OsmoTRX VTY Reference

osmo-trx-uhd
# COLLABORATORS

<table>
<thead>
<tr>
<th>ACTION</th>
<th>NAME</th>
<th>DATE</th>
<th>SIGNATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRITTEN BY</td>
<td></td>
<td>June 21, 2024</td>
<td></td>
</tr>
</tbody>
</table>

# REVISION HISTORY

<table>
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<tr>
<th>NUMBER</th>
<th>DATE</th>
<th>DESCRIPTION</th>
<th>NAME</th>
</tr>
</thead>
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<tr>
<td>DRAFT 1.6.0-33-g132e</td>
<td>2024-Mar-26</td>
<td>Automatically Generated VTY Reference</td>
<td>s.f.m.c.</td>
</tr>
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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>
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<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

```
write terminal
```

Parameters

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

1.2 view

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

1.2.1 enable [expert-mode]

Command

```
enable [expert-mode]
```

Parameters

- enable
  - Turn on privileged mode command
- [expert-mode]
  - Enable the expert mode (show hidden commands)

1.2.2 logging color (0|1)

Command

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

Parameters

- logging
  - Configure logging
- color
  - Configure color-printing for log messages
- 0
  - Don’t use color for printing messages
- 1
  - Use color for printing messages
1.2.3 logging disable

Command

```
logging disable
```

Parameters

logging
Configure logging
disable
Disables logging to this vty

1.2.4 logging enable

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

Command

```
logging enable
```

Parameters

logging
Configure logging
enable
Enables logging to this vty

1.2.5 logging filter all (0|1)

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

Command

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

Parameters

logging
Configure logging
filter
Filter log messages
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 level (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|llapd|l...

Command

logging level (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|linp|lmux ← [lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf| ← [lrspro|lns|lbssgp|lnsdata|lnssignal|lluup|lpfcp|lcsn1|llo) (debug|info|notice|error ← [fatal)

Parameters

logging

Configure logging

level

Set the log level for a specified category

main

Main generic category

trxclk

TRX Master Clock

trxctrl

TRX CTRL interface

trxddl

TRX Data interface Downlink

trxdul

TRX CTRL interface Uplink

dev

Device/Driver specific code

devdrv

Logging from external device driver library implementing lower level specifics

ctr

Rate counter related logging

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

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
debu
  Log debug messages and higher levels
info
  Log informational messages and higher levels
notice
  Log noticeable messages and higher levels
erro
  Log error messages and higher levels
fata
  Log only fatal messages

1.2.7 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> <levels>' 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

1.2.8 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
1.2.9  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

1.2.10 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>`)
1.2.11 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

1.2.12 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.
1.2.13 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

1.2.14 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
1.2.15 logging set-log-mask MASK

Command

logging set-log-mask MASK

Parameters

logging
Configure logging

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

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

1.2.16 logging timestamp (0|1)

Command

logging timestamp (0|1)

Parameters

logging
Configure logging

timestamp
Configure log message timestamping

0
Don’t prefix each log message

1
Prefix each log message with current timestamp

1.2.17 logp (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|linp|lmux|l...
Parameters

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

main
  Main generic category

trxclk
  TRX Master Clock

trxctrl
  TRX CTRL interface

trxddl
  TRX Data interface Downlink

trxdu
  TRX CTRL interface Uplink

dev
  Device/Driver specific code

devdrv
  Logging from external device driver library implementing lower level specifics

ctr
  Rate counter related logging

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
lins
  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

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

1.2.18 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>'

1.2.19 show alarms

Command
  show alarms

Parameters
  show
    Show running system information
    alarms
    Show current logging configuration
1.2.20  show asciidoc counters

Command

show asciidoc counters

Parameters

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

1.2.21  show cpu-sched threads

Command

show cpu-sched threads

Parameters

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

1.2.22  show history

Command

show history

Parameters

show
  Show running system information
history
  Display the session command history
1.2.23  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

1.2.24  show online-help

Command

show online-help

Parameters

show
  Show running system information
online-help
  Online help

1.2.25  show pid

Command

show pid

Parameters

show
  Show running system information
pid
  Displays the process ID
1.2.26  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

1.2.27  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

1.2.28  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

1.2.29  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
1.2.30  
**show talloc-context (application|global|all) (full|brief|DEPTH) filter REGEXP**

**Command**

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

**Parameters**

- **show**
  - Show running system information
- **talloc-context**
  - Show talloc memory hierarchy
- **application**
  - Application’s context
- **global**
  - Global context (OTC_GLOBAL)
- **all**
  - All contexts, if NULL-context tracking is enabled
- **full**
  - Display a full talloc memory hierarchy
- **brief**
  - Display a brief talloc memory hierarchy
- **DEPTH**
  - Specify required maximal depth value
- **filter**
  - Filter chunks using regular expression
- **REGEXP**
  - Regular expression

1.2.31  
**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)

1.2.32   show trx

Command

  show trx

Parameters

show
  Show running system information
trx
  Display information on the TRX

1.2.33   show uptime

Command

  show uptime

Parameters

show
  Show running system information
uptime
  Displays how long the program has been running
1.2.34  **show version**

Command

```
show version
```

Parameters

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

1.2.35  **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)

1.2.36  **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
1.2.37  who

Command

```text
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  configure [terminal]

Command

```text
configure [terminal]
```

Parameters

configure

 Configuration from vty interface

[terminal]

 Configuration terminal

1.3.2  copy running-config startup-config

Command

```text
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)
1.3.3 disable

Command

```
disable
```

Parameters

disable

Turn off privileged mode command

1.3.4 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

1.3.5 logging disable

Command

```
logging disable
```

Parameters

logging

Configure logging
disable

Disables logging to this vty
1.3.6 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

1.3.7 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
1.3.8 logging level (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|li...}

Command

```
logging level (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|linp|lmux ←
|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf| ←
|lrspro|lns|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsl|lio) (debug|info|notice|error ←
|fatal)
```

Parameters

```
logging
  Configure logging
level
  Set the log level for a specified category
main
  Main generic category
trxclk
  TRX Master Clock
trxctrl
  TRX CTRL interface
trxddl
  TRX Data interface Downlink
trxdul
  TRX CTRL interface Uplink
dev
  Device/Driver specific code
devdrv
  Logging from external device driver library implementing lower level specifics
ctr
  Rate counter related logging
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

iss7
   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
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

1.3.9 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
1.3.10 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

1.3.11 logging print category (0|1)

Command

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

Parameters

logging
  Configure logging
print
  Log output settings
category
  Configure log message
0
  Don’t prefix each log message
1
  Prefix each log message with category/subsystem name
1.3.12  logging print category-hex (0|1)

Command

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

Parameters

- `logging`
  Configure logging
- `print`
  Log output settings
- `category-hex`
  Configure log message
  - 0
    Don’t prefix each log message
  - 1
    Prefix each log message with category/subsystem nr in hex (`<000b>`)

1.3.13  logging print extended-timestamp (0|1)

Command

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

Parameters

- `logging`
  Configure logging
- `print`
  Log output settings
- `extended-timestamp`
  Configure log message timestamping
  - 0
    Don’t prefix each log message
  - 1
    Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn
1.3.14  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.

1.3.15  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
1.3.16 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

1.3.17 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
1.3.18 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

1.3.19 logp (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|linp|lmux|...)

Command

```
logp (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|linp|lmux|lmi|lmib |lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lgmcp|ljibuf|lrspro|lns |lbbgp|lnsdata|lnssignal|liuup|lpfcp|lscl1|lio) (debug|info|notice|error|fatal) . LOGMESSAGE
```

Parameters

logp
   Print a message on all log outputs; useful for placing markers in test logs
main
   Main generic category
trxclk
   TRX Master Clock
trxctrl
   TRX CTRL interface
trxddl
   TRX Data interface Downlink
trxdul
   TRX CTRL interface Uplink
dev
   Device/Driver specific code
devdrv
   Logging from external device driver library implementing lower level specifics

ctr
   Rate counter related logging

lglobal
   Library-internal global log family

llapd
   LAPD in libosmogsm

linp
   A-bis Input Subsystem

lmux
   A-bis B-Subchannel TRAU Frame Multiplex

lim
   A-bis Input Driver for Signalling

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

lsms
   Layer3 Short Message Service (SMS)

lctrl
   Control Interface

lgtp
   GPRS GTP library

lstats
   Statistics messages and logging

lgsup
   Generic Subscriber Update Protocol

loap
   Osmocom Authentication Protocol

lss7
   libosmo-sigtran Signalling System 7

lsccp
   libosmo-sigtran SCCP Implementation

lsua
   libosmo-sigtran SCCP User Adaptation

lm3ua
   libosmo-sigtran MTP3 User Adaptation

lmgcp
   libosmo-mgcp Media Gateway Control Protocol
ljibuf
    libosmo-netif Jitter Buffer

lrspro
    Remote SIM protocol

lns
    GPRS NS layer

lbssgp
    GPRS BSSGP layer

lnsdata
    GPRS NS layer data PDU

lnssignal
    GPRS NS layer signal PDU

liuup
    Iu UP layer

lpfcp
    libosmo-pfcp Packet Forwarding Control Protocol

lcsn1
    libosmo-csn1 Concrete Syntax Notation 1 codec

lio
    libosmocore IO Subsystem

debug
    Log debug messages and higher levels

info
    Log informational messages and higher levels

notice
    Log noticeable messages and higher levels

error
    Log error messages and higher levels

fatal
    Log only fatal messages

.LOGMESSAGE
    Arbitrary message to log on given category and log level
### 1.3.20 no logging level force-all

**Command**

```plaintext
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>'

### 1.3.21 show alarms

**Command**

```plaintext
show alarms
```

**Parameters**

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

### 1.3.22 show asciidoc counters

**Command**

```plaintext
show asciidoc counters
```

**Parameters**

- `show`
  - Show running system information
- `asciidoc`
  - Asciidoc generation
- `counters`
  - Generate table of all registered counters
1.3.23  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

1.3.24  show history

Command

```
show history
```

Parameters

- `show`
  - Show running system information
- `history`
  - Display the session command history

1.3.25  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
1.3.26  show online-help

Command

```
show online-help
```

Parameters

show
  Show running system information

online-help
  Online help

1.3.27  show rate-counters [skip-zero]

Command

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

Parameters

show
  Show running system information

rate-counters
  Show all rate counters

[skip-zero]
  Skip items with total count zero

1.3.28  show startup-config

Command

```
show startup-config
```

Parameters

show
  Show running system information

startup-config
  Contentes of startup configuration


1.3.29  **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

1.3.30  **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
1.3.31  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

1.3.32  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

1.3.33  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)
1.3.34  show trx

Command

```
showtrx
```

Parameters

```
show
    Show running system information
trx
    Display information on the TRX
```

1.3.35  show version

Command

```
showversion
```

Parameters

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

1.3.36  shutdown

Command

```
shutdown
```

Parameters

```
shutdown
    Request a shutdown of the program
```

1.3.37  stats report

Command

```
stats report
```

Parameters

```
stats
    Stats related commands
report
    Manually trigger reporting of stats
```
1.3.38 stats reset

Command
stats reset

Parameters
stats
Stats related commands
reset
Reset all rate counter stats

1.3.39 terminal length <0-512>

Command
terminal length <0-512>

Parameters
terminal
Set terminal line parameters
length
Set number of lines on a screen
<0-512>
Number of lines on screen (0 for no pausing)

1.3.40 terminal monitor

Command
terminal monitor

Parameters
terminal
Set terminal line parameters
monitor
Copy debug output to the current terminal line
1.3.41  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

1.3.42  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

1.3.43  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 cpu-sched

Command

```
cpu-sched
```

Parameters

- **cpu-sched**
  - Configure CPU Scheduler related settings
1.4.4  ctrl

Command

```
ctrl
```

Parameters

ctrl
Configure the Control Interface

1.4.5  enable password (8|) WORD

Command

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

Parameters

enable
Modify enable password parameters
password
Assign the privileged level password
8
Specifies a HIDDEN password will follow
dummy string
WORD
The HIDDEN ’enable’ password string

1.4.6  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
1.4.7  hostname WORD

Command

```plaintext
hostname WORD
```

Parameters

hostname

Set system’s network name

WORD

This system’s network name

1.4.8  line vty

Command

```plaintext
line vty
```

Parameters

line

Configure a terminal line

vty

Virtual terminal

1.4.9  log alarms <2-32700>

Command

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

Parameters

log

Configure logging sub-system

alarms

Logging alarms to osmo_strrb

<2-32700>

Maximum number of messages to log
1.4.10  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

1.4.11  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)

1.4.12  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
1.4.13  **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

1.4.14  **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

1.4.15  **log systemd-journal [raw]**

Command

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

Parameters

**log**
   Configure logging sub-system

**systemd-journal**
   Logging to systemd-journal

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

1.4.16  **no banner motd**

Command

```
no banner motd
```

Parameters

**no**
   Negate a command or set its defaults

**banner**
   Set banner string

**motd**
   Strings for motd
1.4.17  no enable password

Command

| no enable password |

Parameters

no
  Negate a command or set its defaults

enable
  Modify enable password parameters

password
  Assign the privileged level password

1.4.18  no hostname [HOSTNAME]

Command

| no hostname [HOSTNAME] |

Parameters

no
  Negate a command or set its defaults

hostname
  Reset system’s network name

[HOSTNAME]
  Host name of this router

1.4.19  no log alarms

Command

| no log alarms |

Parameters

no
  Negate a command or set its defaults

log
  Configure logging sub-system

alarms
  Logging alarms to osmo_strrb
1.4.20  no log file FILENAME

Command

no log file FILENAME

Parameters

no
  Negate a command or set its defaults
log
  Configure logging sub-system
file
  Logging to text file
FILENAME
  Filename

1.4.21  no log gsmtap [HOSTNAME]

Command

no log gsmtap [HOSTNAME]

Parameters

no
  Negate a command or set its defaults
log
  Configure logging sub-system
gsmtap
  Logging via GSMTAP
[HOSTNAME]
  Host name to send the GSMTAP logging to (UDP port 4729)

1.4.22  no log stderr

Command

no log stderr

Parameters

no
  Negate a command or set its defaults
log
  Configure logging sub-system
stderr
  Logging via STDERR of the process
1.4.23  no log syslog

Command

| no log syslog |

Parameters

- **no**
  - Negate a command or set its defaults
- **log**
  - Configure logging sub-system
- **syslog**
  - Logging via syslog

1.4.24  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

1.4.25  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
1.4.26  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)

1.4.27  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
1.4.28  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

1.4.29  password (8|) WORD

Command

password (8|) WORD

Parameters

password
  Assign the terminal connection password
8
  Specifies a HIDDEN password will follow
dummy string
WORD
  The HIDDEN line password string

1.4.30  password LINE

Command

password LINE

Parameters

password
  Assign the terminal connection password
LINE
  The UNENCRYPTED (cleartext) line password
1.4.31 service advanced-vty

Command

```
service advanced-vty
```

Parameters

- service
  - Set up miscellaneous service
- advanced-vty
  - Enable advanced mode vty interface

1.4.32 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)

1.4.33 show history

Command

```
show history
```

Parameters

- show
  - Show running system information
- history
  - Display the session command history
1.4.34  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)

1.4.35  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

1.4.36  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
1.4.37  stats-tcp batch-size <1-65535>

Command

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

Parameters

stats-tcp

Configure stats sub-system

batch-size

Set the number of tcp sockets that are processed per stats polling interval

<1-65535>

Number of sockets per interval

1.4.38  stats-tcp interval <0-65535>

Command

```
stats-tcp interval <0-65535>
```

Parameters

stats-tcp

Configure stats sub-system

interval

Set the tcp socket stats polling interval

<0-65535>

Interval in seconds (0 disables the polling interval)

1.4.39  trx

Command

```
trx
```

Parameters

trx

Configure the TRX
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 (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|l...}

Command

logging level (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|linp|lmux ←
|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lssua|lm3ua|lmgcp|ljibuf| ←
lrspro|lns|lbssgp|lnsdata|lsssignal|liuup|lpcf|lcsn1|lio) (debug|info|notice|error ←
fatal)

Parameters
logging
Configure logging
level
Set the log level for a specified category
main
Main generic category
txclk
TRX Master Clock
txctrl
TRX CTRL interface
trxddl
TRX Data interface Downlink
trxdul
TRX CTRL interface Uplink
dev
Device/Driver specific code
devdrv
Logging from external device driver library implementing lower level specifics
ctr
Rate counter related logging
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
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
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

1.5.4 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.
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
1.5.5  logging level set-all (debug|info|notice|error|fatal)

Command

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

Parameters

- **logging**
  Configure logging
- **level**
  Set the log level for a specified category
- **set-all**
  Once-off set all categories to the given log level. There is no single command to take back these changes -- each category is set to the given level, period.

- **debug**
  Log debug messages and higher levels
- **info**
  Log informational messages and higher levels
- **notice**
  Log noticeable messages and higher levels
- **error**
  Log error messages and higher levels
- **fatal**
  Log only fatal messages

1.5.6  logging print category (0|1)

Command

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

Parameters

- **logging**
  Configure logging
- **print**
  Log output settings
- **category**
  Configure log message

- **0**
  Don’t prefix each log message

- **1**
  Prefix each log message with category/subsystem name
1.5.7 logging print category-hex (0|1)

Command

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

Parameters

logging
  Configure logging

print
  Log output settings

category-hex
  Configure log message

0
  Don’t prefix each log message

1
  Prefix each log message with category/subsystem nr in hex (’<000b>’)

1.5.8 logging print extended-timestamp (0|1)

Command

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

Parameters

logging
  Configure logging

print
  Log output settings

extended-timestamp
  Configure log message timestamping

0
  Don’t prefix each log message

1
  Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

Command

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

Parameters

logging
  Configure logging

print
  Log output settings

file
  Configure log message

0
  Don’t prefix each log message

1
  Prefix each log message with the source file and line

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

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

1.5.10  **logging print level (0|1)**

Command

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

Parameters

logging
  Configure logging

print
  Log output settings

level
  Configure log message

0
  Don’t prefix each log message

1
  Prefix each log message with the log level name
1.5.11  logging print thread-id (0|1)

Command

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

Parameters

logging
   Configure logging
print
   Log output settings
thread-id
   Configure log message logging Thread ID
0
   Don’t prefix each log message
1
   Prefix each log message with current Thread ID

1.5.12  logging timestamp (0|1)

Command

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

Parameters

logging
   Configure logging
timestamp
   Configure log message timestamping
0
   Don’t prefix each log message
1
   Prefix each log message with current timestamp
1.5.13  no logging level force-all

Command

no logging level force-all

Parameters

no
   Negate a command or set its defaults
logging
   Configure logging
level
   Set the log level for a specified category
force-all
   Release any globally forced log level set with 'logging level force-all <level>'

1.6  config-stats

1.6.1  disable

Command

disable

Parameters

disable
   Disable the reporter

1.6.2  enable

Command

enable

Parameters

enable
   Enable the reporter
1.6.3  **flush-period <0-65535>**

Command

```
flush-period <0-65535>
```

Parameters

flush-period

Configure stats sub-system

<0-65535>

Send all stats even if they have not changed (i.e. force the flush) every N-th reporting interval. Set to 0 to disable regular flush (default).

1.6.4  **level (global|peer|subscriber)**

Command

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

Parameters

level

Set the maximum group level

global

Report global groups only

peer

Report global and network peer related groups

subscriber

Report global, peer, and subscriber groups

1.6.5  **local-ip ADDR**

Command

```
local-ip ADDR
```

Parameters

local-ip

Set the IP address to which we bind locally

ADDR

IP Address
1.6.6 mtu <100-65535>

Command

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

Parameters

mtu

Set the maximum packet size

<100-65535>

Size in byte

1.6.7 no local-ip

Command

```
no local-ip
```

Parameters

no

Negate a command or set its defaults

local-ip

Set the IP address to which we bind locally

1.6.8 no mtu

Command

```
no mtu
```

Parameters

no

Negate a command or set its defaults

mtu

Set the maximum packet size
1.6.9  no prefix

Command

```text
no prefix
```

Parameters

no
  Negate a command or set its defaults

prefix
  Set the item name prefix

1.6.10  prefix PREFIX

Command

```text
prefix PREFIX
```

Parameters

prefix
  Set the item name prefix

PREFIX
  The prefix string

1.6.11  remote-ip ADDR

Command

```text
remote-ip ADDR
```

Parameters

remote-ip
  Set the remote IP address to which we connect

ADDR
  IP Address
1.6.12 remote-port <1-65535>

Command

remote-port <1-65535>

Parameters

remote-port
Set the remote port to which we connect

<1-65535>
Remote port number

1.7 config-line

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

Command

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

Parameters

bind
Accept VTY telnet connections on local interface

A.B.C.D
Local interface IP address (default: 127.0.0.1)

[<0-65535>]
Local TCP port number

1.7.2 login

Command

login

Parameters

login
Enable password checking
1.7.3 no login

Command

no login

Parameters

no
   Negate a command or set its defaults

login
   Enable password checking

1.8 config-ctrl

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

Command

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

Parameters

bind
   Set bind address to listen for Control connections

A.B.C.D
   Local IP address (default 127.0.0.1)

[<0-65535>]
   Local TCP port number

1.9 config-cpu-sched

1.9.1 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

1.9.2  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
1.10 config-trx

1.10.1 base-port <1-65535>

Command

```
base-port <1-65535>
```

Parameters

base-port

Set the TRX Base Port

<1-65535>

TRX Base Port

1.10.2 bind-ip A.B.C.D

Command

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

Parameters

bind-ip

Set the IP address for the local bind

A.B.C.D

IPv4 Address

1.10.3 chan <0-100>

Command

```
chan <0-100>
```

Parameters

chan

Select a channel to configure

<0-100>

Channel index
1.10.4 clock-ref (internal|external|gpsdo)

Command

clock-ref (internal|external|gpsdo)

Parameters

clock-ref
    Set the Reference Clock

internal
    Enable internal reference (default)

external
    Enable external 10 MHz reference

gpsdo
    Enable GPSDO reference

1.10.5 ctr-error-threshold (rx_overruns|tx_underruns|rx_drop_events|rx_drop_samples|tx_...)

Command

ctr-error-threshold (rx_overruns|tx_underruns|rx_drop_events|rx_drop_samples|tx_...)

Global attributes

Flag: !
    This command applies immediately

Parameters

ctr-error-threshold
    Threshold rate for error counter

rx_overruns
    Set threshold value for rate_ctr device:rx_overruns

tx_underruns
    Set threshold value for rate_ctr device:tx_underruns

rx_drop_events
    Set threshold value for rate_ctr device:rx_drop_events

rx_drop_samples
    Set threshold value for rate_ctr device:rx_drop_samples
tx_drop_events
   Set threshold value for rate_ctr device:tx_drop_events

tx_drop_samples
   Set threshold value for rate_ctr device:tx_drop_samples

tx_stale_bursts
   Set threshold value for rate_ctr device:tx_stale_bursts

tx_unavailable_bursts
   Set threshold value for rate_ctr device:tx_unavailable_bursts

tx_trxd_fn_repeated
   Set threshold value for rate_ctr device:tx_trxd_fn_repeated

tx_trxd_fn_outoforder
   Set threshold value for rate_ctr device:tx_trxd_fn_outoforder

tx_trxd_fn_skipped
   Set threshold value for rate_ctr device:tx_trxd_fn_skipped

<0-65535>
   Value to set for threshold

per-second
   Threshold value sampled per-second

per-minute
   Threshold value sampled per-minute

per-hour
   Threshold value sampled per-hour

per-day
   Threshold value sampled per-day

1.10.6 dev-args DESC

Command

```bash
dev-args DESC
```

Parameters

dev-args
   Set the device-specific arguments to pass to the device

DESC
   Device-specific arguments
### 1.10.7 egprs (disable|enable)

**Command**

```
  egprs (disable|enable)
```

**Parameters**

- **egprs**
  EGPRS (8-PSK demodulation) support (default=disable)
- **disable**
  Disable EGPRS (8-PSK demodulation) support
- **enable**
  Enable EGPRS (8-PSK demodulation) support

### 1.10.8 ext-rach (disable|enable)

**Command**

```
  ext-rach (disable|enable)
```

**Parameters**

- **ext-rach**
  11-bit Access Burst correlation support (default=disable)
- **disable**
  Disable 11-bit Access Burst (TS1 & TS2) correlation
- **enable**
  Enable 11-bit Access Burst (TS1 & TS2) correlation

### 1.10.9 filler access-burst-delay <0-68>

**Command**

```
  filler access-burst-delay <0-68>
```

**Parameters**

- **filler**
  Filler burst settings
- **access-burst-delay**
  Set the delay for Access Burst random fillers. Used only with 'random-ab' filler type. (default=0)

  `<0-68>
  RACH delay in symbols`
1.10.10  filler tsc <0-7>

Command

```
filler tsc <0-7>
```

Parameters

filler
  Filler burst settings

tsc
  Set the TSC for GMSK/8-PSK Normal Burst random fillers. Used only with 'random-nb-gmsk' and 'random-nb-8psk' filler types. (default=0)

<0-7>
  TSC

1.10.11  filler type (dummy|zero|random-nb-gmsk|random-nb-8psk|random-ab)

Command

```
filler type (dummy|zero|random-nb-gmsk|random-nb-8psk|random-ab)
```

Parameters

filler
  Filler burst settings

type
  What to do when there is nothing to send (filler type, default=zero)

dummy
  Send a Dummy Burst on C0 (TRX0) and empty burst on other channels

zero
  Send an empty burst (default)

random-nb-gmsk
  Send a GMSK modulated Normal Burst with random bits (spectrum mask testing)

random-nb-8psk
  Send an 8-PSK modulated Normal Burst with random bits (spectrum mask testing)

random-ab
  Send an Access Burst with random bits (Rx/Tx alignment testing)
1.10.12 multi-arfcn (disable|enable)

Command

```
multi-arfcn (disable|enable)
```

Parameters

**multi-arfcn**

Multi-ARFCN transceiver mode (default=disable)

**disable**

Enable multi-ARFCN mode

**enable**

Disable multi-ARFCN mode

1.10.13 no ctr-error-threshold (rx_overruns|tx_underruns|rx_drop_events|rx_drop_samples|...

Command

```
no ctr-error-threshold (rx_overruns|tx_underruns|rx_drop_events|rx_drop_samples|...
```

Global attributes

Flag: !

This command applies immediately

Parameters

**no**

Negate a command or set its defaults

**ctr-error-threshold**

Threshold rate for error counter

**rx_overruns**

Set threshold value for rate_ctr device:rx_overruns

**tx_underruns**

Set threshold value for rate_ctr device:tx_underruns

**rx_drop_events**

Set threshold value for rate_ctr device:rx_drop_events

**rx_drop_samples**

Set threshold value for rate_ctr device:rx_drop_samples
tx_drop_events
  Set threshold value for rate_ctr device:tx_drop_events

tax_drop_samples
  Set threshold value for rate_ctr device:tx_drop_samples

tax_stale_bursts
  Set threshold value for rate_ctr device:tx_stale_bursts

rx_unavailable_bursts
  Set threshold value for rate_ctr device:tx_unavailable_bursts

tax_trxd_fn_repeated
  Set threshold value for rate_ctr device:tx_trxd_fn_repeated

rx_trxd_fn_outoforder
  Set threshold value for rate_ctr device:tx_trxd_fn_outoforder

tax_trxd_fn_skipped
  Set threshold value for rate_ctr device:tx_trxd_fn_skipped

<0-65535>
  Value to set for threshold

per-second
  Threshold value sampled per-second

per-minute
  Threshold value sampled per-minute

per-hour
  Threshold value sampled per-hour

per-day
  Threshold value sampled per-day

1.10.14  offset FLOAT

Command

offset  FLOAT

Parameters

offset
  Set the baseband frequency offset (default=0, auto)

FLOAT
  Baseband Frequency Offset
1.10.15  remote-ip A.B.C.D

Command

remote-ip A.B.C.D

Parameters
remote-ip
  Set the IP address for the remote BTS
A.B.C.D
  IPv4 Address

1.10.16  rssi-offset FLOAT [relative]

Command

rssi-offset FLOAT [relative]

Parameters
rssi-offset
  Set the RSSI to dBm offset in dB (default=0)
FLOAT
  RSSI to dBm offset in dB
[relative]
  Add to the default rssi-offset value instead of completely replacing it

1.10.17  rx-sps (1|4)

Command

rx-sps (1|4)

Parameters
rx-sps
  Set the Rx Samples-per-Symbol
1
  Rx Samples-per-Symbol
4
  1 Sample-per-Symbol
1.10.18  \texttt{stack-size <0-2147483647>}

\textbf{Command}
\begin{verbatim}
stack-size <0-2147483647>
\end{verbatim}

\textbf{Parameters}
\begin{itemize}
  \item \texttt{stack-size}
    \begin{itemize}
      \item Set the stack size per thread in BYTE, 0 = OS default
      \item <0-2147483647>
        \begin{itemize}
          \item Stack size per thread in BYTE
        \end{itemize}
    \end{itemize}
\end{itemize}

1.10.19  \texttt{swap-channels (disable|enable)}

\textbf{Command}
\begin{verbatim}
swap-channels (disable|enable)
\end{verbatim}

\textbf{Parameters}
\begin{itemize}
  \item \texttt{swap-channels}
    \begin{itemize}
      \item Swap primary and secondary channels of the PHY (if any)
    \end{itemize}
  \item \texttt{disable}
    \begin{itemize}
      \item Do not swap primary and secondary channels (default)
    \end{itemize}
  \item \texttt{enable}
    \begin{itemize}
      \item Swap primary and secondary channels
    \end{itemize}
\end{itemize}

1.10.20  \texttt{tx-sps (1|4)}

\textbf{Command}
\begin{verbatim}
tx-sps (1|4)
\end{verbatim}

\textbf{Parameters}
\begin{itemize}
  \item \texttt{tx-sps}
    \begin{itemize}
      \item Set the Tx Samples-per-Symbol
      \item 1
        \begin{itemize}
          \item Tx Samples-per-Symbol
        \end{itemize}
      \item 4
        \begin{itemize}
          \item 1 Sample-per-Symbol
        \end{itemize}
    \end{itemize}
\end{itemize}
1.11 config-trx-chan

1.11.1 rx-path NAME

Command

rx-path NAME

Parameters
rx-path
Set the Rx Path
NAME
Rx Path name

1.11.2 tx-path NAME

Command

tx-path NAME

Parameters
tx-path
Set the Tx Path
NAME
Tx Path name