OsmoBTS VTY Reference

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<td>January 29, 2024</td>
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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 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.

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Example</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.B.C.D</td>
<td>127.0.0.1</td>
<td>A IPv4 address</td>
</tr>
<tr>
<td>TEXT</td>
<td>example01</td>
<td>A single string without any spaces, tabs</td>
</tr>
<tr>
<td>.TEXT</td>
<td>Some information</td>
<td>A line of text</td>
</tr>
<tr>
<td>(OptionA</td>
<td>OptionB</td>
<td>OptionC)</td>
</tr>
<tr>
<td>&lt;0-10&gt;</td>
<td>5</td>
<td>A number from a range</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Port Number</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>4240</td>
<td>osmo-pcu</td>
</tr>
<tr>
<td>4241</td>
<td>osmo-bts</td>
</tr>
<tr>
<td>4242</td>
<td>osmo-nitb, osmo-bsc</td>
</tr>
<tr>
<td>4243</td>
<td>osmo-bsc_mgcp</td>
</tr>
<tr>
<td>4244</td>
<td>osmo-bsc_nat</td>
</tr>
<tr>
<td>4245</td>
<td>osmo-sgsn</td>
</tr>
<tr>
<td>4246</td>
<td>osmo-gbproxy</td>
</tr>
</tbody>
</table>

Table 1.2: VTY port numbers

1.1 Common Commands

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

Command

end

Parameters

end

End current mode and change to enable mode.

1.1.2 exit

Command

exit

Parameters

exit

Exit current mode and down to previous mode

1.1.3 help

Command

help

Parameters

help

Description of the interactive help system

1.1.4 list [with-flags]

Command

list [with-flags]

Parameters

list

Print command list

[with-flags]

Also print the VTY attribute flags
**1.1.5 show running-config**

Command

```
show running-config
```

Parameters

- `show`
  - Show running system information
- `running-config`
  - Running configuration

**1.1.6 show vty-attributes**

Command

```
show vty-attributes
```

Parameters

- `show`
  - Show running system information
- `vty-attributes`
  - List of VTY attributes

**1.1.7 show vty-attributes (application|library|global)**

Command

```
show vty-attributes (application|library|global)
```

Parameters

- `show`
  - Show running system information
- `vty-attributes`
  - List of VTY attributes
- `application`
  - Application specific attributes only
- `library`
  - Library specific attributes only
- `global`
  - Global attributes only
1.1.8 write

Command

```
write
```

Parameters

```
write
```
Write running configuration to memory, network, or terminal

1.1.9 write file [PATH]

Command

```
write file [PATH]
```

Parameters

```
write
```
Write running configuration to memory, network, or terminal
```
file
```
Write to configuration file
```

[PATH]
Set file path to store the config, or replace if already exists

1.1.10 write memory

Command

```
write memory
```

Parameters

```
write
```
Write running configuration to memory, network, or terminal
```
memory
```
Write configuration to the file (same as write file)
```
1.1.11 **write terminal**

**Command**

```plaintext
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**

```plaintext
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**

```plaintext
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|pbcch|pctch|pch|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
1.2.7 logging level (rsl|oml|rll|rr|meas|pag|1c|1p|dsp|pcu|ho|trx|loop|abis|rtp|osmu...)

Command

```
logging level (rsl|oml|rll|rr|meas|pag|1c|1p|dsp|pcu|ho|trx|loop|abis|rtp|osmux|asci | ←
| lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscgp|lsua| ←
| lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal|liuup|lfpfc|lcsl1|lio) ( ←
| 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
  Layer 3 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 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)
lms
    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
Ins
    GPRS NS layer
lbssgp
    GPRS BSSGP layer
lnsdata
    GPRS NS layer data PDU
lnssignal
    GPRS NS layer signal PDU
liuup
    Iu UP layer
lpfcp
    libosmo-pfcp Packet Forwarding Control Protocol
lcsn1
    libosmo-csn1 Concrete Syntax Notation 1 codec
lio
    libosmocore IO Subsystem
debug
    Log debug messages and higher levels
info
    Log informational messages and higher levels
notice
    Log noticeable messages and higher levels
error
    Log error messages and higher levels
fatal
    Log only fatal messages

1.2.8 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|asci|lg...

Command

```
logp (rsl|oml|rll|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmux|asci|lg...)
```
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
  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 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
lmit
   A-bis Input Driver for B-Channels (voice)
lsm
   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
lgmcp
   libosmo-mgcp Media Gateway Control Protocol
ljibuf
   libosmo-netif Jitter Buffer
lrpro
   Remote SIM protocol
lns
   GPRS NS layer
lbssgp
   GPRS BSSGP layer
lnsdata
   GPRS NS layer data PDU
lnssignal
   GPRS NS layer signal PDU
liuup
   Iu UP layer
lpfcp
   libosmo-pfcp Packet Forwarding Control Protocol
lcsn1
   libosmo-csn1 Concrete Syntax Notation 1 codec
lio
   libosmocore IO Subsystem
debug
   Log debug messages and higher levels
info
   Log informational messages and higher levels
notice
   Log noticeable messages and higher levels
error
   Log error messages and higher levels
fatal
   Log only fatal messages
.LOGMESSAGE
   Arbitrary message to log on given category and log level

1.2.19 no logging 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
OsmoBTS VTY Reference

ptch
    PTCCH
rach
    RACH
sacch
    SACCH
sch
    SCH
sdch
    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  no phy <0-1> dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg|l1_tx_msg_byte|mph_cnf|mph_ind|mph_req|ph_ind|ph Req|ph_rf|phy_msg_byte|mode|tdma_info|bad_crc|ph_ind_byte|ph_req_byte|device_msg|rach_info|log_ch_info|memory|profiling|test_comment|test|status)

Parameters

no
    Negate a command or set its defaults

phy
    Transceiver related commands

<0-1>
    TRX number

dsp-trace-flag
    DSP Trace Flag

debug
    Debug Region

l1_warning
    L1 Warning Region

error
    Error Region

l1_rx_msg
    L1_RX_MSG Region

l1_rx_msg_byte
    L1_RX_MSG_BYTE Region

l1_tx_msg
    L1_TX_MSG Region

l1_tx_msg_byte
    L1_TX_MSG_BYTE Region

mph_cnf
    MphConfirmation Region

mph_ind
    MphIndication Region

mph_req
    MphRequest Region

ph_ind
    PhIndication Region

ph_req
    PhRequest Region

phy_rf
    PhyRF Region

phy_msg_byte
    PhyRF Message Region

mode
    Mode Region
1.2.22 phy <0-1> dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg|l1_tx_msg_byte|mph_cnf|mph_ind|mph_req|ph_ind|ph_req|phy_rf|phy_msg_byte|mode|tdma_info|bad_crc|ph_ind_byte|ph_req_byte|device_msg|rach_info|log_ch_info|memory|profiling|test_comment|test|status)

Command

Parameters

phy

Transceiver related commands

<0-1>

TRX number
dsp-trace-flag
  DSP Trace Flag
debug
  Debug Region
l1_warning
  L1 Warning Region
error
  Error Region
l1_rx_msg
  L1_RX_MSG Region
l1_rx_msg_byte
  L1_RX_MSG_BYTE Region
l1_tx_msg
  L1_TX_MSG Region
l1_tx_msg_byte
  L1_TX_MSG_BYTE Region
mph_cnf
  MphConfirmation Region
mph_ind
  MphIndication Region
mph_req
  MphRequest Region
ph_ind
  PhIndication Region
ph_req
  PhRequest Region
phy_rf
  PhyRF Region
phy_msg_byte
  PhyRF Message Region
mode
  Mode Region
tdma_info
  TDMA Info Region
bad_crc
  Bad CRC Region
ph_ind_byte
  PH_IND_BYTE
ph_req_byte
  PH_REQ_BYTE

device_msg
  Device Message Region

rach_info
  RACH Info

log_ch_info
  LOG_CH_INFO

memory
  Memory Region

profiling
  Profiling Region

test_comment
  Test Comments

test
  Test Region

status
  Status Region

### 1.2.23 show alarms

**Command**

```
show alarms
```

**Parameters**

- **show**
  
  - Show running system information
- **alarms**
  
  - Show current logging configuration

### 1.2.24 show asciidoc counters

**Command**

```
show asciidoc counters
```

**Parameters**

- **show**
  
  - Show running system information
- **asciidoc**
  
  - Asciidoc generation
- **counters**
  
  - Generate table of all registered counters
1.2.25  show bts <0-255> gprs

Command

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

Parameters

<table>
<thead>
<tr>
<th>show</th>
<th>Show running system information</th>
</tr>
</thead>
<tbody>
<tr>
<td>bts</td>
<td>Display information about a BTS</td>
</tr>
<tr>
<td>&lt;0-255&gt;</td>
<td>BTS Number</td>
</tr>
<tr>
<td>gprs</td>
<td>GPRS/EGPRS configuration</td>
</tr>
</tbody>
</table>

1.2.26  show bts [<0-255>]

Command

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

Parameters

<table>
<thead>
<tr>
<th>show</th>
<th>Show running system information</th>
</tr>
</thead>
<tbody>
<tr>
<td>bts</td>
<td>Display information about a BTS</td>
</tr>
<tr>
<td>[&lt;0-255&gt;]</td>
<td>BTS Number</td>
</tr>
</tbody>
</table>

1.2.27  show cpu-sched threads

Command

```
show cpu-sched threads
```

Parameters

<table>
<thead>
<tr>
<th>show</th>
<th>Show running system information</th>
</tr>
</thead>
<tbody>
<tr>
<td>cpu-sched</td>
<td>Show Sched section information</td>
</tr>
<tr>
<td>threads</td>
<td>Show information about running threads)</td>
</tr>
</tbody>
</table>
1.2.28  show dsp-trace-flags trx <0-0>

Command
```
show dsp-trace-flags trx <0-0>
```

Parameters
- show
  - Show running system information
- dsp-trace-flags
  - Transceiver related commands
- trx
  - TRX number
- <0-0>
  - Display the current setting of the DSP trace flags

1.2.29  show e1_driver

Command
```
show e1_driver
```

Parameters
- show
  - Show running system information
- e1_driver
  - Display information about available E1 drivers

1.2.30  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
**1.2.31 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

**1.2.32 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

**1.2.33 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
1.2.34  **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.

1.2.35  **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.

1.2.36  **show history**

Command

```
show history
```

Parameters

**show**

Show running system information

**history**

Display the session command history.
1.2.37  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

1.2.38  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
1.2.39  show logging vty

Command

```
show logging vty
```

Parameters

- **show**
  - Show running system information
- **logging**
  - Show current logging configuration
- **vty**
  - Show current logging configuration for this vty

1.2.40  show online-help

Command

```
show online-help
```

Parameters

- **show**
  - Show running system information
- **online-help**
  - Online help

1.2.41  show phy <0-0> instance <0-0> system-information

Command

```
show phy <0-0> instance <0-0> system-information
```

Parameters

- **show**
  - Show running system information
- **phy**
  - Transceiver related commands
- **<0-0>**
  - TRX number
- **instance**
  - Display information about system
- **<0-0>**
  - (null)
- **system-information**
  - (null)
1.2.42  **show pid**

**Command**

```
show pid
```

**Parameters**

- `show`
  
  Show running system information

- `pid`
  
  Displays the process ID

1.2.43  **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

1.2.44  **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
1.2.45  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

1.2.46  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

1.2.47  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 (OTCGLOBAL)
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
1.2.48  **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)

1.2.49  **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'.

1.2.50 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

1.2.51 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
1.2.52  show uptime

Command

```
show uptime
```

Parameters

- show
  - Show running system information
- uptime
  - Displays how long the program has been running

1.2.53  show version

Command

```
show version
```

Parameters

- show
  - Show running system information
- version
  - Displays program version

1.2.54  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)
1.2.55  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

1.2.56  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|pbch|pdtch|pnc|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
1.3.11 logging level (rsl|oml|rl|rr|meas|pag|llc|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmu...)

Command

logging level (rsl|oml|rl|rr|meas|pag|llc|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmu|asci| ←
global|llapd|linp|limux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgup|loap|lss7|lsccp|lsua| ←
lm3ua|lmgcp|ljibuf|lrasp|lnds|lbound|lsudata|lndsignal|liuup|lpcf|lcsn1|lio) ( ←
deq|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)
rrl
  A-bis Radio Link Layer (RLL)
rr
  Layer 3 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)
ascli
  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)
lcrl
   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
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
ddebug
   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

```plaintext
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

```plaintext
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 YYYYMMDDhhmssnns

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|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmux|asci|lg...
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
   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 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
OsmoBTS VTY Reference

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
lcnn1
  libosmo-csn1 Concrete Syntax Notation 1 codec
lio
  libosmocore IO Subsystem
debug
  Log debug messages and higher levels
info
  Log informational messages and higher levels
notice
  Log noticeable messages and higher levels
error
  Log error messages and higher levels
fatal
  Log only fatal messages
.LOGMESSAGE
  Arbitrary message to log on given category and log level

1.3.23  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|pbcch|pch|pdtch|pncch|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
ptch
   PTCCH
rach
   RACH
sacch
   SACCH
sch
   SCH
sdcch
   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  no phy <0-1> dsp-trace-flag (debug|1_warning|error|1_rx_msg|1_rx_msg_byte|1_...
Parameters

no
   Negate a command or set its defaults
phy
   Transceiver related commands
   <0-1>
      TRX number
dsp-trace-flag
   DSP Trace Flag
debug
   Debug Region
l1_warning
   L1 Warning Region
error
   Error Region
l1_rx_msg
   L1_RX(MSG Region
l1_rx_msg_byte
   L1_RX(MSG_BYTE Region
l1_tx_msg
   L1_TX_MSG Region
l1_tx_msg_byte
   L1_TX_MSG_BYTE Region
mph_cnf
   MphConfirmation Region
mph_ind
   MphIndication Region
mph_req
   MphRequest Region
ph_ind
   PhIndication Region
ph_req
   PhRequest Region
phy_rf
   PhyRF Region
phy_msg_byte
   PhyRF Message Region
mode
   Mode Region
1.3.26  **no trx <0-0> <0-7> loopback <0-1>**

**Command**

```plaintext
no trx <0-0> <0-7> loopback <0-1>
```

**Parameters**

- **no**
  - Negate a command or set its defaults
- **trx**
  - Transceiver related commands
  - **<0-0>**
    - TRX number
<0-7>
  Timeslot number

loopback
  Set TCH loopback

<0-1>
  Logical Channel Number

1.3.27  phy <0-1> dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx...

Command

phy <0-1> dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg|...}

Parameters

phy
  Transceiver related commands

<0-1>
  TRX number
dsp-trace-flag
  DSP Trace Flag
debug
  Debug Region
l1_warning
  L1 Warning Region
error
  Error Region
l1_rx_msg
  L1_RX_MSG Region
l1_rx_msg_byte
  L1_RX_MSG_BYTE Region
l1_tx_msg
  L1_TX_MSG Region
l1_tx_msg_byte
  L1_TX_MSG_BYTE Region
mph_cnf
  MphConfirmation Region
mph_ind
    MphIndication Region
mph_req
    MphRequest Region
ph_ind
    PhIndication Region
ph_req
    PhRequest Region
phy_rf
    PhyRF Region
phy_msg_byte
    PhyRF Message Region
mode
    Mode Region
tdma_info
    TDMA Info Region
bad_crc
    Bad CRC Region
ph_ind_byte
    PH_IND_BYTE
ph_req_byte
    PH_REQ_BYTE
device_msg
    Device Message Region
rach_info
    RACH Info
log_ch_info
    LOG_CH_INFO
memory
    Memory Region
profiling
    Profiling Region
test_comment
    Test Comments
test
    Test Region
status
    Status Region
1.3.28  show alarms

Command

```
show alarms
```

Parameters

- **show**
  - Show running system information
- **alarms**
  - Show current logging configuration

1.3.29  show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

- **show**
  - Show running system information
- **asciidoc**
  - Asciidoc generation
- **counters**
  - Generate table of all registered counters

1.3.30  show 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
1.3.31  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

1.3.32  show cpu-sched threads

Command
show cpu-sched threads

Parameters
show
  Show running system information
cpu-sched
  Show Sched section information
threads
  Show information about running threads)

1.3.33  show dsp-trace-flags trx <0-0>

Command
show dsp-trace-flags trx <0-0>

Parameters
show
  Show running system information
dsp-trace-flags
  Transceiver related commands
trx
  TRX number
  <0-0>
  Display the current setting of the DSP trace flags
1.3.34 show e1_driver

Command

```
show e1_driver
```

Parameters

- `show`  
  Show running system information
- `e1_driver`  
  Display information about available E1 drivers

1.3.35 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

1.3.36 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
1.3.37  show fsm NAME

Command

```
show fsm NAME
```

Parameters

show

Show running system information

fsm

Show information about finite state machines

NAME

Display information about a single named finite state machine

1.3.38  show fsm all

Command

```
show fsm all
```

Parameters

show

Show running system information

fsm

Show information about finite state machines

all

Display a list of all registered finite state machines

1.3.39  show fsm-instances NAME

Command

```
show fsm-instances NAME
```

Parameters

show

Show running system information

fsm-instances

Show information about finite state machine instances

NAME

Display a list of all FSM instances of the named finite state machine
1.3.40  show fsm-instances all

Command

```
show fsm-instances all
```

Parameters

show
  Show running system information
fsm-instances
  Show information about finite state machine instances
all
  Display a list of all FSM instances of all finite state machine

1.3.41  show history

Command

```
show history
```

Parameters

show
  Show running system information
history
  Display the session command history

1.3.42  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
1.3.43  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

1.3.44  show logging vty

Command

```
show logging vty
```

Parameters

show

Show running system information

logging

Show current logging configuration

vty

Show current logging configuration for this vty
1.3.45  **show online-help**

Command

```bash
show online-help
```

Parameters

- **show**
  - Show running system information
- **online-help**
  - Online help

1.3.46  **show phy <0-0> instance <0-0> system-information**

Command

```bash
show phy <0-0> instance <0-0> system-information
```

Parameters

- **show**
  - Show running system information
- **phy**
  - Transceiver related commands
- `<0-0>`
  - TRX number
- **instance**
  - Display information about system
- `<0-0>`
  - (null)
- **system-information**
  - (null)

1.3.47  **show rate-counters [skip-zero]**

Command

```bash
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
1.3.48 show startup-config

Command

show startup-config

Parameters

show
  Show running system information
startup-config
  Contentes of startup configuration

1.3.49 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

1.3.50 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

1.3.51  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
1.3.52  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

1.3.53  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)

### 1.3.54 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’.
1.3.55  **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

1.3.56  **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

1.3.57  **show version**

**Command**

```
show version
```

**Parameters**

- `show`
  - Show running system information
- `version`
  - Displays program version
1.3.58 shutdown

Command

```
shutdown
```

Parameters

```
shutdown
```

Request a shutdown of the program

1.3.59 stats report

Command

```
stats report
```

Parameters

```
stats
```

Stats related commands

```
report
```

Manurally trigger reporting of stats

1.3.60 stats reset

Command

```
stats reset
```

Parameters

```
stats
```

Stats related commands

```
reset
```

Reset all rate counter stats
1.3.61  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)

1.3.62  terminal monitor

Command

```
terminal monitor
```

Parameters

- **terminal**
  - Set terminal line parameters

- **monitor**
  - Copy debug output to the current terminal line

1.3.63  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
1.3.64   **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

1.3.65   **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

1.3.66   **trigger-ho-cause trx <0-1> ts <0-7> lchan <0-1> cause (l_rxlev_ul_h|l_rxlev_dl_h...**

Command

```
trigger-ho-cause trx <0-1> ts <0-7> lchan <0-1> cause (l_rxlev_ul_h|l_rxlev_dl_h| l_rxqual_ul_h|l_rxqual_dl_h|rxlev_ul_ih|rxlev_dl_ih|max_ms_range|power_budget| enquiry|enquiry_failed)
```

Parameters

- **trigger-ho-cause**
  - Transceiver related commands
trx
   TRX number
<0-1>
   (null)
ts
   (null)
<0-7>
   (null)
lchan
   (null)
<0-1>
   (null)
cause
   (null)
l_rxlev_ul_h
   (null)
l_rxlev_dl_h
   (null)
l_rxqual_ul_h
   (null)
l_rxqual_dl_h
   (null)
rxlev_ul_ih
   (null)
rxlev_dl_ih
   (null)
max_ms_range
   (null)
power_budget
   (null)
enquiry
   (null)
enquiry_failed
   (null)
1.3.67  \texttt{trx <0-0> <0-7> (activate|deactivate) <0-7>}

Command
\begin{verbatim}
trx <0-0> <0-7> (activate|deactivate) <0-7>
\end{verbatim}

Parameters
\begin{itemize}
  \item \texttt{trx}
    \begin{itemize}
      \item Transceiver related commands
    \end{itemize}
  \item \texttt{<0-0>}
    \begin{itemize}
      \item TRX number
    \end{itemize}
  \item \texttt{<0-7>}
    \begin{itemize}
      \item Timeslot number
    \end{itemize}
  \item \texttt{activate}
    \begin{itemize}
      \item Activate Logical Channel
    \end{itemize}
  \item \texttt{deactivate}
    \begin{itemize}
      \item Deactivate Logical Channel
    \end{itemize}
  \item \texttt{<0-7>}
    \begin{itemize}
      \item Logical Channel Number
    \end{itemize}
\end{itemize}

1.3.68  \texttt{trx <0-0> <0-7> loopback <0-1>}

Command
\begin{verbatim}
trx <0-0> <0-7> loopback <0-1>
\end{verbatim}

Parameters
\begin{itemize}
  \item \texttt{trx}
    \begin{itemize}
      \item Transceiver related commands
    \end{itemize}
  \item \texttt{<0-0>}
    \begin{itemize}
      \item TRX number
    \end{itemize}
  \item \texttt{<0-7>}
    \begin{itemize}
      \item Timeslot number
    \end{itemize}
  \item \texttt{loopback}
    \begin{itemize}
      \item Set TCH loopback
    \end{itemize}
  \item \texttt{<0-1>}
    \begin{itemize}
      \item Logical Channel Number
    \end{itemize}
\end{itemize}
1.3.69  **trx nr <0-1> tx-power <-110-100>**

Command

```
trx nr <0-1> tx-power <-110-100>
```

Parameters

- **trx**: Transceiver related commands
- **nr**: TRX number
  - `<0-1>`: TRX number
- **tx-power**: Set transmit power (override BSC)
  - `<<-110-100>`: Transmit power in dBm

1.3.70  **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**
  - 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
- `vty`
  - 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 [blocking-io]

Command

```
log file FILENAME [blocking-io]
```

Parameters

- `log`
  - Configure logging sub-system
- `file`
  - Logging to text file
- `FILENAME`
  - Filename
- `[blocking-io]`
  - Use blocking, synchronous I/O
1.4.13  **log gsmtap [HOSTNAME]**

**Command**

```
log gsmtap [HOSTNAME]
```

**Parameters**

log  
Configure logging sub-system

gsmtap  
Logging via GSMTAP

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

1.4.14  **log stderr [blocking-io]**

**Command**

```
log stderr [blocking-io]
```

**Parameters**

log  
Configure logging sub-system

stderr  
Logging via STDERR of the process

[blocking-io]  
Use blocking, synchronous I/O

1.4.15  **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

```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

```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

```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

```bash
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

```bash
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

```bash
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

```plaintext
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

```plaintext
password LINE
```

Parameters

password
  Assign the terminal connection password
LINE
  The UNENCRYPTED (cleartext) line password

1.4.33  phy <0-255>

Command

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

Global attributes

Flag: !
  This command applies immediately

Parameters

phy
  Select a PHY to configure
<br /> <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
```markdown
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
```markdown
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
```markdown
timer [(bts|abis)] [TNNNN] [(<0-2147483647>|default)]
```

Parameters

timer
Configure or show timers

[bts]
BTS process timers
Abis (RSL) related timers

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'.

New timer value

Set to default timer value

1.4.43 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

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|rl|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmu...)

Command

logging level (rsl|oml|rl|rr|meas|pag|l1c|l1p|dsp|pcu|ho|trx|loop|abis|rtp|osmux|asci|←
lglobal|llapd|lindp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgup|lss7|lscrp|lsua|←
lm3ua|lmgcp|ljibuf|lsrpro|lns|lbssgp|lnsdata|lnsignal|liuup|lpfcp|lcsnl|lio) (←
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

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 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
lrpro
  Remote SIM protocol
lns
  GPRS NS layer
lbssgp
  GPRS BSSGP layer
lnsdata
  GPRS NS layer data PDU
lnsignal
  GPRS NS layer signal PDU
liuup
   Iu UP layer
lpfcp
   libosmo-pfcp Packet Forwarding Control Protocol
lcsn1
   libosmo-csn1 Concrete Syntax Notation 1 codec
lio
   libosmocore IO Subsystem
debug
   Log debug messages and higher levels
info
   Log informational messages and higher levels
notice
   Log noticeable messages and higher levels
error
   Log error messages and higher levels
fatal
   Log only fatal messages

1.5.4  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.

debbug

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

<table>
<thead>
<tr>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negate a command or set its defaults</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>prefix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set the item name prefix</td>
</tr>
</tbody>
</table>

1.6.10  prefix PREFIX

Command

| prefix PREFIX |

Parameters

<table>
<thead>
<tr>
<th>prefix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set the item name prefix</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PREFIX</th>
</tr>
</thead>
<tbody>
<tr>
<td>The prefix string</td>
</tr>
</tbody>
</table>

1.6.11  remote-ip ADDR

Command

| remote-ip ADDR |

Parameters

<table>
<thead>
<tr>
<th>remote-ip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set the remote IP address to which we connect</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address</td>
</tr>
</tbody>
</table>
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

\texttt{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

\texttt{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|misdnlapd|dahdi|e1d|ipa|unixsocket)

Command

```
e1_line <0-255> driver (misdn|misdnlapd|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
1.12 phy-inst

1.12.1 c0-idle-red-pwr <0-40>

Command

c0-idle-red-pwr <0-40>

Parameters

c0-idle-red-pwr
Set reduction output power for C0 idle slot in dB unit

<0-40>
(null)

1.12.2 dsp-alive-period <0-60>

Command

dsp-alive-period <0-60>

Parameters

dsp-alive-period
Set DSP alive timer period in second

<0-60>
(null)

1.12.3 dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg|l1_tx...

Command

dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg|l1_tx...

Parameters

dsp-trace-flag
DSP Trace Flag

default
Debug Region
l1_warning
    L1 Warning Region
error
    Error Region
l1_rx_msg
    L1_RX_MSG Region
l1_rx_msg_byte
    L1_RX_MSG_BYTE Region
l1_tx_msg
    L1_TX_MSG Region
l1_tx_msg_byte
    L1_TX_MSG_BYTE Region
mph_cnf
    MphConfirmation Region
mph_ind
    MphIndication Region
mph_req
    MphRequest Region
ph_ind
    PhIndication Region
ph_req
    PhRequest Region
phy_rf
    PhyRF Region
phy_msg_byte
    PhyRF Message Region
mode
    Mode Region
tdma_info
    TDMA Info Region
bad_crc
    Bad CRC Region
ph_ind_byte
    PH_IND_BYTE
ph_req_byte
    PH_REQ_BYTE
device_msg
    Device Message Region
1.12.4 max-cell-size <0-166>

Command

```
max-cell-size <0-166>
```

Parameters

max-cell-size
Set the maximum cell size in qbits

<0-166>
(null)

1.12.5 no dsp-trace-flag (debug|l1_warning|error|l1_rx_msg|l1_rx_msg_byte|l1_tx_msg|l1_...
debug
  Debug Region
l1_warning
  L1 Warning Region
error
  Error Region
l1_rx_msg
  L1_RX_MSG Region
l1_rx_msg_byte
  L1_RX_MSG_BYTE Region
l1_tx_msg
  L1_TX_MSG Region
l1_tx_msg_byte
  L1_TX_MSG_BYTE Region
mph.cnf
  MphConfirmation Region
mph.ind
  MphIndication Region
mph.req
  MphRequest Region
ph.ind
  PhIndication Region
ph.req
  PhRequest Region
phy.rf
  PhyRF Region
phy_msg_byte
  PhyRF Message Region
mode
  Mode Region
tdma_info
  TDMA Info Region
bad_crc
  Bad CRC Region
ph_ind_byte
  PH_IND_BYTE
ph_req_byte
  PH_REQ_BYTE


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**

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

**Parameters**

**1.12.7 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**

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

**Parameters**
1.12.8 pedestal-mode (on|off)

Command

| pedestal-mode (on|off) |

Parameters

pedestal-mode
Set unused time-slot transmission in pedestal mode

- on
  Transmission pedestal mode can be (off, on)

- off
  (null)

1.12.9 pwr-adj-mode (none|auto)

Command

| pwr-adj-mode (none|auto) |

Parameters

pwr-adj-mode
Set output power adjustment mode

- none
  (null)

- auto
  (null)

1.12.10 trx-calibration-path PATH

Command

| trx-calibration-path PATH |

Parameters

trx-calibration-path
Set the path name to TRX calibration data

PATH
Path name
### 1.12.11 tx-red-pwr-8psk <0-40>

**Command**

```plaintext
     tx-red-pwr-8psk <0-40>
```

**Parameters**

- **tx-red-pwr-8psk**
  
  Set reduction output power for 8-PSK scheme in dB unit

```plaintext
  <0-40>
  (null)
```

### 1.13 bts

#### 1.13.1 agch-queue-mgmt default

**Command**

```plaintext
    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**

```plaintext
    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 auto-band

Command

```
auto-band
```

Parameters

auto-band
    Automatically select band for ARFCN based on configured band

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

Command

```
bond (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

1.13.5  description .TEXT

Command

   description .TEXT

Parameters

description
   Save human-readable description of the object

.TEXT
   Text until the end of the line
1.13.6 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

1.13.7 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)

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

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
1.13.10  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)

1.13.11  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

1.13.12  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)
1.13.13  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)

1.13.14  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)

1.13.15  no auto-band

Command

```
no auto-band
```

Parameters

no

Negate a command or set its defaults

auto-band

Automatically select band for ARFCN based on configured band
1.13.16  **no description**

**Command**

```
no description
```

**Parameters**

`no`

Negate a command or set its defaults

`description`

Remove description of the object

1.13.17  **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

1.13.18  **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
1.13.19  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)

1.13.20  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

bch

BCCH

cch

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

1.13.21  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

1.13.22  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
1.13.23  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

1.13.24  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

1.13.25  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
1.13.26  osmux

Command

```
osmux
```

Global attributes

Flag: !

This command applies immediately

Parameters

```
osmux
```
Configure Osmux

1.13.27  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)

1.13.28  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

1.13.29  pcu-socket PATH

Command
   pcu-socket PATH

Parameters
pcu-socket
   Configure the PCU socket file/path name
PATH
   UNIX socket path

1.13.30  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
1.13.31 rtp continuous-streaming

Command

```
rtp continuous-streaming
```

Parameters

- `rtp`
  RTP parameters

    - `continuous-streaming`
      Always emit an RTP packet every 20 ms

1.13.32 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

1.13.33 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
1.13.34  **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)

1.13.35  **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
1.13.36  **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)

1.13.37  **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)
1.13.38  \texttt{smscb queue-hysteresis \textless 0-30>}

Command

\begin{verbatim}
  smscb queue-hysteresis \textless 0-30>
\end{verbatim}

Global attributes

Flag: !
This command applies immediately

Parameters

\begin{description}
\item[smscb] SMSCB (SMS Cell Broadcast) / CBCH configuration
\item[queue-hysteresis] Hysteresis of the SMSCB (CBCH) queue
\item[\textless 0-30>] In count of messages/pages (default: 2)
\end{description}

1.13.39  \texttt{smscb queue-max-length \textless 1-60>}

Command

\begin{verbatim}
  smscb queue-max-length \textless 1-60>
\end{verbatim}

Global attributes

Flag: !
This command applies immediately

Parameters

\begin{description}
\item[smscb] SMSCB (SMS Cell Broadcast) / CBCH configuration
\item[queue-max-length] Maximum length of the SMSCB (CBCH) queue
\item[\textless 1-60>] Length in count of messages/pages (default: 15)
\end{description}
1.13.40  \texttt{smscb queue-target-length <1-30>}

Command

\texttt{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)

1.13.41  \texttt{supp-meas-info toa256}

Command

\texttt{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
1.13.42  `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

1.14  `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  `nominal-tx-power <0-25>`

Command

```
nominal-tx-power <0-25>
```

Parameters

`nominal-tx-power`

Set the nominal transmit output power in dBm

 `<0-25>`

Nominal transmit output power level in dBm
1.14.3  **phy <0-255> instance <0-255>**

**Command**

```plaintext
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

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

**Command**

```plaintext
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)
1.14.5 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

1.14.6 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)

1.14.7 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)
1.14.8 **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

<table>
<thead>
<tr>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>use (off</td>
</tr>
</tbody>
</table>

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