefix each log message with the source file and line

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

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

logging print level (0|1)

Command

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

Parameters

logging
 Configure logging

print
 Log output settings

level
 Configure log message

0
 Don't prefix each log message

1
 Prefix each log message with the log level name

logging set-log-mask MASK

Command

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

Parameters

logging
 Configure logging

set-log-mask
 Set the logmask of this logging target

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

logging timestamp (0|1)

Command

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

Parameters

logging

Configure logging

timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

logp (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|lglobal|l...

Command

```
logp (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|lglobal|llapd| ←
    linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp| ←
    ljibuf|lrspro) (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 Siganlling 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

l1c

Layer 1 Control (MPH)

l1p

Layer 1 Primitives (PH)

dsp

DSP Trace Messages

pcu

PCU interface

ho

    Handover

trx

    TRX interface

loop

    Control loops

abis

    A-bis Intput Subsystem

rtp

    Realtime Transfer Protocol

sum

    DSUM

lglobal

    Library-internal global log family

llapd

    LAPD in libosmogsm

linp

    A-bis Intput Subsystem

lmux

    A-bis B-Subchannel TRAU Frame Multiplex

lmi

    A-bis Input Driver for Signalling

lmib

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

lsms

    Layer3 Short Message Service (SMS)

lctrl

    Control Interface

lgtp

    GPRS GTP library

lstats

    Statistics messages and logging

lgsup

    Generic Subscriber Update Protocol

loap

    Osmocom Authentication Protocol

lss7

    libosmo-sigtran Signalling System 7

lsccp

> libosmo-sigtran SCCP Implementation

lsua

> libosmo-sigtran SCCP User Adaptation

lm3ua

> libosmo-sigtran MTP3 User Adaptation

lmgcp

> libosmo-mgcp Media Gateway Control Protocol

ljibuf

> libosmo-netif Jitter Buffer

lrspro

> Remote SIM protocol

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

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|pbcch|pch|pdtch|pnch|ppch|prach|ptcch|rach|sacch|sch|sdcch|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

pbcch
    PBCCH

pch
    PCH

pdtch
    PDTCH

pnch
    PNCH

ppch
    PPCH

prach
    PRACH

ptcch
    PTCCH

rach

   RACH

sacch

   SACCH

sch

   SCH

sdcch

   SDCCH

tch/f

   TCH/F

tch/h

   TCH/H

no logging level force-all

Command

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

Parameters

no

   Negate a command or set its defaults

logging

   Configure logging

level

   Set the log level for a specified category

force-all

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

show alarms

Command

```
show alarms
```

Parameters

show

   Show running system information

alarms

   Show current logging configuration

show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show

    Show running system information

asciidoc

    Asciidoc generation

counters

    Generate table of all registered counters

show bts <0-255>

Command

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

Parameters

show

    Show running system information

bts

    Display information about a BTS

<0-255>

    BTS Number

show e1_driver

Command

```
show e1_driver
```

Parameters

show

    Show running system information

e1_driver

    Display information about available E1 drivers

show e1_line [line_nr] [stats]

Command

```
show e1_line [line_nr] [stats]
```

Parameters

show

Show running system information

e1_line

Display information about a E1 line

[line_nr]

E1 Line Number

[stats]

Include statistics

show e1_timeslot [line_nr] [ts_nr]

Command

```
show e1_timeslot [line_nr] [ts_nr]
```

Parameters

show

Show running system information

e1_timeslot

Display information about a E1 timeslot

[line_nr]

E1 Line Number

[ts_nr]

E1 Timeslot Number

show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

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

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

show logging vty

Command

```
show logging vty
```

Parameters

show
>   Show running system information

logging
>   Show current logging configuration

vty
>   Show current logging configuration for this vty

show online-help

Command

```
show online-help
```

Parameters

show
>   Show running system information

online-help
>   Online help

show rate-counters

Command

```
show rate-counters
```

Parameters

show
>   Show running system information

rate-counters
>   Show all rate counters

show stats

Command

```
show stats
```

Parameters

show
> Show running system information

stats
> Show statistical values

show stats level (global|peer|subscriber)

Command

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

Parameters

show
> Show running system information

stats
> Show statistical values

level
> Set the maximum group level

global
> Show global groups only

peer
> Show global and network peer related groups

subscriber
> Show global, peer, and subscriber groups

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

Command

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

Parameters

show
> Show running system information

talloc-context

>   Show talloc memory hierarchy

application

>   Application's context

all

>   All contexts, if NULL-context tracking is enabled

full

>   Display a full talloc memory hierarchy

brief

>   Display a brief talloc memory hierarchy

DEPTH

>   Specify required maximal depth value

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

Command

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

Parameters

show

>   Show running system information

talloc-context

>   Show talloc memory hierarchy

application

>   Application's context

all

>   All contexts, if NULL-context tracking is enabled

full

>   Display a full talloc memory hierarchy

brief

>   Display a brief talloc memory hierarchy

DEPTH

>   Specify required maximal depth value

filter

>   Filter chunks using regular expression

REGEXP

>   Regular expression

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

tree

Display only a specific memory chunk

ADDRESS

Chunk address (e.g. 0xdeadbeef)

show 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

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

show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

terminal length <0-512>

Command

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

Parameters

terminal

Set terminal line parameters

length

Set number of lines on a screen

<0-512>

Number of lines on screen (0 for no pausing)

terminal no length

Command

```
terminal no length
```

Parameters

terminal
> Set terminal line parameters

no
> Negate a command or set its defaults

length
> Set number of lines on a screen

who

Command

```
who
```

Parameters

who
> Display who is on vty

enable

The enable node is a privileged node, allowing to make changes to the configuration and to access further commands like 'configure'. All commands seen on the view node are also available here.

bts <0-0> trx <0-0> ts <0-7> lchan <0-1> loopback

Command

```
bts <0-0> trx <0-0> ts <0-7> lchan <0-1> loopback
```

Parameters

bts
> BTS related commands

<0-0>
> BTS number

trx
> TRX related commands

<0-0>

    TRX number

ts

    timeslot related commands

<0-7>

    timeslot number

lchan

    logical channel commands

<0-1>

    logical channel number

loopback

    Set loopback

bts <0-0> trx <0-0> ts <0-7> lchan <0-1> rtp jitter-buffer <0-10000>

Command

```
bts <0-0> trx <0-0> ts <0-7> lchan <0-1> rtp jitter-buffer <0-10000>
```

Parameters

bts

    BTS related commands

<0-0>

    BTS number

trx

    TRX related commands

<0-0>

    TRX number

ts

    timeslot related commands

<0-7>

    timeslot number

lchan

    logical channel commands

<0-1>

    logical channel number

rtp

    RTP settings

jitter-buffer

    Jitter buffer

<0-10000>

    Size of jitter buffer in (ms)

configure terminal

Command

```
configure terminal
```

Parameters

configure
: Configuration from vty interface

terminal
: Configuration terminal

copy running-config startup-config

Command

```
copy running-config startup-config
```

Parameters

copy
: Copy configuration

running-config
: Copy running config to...

startup-config
: Copy running config to startup config (same as write file)

disable

Command

```
disable
```

Parameters

disable
: Turn off privileged mode command

logging color (0|1)

Command

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

Parameters

logging
> Configure logging

color
> Configure color-printing for log messages

0
> Don't use color for printing messages

1
> Use color for printing messages

logging disable

Command

```
logging disable
```

Parameters

logging
> Configure logging

disable
> Disables logging to this vty

logging enable

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

Command

```
logging enable
```

Parameters

logging
> Configure logging

enable
> Enables logging to this vty

logging filter all (0|1)

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

Command

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

Parameters

logging

    Configure logging

filter

    Filter log messages

all

    Do you want to log all messages?

0

    Only print messages matched by other filters

1

    Bypass filter and print all messages

logging filter 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|pbcch|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

pbcch

   PBCCH

pch

   PCH

pdtch

   PDTCH

pnch

   PNCH

ppch

   PPCH

prach

   PRACH

ptcch

   PTCCH

rach

   RACH

sacch

   SACCH

sch

   SCH

sdcch

>   SDCCH

tch/f

>   TCH/F

tch/h

>   TCH/H

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

Command

```
logging level (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|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

rsl

>   A-bis Radio Siganlling 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

l1c

>   Layer 1 Control (MPH)

l1p

>   Layer 1 Primitives (PH)

dsp

>   DSP Trace Messages

pcu

>   PCU interface

ho

    Handover

trx

    TRX interface

loop

    Control loops

abis

    A-bis Intput Subsystem

rtp

    Realtime Transfer Protocol

sum

    DSUM

lglobal

    Library-internal global log family

llapd

    LAPD in libosmogsm

linp

    A-bis Intput Subsystem

lmux

    A-bis B-Subchannel TRAU Frame Multiplex

lmi

    A-bis Input Driver for Signalling

lmib

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

lsms

    Layer3 Short Message Service (SMS)

lctrl

    Control Interface

lgtp

    GPRS GTP library

lstats

    Statistics messages and logging

lgsup

    Generic Subscriber Update Protocol

loap

    Osmocom Authentication Protocol

lss7

    libosmo-sigtran Signalling System 7

lsccp

   libosmo-sigtran SCCP Implementation

lsua

   libosmo-sigtran SCCP User Adaptation

lm3ua

   libosmo-sigtran MTP3 User Adaptation

lmgcp

   libosmo-mgcp Media Gateway Control Protocol

ljibuf

   libosmo-netif Jitter Buffer

lrspro

   Remote SIM protocol

debug

   Log debug messages and higher levels

info

   Log informational messages and higher levels

notice

   Log noticeable messages and higher levels

error

   Log error messages and higher levels

fatal

   Log only fatal messages

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

Command

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

Parameters

logging

   Configure logging

level

   Set the log level for a specified category

force-all

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

debug

   Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

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

Command

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

Parameters

logging

    Configure logging

level

    Set the log level for a specified category

set-all

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

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

logging print category (0|1)

Command

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

Parameters

logging

    Configure logging

print

    Log output settings

category

    Configure log message

0

    Don't prefix each log message

1

    Prefix each log message with category/subsystem name

logging print category-hex (0|1)

Command

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

Parameters

logging

    Configure logging

print

    Log output settings

category-hex

    Configure log message

0

    Don't prefix each log message

1

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

logging print extended-timestamp (0|1)

Command

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

Parameters

logging

    Configure logging

print

    Log output settings

extended-timestamp

   Configure log message timestamping

0

   Don't prefix each log message

1

   Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

Command

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

Parameters

logging

   Configure logging

print

   Log output settings

file

   Configure log message

0

   Don't prefix each log message

1

   Prefix each log message with the source file and line

basename

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

[last]

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

logging print level (0|1)

Command

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

Parameters

logging

   Configure logging

print

   Log output settings

level

    Configure log message

0

    Don't prefix each log message

1

    Prefix each log message with the log level name

logging set-log-mask MASK

Command

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

Parameters

logging

    Configure logging

set-log-mask

    Set the logmask of this logging target

MASK

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

logging timestamp (0|1)

Command

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

Parameters

logging

    Configure logging

timestamp

    Configure log message timestamping

0

    Don't prefix each log message

1

    Prefix each log message with current timestamp

logp (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|lglobal|l...

Command

```
logp (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|lglobal|llapd| ↩
    linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp| ↩
    ljibuf|lrspro) (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 Siganlling 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

l1c

Layer 1 Control (MPH)

l1p

Layer 1 Primitives (PH)

dsp

DSP Trace Messages

pcu

PCU interface

ho

Handover

trx

TRX interface

loop

Control loops

abis

A-bis Intput Subsystem

rtp

    Realtime Transfer Protocol

sum

    DSUM

lglobal

    Library-internal global log family

llapd

    LAPD in libosmogsm

linp

    A-bis Intput Subsystem

lmux

    A-bis B-Subchannel TRAU Frame Multiplex

lmi

    A-bis Input Driver for Signalling

lmib

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

lsms

    Layer3 Short Message Service (SMS)

lctrl

    Control Interface

lgtp

    GPRS GTP library

lstats

    Statistics messages and logging

lgsup

    Generic Subscriber Update Protocol

loap

    Osmocom Authentication Protocol

lss7

    libosmo-sigtran Signalling System 7

lsccp

    libosmo-sigtran SCCP Implementation

lsua

    libosmo-sigtran SCCP User Adaptation

lm3ua

    libosmo-sigtran MTP3 User Adaptation

lmgcp

    libosmo-mgcp Media Gateway Control Protocol

ljibuf

   libosmo-netif Jitter Buffer

lrspro

   Remote SIM protocol

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

no bts <0-0> trx <0-0> ts <0-7> lchan <0-1> loopback

Command

```
no bts <0-0> trx <0-0> ts <0-7> lchan <0-1> loopback
```

Parameters

no

   Negate a command or set its defaults

bts

   BTS related commands

<0-0>

   BTS number

trx

   TRX related commands

<0-0>

   TRX number

ts

   timeslot related commands

<0-7>

   timeslot number

lchan

   logical channel commands

<0-1>

    logical channel number

loopback

    Set loopback

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|pbcch|pch|pdtch|pnch|ppch|prach|ptcch|rach|sacch|sch|sdcch|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

pbcch

    PBCCH

pch

    PCH

pdtch

    PDTCH

pnch

    PNCH

ppch

    PPCH

prach

    PRACH

ptcch

    PTCCH

rach

    RACH

sacch

    SACCH

sch

    SCH

sdcch

    SDCCH

tch/f

    TCH/F

tch/h

    TCH/H

no logging level force-all

Command

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

Parameters

no

    Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

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

show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

show bts <0-255>

Command

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

Parameters

show

Show running system information

bts

Display information about a BTS

<0-255>

BTS Number

show e1_driver

Command

```
show e1_driver
```

Parameters

show

Show running system information

e1_driver

Display information about available E1 drivers

show e1_line [line_nr] [stats]

Command

```
show e1_line [line_nr] [stats]
```

Parameters

show

Show running system information

e1_line

Display information about a E1 line

[line_nr]

E1 Line Number

[stats]

Include statistics

show e1_timeslot [line_nr] [ts_nr]

Command

```
show e1_timeslot [line_nr] [ts_nr]
```

Parameters

show

Show running system information

e1_timeslot

Display information about a E1 timeslot

[line_nr]

E1 Line Number

[ts_nr]

E1 Timeslot Number

show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

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

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

show logging vty

Command

```
show logging vty
```

Parameters

show

    Show running system information

logging

    Show current logging configuration

vty

    Show current logging configuration for this vty

show online-help

Command

```
show online-help
```

Parameters

show

    Show running system information

online-help

    Online help

show rate-counters

Command

```
show rate-counters
```

Parameters

show
> Show running system information

rate-counters
> Show all rate counters

show startup-config

Command

```
show startup-config
```

Parameters

show
> Show running system information

startup-config
> Contentes of startup configuration

show stats

Command

```
show stats
```

Parameters

show
> Show running system information

stats
> Show statistical values

show stats level (global|peer|subscriber)

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

Parameters

show

Show running system information

stats

Show statistical values

level

Set the maximum group level

global

Show global groups only

peer

Show global and network peer related groups

subscriber

Show global, peer, and subscriber groups

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

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

filter

Filter chunks using regular expression

REGEXP

Regular expression

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

    Display a full talloc memory hierarchy

brief

    Display a brief talloc memory hierarchy

DEPTH

    Specify required maximal depth value

tree

    Display only a specific memory chunk

ADDRESS

    Chunk address (e.g. 0xdeadbeef)

show 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

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

show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

terminal length <0-512>

Command

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

Parameters

terminal

Set terminal line parameters

length

Set number of lines on a screen

<0-512>

Number of lines on screen (0 for no pausing)

terminal monitor

Command

```
terminal monitor
```

Parameters

terminal

Set terminal line parameters

monitor

Copy debug output to the current terminal line

terminal no length

Command

```
terminal no length
```

Parameters

terminal

Set terminal line parameters

no

Negate a command or set its defaults

length

Set number of lines on a screen

terminal no monitor

Command

```
terminal no monitor
```

Parameters

terminal

Set terminal line parameters

no

Negate a command or set its defaults

monitor

Copy debug output to the current terminal line

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

who

Command

```
who
```

Parameters

who

  Display who is on vty

config

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

banner motd default

Command

```
banner motd default
```

Parameters

banner

  Set banner string

motd

  Strings for motd

default

  Default string

banner motd file [FILE]

Command

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

Parameters

banner

  Set banner

motd

  Banner for motd

file

  Banner from a file

[FILE]

  Filename

bts BTS_NR

Command

```
bts BTS_NR
```

Parameters

bts

Select a BTS to configure

BTS_NR

BTS Number

ctrl

Command

```
ctrl
```

Parameters

ctrl

Configure the Control Interface

e1_input

Command

```
e1_input
```

Parameters

e1_input

Configure E1/T1/J1 TDM input

enable password (8|) WORD

Command

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

Parameters

enable

Modify enable password parameters

password

Assign the privileged level password

8

Specifies a HIDDEN password will follow

dummy string

WORD

The HIDDEN 'enable' password string

enable password LINE

Command

```
enable password LINE
```

Parameters

enable
> Modify enable password parameters

password
> Assign the privileged level password

LINE
> The UNENCRYPTED (cleartext) 'enable' password

hostname WORD

Command

```
hostname WORD
```

Parameters

hostname
> Set system's network name

WORD
> This system's network name

line vty

Command

```
line vty
```

Parameters

line
> Configure a terminal line

vty
> Virtual terminal

log alarms <2-32700>

Command

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

Parameters

log

Configure logging sub-system

alarms

Logging alarms to osmo_strrb

<2-32700>

Maximum number of messages to log

log file .FILENAME

Command

```
log file .FILENAME
```

Parameters

log

Configure logging sub-system

file

Logging to text file

.FILENAME

Filename

log gsmtap [HOSTNAME]

Command

```
log gsmtap [HOSTNAME]
```

Parameters

log

Configure logging sub-system

gsmtap

Logging via GSMTAP

[HOSTNAME]

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

log stderr

Command

```
log stderr
```

Parameters

log

Configure logging sub-system

stderr

Logging via STDERR of the process

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

Command

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

Parameters

log

Configure logging sub-system

syslog

Logging via syslog

authpriv

Security/authorization messages facility

cron

Clock daemon (cron/at) facility

daemon

General system daemon facility

ftp

Ftp daemon facility

lpr

Line printer facility

mail

Mail facility

news

News facility

user

Generic facility

uucp

UUCP facility

log syslog local <0-7>

Command

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

Parameters

log

Configure logging sub-system

syslog

Logging via syslog

local

Syslog LOCAL facility

<0-7>

Local facility number

no banner motd

Command

```
no banner motd
```

Parameters

no

Negate a command or set its defaults

banner

Set banner string

motd

Strings for motd

no enable password

Command

```
no enable password
```

Parameters

no

Negate a command or set its defaults

enable

Modify enable password parameters

password

Assign the privileged level password

no hostname [HOSTNAME]

Command

```
no hostname [HOSTNAME]
```

Parameters

no

Negate a command or set its defaults

hostname

Reset system's network name

[HOSTNAME]

Host name of this router

no log alarms

Command

```
no log alarms
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

alarms

Logging alarms to osmo_strrb

no log file .FILENAME

Command

```
no log file .FILENAME
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

file

Logging to text file

.FILENAME

Filename

no log stderr

Command

```
no log stderr
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

stderr

Logging via STDERR of the process

no log syslog

Command

```
no log syslog
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

syslog

Logging via syslog

no service advanced-vty

Command

```
no service advanced-vty
```

Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

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

Command

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

Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

terminal-length

System wide terminal length configuration

[<0-512>]

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

no stats reporter log

Command

```
no stats reporter log
```

Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

no stats reporter statsd

Command

```
no stats reporter statsd
```

Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

password (8|) WORD

Command

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

Parameters

password

Assign the terminal connection password

8

Specifies a HIDDEN password will follow

dummy string

WORD

The HIDDEN line password string

password LINE

Command

```
password LINE
```

Parameters

password

Assign the terminal connection password

LINE

The UNENCRYPTED (cleartext) line password

phy <0-255>

Command

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

Parameters

phy

Select a PHY to configure

<0-255>

PHY number

service advanced-vty

Command

```
service advanced-vty
```

Parameters

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

service terminal-length <0-512>

Command

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

Parameters

service

Set up miscellaneous service

terminal-length

System wide terminal length configuration

<0-512>

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

show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

stats interval <1-65535>

Command

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

Parameters

stats

> Configure stats sub-system

interval

> Set the reporting interval

<1-65535>

> Interval in seconds

stats reporter log

Command

```
stats reporter log
```

Parameters

stats

> Configure stats sub-system

reporter

> Configure a stats reporter

log

> Report to the logger

stats reporter statsd

Command

```
stats reporter statsd
```

Parameters

stats

> Configure stats sub-system

reporter

> Configure a stats reporter

statsd

> Report to a STATSD server

vty telnet-port <0-65535>

Command

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

Parameters

vty

Configure the VTY

telnet-port

Set the VTY telnet port

<0-65535>

TCP Port number

config-log

The log node is commonly available in all Osmocom programs and allows configuring logging to stderr and/or log files, including logging category and level filtering as well as output formatting options. Note that the 'logging enable' command is required to make logging commands available on the telnet VTY.

logging color (0|1)

Command

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

Parameters

logging

Configure logging

color

Configure color-printing for log messages

0

Don't use color for printing messages

1

Use color for printing messages

logging filter all (0|1)

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

Command

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

Parameters

logging

Configure logging

filter

Filter log messages

all

Do you want to log all messages?

0

Only print messages matched by other filters

1

Bypass filter and print all messages

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

Command

```
logging level (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|sum|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

rsl

A-bis Radio Siganlling 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

l1c

   Layer 1 Control (MPH)

l1p

   Layer 1 Primitives (PH)

dsp

   DSP Trace Messages

pcu

   PCU interface

ho

   Handover

trx

   TRX interface

loop

   Control loops

abis

   A-bis Intput Subsystem

rtp

   Realtime Transfer Protocol

sum

   DSUM

lglobal

   Library-internal global log family

llapd

   LAPD in libosmogsm

linp

   A-bis Intput Subsystem

lmux

   A-bis B-Subchannel TRAU Frame Multiplex

lmi

   A-bis Input Driver for Signalling

lmib

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

lsms

>   Layer3 Short Message Service (SMS)

lctrl

>   Control Interface

lgtp

>   GPRS GTP library

lstats

>   Statistics messages and logging

lgsup

>   Generic Subscriber Update Protocol

loap

>   Osmocom Authentication Protocol

lss7

>   libosmo-sigtran Signalling System 7

lsccp

>   libosmo-sigtran SCCP Implementation

lsua

>   libosmo-sigtran SCCP User Adaptation

lm3ua

>   libosmo-sigtran MTP3 User Adaptation

lmgcp

>   libosmo-mgcp Media Gateway Control Protocol

ljibuf

>   libosmo-netif Jitter Buffer

lrspro

>   Remote SIM protocol

debug

>   Log debug messages and higher levels

info

>   Log informational messages and higher levels

notice

>   Log noticeable messages and higher levels

error

>   Log error messages and higher levels

fatal

>   Log only fatal messages

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

force-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

set-all

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

debug

Log debug messages and higher levels

info

   Log informational messages and higher levels

notice

   Log noticeable messages and higher levels

error

   Log error messages and higher levels

fatal

   Log only fatal messages

logging print category (0|1)

Command

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

Parameters

logging

   Configure logging

print

   Log output settings

category

   Configure log message

0

   Don't prefix each log message

1

   Prefix each log message with category/subsystem name

logging print category-hex (0|1)

Command

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

Parameters

logging

   Configure logging

print

   Log output settings

category-hex

   Configure log message

0

   Don't prefix each log message

1

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

logging print extended-timestamp (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

extended-timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

Command

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

Parameters

logging

Configure logging

print

Log output settings

file

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the source file and line

basename

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

[last]

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

logging print level (0|1)

Command

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

Parameters

logging
    Configure logging

print
    Log output settings

level
    Configure log message

0
    Don't prefix each log message

1
    Prefix each log message with the log level name

logging timestamp (0|1)

Command

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

Parameters

logging
    Configure logging

timestamp
    Configure log message timestamping

0
    Don't prefix each log message

1
    Prefix each log message with current timestamp

no logging level force-all

Command

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

Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

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

config-stats

disable

Command

```
disable
```

Parameters

disable

Disable the reporter

enable

Command

```
enable
```

Parameters

enable

Enable the reporter

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).

level (global|peer|subscriber)

Command

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

Parameters

level

Set the maximum group level

global

Report global groups only

peer

Report global and network peer related groups

subscriber

Report global, peer, and subscriber groups

local-ip ADDR

Command

```
local-ip ADDR
```

Parameters

local-ip

Set the IP address to which we bind locally

ADDR

IP Address

mtu <100-65535>

Command

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

Parameters

mtu

Set the maximum packet size

<100-65535>

Size in byte

no local-ip

Command

```
no local-ip
```

Parameters

no

Negate a command or set its defaults

local-ip

Set the IP address to which we bind locally

no mtu

Command

```
no mtu
```

Parameters

no

Negate a command or set its defaults

mtu

Set the maximum packet size

no prefix

Command

```
no prefix
```

Parameters

no

Negate a command or set its defaults

prefix

Set the item name prefix

prefix PREFIX

Command

```
prefix PREFIX
```

Parameters

prefix

Set the item name prefix

PREFIX

The prefix string

remote-ip ADDR

Command

```
remote-ip ADDR
```

Parameters

remote-ip

Set the remote IP address to which we connect

ADDR

IP Address

remote-port <1-65535>

Command

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

Parameters

remote-port

Set the remote port to which we connect

<1-65535>

Remote port number

config-line

bind A.B.C.D [<0-65535>]

Command

```
bind A.B.C.D [<0-65535>]
```

Parameters

bind

Accept VTY telnet connections on local interface

A.B.C.D

Local interface IP address (default: 127.0.0.1)

[<0-65535>]

Local TCP port number

login

Command

```
login
```

Parameters

login

Enable password checking

no login

Command

```
no login
```

Parameters

no

Negate a command or set its defaults

login

Enable password checking

config-e1_input

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

    IPA TCP/IP input

ipa

    HSL TCP/IP input

unixsocket

    Unix socket input

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

Command

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

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

e1_line <0-255> keepalive

Command

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

Parameters

e1_line

    Configure E1/T1/J1 Line

<0-255>

    Line Number

keepalive

    Enable keep-alive probing

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

Command

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

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

e1_line <0-255> name .LINE

Command

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

Parameters

e1_line

    Configure E1/T1/J1 Line

<0-255>

    Line Number

name

    Set name for this line

.LINE

    Human readable name

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

Command

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

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

e1_line <0-255> socket .SOCKET

Command

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

Parameters

e1_line

   Configure E1/T1/J1 Line

<0-255>

   Line Number

socket

   Set socket path for unixsocket

.SOCKET

   socket path

ipa bind A.B.C.D

Command

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

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)

no e1_line <0-255> ipa-keepalive

Command

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

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

no e1_line <0-255> keepalive

Command

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

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

no pcap

Command

```
no pcap
```

Parameters

no

> Negate a command or set its defaults

pcap

> Disable pcap recording of all E1 traffic

pcap .FILE

Command

```
pcap .FILE
```

Parameters

pcap

Setup a pcap recording of all E1 traffic

.FILE

Filename to save the packets to

config-ctrl

bind A.B.C.D

Command

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

Parameters

bind

Set bind address to listen for Control connections

A.B.C.D

Local IP address (default 127.0.0.1)

phy

instance <0-255>

Command

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

Parameters

instance

Select a PHY instance to configure

<0-255>

PHY Instance number

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

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)

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)

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)

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)

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)

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)

phy-inst

bts

agch-queue-mgmt default

Command

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

Parameters

agch-queue-mgmt
> AGCH queue mgmt

default
> Reset clean parameters to default values

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>
```

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

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

description .TEXT

Command

```
description .TEXT
```

Parameters

description

> Save human-readable description of the object

.TEXT

> Text until the end of the line

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

> GSMTAP SAPI

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

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

max-ber10k-rach <0-10000>

Command

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

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)

min-qual-norm <-100-100>

Command

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

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)

min-qual-rach <-100-100>

Command

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

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)

no description

Command

```
no description
```

Parameters

no

> Negate a command or set its defaults

description

> Remove description of the object

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

GSMTAP SAPI

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

no supp-meas-info toa256

Command

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

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

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

paging lifetime <0-60>

Command

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

Parameters

paging

Paging related parameters

lifetime

Maximum lifetime of a paging record

<0-60>

Maximum lifetime of a paging record (secods)

paging queue-size <1-1024>

Command

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

Parameters

paging

    Paging related parameters

queue-size

    Maximum length of BTS-internal paging queue

<1-1024>

    Maximum length of BTS-internal paging queue

pcu-socket PATH

Command

```
pcu-socket PATH
```

Parameters

pcu-socket

    Configure the PCU socket file/path name

PATH

    (null)

rtp ip-dscp <0-63>

Command

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

Parameters

rtp

    RTP parameters

ip-dscp

    Specify DSCP for RTP/IP packets

<0-63>

    The DSCP value (upper 6 bits of TOS)

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

Command

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

Parameters

rtp

RTP parameters

jitter-buffer

RTP jitter buffer

<0-10000>

jitter buffer in ms

[adaptive]

(null)

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>

(null)

<1-65534>

(null)

smscb queue-hysteresis <0-30>

Command

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

Parameters

smscb

Hysteresis for SMSCB (CBCH) queue. In count of messages/pages (Default: 2)

queue-hysteresis

(null)

<0-30>

(null)

smscb queue-max-length <1-60>

Command

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

Parameters

smscb

Maximum queue length for SMSCB (CBCH) queue. In count of messages/pages (Default: 15)

queue-max-length

(null)

<1-60>

(null)

smscb queue-target-length <1-30>

Command

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

Parameters

smscb

Target queue length for SMSCB (CBCH) queue. In count of messages/pages (Default: 2)

queue-target-length

(null)

<1-30>

(null)

supp-meas-info toa256

Command

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

Parameters

supp-meas-info

Configure the RSL Supplementary Measurement Info

toa256

Report the TOA in 1/256th symbol periods

trx <0-254>

Command

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

Parameters

trx

Select a TRX to configure

<0-254>

TRX number

uplink-power-target <-110-0>

Command

```
uplink-power-target <-110-0>
```

Parameters

uplink-power-target

Set the nominal target Rx Level for uplink power control loop

<-110-0>

Target uplink Rx level in dBm

trx

ms-power-control (dsp|osmo)

Command

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

Parameters

ms-power-control

Mobile Station Power Level Control (change requires restart)

dsp

Handled by DSP

osmo

Handled by OsmoBTS

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

power-ramp max-initial <0-100000> (dBm|mdBm)

Command

```
power-ramp max-initial <0-100000> (dBm|mdBm)
```

Parameters

power-ramp

Power-Ramp settingsMaximum initial power

max-initial

Value

<0-100000>

Unit is dB (decibels)

dBm

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

mdBm

(null)

power-ramp step-interval <1-100>

Command

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

Parameters

power-ramp

    Power-Ramp settingsPower increase by step

step-interval

    Step time in seconds

<1-100>

    (null)

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

Command

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

Parameters

power-ramp

    Power-Ramp settingsPower increase by step

step-size

    Step size

<1-100000>

    Unit is dB (decibels)

dB

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

mdB

    (null)

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

Command

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

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)