

# **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

## &lt;0-65535&gt;

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 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|rlmacsched|rlcmacmeas|tbf|t...****Command**

```
logp (csn1|l1if|rlcmac|rlcmacdata|rlcmacdl|rlcmacul|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)

**rlcmacul**

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|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)

#### 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)

#### 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|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)

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)

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

## &lt;0-65535&gt;

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

&lt;0-65535&gt;

NS Entity ID (NSEI)

fr-dlci

Frame Relay DLCI

&lt;16-1007&gt;

Frame Relay DLCI Number

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

## Command

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

## Parameters

nse

Persistent NS Entity

&lt;0-65535&gt;

NS Entity ID (NSEI)

nsvci

NS Virtual Connection

&lt;0-65534&gt;

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

## &lt;0-65535&gt;

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)

&lt;0-35&gt;

CS-1 high (dB)

cs2

Set quality range for CS-2

&lt;0-35&gt;

CS-2 low (dB)

&lt;0-35&gt;

CS-2 high (dB)

cs3

Set quality range for CS-3

&lt;0-35&gt;

CS-3 low (dB)

&lt;0-35&gt;

CS-3 high (dB)

cs4

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

&lt;0-35&gt;

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

&lt;1-6553500&gt;

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

&lt;1-6553500&gt;

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

&lt;1-6553500&gt;

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 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)
```

### Parameters

no

Negate a command or set its defaults

gsmtap-category

GSM TAP 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)

---