

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

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 filter nsvc (nsei|nsvci) <0-65535>

Command

```
logging filter nsvc (nsei|nsvci) <0-65535>
```

Parameters

logging

Configure logging

filter

Filter log messages

nsvc

Filter based on NS Virtual Connection

nsei

Identify NS-VC by NSEI

nsvci

Identify NS-VC by NSVCI

<0-65535>

Numeric identifier

logging level (csn1|l1if|rlcmac|rlcmacdata|rlcmacd|rlcmacul|rlcmacsched|rlcmacm...

Command

```
logging level (csn1|l1if|rlcmac|rlcmacdata|rlcmacd|rlcmacul|rlcmacsched|rlcmacmeas|tbf ↵
|tbfdl|tbful|ns|bssgp|pcu|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats| ↵
lgsup|loap|lss7|lscdp|lsua|lm3ua|lmgcp|ljibuf|lrspro) (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)

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)

bssgp
GPRS BSS Gateway Protocol (BSSGP)

pcu
GPRS Packet Control Unit (PCU)

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

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 (csn1|l1if|rlcmac|rlcmacdata|rlcmacdl|rlmacul|rlmacsched|rlcmacmeas|tbf|t...**Command**

```
logp (csn1|l1if|rlcmac|rlcmacdata|rlcmacdl|rlmacul|rlmacsched|rlcmacmeas|tbf|tbfdl|
      tbful|ns|bssgp|pcu|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

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)

rlmacul

GPRS RLC/MAC layer Uplink (RLCMAC)

rlmacsched

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) |
| bssgp | GPRS BSS Gateway Protocol (BSSGP) |
| pcu | GPRS Packet Control Unit (PCU) |
| 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

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 bts statistics

Command

```
show bts statistics
```

Parameters

show

Show running system information

bts

BTS related functionality

statistics

Statistics

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'.

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 ms all

Command

```
show ms all
```

Parameters

show

Show running system information

ms

information about MSs

all

All TBFs

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

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

show ns

Command

```
show ns
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

show ns (nsei|nsvc) <0-65535> [stats]

Command

```
show ns (nsei|nsvc) <0-65535> [stats]
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

nsei

Select one NSE by its NSE Identifier

nsvc

Select one NSE by its NS-VC Identifier

<0-65535>

The Identifier of selected type

[stats]

Include Statistics

show ns persistent

Command

```
show ns persistent
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

persistent

Show only persistent NS

show ns stats

Command

```
show ns stats
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

stats

Include statistics

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 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

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'.

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 filter nsvc (nsei|nsvci) <0-65535>

Command

```
logging filter nsvc (nsei|nsvci) <0-65535>
```

Parameters

logging

Configure logging

filter

Filter log messages

nsvc

Filter based on NS Virtual Connection

nsei

Identify NS-VC by NSEI

nsvci

Identify NS-VC by NSVCI

<0-65535>

Numeric identifier

logging level (csn1|l1if|rlcmac|rlcmacdata|rlcmacd|rlcmacul|rlmacsched|rlcmacm...

Command

```
logging level (csn1|l1if|rlcmac|rlcmacdata|rlcmacd|rlcmacul|rlmacsched|rlcmacmeas|tbf ↔  
|tbfdl|tbful|ns|bssgp|pcu|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats| ↔  
lgsup|loap|lss7|lscdp|lsua|lm3ua|lmgcp|ljibuf|lrspro) (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)

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)

bssgp

GPRS BSS Gateway Protocol (BSSGP)

pcu
GPRS Packet Control Unit (PCU)

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

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

Command

```
logp (csn1|l1if|rlcmac|rlcmacdata|rlcmacdl|rlcmacul|rlcmacsched|rlcmacmeas|tbf|tbfdl| ↵
tbfu|ns|bssgp|pcu|lgloba|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

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

tbfup

Temporary Block Flow (TBF) Uplink

ns

GPRS Network Service Protocol (NS)

bssgp

GPRS BSS Gateway Protocol (BSSGP)

pcu

GPRS Packet Control Unit (PCU)

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

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>'

nsvc (nsei|nsvci) <0-65535> (block|unblock|reset)

Command

```
nsvc (nsei|nsvci) <0-65535> (block|unblock|reset)
```

Parameters

nsvc

Perform an operation on a NSVC

nsei

NSEI to identify NS-VC Identifier (NS-VCI)

nsvci

NS-VC Identifier (NS-VCI)

<0-65535>

The NSEI

block

Initiate BLOCK procedure

unblock

Initiate UNBLOCK procedure

reset

Initiate RESET procedure

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 bts statistics

Command

```
show bts statistics
```

Parameters

show

Show running system information

bts

BTS related functionality

statistics

Statistics

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'.

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 ms all

Command

```
show ms all
```

Parameters

show

Show running system information

ms

information about MSs

all

All TBFs

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

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

show ns

Command

```
show ns
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

show ns (nsei|nsvc) <0-65535> [stats]

Command

```
show ns (nsei|nsvc) <0-65535> [stats]
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

nsei

Select one NSE by its NSE Identifier

nsvc

Select one NSE by its NS-VC Identifier

<0-65535>

The Identifier of selected type

[stats]

Include Statistics

show ns persistent

Command

```
show ns persistent
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

persistent

Show only persistent NS

show ns stats

Command

```
show ns stats
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

stats

Include statistics

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 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

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'.

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

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

vtty

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

ns

Command

```
ns
```

Parameters

ns

Configure the GPRS Network Service

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

pcu

Command

```
pcu
```

Parameters

pcu

BTS specific configure

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

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 filter nsvc (nsei|nsvci) <0-65535>

Command

```
logging filter nsvc (nsei|nsvci) <0-65535>
```

Parameters

logging

Configure logging

filter

Filter log messages

nsvc

Filter based on NS Virtual Connection

nsei

Identify NS-VC by NSEI

nsvci

Identify NS-VC by NSVCI

<0-65535>

Numeric identifier

logging level (csn1|l1if|rlcmac|rlcmacdata|rlcmacd|rlcmacul|rlcmacsched|rlcmacm...

Command

```
logging level (csn1|l1if|rlcmac|rlcmacdata|rlcmacd|rlcmacul|rlcmacsched|rlcmacmeas|tbf ↵
|tbfdl|tbful|ns|bssgp|pcu|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

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)

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)

bssgp

GPRS BSS Gateway Protocol (BSSGP)

pcu

GPRS Packet Control Unit (PCU)

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

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-ns

encapsulation framerelay-gre enabled (1|0)

Command

```
encapsulation framerelay-gre enabled (1|0)
```

Parameters

encapsulation

NS encapsulation options

framerelay-gre

NS over Frame Relay over GRE Encapsulation

enabled

Enable or disable Frame Relay over GRE

1

Enable

0

Disable

encapsulation framerelay-gre local-ip A.B.C.D

Command

```
encapsulation framerelay-gre local-ip A.B.C.D
```

Parameters

encapsulation

NS encapsulation options

framerelay-gre

NS over Frame Relay over GRE Encapsulation

local-ip

Set the IP address on which we listen for NS/FR/GRE

A.B.C.D

IP Address

encapsulation udp dscp <0-255>

Command

```
encapsulation udp dscp <0-255>
```

Parameters

encapsulation

NS encapsulation options

udp

NS over UDP Encapsulation

dscp

Set DSCP/TOS on the UDP socket

<0-255>

DSCP Value

encapsulation udp local-ip A.B.C.D

Command

```
encapsulation udp local-ip A.B.C.D
```

Parameters

encapsulation

NS encapsulation options

udp

NS over UDP Encapsulation

local-ip

Set the IP address on which we listen for NS/UDP

A.B.C.D

IP Address

encapsulation udp local-port <0-65535>

Command

```
encapsulation udp local-port <0-65535>
```

Parameters

encapsulation

NS encapsulation options

udp

NS over UDP Encapsulation

local-port

Set the UDP port on which we listen for NS/UDP

<0-65535>

UDP port number

no nse <0-65535>

Command

```
no nse <0-65535>
```

Parameters

no

Delete Persistent NS Entity

nse

Delete Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

nse <0-65535> encapsulation (udp|framerelay-gre)

Command

```
nse <0-65535> encapsulation (udp|framerelay-gre)
```

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

encapsulation

Encapsulation for NS

udp

UDP/IP Encapsulation

framerelay-gre

Frame-Relay/GRE/IP Encapsulation

nse <0-65535> fr-dlci <16-1007>

Command

```
nse <0-65535> fr-dlci <16-1007>
```

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

fr-dlci

Frame Relay DLCI

<16-1007>

Frame Relay DLCI Number

nse <0-65535> nsvci <0-65534>

Command

```
nse <0-65535> nsvci <0-65534>
```

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

nsvci

NS Virtual Connection

<0-65534>

NS Virtual Connection ID (NSVCI)

nse <0-65535> remote-ip A.B.C.D

Command

```
nse <0-65535> remote-ip A.B.C.D
```

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

remote-ip

Remote IP Address

A.B.C.D

Remote IP Address

nse <0-65535> remote-port <0-65535>

Command

```
nse <0-65535> remote-port <0-65535>
```

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

remote-port

Remote UDP Port

<0-65535>

Remote UDP Port Number

nse <0-65535> remote-role (sgsn|bss)

Command

```
nse <0-65535> remote-role (sgsn|bss)
```

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

remote-role

Remote NSE Role

sgsn

Remote Peer is SGSN

bss

Remote Peer is BSS

timer (tns-block|tns-block-retries|tns-reset|tns-reset-retries|tns-test|tns-aliv...

Command

```
timer (tns-block|tns-block-retries|tns-reset|tns-reset-retries|tns-test|tns-alive|tns- ↵  
    alive-retries|tsns-prov) <0-65535>
```

Parameters

timer

Network Service Timer

tns-block

(un)blocking Timer (Tns-block) timeout

tns-block-retries

(un)blocking Timer (Tns-block) number of retries

tns-reset

Reset Timer (Tns-reset) timeout

tns-reset-retries

Reset Timer (Tns-reset) number of retries

tns-test

Test Timer (Tns-test) timeout

tns-alive

Alive Timer (Tns-alive) timeout

tns-alive-retries

Alive Timer (Tns-alive) number of retries

tsns-prov

SNS Provision Timer (Tsns-prov) timeout

<0-65535>

Timer Value

config-pcu**alloc-algorithm (a|b|dynamic)**

Command

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

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

alpha <0-10>

Command

```
alpha <0-10>
```

Parameters

alpha

Alpha parameter for MS power control in units of 0.1 (see TS 05.08) NOTE: Be sure to set Alpha value at System information 13 too.

<0-10>

Alpha in units of 0.1

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

Command

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

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

cs downgrade-threshold <1-10000>

Command

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

Parameters

cs

Coding Scheme configuration

downgrade-threshold

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

<1-10000>

downgrade if less octets left

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>
```

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)

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

Command

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

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

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

Command

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

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 %

dl-tbf-preemptive-retransmission

Command

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

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)

egprs dl arq-type (spb|arq2)

Command

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

Parameters

egprs

EGPRS configuration

dl

downlink specific configuration

arq-type

ARQ options

spb

enable SPB(ARQ1) support

arq2

enable ARQ2 support

egprs only

Command

```
egprs only
```

Parameters

egprs

EGPRS configuration

only

Use EGPRS and disable plain GPRS

flow-control bucket-time <1-65534>

Command

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

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

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

Command

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

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

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

Command

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

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

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

Command

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

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

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

Command

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

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

flow-control-interval <1-10>

Command

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

Parameters

flow-control-interval

Interval between sending subsequent Flow Control PDUs

<1-10>

Interval time in seconds

gamma <0-62>

Command

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

Parameters

gamma

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

<0-62>

Gamma in even unit of dBs

gb-dialect (classic|ip-sns)

Command

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

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

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)
```

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

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

Command

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

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

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>
```

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)

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

Command

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

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

no cs

Command

```
no cs
```

Parameters

no

Negate a command or set its defaults

cs

Coding Scheme configuration

no cs downgrade-threshold

Command

```
no cs downgrade-threshold
```

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

no cs max

Command

```
no cs max
```

Parameters

no

Negate a command or set its defaults

cs

Coding Scheme configuration

max

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

no cs threshold

Command

```
no cs threshold
```

Parameters

no

Negate a command or set its defaults

cs

Coding Scheme configuration

threshold

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

no dl-tbf-preemptive-retransmission

Command

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

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)

no egprs

Command

```
no egprs
```

Parameters

no

Negate a command or set its defaults

egprs

EGPRS configuration

no flow-control bucket-time

Command

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

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)

no flow-control force-bvc-bucket-size

Command

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

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

no flow-control force-bvc-leak-rate

Command

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

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

no flow-control force-ms-bucket-size

Command

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

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

no flow-control force-ms-leak-rate

Command

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

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

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

Command

```
no gsmmap-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)
```

Parameters

no

Negate a command or set its defaults

gsmmap-category

GSM MAP 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

no mcs

Command

```
no mcs
```

Parameters

no

Negate a command or set its defaults

mcs

Modulation and Coding Scheme configuration (EGPRS)

no mcs max

Command

```
no mcs max
```

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)

no queue codel

Command

```
no queue codel
```

Parameters

no

Negate a command or set its defaults

queue

Packet queue options

codel

Set CoDel queue management

no queue hysteresis

Command

```
no queue hysteresis
```

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)

no queue idle-ack-delay

Command

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

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

no queue lifetime

Command

```
no queue lifetime
```

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)

no two-phase-access

Command

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

Parameters

no

Negate a command or set its defaults

two-phase-access

Only use two phase access when requested my MS

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

queue codel

Command

```
queue codel
```

Parameters

queue

Packet queue options

codel

Set CoDel queue management

queue codel interval <1-1000>

Command

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

Parameters

queue

Packet queue options

codel

Set CoDel queue management

interval

Specify interval

<1-1000>

Interval in centi-seconds

queue hysteresis <1-65535>

Command

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

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

queue idle-ack-delay <1-65535>

Command

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

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

queue lifetime <1-65534>

Command

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

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

queue lifetime infinite

Command

```
queue lifetime infinite
```

Parameters

queue

Packet queue options

lifetime

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

infinite

Infinite lifetime

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

Command

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

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

two-phase-access

Command

```
two-phase-access
```

Parameters

two-phase-access

Force two phase access when MS requests single phase access

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

Command

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

Parameters

window-size

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

<0-1024>

Base value (b)

[**<0-256>**]

Factor for number of PDCH (f)
