

# **OsmoTRX VTY Reference**



**osmo-trx-uhd**

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**COLLABORATORS**

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# Contents

<b>1</b>	<b>VTY reference</b>	<b>1</b>
1.1	Common Commands	1
1.1.1	end	2
1.1.2	exit	2
1.1.3	help	2
1.1.4	list [with-flags]	2
1.1.5	show running-config	3
1.1.6	show vty-attributes	3
1.1.7	show vty-attributes (application library global)	3
1.1.8	write	4
1.1.9	write file [PATH]	4
1.1.10	write memory	4
1.1.11	write terminal	5
1.2	view	5
1.2.1	enable [expert-mode]	5
1.2.2	logging color (0 1)	5
1.2.3	logging disable	6
1.2.4	logging enable	6
1.2.5	logging filter all (0 1)	6
1.2.6	logging level (main trxclk trxctrl trxddll trxdull dev devdrv ctrl global llapdli...	7
1.2.7	logging level force-all (debug info notice error fatal)	9
1.2.8	logging level set-all (debug info notice error fatal)	10
1.2.9	logging print category (0 1)	11
1.2.10	logging print category-hex (0 1)	11
1.2.11	logging print extended-timestamp (0 1)	12
1.2.12	logging print file (0 1 basename) [last]	12
1.2.13	logging print level (0 1)	13
1.2.14	logging print thread-id (0 1)	13
1.2.15	logging set-log-mask MASK	14
1.2.16	logging timestamp (0 1)	14

1.2.17	logp (main trxclk trxctrl trxddll trxdull dev devdrv ctrl global lapd linp lmuxl...	14
1.2.18	no logging level force-all	17
1.2.19	show alarms	17
1.2.20	show asciidoc counters	18
1.2.21	show cpu-sched threads	18
1.2.22	show history	18
1.2.23	show logging vty	19
1.2.24	show online-help	19
1.2.25	show pid	19
1.2.26	show rate-counters [skip-zero]	20
1.2.27	show stats [skip-zero]	20
1.2.28	show stats level (global peer subscriber) [skip-zero]	20
1.2.29	show talloc-context (application global all) (full brief DEPTH)	21
1.2.30	show talloc-context (application global all) (full brief DEPTH) filter REGEXP	22
1.2.31	show talloc-context (application global all) (full brief DEPTH) tree ADDRESS	22
1.2.32	show trx	23
1.2.33	show uptime	23
1.2.34	show version	24
1.2.35	terminal length <0-512>	24
1.2.36	terminal no length	24
1.2.37	who	25
1.3	enable	25
1.3.1	configure [terminal]	25
1.3.2	copy running-config startup-config	25
1.3.3	disable	26
1.3.4	logging color (0 1)	26
1.3.5	logging disable	26
1.3.6	logging enable	27
1.3.7	logging filter all (0 1)	27
1.3.8	logging level (main trxclk trxctrl trxddll trxdull dev devdrv ctrl global lapd li...	28
1.3.9	logging level force-all (debug info notice error fatal)	30
1.3.10	logging level set-all (debug info notice error fatal)	31
1.3.11	logging print category (0 1)	31
1.3.12	logging print category-hex (0 1)	32
1.3.13	logging print extended-timestamp (0 1)	32
1.3.14	logging print file (0 1 basename) [last]	33
1.3.15	logging print level (0 1)	33
1.3.16	logging print thread-id (0 1)	34
1.3.17	logging set-log-mask MASK	34

1.3.18	logging timestamp (0 1)	35
1.3.19	logp (main trxclk ltxctrl ltxddl ltxdul dev devdrv ctrl global lapd linp muxl ...	35
1.3.20	no logging level force-all	38
1.3.21	show alarms	38
1.3.22	show asciidoc counters	38
1.3.23	show cpu-sched threads	39
1.3.24	show history	39
1.3.25	show logging vty	39
1.3.26	show online-help	40
1.3.27	show rate-counters [skip-zero]	40
1.3.28	show startup-config	40
1.3.29	show stats [skip-zero]	41
1.3.30	show stats level (global peer subscriber) [skip-zero]	41
1.3.31	show talloc-context (application global all) (full brief DEPTH)	42
1.3.32	show talloc-context (application global all) (full brief DEPTH) filter REGEXP	42
1.3.33	show talloc-context (application global all) (full brief DEPTH) tree ADDRESS	43
1.3.34	show trx	44
1.3.35	show version	44
1.3.36	shutdown	44
1.3.37	stats report	44
1.3.38	stats reset	45
1.3.39	terminal length <0-512>	45
1.3.40	terminal monitor	45
1.3.41	terminal no length	46
1.3.42	terminal no monitor	46
1.3.43	who	46
1.4	config	47
1.4.1	banner motd default	47
1.4.2	banner motd file [FILE]	47
1.4.3	cpu-sched	47
1.4.4	ctrl	48
1.4.5	enable password (8 ) WORD	48
1.4.6	enable password LINE	48
1.4.7	hostname WORD	49
1.4.8	line vty	49
1.4.9	log alarms <2-32700>	49
1.4.10	log file FILENAME [blocking-io]	50
1.4.11	log gsmtap [HOSTNAME]	50
1.4.12	log stderr [blocking-io]	50

---

1.4.13	log syslog (authpriv cron daemon ftp lpr mail news user uucp)	51
1.4.14	log syslog local <0-7>	51
1.4.15	log systemd-journal [raw]	52
1.4.16	no banner motd	52
1.4.17	no enable password	53
1.4.18	no hostname [HOSTNAME]	53
1.4.19	no log alarms	53
1.4.20	no log file FILENAME	54
1.4.21	no log gsmtap [HOSTNAME]	54
1.4.22	no log stderr	54
1.4.23	no log syslog	55
1.4.24	no log systemd-journal	55
1.4.25	no service advanced-vty	55
1.4.26	no service terminal-length [<0-512>]	56
1.4.27	no stats reporter log [NAME]	56
1.4.28	no stats reporter statsd [NAME]	57
1.4.29	password (8) WORD	57
1.4.30	password LINE	57
1.4.31	service advanced-vty	58
1.4.32	service terminal-length <0-512>	58
1.4.33	show history	58
1.4.34	stats interval <0-65535>	59
1.4.35	stats reporter log [NAME]	59
1.4.36	stats reporter statsd [NAME]	59
1.4.37	stats-tcp batch-size <1-65535>	60
1.4.38	stats-tcp interval <0-65535>	60
1.4.39	trx	60
1.5	config-log	61
1.5.1	logging color (0 1)	61
1.5.2	logging filter all (0 1)	61
1.5.3	logging level (main trx clk trx ctrl trx ddl trx dul dev dev drv ctrl global ll apd li...	62
1.5.4	logging level force-all (debug info notice error fatal)	64
1.5.5	logging level set-all (debug info notice error fatal)	65
1.5.6	logging print category (0 1)	65
1.5.7	logging print category-hex (0 1)	66
1.5.8	logging print extended-timestamp (0 1)	66
1.5.9	logging print file (0 1 basename) [last]	67
1.5.10	logging print level (0 1)	67
1.5.11	logging print thread-id (0 1)	68

1.5.12	logging timestamp (01)	68
1.5.13	no logging level force-all	69
1.6	config-stats	69
1.6.1	disable	69
1.6.2	enable	69
1.6.3	flush-period <0-65535>	70
1.6.4	level (globalpeer subscriber)	70
1.6.5	local-ip ADDR	70
1.6.6	mtu <100-65535>	71
1.6.7	no local-ip	71
1.6.8	no mtu	71
1.6.9	no prefix	72
1.6.10	prefix PREFIX	72
1.6.11	remote-ip ADDR	72
1.6.12	remote-port <1-65535>	73
1.7	config-line	73
1.7.1	bind A.B.C.D [<0-65535>]	73
1.7.2	login	73
1.7.3	no login	74
1.8	config-ctrl	74
1.8.1	bind A.B.C.D [<0-65535>]	74
1.9	config-cpu-sched	74
1.9.1	cpu-affinity (self all<0-4294967295> THREADNAME) CPUHEXMASK [delay]	74
1.9.2	policy rr <1-32>	75
1.10	config-trx	76
1.10.1	base-port <1-65535>	76
1.10.2	bind-ip A.B.C.D	76
1.10.3	chan <0-100>	76
1.10.4	clock-ref (internal external gpsdo)	77
1.10.5	ctr-error-threshold (rx_overs tx_unders rx_drop_events rx_drop_samples tx_...	77
1.10.6	dev-args DESC	78
1.10.7	egprs (disable enable)	79
1.10.8	ext-rach (disable enable)	79
1.10.9	filler access-burst-delay <0-68>	79
1.10.10	filler tsc <0-7>	80
1.10.11	filler type (dummy zerol random-nb-gmsk random-nb-8psk random-ab)	80
1.10.12	multi-arfcn (disable enable)	81
1.10.13	no ctr-error-threshold (rx_overs tx_unders rx_drop_events rx_drop_samples ...	81
1.10.14	offset FLOAT	82



---

1.10.15 remote-ip A.B.C.D . . . . .	83
1.10.16 rssi-offset FLOAT [relative] . . . . .	83
1.10.17 rx-sps (1 4) . . . . .	83
1.10.18 stack-size <0-2147483647> . . . . .	84
1.10.19 swap-channels (disable enable) . . . . .	84
1.10.20 tx-sps (1 4) . . . . .	84
1.11 config-trx-chan . . . . .	85
1.11.1 rx-path NAME . . . . .	85
1.11.2 tx-path NAME . . . . .	85

---

# List of Tables

1.1	VTY Parameter Patterns . . . . .	1
1.2	VTY port numbers . . . . .	1

# Chapter 1

## VTY reference

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

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

Table 1.1: VTY Parameter Patterns

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

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

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

Table 1.2: VTY port numbers

### 1.1 Common Commands

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

### 1.1.1 end

#### Command

```
end
```

#### Parameters

end

End current mode and change to enable mode.

### 1.1.2 exit

#### Command

```
exit
```

#### Parameters

exit

Exit current mode and down to previous mode

### 1.1.3 help

#### Command

```
help
```

#### Parameters

help

Description of the interactive help system

### 1.1.4 list [with-flags]

#### Command

```
list [with-flags]
```

#### Parameters

list

Print command list

[with-flags]

Also print the VTY attribute flags

---

### 1.1.5 show running-config

#### Command

```
show running-config
```

#### Parameters

show

Show running system information

running-config

running configuration

### 1.1.6 show vty-attributes

#### Command

```
show vty-attributes
```

#### Parameters

show

Show running system information

vtty-attributes

List of VTY attributes

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

#### Command

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

#### Parameters

show

Show running system information

vtty-attributes

List of VTY attributes

application

Application specific attributes only

library

Library specific attributes only

global

Global attributes only

---

### 1.1.8 write

#### Command

```
write
```

#### Parameters

write

Write running configuration to memory, network, or terminal

### 1.1.9 write file [PATH]

#### Command

```
write file [PATH]
```

#### Parameters

write

Write running configuration to memory, network, or terminal

file

Write to configuration file

[PATH]

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

### 1.1.10 write memory

#### Command

```
write memory
```

#### Parameters

write

Write running configuration to memory, network, or terminal

memory

Write configuration to the file (same as write file)

---

### 1.1.11 write terminal

#### Command

```
write terminal
```

#### Parameters

##### write

Write running configuration to memory, network, or terminal

##### terminal

Write to terminal

## 1.2 view

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

### 1.2.1 enable [expert-mode]

#### Command

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

#### Parameters

##### enable

Turn on privileged mode command

##### [expert-mode]

Enable the expert mode (show hidden commands)

### 1.2.2 logging color (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### color

Configure color-printing for log messages

##### 0

Don't use color for printing messages

##### 1

Use color for printing messages

---

### 1.2.3 logging disable

#### Command

```
logging disable
```

#### Parameters

##### logging

Configure logging

##### disable

Disables logging to this vty

### 1.2.4 logging enable

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

#### Command

```
logging enable
```

#### Parameters

##### logging

Configure logging

##### enable

Enables logging to this vty

### 1.2.5 logging filter all (0|1)

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### filter

Filter log messages



all

Do you want to log all messages?

0

Only print messages matched by other filters

1

Bypass filter and print all messages

## 1.2.6 logging level (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|linp|lmux ↔

Command

```
logging level (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|linp|lmux ↔
|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscpp|lsua|lm3ua|lmgcp|ljibuf| ↔
|rspro|lns|lbssgp|lndata|lnssignal|liuup|lpfcp|lcsn1|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

lss7  
libosmo-sigtran Signalling System 7

lsccp  
libosmo-sigtran SCCP Implementation

lsua  
libosmo-sigtran SCCP User Adaptation

lm3ua  
libosmo-sigtran MTP3 User Adaptation

lmgcp  
libosmo-mgcp Media Gateway Control Protocol

ljibuf  
libosmo-netif Jitter Buffer

lrspro  
Remote SIM protocol

lns  
GPRS NS layer

---

lbssgp	GPRS BSSGP layer
lndata	GPRS NS layer data PDU
lnsignal	GPRS NS layer signal PDU
liuup	Iu UP layer
lpfcp	libosmo-pfcp Packet Forwarding Control Protocol
lcsn1	libosmo-csn1 Concrete Syntax Notation 1 codec
lio	libosmocore IO Subsystem
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

### 1.2.7 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> <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

### 1.2.8 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|trxcctl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscpp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio) (debug|info|notice|error|fatal) . LOGMESSAGE

### Command

```
logp (main|trxclk|trxcctl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|linp|lmux|lmi|lmib ↔
|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscpp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns| ↔
|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio) (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

### lmi

A-bis Input Driver for Signalling

### lmib

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

### lsms

Layer3 Short Message Service (SMS)

### lctrl

Control Interface

### lgtp

GPRS GTP library

### lstats

Statistics messages and logging

---

---

lgsup  
Generic Subscriber Update Protocol

loap  
Osmocom Authentication Protocol

lss7  
libosmo-sigtran Signalling System 7

lscpp  
libosmo-sigtran SCCP Implementation

lsua  
libosmo-sigtran SCCP User Adaptation

lm3ua  
libosmo-sigtran MTP3 User Adaptation

lmgcp  
libosmo-mgcp Media Gateway Control Protocol

ljibuf  
libosmo-netif Jitter Buffer

lrspro  
Remote SIM protocol

lns  
GPRS NS layer

lbssgp  
GPRS BSSGP layer

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

##### vtty

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

```
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

```
configure [terminal]
```

#### Parameters

configure

Configuration from vty interface

[terminal]

Configuration terminal

### 1.3.2 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)

---

### 1.3.3 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|linp|lmux

#### Command

```
logging level (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|linp|lmux ↔
|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscpp|lsua|lm3ua|lmgcp|ljibuf| ↔
|lrspro|lns|lbssgp|lndata|lnssignal|liuup|lpfcp|lcsn1|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

lss7  
libosmo-sigtran Signalling System 7

lscpp  
libosmo-sigtran SCCP Implementation

lsua  
libosmo-sigtran SCCP User Adaptation

lm3ua  
libosmo-sigtran MTP3 User Adaptation

lmgcp  
libosmo-mgcp Media Gateway Control Protocol

ljibuf  
libosmo-netif Jitter Buffer

lrspro  
Remote SIM protocol

lns  
GPRS NS layer

lbssgp  
GPRS BSSGP layer

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|l...)

#### Command

```
logp (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|linp|lmux|lmi|lmib ↔
|lsms|lctrl|lgtpl|lstats|lgsup|loap|lss7|lscpp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns| ↔
|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio) (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

lmi  
A-bis Input Driver for Signalling

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

lsms  
Layer3 Short Message Service (SMS)

lctrl  
Control Interface

lgtp  
GPRS GTP library

lstats  
Statistics messages and logging

lgsup  
Generic Subscriber Update Protocol

loap  
Osmocom Authentication Protocol

lss7  
libosmo-sigtran Signalling System 7

lscpp  
libosmo-sigtran SCCP Implementation

lsua  
libosmo-sigtran SCCP User Adaptation

lm3ua  
libosmo-sigtran MTP3 User Adaptation

lmgcp  
libosmo-mgcp Media Gateway Control Protocol

---

---

ljibuf  
libosmo-netif Jitter Buffer

lrspro  
Remote SIM protocol

lns  
GPRS NS layer

lbssgp  
GPRS BSSGP layer

lndata  
GPRS NS layer data PDU

lnsignal  
GPRS NS layer signal PDU

liuup  
Iu UP layer

lpfcp  
libosmo-pfcp Packet Forwarding Control Protocol

lcsn1  
libosmo-csn1 Concrete Syntax Notation 1 codec

lio  
libosmocore IO Subsystem

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

```
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

```
show alarms
```

#### Parameters

show

Show running system information

alarms

Show current logging configuration

### 1.3.22 show asciidoc counters

#### Command

```
show asciidoc counters
```

#### Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters



### 1.3.23 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

```
show trx
```

#### Parameters

show

Show running system information

trx

Display information on the TRX

### 1.3.35 show version

#### Command

```
show version
```

#### 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

Manurally 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

```
hostname WORD
```

#### Parameters

##### hostname

Set system's network name

##### WORD

This system's network name

### 1.4.8 line vty

#### Command

```
line vty
```

#### Parameters

##### line

Configure a terminal line

##### vtty

Virtual terminal

### 1.4.9 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

---

### 1.4.10 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|linp|lmux ↔

#### Command

```
logging level (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|ctr|lglobal|llapd|linp|lmux ↔
|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscpp|lsua|lm3ua|lmgcp|ljibuf| ↔
|lrspro|lns|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio) (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

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

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

##### Command

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

##### Parameters

##### logging

Configure logging

##### level

Set the log level for a specified category

##### force-all

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

##### debug

Log debug messages and higher levels

##### info

Log informational messages and higher levels

##### notice

Log noticeable messages and higher levels

##### error

Log error messages and higher levels

##### fatal

Log only fatal messages

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### level

Set the log level for a specified category

##### set-all

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

##### debug

Log debug messages and higher levels

##### info

Log informational messages and higher levels

##### notice

Log noticeable messages and higher levels

##### error

Log error messages and higher levels

##### fatal

Log only fatal messages

### 1.5.6 logging print category (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### category

Configure log message

##### 0

Don't prefix each log message

##### 1

Prefix each log message with category/subsystem name

---

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### category-hex

Configure log message

0

Don't prefix each log message

1

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

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### extended-timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

---

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### file

Configure log message

##### 0

Don't prefix each log message

##### 1

Prefix each log message with the source file and line

##### basename

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

##### [last]

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

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### level

Configure log message

##### 0

Don't prefix each log message

##### 1

Prefix each log message with the log level name

---

### 1.5.11 logging print thread-id (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### thread-id

Configure log message logging Thread ID

0

Don't prefix each log message

1

Prefix each log message with current Thread ID

### 1.5.12 logging timestamp (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

### 1.5.13 no logging level force-all

#### Command

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

#### Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

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

## 1.6 config-stats

### 1.6.1 disable

#### Command

```
disable
```

#### Parameters

disable

Disable the reporter

### 1.6.2 enable

#### Command

```
enable
```

#### Parameters

enable

Enable the reporter

---

### 1.6.3 flush-period <0-65535>

#### Command

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

#### Parameters

flush-period

Configure stats sub-system

<0-65535>

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

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

#### Command

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

#### Parameters

level

Set the maximum group level

global

Report global groups only

peer

Report global and network peer related groups

subscriber

Report global, peer, and subscriber groups

### 1.6.5 local-ip ADDR

#### Command

```
local-ip ADDR
```

#### Parameters

local-ip

Set the IP address to which we bind locally

ADDR

IP Address

---



## 1.6.6 mtu <100-65535>

### Command

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

### Parameters

mtu

Set the maximum packet size

<100-65535>

Size in byte

## 1.6.7 no local-ip

### Command

```
no local-ip
```

### Parameters

no

Negate a command or set its defaults

local-ip

Set the IP address to which we bind locally

## 1.6.8 no mtu

### Command

```
no mtu
```

### Parameters

no

Negate a command or set its defaults

mtu

Set the maximum packet size

---

### 1.6.9 no prefix

#### Command

```
no prefix
```

#### Parameters

no

Negate a command or set its defaults

prefix

Set the item name prefix

### 1.6.10 prefix PREFIX

#### Command

```
prefix PREFIX
```

#### Parameters

prefix

Set the item name prefix

PREFIX

The prefix string

### 1.6.11 remote-ip ADDR

#### Command

```
remote-ip ADDR
```

#### Parameters

remote-ip

Set the remote IP address to which we connect

ADDR

IP Address

---

## 1.6.12 remote-port <1-65535>

### Command

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

### Parameters

#### remote-port

Set the remote port to which we connect

#### <1-65535>

Remote port number

## 1.7 config-line

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

### Command

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

### Parameters

#### bind

Accept VTY telnet connections on local interface

#### A.B.C.D

Local interface IP address (default: 127.0.0.1)

#### [<0-65535>]

Local TCP port number

### 1.7.2 login

### Command

```
login
```

### Parameters

#### login

Enable password checking

---

### 1.7.3 no login

#### Command

```
no login
```

#### Parameters

no

Negate a command or set its defaults

login

Enable password checking

## 1.8 config-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_drop_events|tx_drop_samples|tx_stale_bursts|tx_unavailable_bursts| ↔  
tx_trxd_fn_repeated|tx_trxd_fn_outoforder|tx_trxd_fn_skipped) <0-65535> (per-second ↔  
|per-minute|per-hour|per-day)
```

#### 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

```
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| ↵  
tx_drop_events|tx_drop_samples|tx_stale_bursts|tx_unavailable_bursts| ↵  
tx_trxd_fn_repeated|tx_trxd_fn_outoforder|tx_trxd_fn_skipped) <0-65535> (per-second ↵  
|per-minute|per-hour|per-day)
```

#### 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

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

### 1.10.14 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 stack-size <0-2147483647>

#### Command

```
stack-size <0-2147483647>
```

#### Parameters

##### stack-size

Set the stack size per thread in BYTE, 0 = OS default

<0-2147483647>

Stack size per thread in BYTE

### 1.10.19 swap-channels (disable|enable)

#### Command

```
swap-channels (disable|enable)
```

#### Parameters

##### swap-channels

Swap primary and secondary channels of the PHY (if any)

##### disable

Do not swap primary and secondary channels (default)

##### enable

Swap primary and secondary channels

### 1.10.20 tx-sps (1|4)

#### Command

```
tx-sps (1|4)
```

#### Parameters

##### tx-sps

Set the Tx Samples-per-Symbol

1

Tx Samples-per-Symbol

4

1 Sample-per-Symbol

---

## 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