

OsmoPCU VTY Reference

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COLLABORATORS

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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

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 (csn1|l1if|rlcmac|rlcmacdata|rlcmacdl|rlcmacul|rlcmacsched|rlcmacm...

Command

```
logging level (csn1|l1if|rlcmac|rlcmacdata|rlcmacdl|rlcmacul|rlcmacsched|rlcmacmeas|tbfdl|tbfdl|tbful|ns|pcu|nacc|rim|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lms|lbssgp) (debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

csn1

Concrete Syntax Notation One (CSN1)

l1if

GPRS PCU L1 interface (L1IF)

rlcmac

GPRS RLC/MAC layer (RLCMAC)

rlcmacdata

GPRS RLC/MAC layer Data (RLCMAC)

rlcmacdl

GPRS RLC/MAC layer Downlink (RLCMAC)

rlcmacul

GPRS RLC/MAC layer Uplink (RLCMAC)

rlcmacsched

GPRS RLC/MAC layer Scheduling (RLCMAC)

rlcmacmeas

GPRS RLC/MAC layer Measurements (RLCMAC)

tbf	Temporary Block Flow (TBF)
tbfdl	Temporary Block Flow (TBF) Downlink
tbful	Temporary Block Flow (TBF) Uplink
ns	GPRS Network Service Protocol (NS)
pcu	GPRS Packet Control Unit (PCU)
nacc	Network Assisted Cell Change (NACC)
rim	RAN Information Management (RIM)
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

lscdp

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

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 (csn1|l1if|rlcmac|rlcmacdata|rlcmacdl|rlcmacul|rlcmacsched|rlcmacmeas|tbf|t...

Command

```
logp (csn1|l1if|rlcmac|rlcmacdata|rlcmacdl|rlcmacul|rlcmacsched|rlcmacmeas|tbf|tbfdl| ↔
tbfu|ns|pcu|nacc|rim|lgloba|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup ↔
|loap|lss7|lscpp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lms|lbssgp) (debug|info|notice| ↔
error|fatal) .LOGMESSAGE
```

Parameters

logp

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

csn1

Concrete Syntax Notation One (CSN1)

l1if

GPRS PCU L1 interface (L1IF)

rlcmac

GPRS RLC/MAC layer (RLCMAC)

rlcmacdata

GPRS RLC/MAC layer Data (RLCMAC)

rlmacdl

GPRS RLC/MAC layer Downlink (RLCMAC)

rlmacul

GPRS RLC/MAC layer Uplink (RLCMAC)

rlmacsched

GPRS RLC/MAC layer Scheduling (RLCMAC)

rlmacmeas

GPRS RLC/MAC layer Measurements (RLCMAC)

tbf

Temporary Block Flow (TBF)

tbfdl

Temporary Block Flow (TBF) Downlink

tbful

Temporary Block Flow (TBF) Uplink

ns

GPRS Network Service Protocol (NS)

pcu

GPRS Packet Control Unit (PCU)

nacc

Network Assisted Cell Change (NACC)

rim

RAN Information Management (RIM)

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

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 bts pdch

Command

```
show bts pdch
```

Parameters

show

Show running system information

bts

BTS related functionality

pdch

PDCH timeslots

1.2.22 show bts statistics

Command

```
show bts statistics
```

Parameters

show

Show running system information

bts

BTS related functionality

statistics

Statistics

1.2.23 show bts-timer [TNNNN]

Command

```
show bts-timer [TNNNN]
```

Parameters

show

Show running system information

bts-timer

Show BTS controlled timers

[TNNNN]

T- or X-timer-number -- 3GPP compliant timer number of the format '1234' or 'T1234' or 't1234'; Osmocom-specific timer number of the format: 'X1234' or 'x1234'.

1.2.24 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)

1.2.25 show fsm NAME

Command

```
show fsm NAME
```

Parameters

show

Show running system information

fsm

Show information about finite state machines

NAME

Display information about a single named finite state machine

1.2.26 show fsm all

Command

```
show fsm all
```

Parameters

show

Show running system information

fsm

Show information about finite state machines

all

Display a list of all registered finite state machines

1.2.27 show fsm-instances NAME

Command

```
show fsm-instances NAME
```

Parameters

show

Show running system information

fsm-instances

Show information about finite state machine instances

NAME

Display a list of all FSM instances of the named finite state machine

1.2.28 show fsm-instances all

Command

```
show fsm-instances all
```

Parameters

show

Show running system information

fsm-instances

Show information about finite state machine instances

all

Display a list of all FSM instances of all finite state machine

1.2.29 show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

1.2.30 show logging vty

Command

```
show logging vty
```

Parameters

show

Show running system information

logging

Show current logging configuration

vty

Show current logging configuration for this vty

1.2.31 show ms all

Command

```
show ms all
```

Parameters

show

Show running system information

ms

information about MSs

all

All TBFs

1.2.32 show ms imsi IMSI

Command

```
show ms imsi IMSI
```

Parameters

show

Show running system information

ms

information about MSs

imsi

Select MS by IMSI

IMSI

IMSI

1.2.33 show ms tlli TLLI

Command

```
show ms tlli TLLI
```

Parameters

show

Show running system information

ms

information about MSs

tlli

Select MS by TLLI

TLLI

TLLI as hex

1.2.34 show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

1.2.35 show rate-counters

Command

```
show rate-counters
```

Parameters

show

Show running system information

rate-counters

Show all rate counters

1.2.36 show stats

Command

```
show stats
```

Parameters

show

Show running system information

stats

Show statistical values

1.2.37 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

1.2.38 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

1.2.39 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

1.2.40 **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)

1.2.41 show tbf (all|ccch|pacch)

Command

```
show tbf (all|ccch|pacch)
```

Parameters

show

Show running system information

tbf

information about TBFs

all

All TBFs

ccch

TBFs allocated via CCCH

pacch

TBFs allocated via PACCH

1.2.42 show timer [TNNNN]

Command

```
show timer [TNNNN]
```

Parameters

show

Show running system information

timer

Show PCU timers

[TNNNN]

T- or X-timer-number -- 3GPP compliant timer number of the format '1234' or 'T1234' or 't1234'; Osmocom-specific timer number of the format: 'X1234' or 'x1234'.

1.2.43 show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

1.2.44 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)

1.2.45 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

1.2.46 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 (csn1|l1if|rlcmac|rlcmacdata|rlcmacd|rlcmacul|rlcmacsched|rlcmacm...

Command

```
logging level (csn1|l1if|rlcmac|rlcmacdata|rlcmacd|rlcmacul|rlcmacsched|rlcmacmeas|tbfb ↔
|tbfdl|tbful|ns|pcu|nacc|rim|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp| ↔
|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lms|lbssgp) (debug|info ↔
|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

csn1

Concrete Syntax Notation One (CSN1)

l1if

GPRS PCU L1 interface (L1IF)

rlcmac
GPRS RLC/MAC layer (RLCMAC)

rlmacdata
GPRS RLC/MAC layer Data (RLCMAC)

rlmacdl
GPRS RLC/MAC layer Downlink (RLCMAC)

rlmacul
GPRS RLC/MAC layer Uplink (RLCMAC)

rlmacsched
GPRS RLC/MAC layer Scheduling (RLCMAC)

rlmacmeas
GPRS RLC/MAC layer Measurements (RLCMAC)

tbf
Temporary Block Flow (TBF)

tbfdl
Temporary Block Flow (TBF) Downlink

tbful
Temporary Block Flow (TBF) Uplink

ns
GPRS Network Service Protocol (NS)

pcu
GPRS Packet Control Unit (PCU)

nacc
Network Assisted Cell Change (NACC)

rim
RAN Information Management (RIM)

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

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 (csn1|l1if|rlcmac|rlcmacdata|rlcmacdl|rlcmacul|rlcmacsched|rlcmacmeas|tbfdl|tbful|ns|pcu|nacc|rim|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscpp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp) (debug|info|notice|error|fatal) .LOGMESSAGE

Command

```
logp (csn1|l1if|rlcmac|rlcmacdata|rlcmacdl|rlcmacul|rlcmacsched|rlcmacmeas|tbfdl|tbful|ns|pcu|nacc|rim|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscpp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp) (debug|info|notice|error|fatal) .LOGMESSAGE
```

Parameters

logp

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

csn1

Concrete Syntax Notation One (CSN1)

l1if

GPRS PCU L1 interface (L1IF)

rlcmac

GPRS RLC/MAC layer (RLCMAC)

rlcmacdata

GPRS RLC/MAC layer Data (RLCMAC)

rlcmacdl

GPRS RLC/MAC layer Downlink (RLCMAC)

rlcmacul

GPRS RLC/MAC layer Uplink (RLCMAC)

rlcmacsched

GPRS RLC/MAC layer Scheduling (RLCMAC)

rlcmacmeas

GPRS RLC/MAC layer Measurements (RLCMAC)

tbfdl

Temporary Block Flow (TBF)

tbful

Temporary Block Flow (TBF) Downlink

tbfdl

Temporary Block Flow (TBF) Uplink

ns

GPRS Network Service Protocol (NS)

pcu

GPRS Packet Control Unit (PCU)

nacc

Network Assisted Cell Change (NACC)

rim
RAN Information Management (RIM)

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

lrs
GPRS NS layer

lbssgp
GPRS BSSGP layer

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 bts pdch

Command

```
show bts pdch
```

Parameters

show

Show running system information

bts

BTS related functionality

pdch

PDCH timeslots

1.3.24 show bts statistics

Command

```
show bts statistics
```

Parameters

show

Show running system information

bts

BTS related functionality

statistics

Statistics

1.3.25 show bts-timer [TNNNN]

Command

```
show bts-timer [TNNNN]
```

Parameters

show

Show running system information

bts-timer

Show BTS controlled timers

[TNNNN]

T- or X-timer-number -- 3GPP compliant timer number of the format '1234' or 'T1234' or 't1234'; Osmocom-specific timer number of the format: 'X1234' or 'x1234'.

1.3.26 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)

1.3.27 show fsm NAME

Command

```
show fsm NAME
```

Parameters

show

Show running system information

fsm

Show information about finite state machines

NAME

Display information about a single named finite state machine

1.3.28 show fsm all

Command

```
show fsm all
```

Parameters

show

Show running system information

fsm

Show information about finite state machines

all

Display a list of all registered finite state machines

1.3.29 show fsm-instances NAME

Command

```
show fsm-instances NAME
```

Parameters

show

Show running system information

fsm-instances

Show information about finite state machine instances

NAME

Display a list of all FSM instances of the named finite state machine

1.3.30 show fsm-instances all

Command

```
show fsm-instances all
```

Parameters

show

Show running system information

fsm-instances

Show information about finite state machine instances

all

Display a list of all FSM instances of all finite state machine

1.3.31 show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

1.3.32 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

1.3.33 show ms all

Command

```
show ms all
```

Parameters

show

Show running system information

ms

information about MSs

all

All TBFs

1.3.34 show ms imsi IMSI

Command

```
show ms imsi IMSI
```

Parameters

show

Show running system information

ms

information about MSs

imsi

Select MS by IMSI

IMSI

IMSI

1.3.35 show ms tlli TLLI

Command

```
show ms tlli TLLI
```

Parameters

show

Show running system information

ms

information about MSs

tlli

Select MS by TLLI

TLLI

TLLI as hex

1.3.36 show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

1.3.37 show rate-counters

Command

```
show rate-counters
```

Parameters

show

Show running system information

rate-counters

Show all rate counters

1.3.38 show startup-config

Command

```
show startup-config
```

Parameters

show

Show running system information

startup-config

Contentes of startup configuration

1.3.39 show stats

Command

```
show stats
```

Parameters

show

Show running system information

stats

Show statistical values

1.3.40 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

1.3.41 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

1.3.42 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

1.3.43 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)

1.3.44 show tbf (all|ccch|pacch)

Command

```
show tbf (all|ccch|pacch)
```

Parameters

show

Show running system information

tbf

information about TBFs

all

All TBFs

ccch

TBFs allocated via CCCH

pacch

TBFs allocated via PACCH

1.3.45 show timer [TNNNN]

Command

```
show timer [TNNNN]
```

Parameters

show

Show running system information

timer

Show PCU timers

[TNNNN]

T- or X-timer-number -- 3GPP compliant timer number of the format '1234' or 'T1234' or 't1234'; Osmocom-specific timer number of the format: 'X1234' or 'x1234'.

1.3.46 show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

1.3.47 stats report

Command

```
stats report
```

Parameters

stats

Stats related commands

report

Manurally trigger reporting of stats

1.3.48 stats reset

Command

```
stats reset
```

Parameters

stats

Stats related commands

reset

Reset all stats

1.3.49 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)

1.3.50 terminal monitor

Command

```
terminal monitor
```

Parameters

terminal

Set terminal line parameters

monitor

Copy debug output to the current terminal line

1.3.51 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

1.3.52 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

1.3.53 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 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

1.4.5 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

1.4.6 hostname WORD

Command

```
hostname WORD
```

Parameters

hostname

Set system's network name

WORD

This system's network name

1.4.7 line vty

Command

```
line vty
```

Parameters

line

Configure a terminal line

vtty

Virtual terminal

1.4.8 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

1.4.9 log file .FILENAME

Command

```
log file .FILENAME
```

Parameters

log

Configure logging sub-system

file

Logging to text file

.FILENAME

Filename

1.4.10 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)

1.4.11 log stderr

Command

```
log stderr
```

Parameters

log

Configure logging sub-system

stderr

Logging via STDERR of the process

1.4.12 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

1.4.13 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

1.4.14 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

1.4.15 no banner motd

Command

```
no banner motd
```

Parameters

no

Negate a command or set its defaults

banner

Set banner string

motd

Strings for motd

1.4.16 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

1.4.17 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

1.4.18 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

1.4.19 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

1.4.20 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

1.4.21 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

1.4.22 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

1.4.23 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

1.4.24 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)

1.4.25 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

1.4.26 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

1.4.27 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

1.4.28 password LINE

Command

```
password LINE
```

Parameters

password

Assign the terminal connection password

LINE

The UNENCRYPTED (cleartext) line password

1.4.29 pcu

Command

```
pcu
```

Global attributes

Flag: !

This command applies immediately

Parameters

pcu

BTS specific configure

1.4.30 service advanced-vty

Command

```
service advanced-vty
```

Parameters

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

1.4.31 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)

1.4.32 show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

1.4.33 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)

1.4.34 stats reporter log

Command

```
stats reporter log
```

Parameters

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

1.4.35 stats reporter statsd

Command

```
stats reporter statsd
```

Parameters

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

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 (csn1|l1if|rlcmac|rlcmacdata|rlcmacdl|rlcmacul|rlmacsched|rlcmacm...

Command

```
logging level (csn1|l1if|rlcmac|rlcmacdata|rlcmacdl|rlcmacul|rlmacsched|rlcmacmeas|tbf ↔
|tbfdl|tbful|ns|pcu|nacc|rim|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp| ↔
|lstats|lgsup|loap|lss7|lscpp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lms|lbssgp) (debug|info ↔
|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

csn1

Concrete Syntax Notation One (CSN1)

l1if

GPRS PCU L1 interface (L1IF)

rlcmac

GPRS RLC/MAC layer (RLCMAC)

rlcmacdata

GPRS RLC/MAC layer Data (RLCMAC)

rlmacdl

GPRS RLC/MAC layer Downlink (RLCMAC)

rlmacul

GPRS RLC/MAC layer Uplink (RLCMAC)

rlmacsched

GPRS RLC/MAC layer Scheduling (RLCMAC)

rlmacmeas

GPRS RLC/MAC layer Measurements (RLCMAC)

tbf

Temporary Block Flow (TBF)

tbfdl

Temporary Block Flow (TBF) Downlink

tbful

Temporary Block Flow (TBF) Uplink

ns

GPRS Network Service Protocol (NS)

pcu

GPRS Packet Control Unit (PCU)

nacc
Network Assisted Cell Change (NACC)

rim
RAN Information Management (RIM)

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
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-cpu-sched

1.8.1 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

1.8.2 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

1.9 config-pcu

1.9.1 alloc-algorithm (a|b|dynamic)

Command

```
alloc-algorithm (a|b|dynamic)
```

Global attributes

Flag: !

This command applies immediately

Parameters

alloc-algorithm

Select slot allocation algorithm to use when assigning timeslots on PACCH

a

Single slot is assigned only

b

Multiple slots are assigned for semi-duplex operation

dynamic

Dynamically select the algorithm based on the system state

1.9.2 cs <1-4> [<1-4>]

Command

```
cs <1-4> [<1-4>]
```

Global attributes

Flag: !

This command applies immediately

Parameters

cs

Coding Scheme configuration

<1-4>

Initial CS value to be used (overrides BTS config)

[<1-4>]

Use a different initial CS value for the uplink

1.9.3 cs downgrade-threshold <1-10000>

Command

```
cs downgrade-threshold <1-10000>
```

Global attributes

Flag: !

This command applies immediately

Parameters

cs

Coding Scheme configuration

downgrade-threshold

set threshold for data size based downlink (M)CS downgrade

<1-10000>

downgrade if less octets left

1.9.4 cs link-quality-ranges cs1 <0-35> cs2 <0-35> <0-35> cs3 <0-35> <0-35> cs4 <0-35>

Command

```
cs link-quality-ranges cs1 <0-35> cs2 <0-35> <0-35> cs3 <0-35> <0-35> cs4 <0-35>
```

Global attributes

Flag: !

This command applies immediately

Parameters

cs

Coding Scheme configuration

link-quality-ranges

Set link quality ranges for each uplink CS

cs1

Set quality range for CS-1 (high value only)

<0-35>

CS-1 high (dB)

cs2

Set quality range for CS-2

<0-35>

CS-2 low (dB)

<0-35>

CS-2 high (dB)

cs3

Set quality range for CS-3

<0-35>

CS-3 low (dB)

<0-35>

CS-3 high (dB)

cs4

Set quality range for CS-4 (low value only)

<0-35>

CS-4 low (dB)

1.9.5 cs max <1-4> [<1-4>]

Command

```
cs max <1-4> [<1-4>]
```

Global attributes

Flag: !

This command applies immediately

Parameters

cs

Coding Scheme configuration

max

Set maximum values for adaptive CS selection (overrides BTS config)

<1-4>

Maximum CS value to be used

[<1-4>]

Use a different maximum CS value for the uplink

1.9.6 cs threshold <0-100> <0-100>

Command

```
cs threshold <0-100> <0-100>
```

Global attributes

Flag: !

This command applies immediately

Parameters

cs

Coding Scheme configuration

threshold

set thresholds for error rate based downlink (M)CS adjustment

<0-100>

lower limit in %

<0-100>

upper limit in %

1.9.7 dl-tbf-preemptive-retransmission

Command

```
dl-tbf-preemptive-retransmission
```

Global attributes

Flag: !

This command applies immediately

Parameters

dl-tbf-preemptive-retransmission

retransmit blocks even before the MS had a chance to receive them (better throughput, less readable traces) (enabled by default)

1.9.8 egprs dl arq-type (spb|arq2)

Command

```
egprs dl arq-type (spb|arq2)
```

Global attributes

Flag: !

This command applies immediately

Parameters

egprs

EGPRS configuration

dl

downlink specific configuration

arq-type

ARQ options

spb

enable SPB(ARQ1) support

arq2

enable ARQ2 support

1.9.9 flow-control bucket-time <1-65534>

Command

```
flow-control bucket-time <1-65534>
```

Global attributes

Flag: !

This command applies immediately

Parameters

flow-control

BSSGP Flow Control configuration

bucket-time

Set target downlink maximum queueing time (only affects the advertised bucket size)

<1-65534>

Time in centi-seconds

1.9.10 flow-control force-bvc-bucket-size <1-6553500>

Command

```
flow-control force-bvc-bucket-size <1-6553500>
```

Global attributes

Flag: !

This command applies immediately

Parameters

flow-control

BSSGP Flow Control configuration

force-bvc-bucket-size

Force a fixed value for the BVC bucket size

<1-6553500>

Bucket size in octets

1.9.11 flow-control force-bvc-leak-rate <1-6553500>

Command

```
flow-control force-bvc-leak-rate <1-6553500>
```

Global attributes

Flag: !

This command applies immediately

Parameters

flow-control

BSSGP Flow Control configuration

force-bvc-leak-rate

Force a fixed value for the BVC leak rate

<1-6553500>

Leak rate in bit/s

1.9.12 flow-control force-ms-bucket-size <1-6553500>

Command

```
flow-control force-ms-bucket-size <1-6553500>
```

Global attributes

Flag: !

This command applies immediately

Parameters

flow-control

BSSGP Flow Control configuration

force-ms-bucket-size

Force a fixed value for the default MS bucket size

<1-6553500>

Bucket size in octets

1.9.13 flow-control force-ms-leak-rate <1-6553500>

Command

```
flow-control force-ms-leak-rate <1-6553500>
```

Global attributes

Flag: !

This command applies immediately

Parameters

flow-control

BSSGP Flow Control configuration

force-ms-leak-rate

Force a fixed value for the default MS leak rate

<1-6553500>

Leak rate in bit/s

1.9.14 flow-control-interval <1-10>

Command

```
flow-control-interval <1-10>
```

Global attributes

Flag: !

This command applies immediately

Parameters

flow-control-interval

Interval between sending subsequent Flow Control PDUs

<1-10>

Interval time in seconds

1.9.15 gamma <0-62>

Command

```
gamma <0-62>
```

Global attributes

Flag: !

This command applies immediately

Parameters

gamma

Gamma parameter for MS power control in units of dB (see TS 05.08)

<0-62>

Gamma in even unit of dBs

1.9.16 gb-dialect (classic|ip-sns)

Command

```
gb-dialect (classic|ip-sns)
```

Application specific attributes

Flag: r

This command applies when the NS is reset

Parameters

gb-dialect

Select which Gb interface dialect to use

classic

Classic Gb interface with NS-{RESET,BLOCK,UNBLOCK} and static configuration

ip-sns

Modern Gb interface with IP-SNS (Sub Network Service) and dynamic configuration

1.9.17 gsmtap-category (dl-unknown|dl-dummy|dl-ctrl|dl-data-gprs|dl-data-egprs|dl-ptcch...

Command

```
gsmtap-category (dl-unknown|dl-dummy|dl-ctrl|dl-data-gprs|dl-data-egprs|dl-ptcch|dl- ↵  
agch|dl-pch|ul-unknown|ul-dummy|ul-ctrl|ul-data-gprs|ul-data-egprs|ul-rach|ul-ptcch ↵  
)
```

Parameters

gsmtap-category

GSMTAP Category

dl-unknown

Unknown / Unparseable / Erroneous Downlink Blocks

dl-dummy

Downlink Dummy Blocks

dl-ctrl

Downlink Control Blocks

dl-data-gprs

Downlink Data Blocks (GPRS)

dl-data-egprs

Downlink Data Blocks (EGPRS)

dl-ptcch

Downlink PTCCH Blocks

dl-agch

Downlink AGCH Blocks

dl-pch

Downlink PCH Blocks

ul-unknown

Unknown / Unparseable / Erroneous Downlink Blocks

ul-dummy

Uplink Dummy Blocks

ul-ctrl

Uplink Control Blocks

ul-data-gprs

Uplink Data Blocks (GPRS)

ul-data-egprs

Uplink Data Blocks (EGPRS)

ul-rach

Uplink RACH Bursts

ul-ptcch

Uplink PTCCH Bursts

1.9.18 mcs <1-9> [<1-9>]

Command

```
mcs <1-9> [<1-9>]
```

Global attributes

Flag: !

This command applies immediately

Parameters

mcs

Modulation and Coding Scheme configuration (EGPRS)

<1-9>

Initial MCS value to be used (default 1)

[<1-9>]

Use a different initial MCS value for the uplink

1.9.19 mcs link-quality-ranges mcs1 <0-35> mcs2 <0-35> <0-35> mcs3 <0-35> <0-35> mcs4 <...

Command

```
mcs link-quality-ranges mcs1 <0-35> mcs2 <0-35> <0-35> mcs3 <0-35> <0-35> mcs4 <0-35> ↵  
    <0-35> mcs5 <0-35> <0-35> mcs6 <0-35> <0-35> mcs7 <0-35> <0-35> mcs8 <0-35> <0-35> ↵  
    mcs9 <0-35>
```

Global attributes

Flag: !

This command applies immediately

Parameters

mcs

Coding Scheme configuration

link-quality-ranges

Set link quality ranges for each uplink MCS

mcs1

Set quality range for MCS-1 (high value only)

<0-35>

MCS-1 high (dB)

mcs2

Set quality range for MCS-2

<0-35>

MCS-2 high (dB)

<0-35>

MCS-2 low (dB)

mcs3

Set quality range for MCS-3

<0-35>

MCS-3 high (dB)

<0-35>

MCS-3 low (dB)

mcs4

Set quality range for MCS-4

<0-35>

MCS-4 high (dB)

<0-35>

MCS-4 low (dB)

mcs5

Set quality range for MCS-5

<0-35>

MCS-5 high (dB)

<0-35>

MCS-5 low (dB)

mcs6

Set quality range for MCS-6

<0-35>

MCS-6 low (dB)

<0-35>

MCS-6 high (dB)

mcs7

Set quality range for MCS-7

<0-35>

MCS-7 low (dB)

<0-35>

MCS-7 high (dB)

mcs8

Set quality range for MCS-8

<0-35>

MCS-8 low (dB)

<0-35>

MCS-8 high (dB)

mcs9

Set quality range for MCS-9 (low value only)

<0-35>

MCS-9 low (dB)

1.9.20 mcs max <1-9> [<1-9>]

Command

```
mcs max <1-9> [<1-9>]
```

Global attributes

Flag: !

This command applies immediately

Parameters

mcs

Modulation and Coding Scheme configuration (EGPRS)

max

Set maximum values for adaptive CS selection (overrides BTS config)

<1-9>

Maximum MCS value to be used

[<1-9>]

Use a different maximum MCS value for the uplink

1.9.21 neighbor resolution (A.B.C.D|X:X::X:X) [<0-65535>]

Command

```
neighbor resolution (A.B.C.D|X:X::X:X) [<0-65535>]
```

Parameters

neighbor

Manage local and remote-BSS neighbor cells

resolution

Connect to Neighbor Resolution Service (CTRL interface) to given ip and port

A.B.C.D

IPv4 address to connect to

X:X::X:X

IPv6 address to connect to

[<0-65535>]

Port to connect to (default 4248)

1.9.22 no cs

Command

```
no cs
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

cs

Coding Scheme configuration

1.9.23 no cs downgrade-threshold

Command

```
no cs downgrade-threshold
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

cs

Coding Scheme configuration

downgrade-threshold

set threshold for data size based downlink (M)CS downgrade

1.9.24 no cs max

Command

```
no cs max
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

cs

Coding Scheme configuration

max

Set maximum values for adaptive CS selection (overrides BTS config)

1.9.25 no cs threshold

Command

```
no cs threshold
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

cs

Coding Scheme configuration

threshold

set thresholds for error rate based downlink (M)CS adjustment

1.9.26 no dl-tbf-preemptive-retransmission

Command

```
no dl-tbf-preemptive-retransmission
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

dl-tbf-preemptive-retransmission

retransmit blocks even before the MS had a chance to receive them (better throughput, less readable traces)

1.9.27 no flow-control bucket-time

Command

```
no flow-control bucket-time
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

flow-control

BSSGP Flow Control configuration

bucket-time

Set target downlink maximum queueing time (only affects the advertised bucket size)

1.9.28 no flow-control force-bvc-bucket-size

Command

```
no flow-control force-bvc-bucket-size
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

flow-control

BSSGP Flow Control configuration

force-bvc-bucket-size

Force a fixed value for the BVC bucket size

1.9.29 no flow-control force-bvc-leak-rate

Command

```
no flow-control force-bvc-leak-rate
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

flow-control

BSSGP Flow Control configuration

force-bvc-leak-rate

Force a fixed value for the BVC leak rate

1.9.30 no flow-control force-ms-bucket-size

Command

```
no flow-control force-ms-bucket-size
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

flow-control

BSSGP Flow Control configuration

force-ms-bucket-size

Force a fixed value for the default MS bucket size

1.9.31 no flow-control force-ms-leak-rate

Command

```
no flow-control force-ms-leak-rate
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

flow-control

BSSGP Flow Control configuration

force-ms-leak-rate

Force a fixed value for the default MS leak rate

1.9.32 no gsmtap-category (dl-unknown|dl-dummy|dl-ctrl|dl-data-gprs|dl-data-egprs|dl-pt...

Command

```
no gsmtap-category (dl-unknown|dl-dummy|dl-ctrl|dl-data-gprs|dl-data-egprs|dl-ptcch|dl- ↵  
agch|dl-pch|ul-unknown|ul-dummy|ul-ctrl|ul-data-gprs|ul-data-egprs|ul-rach|ul-ptcch ↵  
)
```

Parameters

no

Negate a command or set its defaults

gsmtap-category

GSMTAP Category

dl-unknown

Unknown / Unparseable / Erroneous Downlink Blocks

dl-dummy

Downlink Dummy Blocks

dl-ctrl

Downlink Control Blocks

dl-data-gprs

Downlink Data Blocks (GPRS)

dl-data-egprs

Downlink Data Blocks (EGPRS)

dl-ptcch

Downlink PTCCH Blocks

dl-agch

Downlink AGCH Blocks

dl-pch

Downlink PCH Blocks

ul-unknown

Unknown / Unparseable / Erroneous Downlink Blocks

ul-dummy

Uplink Dummy Blocks

ul-ctrl

Uplink Control Blocks

ul-data-gprs

Uplink Data Blocks (GPRS)

ul-data-egprs

Uplink Data Blocks (EGPRS)

ul-rach

Uplink RACH Bursts

ul-ptcch

Uplink PTCCH Bursts

1.9.33 no mcs

Command

```
no mcs
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

mcs

Modulation and Coding Scheme configuration (EGPRS)

1.9.34 no mcs max

Command

```
no mcs max
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

mcs

Modulation and Coding Scheme configuration (EGPRS)

max

Set maximum values for adaptive CS selection (overrides BTS config)

1.9.35 no queue codel

Command

```
no queue codel
```

Application specific attributes

Flag: s

This command applies when a new subscriber attaches

Parameters

no

Negate a command or set its defaults

queue

Packet queue options

codel

Set CoDel queue management

1.9.36 no queue hysteresis

Command

```
no queue hysteresis
```

Application specific attributes

Flag: n

This command applies when a new TBF is begins

Parameters

no

Negate a command or set its defaults

queue

Packet queue options

hysteresis

Set lifetime hysteresis of LLC frame in centi-seconds (continue discarding until lifetime-hysteresis is reached)

1.9.37 no queue idle-ack-delay

Command

```
no queue idle-ack-delay
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

queue

Packet queue options

idle-ack-delay

Request an ACK after the last DL LLC frame in centi-seconds

1.9.38 no queue lifetime

Command

```
no queue lifetime
```

Application specific attributes

Flag: n

This command applies when a new TBF is begins

Parameters

no

Negate a command or set its defaults

queue

Packet queue options

lifetime

Disable lifetime limit of LLC frame (use value given by SGSN)

1.9.39 no two-phase-access

Command

```
no two-phase-access
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

two-phase-access

Only use two phase access when requested my MS

1.9.40 pcu-socket PATH

Command

```
pcu-socket PATH
```

Parameters

pcu-socket

Configure the osmo-bts PCU socket file/path name

PATH

Path of the socket to connect to

1.9.41 queue codel

Command

```
queue codel
```

Application specific attributes

Flag: s

This command applies when a new subscriber attaches

Parameters

queue

Packet queue options

codel

Set CoDel queue management

1.9.42 queue codel interval <1-1000>

Command

```
queue codel interval <1-1000>
```

Application specific attributes

Flag: s

This command applies when a new subscriber attaches

Parameters

queue

Packet queue options

codel

Set CoDel queue management

interval

Specify interval

<1-1000>

Interval in centi-seconds

1.9.43 queue hysteresis <1-65535>

Command

```
queue hysteresis <1-65535>
```

Application specific attributes

Flag: n

This command applies when a new TBF is begins

Parameters

queue

Packet queue options

hysteresis

Set lifetime hysteresis of LLC frame in centi-seconds (continue discarding until lifetime-hysteresis is reached)

<1-65535>

Hysteresis in centi-seconds

1.9.44 queue idle-ack-delay <1-65535>

Command

```
queue idle-ack-delay <1-65535>
```

Global attributes

Flag: !

This command applies immediately

Parameters

queue

Packet queue options

idle-ack-delay

Request an ACK after the last DL LLC frame in centi-seconds

<1-65535>

Idle ACK delay in centi-seconds

1.9.45 queue lifetime <1-65534>

Command

```
queue lifetime <1-65534>
```

Application specific attributes

Flag: n

This command applies when a new TBF is begins

Parameters

queue

Packet queue options

lifetime

Set lifetime limit of LLC frame in centi-seconds (overrides the value given by SGSN)

<1-65534>

Lifetime in centi-seconds

1.9.46 queue lifetime infinite

Command

```
queue lifetime infinite
```

Application specific attributes

Flag: n

This command applies when a new TBF is begins

Parameters

queue

Packet queue options

lifetime

Set lifetime limit of LLC frame in centi-seconds (overrides the value given by SGSN)

infinite

Infinite lifetime

1.9.47 timer [TNNNN] [(<0-2147483647>|default)]

Command

```
timer [TNNNN] [(<0-2147483647>|default)]
```

Global attributes

Flag: !

This command applies immediately

Parameters

timer

Configure or show PCU timers

[TNNNN]

T- or X-timer-number -- 3GPP compliant timer number of the format '1234' or 'T1234' or 't1234'; Osmocom-specific timer number of the format: 'X1234' or 'x1234'.

[<0-2147483647>]

New timer value

[default]

Set to default timer value

1.9.48 two-phase-access

Command

```
two-phase-access
```

Global attributes

Flag: !

This command applies immediately

Parameters

two-phase-access

Force two phase access when MS requests single phase access

1.9.49 window-size <0-1024> [<0-256>]

Command

```
window-size <0-1024> [<0-256>]
```

Application specific attributes

Flag: n

This command applies when a new TBF is begins

Parameters

window-size

Window size configuration ($b + N_PDCH * f$)

<0-1024>

Base value (b)

[<0-256>]

Factor for number of PDCH (f)
