OsmoTRX VTY Reference

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COLLABORATORS			
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ACTION	*NAME*	*DATE*	*SIGNATURE*
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Chapter 1

VTY reference

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

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

Table 1.1: VTY Parameter Patterns

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

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

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

Table 1.2: VTY port numbers

Common Commands

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

end

Command

```
end
```

Parameters

end
  End current mode and change to enable mode.

exit

Command

```
exit
```

Parameters

exit
  Exit current mode and down to previous mode

help

Command

```
help
```

Parameters

help
  Description of the interactive help system

list

Command

```
list
```

Parameters

list
  Print command list

show running-config

Command

```
show running-config
```

Parameters

show
> Show running system information

running-config
> running configuration

write

Command

```
write
```

Parameters

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

write file [PATH]

Command

```
write file [PATH]
```

Parameters

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

file
> Write to configuration file

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

write memory

Command

```
write memory
```

Parameters

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

memory
> Write configuration to the file (same as write file)

write terminal

Command

```
write terminal
```

Parameters

write

Write running configuration to memory, network, or terminal

terminal

Write to terminal

view

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

enable

Command

```
enable
```

Parameters

enable

Turn on privileged mode command

logging color (0|1)

Command

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

Parameters

logging

Configure logging

color

Configure color-printing for log messages

0

Don't use color for printing messages

1

Use color for printing messages

logging disable

Command

```
logging disable
```

Parameters

logging
    Configure logging

disable
    Disables logging to this vty

logging enable

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

Command

```
logging enable
```

Parameters

logging
    Configure logging

enable
    Enables logging to this vty

logging filter all (0|1)

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

Command

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

Parameters

logging
    Configure logging

filter
    Filter log messages

all
    Do you want to log all messages?

0
    Only print messages matched by other filters

1
    Bypass filter and print all messages

logging level (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|lglobal|llapd|linp|l...

Command

```
logging level (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|lglobal|llapd|linp|lmux|lmi ←↩
    |lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro) ←↩
    (debug|info|notice|error|fatal)
```

Parameters

logging

    Configure logging

level

    Set the log level for a specified category

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

lglobal

    Library-internal global log family

llapd

    LAPD in libosmogsm

linp

    A-bis Intput Subsystem

lmux

    A-bis B-Subchannel TRAU Frame Multiplex

lmi

    A-bis Input Driver for Signalling

lmib

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

lsms

    Layer3 Short Message Service (SMS)

lctrl

    Control Interface

lgtp

    GPRS GTP library

lstats

    Statistics messages and logging

lgsup

    Generic Subscriber Update Protocol

loap

    Osmocom Authentication Protocol

lss7

    libosmo-sigtran Signalling System 7

lsccp

    libosmo-sigtran SCCP Implementation

lsua

    libosmo-sigtran SCCP User Adaptation

lm3ua

    libosmo-sigtran MTP3 User Adaptation

lmgcp

    libosmo-mgcp Media Gateway Control Protocol

ljibuf

    libosmo-netif Jitter Buffer

lrspro

    Remote SIM protocol

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

force-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

set-all

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

debug

Log debug messages and higher levels

info

> Log informational messages and higher levels

notice

> Log noticeable messages and higher levels

error

> Log error messages and higher levels

fatal

> Log only fatal messages

logging print category (0|1)

Command

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

Parameters

logging

> Configure logging

print

> Log output settings

category

> Configure log message

0

> Don't prefix each log message

1

> Prefix each log message with category/subsystem name

logging print category-hex (0|1)

Command

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

Parameters

logging

> Configure logging

print

> Log output settings

category-hex

> Configure log message

0

> Don't prefix each log message

1

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

logging print extended-timestamp (0|1)

Command

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

Parameters

logging

    Configure logging

print

    Log output settings

extended-timestamp

    Configure log message timestamping

0

    Don't prefix each log message

1

    Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

Command

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

Parameters

logging

    Configure logging

print

    Log output settings

file

    Configure log message

0

    Don't prefix each log message

1

    Prefix each log message with the source file and line

basename

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

[last]

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

logging print level (0|1)

Command

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

Parameters

logging
>   Configure logging

print
>   Log output settings

level
>   Configure log message

0
>   Don't prefix each log message

1
>   Prefix each log message with the log level name

logging set-log-mask MASK

Command

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

Parameters

logging
>   Configure logging

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

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

logging timestamp (0|1)

Command

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

Parameters

logging

Configure logging

timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

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

Command

```
logp (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|lglobal|llapd|linp|lmux|lmi|lmib| ←
    lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro) (debug ←
    |info|notice|error|fatal) .LOGMESSAGE
```

Parameters

logp

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

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

lglobal

Library-internal global log family

llapd

LAPD in libosmogsm

linp

A-bis Intput Subsystem

lmux

    A-bis B-Subchannel TRAU Frame Multiplex

lmi

    A-bis Input Driver for Signalling

lmib

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

lsms

    Layer3 Short Message Service (SMS)

lctrl

    Control Interface

lgtp

    GPRS GTP library

lstats

    Statistics messages and logging

lgsup

    Generic Subscriber Update Protocol

loap

    Osmocom Authentication Protocol

lss7

    libosmo-sigtran Signalling System 7

lsccp

    libosmo-sigtran SCCP Implementation

lsua

    libosmo-sigtran SCCP User Adaptation

lm3ua

    libosmo-sigtran MTP3 User Adaptation

lmgcp

    libosmo-mgcp Media Gateway Control Protocol

ljibuf

    libosmo-netif Jitter Buffer

lrspro

    Remote SIM protocol

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

   Log error messages and higher levels

fatal

   Log only fatal messages

.LOGMESSAGE

   Arbitrary message to log on given category and log level

no logging level force-all

Command

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

Parameters

no

   Negate a command or set its defaults

logging

   Configure logging

level

   Set the log level for a specified category

force-all

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

show alarms

Command

```
show alarms
```

Parameters

show

   Show running system information

alarms

   Show current logging configuration

show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show
    Show running system information

asciidoc
    Asciidoc generation

counters
    Generate table of all registered counters

show history

Command

```
show history
```

Parameters

show
    Show running system information

history
    Display the session command history

show logging vty

Command

```
show logging vty
```

Parameters

show
    Show running system information

logging
    Show current logging configuration

vty
    Show current logging configuration for this vty

show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

show rate-counters

Command

```
show rate-counters
```

Parameters

show

Show running system information

rate-counters

Show all rate counters

show stats

Command

```
show stats
```

Parameters

show

Show running system information

stats

Show statistical values

show stats level (global|peer|subscriber)

Command

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

Parameters

show

Show running system information

stats

Show statistical values

level

Set the maximum group level

global

Show global groups only

peer

Show global and network peer related groups

subscriber

Show global, peer, and subscriber groups

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

filter

Filter chunks using regular expression

REGEXP

Regular expression

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

tree

Display only a specific memory chunk

ADDRESS

Chunk address (e.g. 0xdeadbeef)

show trx

Command

```
show trx
```

Parameters

show

Show running system information

trx

Display information on the TRX

show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

terminal length <0-512>

Command

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

Parameters

terminal
> Set terminal line parameters

length
> Set number of lines on a screen

<0-512>
> Number of lines on screen (0 for no pausing)

terminal no length

Command

```
terminal no length
```

Parameters

terminal
> Set terminal line parameters

no
> Negate a command or set its defaults

length
> Set number of lines on a screen

who

Command

```
who
```

Parameters

who
> Display who is on vty

enable

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

configure terminal

Command

```
configure terminal
```

Parameters

configure
> Configuration from vty interface

terminal
> Configuration terminal

copy running-config startup-config

Command

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

Parameters

copy
> Copy configuration

running-config
> Copy running config to...

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

disable

Command

```
disable
```

Parameters

disable
> Turn off privileged mode command

logging color (0|1)

Command

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

Parameters

logging
    Configure logging

color
    Configure color-printing for log messages

0
    Don't use color for printing messages

1
    Use color for printing messages

logging disable

Command

```
logging disable
```

Parameters

logging
    Configure logging

disable
    Disables logging to this vty

logging enable

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

Command

```
logging enable
```

Parameters

logging
    Configure logging

enable
    Enables logging to this vty

logging filter all (0|1)

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

Command

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

Parameters

logging

    Configure logging

filter

    Filter log messages

all

    Do you want to log all messages?

0

    Only print messages matched by other filters

1

    Bypass filter and print all messages

logging level (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|lglobal|llapd|linp|l...

Command

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

Parameters

logging

    Configure logging

level

    Set the log level for a specified category

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

lglobal

Library-internal global log family

llapd

LAPD in libosmogsm

linp

A-bis Intput Subsystem

lmux

A-bis B-Subchannel TRAU Frame Multiplex

lmi

A-bis Input Driver for Signalling

lmib

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

lsms

Layer3 Short Message Service (SMS)

lctrl

Control Interface

lgtp

GPRS GTP library

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

    libosmo-sigtran MTP3 User Adaptation

lmgcp

    libosmo-mgcp Media Gateway Control Protocol

ljibuf

    libosmo-netif Jitter Buffer

lrspro

    Remote SIM protocol

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

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

Command

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

Parameters

logging

    Configure logging

level

    Set the log level for a specified category

force-all

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

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

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

Command

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

Parameters

logging

    Configure logging

level

    Set the log level for a specified category

set-all

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

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

logging print category (0|1)

Command

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

Parameters

logging

    Configure logging

print

    Log output settings

category

    Configure log message

0

    Don't prefix each log message

1

    Prefix each log message with category/subsystem name

logging print category-hex (0|1)

Command

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

Parameters

logging
>   Configure logging

print
>   Log output settings

category-hex
>   Configure log message

0
>   Don't prefix each log message

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

logging print extended-timestamp (0|1)

Command

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

Parameters

logging
>   Configure logging

print
>   Log output settings

extended-timestamp
>   Configure log message timestamping

0
>   Don't prefix each log message

1
>   Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

Command

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

Parameters

logging

   Configure logging

print

   Log output settings

file

   Configure log message

0

   Don't prefix each log message

1

   Prefix each log message with the source file and line

basename

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

[last]

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

logging print level (0|1)

Command

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

Parameters

logging

   Configure logging

print

   Log output settings

level

   Configure log message

0

   Don't prefix each log message

1

   Prefix each log message with the log level name

logging set-log-mask MASK

Command

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

Parameters

logging

Configure logging

set-log-mask

Set the logmask of this logging target

MASK

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

logging timestamp (0|1)

Command

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

Parameters

logging

Configure logging

timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

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

Command

```
logp (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|lglobal|llapd|linp|lmux|lmi|lmib| ←
    lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro) (debug ←
    |info|notice|error|fatal) .LOGMESSAGE
```

Parameters

logp

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

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

lglobal

    Library-internal global log family

llapd

    LAPD in libosmogsm

linp

    A-bis Intput Subsystem

lmux

    A-bis B-Subchannel TRAU Frame Multiplex

lmi

    A-bis Input Driver for Signalling

lmib

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

lsms

    Layer3 Short Message Service (SMS)

lctrl

    Control Interface

lgtp

    GPRS GTP library

lstats

    Statistics messages and logging

lgsup

    Generic Subscriber Update Protocol

loap

    Osmocom Authentication Protocol

lss7

     libosmo-sigtran Signalling System 7

lsccp

     libosmo-sigtran SCCP Implementation

lsua

     libosmo-sigtran SCCP User Adaptation

lm3ua

     libosmo-sigtran MTP3 User Adaptation

lmgcp

     libosmo-mgcp Media Gateway Control Protocol

ljibuf

     libosmo-netif Jitter Buffer

lrspro

     Remote SIM protocol

debug

     Log debug messages and higher levels

info

     Log informational messages and higher levels

notice

     Log noticeable messages and higher levels

error

     Log error messages and higher levels

fatal

     Log only fatal messages

.LOGMESSAGE

     Arbitrary message to log on given category and log level

no logging level force-all

Command

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

Parameters

no

     Negate a command or set its defaults

logging

     Configure logging

level

     Set the log level for a specified category

force-all

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

show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

show logging vty

Command

```
show logging vty
```

Parameters

show
> Show running system information

logging
> Show current logging configuration

vty
> Show current logging configuration for this vty

show online-help

Command

```
show online-help
```

Parameters

show
> Show running system information

online-help
> Online help

show rate-counters

Command

```
show rate-counters
```

Parameters

show
> Show running system information

rate-counters
> Show all rate counters

show startup-config

Command

```
show startup-config
```

Parameters

show

Show running system information

startup-config

Contentes of startup configuration

show stats

Command

```
show stats
```

Parameters

show

Show running system information

stats

Show statistical values

show stats level (global|peer|subscriber)

Command

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

Parameters

show

Show running system information

stats

Show statistical values

level

Set the maximum group level

global

Show global groups only

peer

Show global and network peer related groups

subscriber

Show global, peer, and subscriber groups

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

filter

Filter chunks using regular expression

REGEXP

Regular expression

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

tree

Display only a specific memory chunk

ADDRESS

Chunk address (e.g. 0xdeadbeef)

show trx

Command

```
show trx
```

Parameters

show

Show running system information

trx

Display information on the TRX

show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

terminal length <0-512>

Command

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

Parameters

terminal

Set terminal line parameters

length

Set number of lines on a screen

<0-512>

Number of lines on screen (0 for no pausing)

terminal monitor

Command

```
terminal monitor
```

Parameters

terminal

Set terminal line parameters

monitor

Copy debug output to the current terminal line

terminal no length

Command

```
terminal no length
```

Parameters

terminal
> Set terminal line parameters

no
> Negate a command or set its defaults

length
> Set number of lines on a screen

terminal no monitor

Command

```
terminal no monitor
```

Parameters

terminal
> Set terminal line parameters

no
> Negate a command or set its defaults

monitor
> Copy debug output to the current terminal line

who

Command

```
who
```

Parameters

who
> Display who is on vty

config

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

banner motd default

Command

```
banner motd default
```

Parameters

banner

Set banner string

motd

Strings for motd

default

Default string

banner motd file [FILE]

Command

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

Parameters

banner

Set banner

motd

Banner for motd

file

Banner from a file

[FILE]

Filename

ctrl

Command

```
ctrl
```

Parameters

ctrl

Configure the Control Interface

enable password (8|) WORD

Command

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

Parameters

enable

    Modify enable password parameters

password

    Assign the privileged level password

8

    Specifies a HIDDEN password will follow

dummy string

WORD

    The HIDDEN 'enable' password string

enable password LINE

Command

```
enable password LINE
```

Parameters

enable

    Modify enable password parameters

password

    Assign the privileged level password

LINE

    The UNENCRYPTED (cleartext) 'enable' password

hostname WORD

Command

```
hostname WORD
```

Parameters

hostname

    Set system's network name

WORD

    This system's network name

line vty

Command

```
line vty
```

Parameters

line

Configure a terminal line

vty

Virtual terminal

log alarms <2-32700>

Command

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

Parameters

log

Configure logging sub-system

alarms

Logging alarms to osmo_strrb

<2-32700>

Maximum number of messages to log

log file .FILENAME

Command

```
log file .FILENAME
```

Parameters

log

Configure logging sub-system

file

Logging to text file

.FILENAME

Filename

log gsmtap [HOSTNAME]

Command

```
log gsmtap [HOSTNAME]
```

Parameters

log

Configure logging sub-system

gsmtap

Logging via GSMTAP

[HOSTNAME]

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

log stderr

Command

```
log stderr
```

Parameters

log

Configure logging sub-system

stderr

Logging via STDERR of the process

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

Command

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

Parameters

log

Configure logging sub-system

syslog

Logging via syslog

authpriv

Security/authorization messages facility

cron

Clock daemon (cron/at) facility

daemon

> General system daemon facility

ftp

> Ftp daemon facility

lpr

> Line printer facility

mail

> Mail facility

news

> News facility

user

> Generic facility

uucp

> UUCP facility

log syslog local <0-7>

Command

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

Parameters

log

> Configure logging sub-system

syslog

> Logging via syslog

local

> Syslog LOCAL facility

<0-7>

> Local facility number

no banner motd

Command

```
no banner motd
```

Parameters

no

> Negate a command or set its defaults

banner

> Set banner string

motd

> Strings for motd

no enable password

Command

```
no enable password
```

Parameters

no

Negate a command or set its defaults

enable

Modify enable password parameters

password

Assign the privileged level password

no hostname [HOSTNAME]

Command

```
no hostname [HOSTNAME]
```

Parameters

no

Negate a command or set its defaults

hostname

Reset system's network name

[HOSTNAME]

Host name of this router

no log alarms

Command

```
no log alarms
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

alarms

Logging alarms to osmo_strrb

no log file .FILENAME

Command

```
no log file .FILENAME
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

file

Logging to text file

.FILENAME

Filename

no log stderr

Command

```
no log stderr
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

stderr

Logging via STDERR of the process

no log syslog

Command

```
no log syslog
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

syslog

Logging via syslog

no service advanced-vty

Command

```
no service advanced-vty
```

Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

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

Command

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

Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

terminal-length

System wide terminal length configuration

[<0-512>]

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

no stats reporter log

Command

```
no stats reporter log
```

Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

no stats reporter statsd

Command

```
no stats reporter statsd
```

Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

password (8|) WORD

Command

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

Parameters

password

Assign the terminal connection password

8

Specifies a HIDDEN password will follow

dummy string

WORD

The HIDDEN line password string

password LINE

Command

```
password LINE
```

Parameters

password

Assign the terminal connection password

LINE

The UNENCRYPTED (cleartext) line password

service advanced-vty

Command

```
service advanced-vty
```

Parameters

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

service terminal-length <0-512>

Command

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

Parameters

service

Set up miscellaneous service

terminal-length

System wide terminal length configuration

<0-512>

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

show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

stats interval <1-65535>

Command

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

Parameters

stats
> Configure stats sub-system

interval
> Set the reporting interval

<1-65535>
> Interval in seconds

stats reporter log

Command

```
stats reporter log
```

Parameters

stats
> Configure stats sub-system

reporter
> Configure a stats reporter

log
> Report to the logger

stats reporter statsd

Command

```
stats reporter statsd
```

Parameters

stats
> Configure stats sub-system

reporter
> Configure a stats reporter

statsd
> Report to a STATSD server

trx

Command

```
trx
```

Parameters

trx

Configure the TRX

config-log

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

logging color (0|1)

Command

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

Parameters

logging

Configure logging

color

Configure color-printing for log messages

0

Don't use color for printing messages

1

Use color for printing messages

logging filter all (0|1)

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

Command

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

Parameters

logging

> Configure logging

filter

> Filter log messages

all

> Do you want to log all messages?

0

> Only print messages matched by other filters

1

> Bypass filter and print all messages

logging level (main|trxclk|trxctrl|trxddl|trxdul|dev|devdrv|lglobal|llapd|linp|l...

Command

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

Parameters

logging

> Configure logging

level

> Set the log level for a specified category

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

lglobal

> Library-internal global log family

llapd

LAPD in libosmogsm

linp

A-bis Intput Subsystem

lmux

A-bis B-Subchannel TRAU Frame Multiplex

lmi

A-bis Input Driver for Signalling

lmib

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

lsms

Layer3 Short Message Service (SMS)

lctrl

Control Interface

lgtp

GPRS GTP library

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

libosmo-sigtran MTP3 User Adaptation

lmgcp

libosmo-mgcp Media Gateway Control Protocol

ljibuf

libosmo-netif Jitter Buffer

lrspro

Remote SIM protocol

debug

Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

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

Command

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

Parameters

logging

    Configure logging

level

    Set the log level for a specified category

force-all

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

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

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

Command

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

Parameters

logging

>   Configure logging

level

>   Set the log level for a specified category

set-all

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

debug

>   Log debug messages and higher levels

info

>   Log informational messages and higher levels

notice

>   Log noticeable messages and higher levels

error

>   Log error messages and higher levels

fatal

>   Log only fatal messages

logging print category (0|1)

Command

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

Parameters

logging

>   Configure logging

print

>   Log output settings

category

>   Configure log message

0

>   Don't prefix each log message

1

>   Prefix each log message with category/subsystem name

logging print category-hex (0|1)

Command

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

Parameters

logging
    Configure logging

print
    Log output settings

category-hex
    Configure log message

0
    Don't prefix each log message

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

logging print extended-timestamp (0|1)

Command

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

Parameters

logging
    Configure logging

print
    Log output settings

extended-timestamp
    Configure log message timestamping

0
    Don't prefix each log message

1
    Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

Command

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

Parameters

logging
>   Configure logging

print
>   Log output settings

file
>   Configure log message

0
>   Don't prefix each log message

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

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

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

logging print level (0|1)

Command

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

Parameters

logging
>   Configure logging

print
>   Log output settings

level
>   Configure log message

0
>   Don't prefix each log message

1
>   Prefix each log message with the log level name

logging timestamp (0|1)

Command

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

Parameters

logging

Configure logging

timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

no logging level force-all

Command

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

Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

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

config-stats

disable

Command

```
disable
```

Parameters

disable

Disable the reporter

enable

Command

```
enable
```

Parameters

enable

Enable the reporter

level (global|peer|subscriber)

Command

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

Parameters

level

Set the maximum group level

global

Report global groups only

peer

Report global and network peer related groups

subscriber

Report global, peer, and subscriber groups

local-ip ADDR

Command

```
local-ip ADDR
```

Parameters

local-ip

Set the IP address to which we bind locally

ADDR

IP Address

mtu <100-65535>

Command

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

Parameters

mtu
> Set the maximum packet size

<100-65535>
> Size in byte

no local-ip

Command

```
no local-ip
```

Parameters

no
> Negate a command or set its defaults

local-ip
> Set the IP address to which we bind locally

no mtu

Command

```
no mtu
```

Parameters

no
> Negate a command or set its defaults

mtu
> Set the maximum packet size

no prefix

Command

```
no prefix
```

Parameters

no
> Negate a command or set its defaults

prefix
> Set the item name prefix

prefix PREFIX

Command

```
prefix PREFIX
```

Parameters

prefix
> Set the item name prefix

PREFIX
> The prefix string

remote-ip ADDR

Command

```
remote-ip ADDR
```

Parameters

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

ADDR
> IP Address

remote-port <1-65535>

Command

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

Parameters

remote-port
> Set the remote port to which we connect

<1-65535>
> Remote port number

config-line

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

Command

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

Parameters

bind

> Accept VTY telnet connections on local interface

A.B.C.D

> Local interface IP address (default: 127.0.0.1)

[<0-65535>]

> Local TCP port number

login

Command

```
login
```

Parameters

login

> Enable password checking

no login

Command

```
no login
```

Parameters

no

> Negate a command or set its defaults

login

> Enable password checking

config-ctrl

bind A.B.C.D

Command

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

Parameters

bind

> Set bind address to listen for Control connections

A.B.C.D

> Local IP address (default 127.0.0.1)

config-trx

base-port <1-65535>

Command

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

Parameters

base-port

> Set the TRX Base Port

<1-65535>

> TRX Base Port

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

chan <0-100>

Command

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

Parameters

chan

Select a channel to configure

<0-100>

Channel index

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

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) <0-65535> (per-second|per-minute|per-hour|per-day)
```

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

<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

dev-args DESC

Command

```
dev-args DESC
```

Parameters

dev-args

    Set the device-specific arguments to pass to the device

DESC

    Device-specific arguments

egprs (disable|enable)

Command

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

Parameters

egprs

    Enable EDGE receiver (default=disable)

disable

    (null)

enable

    (null)

ext-rach (disable|enable)

Command

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

Parameters

ext-rach

Enable extended (11-bit) RACH (default=disable)

disable

(null)

enable

(null)

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

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

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

Command

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

Parameters

filler

Filler burst settings

type

Filler burst type (default=zero)

zero

Send an empty burst when there is nothing to send (default)

dummy

Send a dummy burst when there is nothing to send on C0 (TRX0) and empty burst on other channels. Use for OpenBTS compatibility only, don't use with OsmoBTS as it breaks encryption.

random-nb-gmsk

Send a GMSK modulated Normal Burst with random bits when there is nothing to send. Use for spectrum mask testing. Configure 'filler tsc' to set training sequence.

random-nb-8psk

Send an 8-PSK modulated Normal Burst with random bits when there is nothing to send. Use for spectrum mask testing. Configure 'filler tsc' to set training sequence.

random-ab

Send an Access Burst with random bits when there is nothing to send. Use for Rx/Tx alignment. Configure 'filler access-burst-delay' to introduce artificial delay.

multi-arfcn (disable|enable)

Command

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

Parameters

multi-arfcn

Enable multi-ARFCN transceiver (default=disable)

disable

(null)

enable

(null)

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) <0-65535> (per-second|per-minute|per-hour|per-day)
```

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

<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

offset FLOAT

Command

```
offset FLOAT
```

Parameters

offset

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

FLOAT

  Baseband Frequency Offset

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

rssi-offset FLOAT

Command

```
rssi-offset FLOAT
```

Parameters

rssi-offset

  Set the RSSI to dBm offset in dB (default=0)

FLOAT

  RSSI to dBm offset in dB

rt-prio <1-32>

Command

```
rt-prio <1-32>
```

Parameters

rt-prio

  Set the SCHED_RR real-time priority

<1-32>

  Real time priority

rx-sps (1|4)

Command

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

Parameters

rx-sps

Set the Rx Samples-per-Symbol

1

Rx Samples-per-Symbol

4

(null)

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

swap-channels (disable|enable)

Command

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

Parameters

swap-channels

Swap channels (default=disable)

disable

(null)

enable

(null)

tx-sps (1|4)

Command

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

Parameters

tx-sps
> Set the Tx Samples-per-Symbol

1
> Tx Samples-per-Symbol

4
> (null)

config-trx-chan

rx-path NAME

Command

```
rx-path NAME
```

Parameters

rx-path
> Set the Rx Path

NAME
> Rx Path name

tx-path NAME

Command

```
tx-path NAME
```

Parameters

tx-path
> Set the Tx Path

NAME
> Tx Path name