# OsmoCBC VTY Reference

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# Chapter 1

# VTY reference

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

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

Table 1.1: VTY Parameter Patterns

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

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

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

Table 1.2: VTY port numbers

## 1.1 Common Commands

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

### 1.1.1 end

Command

```
end
```

Parameters

end
: End current mode and change to enable mode.

### 1.1.2 exit

Command

```
exit
```

Parameters

exit
: Exit current mode and down to previous mode

### 1.1.3 help

Command

```
help
```

Parameters

help
: Description of the interactive help system

### 1.1.4 list [with-flags]

Command

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

Parameters

list
: Print command list

[with-flags]
: Also print the VTY attribute flags

### 1.1.5 show running-config

Command

```
show running-config
```

Parameters

show
: Show running system information

running-config
: running configuration

### 1.1.6 show vty-attributes

Command

```
show vty-attributes
```

Parameters

show
: Show running system information

vty-attributes
: List of VTY attributes

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

Command

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

Parameters

show
: Show running system information

vty-attributes
: List of VTY attributes

application
: Application specific attributes only

library
: Library specific attributes only

global
: Global attributes only

### 1.1.8 write

Command

```
write
```

Parameters

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

### 1.1.9 write file [PATH]

Command

```
write file [PATH]
```

Parameters

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

file
: Write to configuration file

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

### 1.1.10 write memory

Command

```
write memory
```

Parameters

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

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

### 1.1.11 write terminal

Command

```
write terminal
```

Parameters

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

terminal
: Write to terminal

## 1.2 view

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

### 1.2.1 delete message expired id <0-65535>

Command

```
delete message expired id <0-65535>
```

Parameters

delete
: Delete message from the local expired list

message
: Delete message from the local expired list

expired
: Delete message from the local expired list

id
: Message ID

<0-65535>
: Message ID

### 1.2.2 enable [expert-mode]

Command

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

Parameters

enable
: Turn on privileged mode command

[expert-mode]
: Enable the expert mode (show hidden commands)

### 1.2.3 show history

Command

```
show history
```

Parameters

show
: Show running system information

history
: Display the session command history

### 1.2.4 show message id <0-65535>

Command

```
show message id <0-65535>
```

Parameters

show
: Show running system information

message
: Display information about currently active SMSCB messages

id
: Message ID

<0-65535>
: Message ID

### 1.2.5 show messages cbs

Command

```
show messages cbs
```

Parameters

show
: Show running system information

messages
: Display information about currently active SMSCB messages

cbs
: Display Cell Broadcast Service (CBS) messages

### 1.2.6 show messages etws

Command

```
show messages etws
```

Parameters

show
: Show running system information

messages
: Display information about currently active SMSCB messages

etws
: Display ETWS (CMAS, KPAS, EU-ALERT, PWS, WEA) Emergency messages

### 1.2.7 show online-help

Command

```
show online-help
```

Parameters

show
: Show running system information

online-help
: Online help

### 1.2.8 show peers

Command

```
show peers
```

Parameters

show
: Show running system information

peers
: Display Information about RAN peers connected to this CBC

### 1.2.9 show pid

Command

```
show pid
```

Parameters

show
: Show running system information

pid
: Displays the process ID

### 1.2.10 show runtime

Command

```
show runtime
```

Parameters

show
: Show running system information

runtime
: Display runtime information

### 1.2.11 show uptime

Command

```
show uptime
```

Parameters

show
: Show running system information

uptime
: Displays how long the program has been running

### 1.2.12 show version

Command

```
show version
```

Parameters

show
: Show running system information

version
: Displays program version

### 1.2.13 terminal length <0-512>

Command

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

Parameters

terminal
: Set terminal line parameters

length
: Set number of lines on a screen

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

### 1.2.14 terminal no length

Command

```
terminal no length
```

Parameters

terminal
: Set terminal line parameters

no
: Negate a command or set its defaults

length
: Set number of lines on a screen

### 1.2.15 who

Command

```
who
```

Parameters

who
: Display who is on vty

## 1.3 enable

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

### 1.3.1 configure [terminal]

Command

```
configure [terminal]
```

Parameters

configure
: Configuration from vty interface

[terminal]
: Configuration terminal

### 1.3.2 copy running-config startup-config

Command

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

Parameters

copy
: Copy configuration

running-config
: Copy running config to...

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

### 1.3.3 delete message expired id <0-65535>

Command

```
delete message expired id <0-65535>
```

Parameters

delete
: Delete message from the local expired list

message
: Delete message from the local expired list

expired
: Delete message from the local expired list

id
: Message ID

<0-65535>
: Message ID

### 1.3.4 disable

Command

```
disable
```

Parameters

disable
: Turn off privileged mode command

### 1.3.5 show history

Command

```
show history
```

Parameters

show
: Show running system information

history
: Display the session command history

### 1.3.6 show message id <0-65535>

Command

```
show message id <0-65535>
```

Parameters

show
: Show running system information

message
: Display information about currently active SMSCB messages

id
: Message ID

<0-65535>
: Message ID

### 1.3.7 show messages cbs

Command

```
show messages cbs
```

Parameters

show
: Show running system information

messages
: Display information about currently active SMSCB messages

cbs
: Display Cell Broadcast Service (CBS) messages

### 1.3.8 show messages etws

Command

```
show messages etws
```

Parameters

show
: Show running system information

messages
: Display information about currently active SMSCB messages

etws
: Display ETWS (CMAS, KPAS, EU-ALERT, PWS, WEA) Emergency messages

### 1.3.9 show online-help

Command

```
show online-help
```

Parameters

show
: Show running system information

online-help
: Online help

### 1.3.10 show peers

Command

```
show peers
```

Parameters

show
: Show running system information

peers
: Display Information about RAN peers connected to this CBC

### 1.3.11 show runtime

Command

```
show runtime
```

Parameters

show
: Show running system information

runtime
: Display runtime information

### 1.3.12 show startup-config

Command

```
show startup-config
```

Parameters

show
: Show running system information

startup-config
: Contentes of startup configuration

### 1.3.13 show version

Command

```
show version
```

Parameters

show
: Show running system information

version
: Displays program version

### 1.3.14 shutdown

Command

```
shutdown
```

Parameters

shutdown
: Request a shutdown of the program

### 1.3.15 terminal length <0-512>

Command

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

Parameters

terminal
: Set terminal line parameters

length
: Set number of lines on a screen

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

### 1.3.16 terminal monitor

Command

```
terminal monitor
```

Parameters

terminal
: Set terminal line parameters

monitor
: Copy debug output to the current terminal line

### 1.3.17 terminal no length

Command

```
terminal no length
```

Parameters

terminal
: Set terminal line parameters

no
: Negate a command or set its defaults

length
: Set number of lines on a screen

### 1.3.18 terminal no monitor

Command

```
terminal no monitor
```

Parameters

terminal
: Set terminal line parameters

no
: Negate a command or set its defaults

monitor
: Copy debug output to the current terminal line

### 1.3.19 who

Command

```
who
```

Parameters

who
: Display who is on vty

## 1.4 config

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

### 1.4.1 banner motd default

Command

```
banner motd default
```

Parameters

banner
: Set banner string

motd
: Strings for motd

default
: Default string

### 1.4.2 banner motd file [FILE]

Command

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

Parameters

banner
: Set banner

motd
: Banner for motd

file
: Banner from a file

[FILE]
: Filename

### 1.4.3 cbc

Command

```
cbc
```

Parameters

cbc
: Cell Broadcast Centre

### 1.4.4 enable password (8|) WORD

Command

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

Parameters

enable
: Modify enable password parameters

password
: Assign the privileged level password

8
: Specifies a HIDDEN password will follow

dummy string

WORD
: The HIDDEN 'enable' password string

### 1.4.5 enable password LINE

Command

```
enable password LINE
```

Parameters

enable
: Modify enable password parameters

password
: Assign the privileged level password

LINE
: The UNENCRYPTED (cleartext) 'enable' password

### 1.4.6 hostname WORD

Command

```
hostname WORD
```

Parameters

hostname
: Set system's network name

WORD
: This system's network name

### 1.4.7 line vty

Command

```
line vty
```

Parameters

line
: Configure a terminal line

vty
: Virtual terminal

### 1.4.8 no banner motd

Command

```
no banner motd
```

Parameters

no
: Negate a command or set its defaults

banner
: Set banner string

motd
: Strings for motd

### 1.4.9 no enable password

Command

```
no enable password
```

Parameters

no
: Negate a command or set its defaults

enable
: Modify enable password parameters

password
: Assign the privileged level password

### 1.4.10 no hostname [HOSTNAME]

Command

```
no hostname [HOSTNAME]
```

Parameters

no
: Negate a command or set its defaults

hostname
: Reset system's network name

[HOSTNAME]
: Host name of this router

### 1.4.11 no service advanced-vty

Command

```
no service advanced-vty
```

Parameters

no
: Negate a command or set its defaults

service
: Set up miscellaneous service

advanced-vty
: Enable advanced mode vty interface

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

Command

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

Parameters

no
: Negate a command or set its defaults

service
: Set up miscellaneous service

terminal-length
: System wide terminal length configuration

[<0-512>]
: Number of lines of VTY (0 means no line control)

### 1.4.13 password (8|) WORD

Command

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

Parameters

password
: Assign the terminal connection password

8
: Specifies a HIDDEN password will follow

dummy string

WORD
: The HIDDEN line password string

### 1.4.14 password LINE

Command

```
password LINE
```

Parameters

password
: Assign the terminal connection password

LINE
: The UNENCRYPTED (cleartext) line password

### 1.4.15 service advanced-vty

Command

```
service advanced-vty
```

Parameters

service
: Set up miscellaneous service

advanced-vty
: Enable advanced mode vty interface

### 1.4.16 service terminal-length <0-512>

Command

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

Parameters

service
: Set up miscellaneous service

terminal-length
: System wide terminal length configuration

<0-512>
: Number of lines of VTY (0 means no line control)

### 1.4.17 show history

Command

```
show history
```

Parameters

show
: Show running system information

history
: Display the session command history

## 1.5 config-line

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

Command

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

Parameters

bind
: Accept VTY telnet connections on local interface

A.B.C.D
: Local interface IP address (default: 127.0.0.1)

[<0-65535>]
: Local TCP port number

### 1.5.2 login

Command

```
login
```

Parameters

login
: Enable password checking

### 1.5.3 no login

Command

```
no login
```

Parameters

no
: Negate a command or set its defaults

login
: Enable password checking

## 1.6 config-cbc

This node allows to configure the CBC. Will enter the CBC specific VTY configuration node.

### 1.6.1 cbsp

Command

```
cbsp
```

Parameters

cbsp
: Cell Broadcast Service Protocol

### 1.6.2 ecbe

Command

```
ecbe
```

Parameters

ecbe
: External CBS Entity (REST Interface)

### 1.6.3 no peer NAME

Command

```
no peer NAME
```

Parameters

no
: Negate a command or set its defaults

peer
: Remote Peer

NAME
: Name identifying the peer

### 1.6.4 peer (cbsp|sbcap) NAME

Command

```
peer (cbsp|sbcap) NAME
```

Parameters

peer
: Remote Peer

cbsp
: Cell Broadcast Service Protocol (GSM)

sbcap
: SBc Application Part (LTE)

NAME
: Name identifying the peer

### 1.6.5 peer NAME

Configure a CBC RAN peer (BSC, ...). Will enter a sub-node where parameters about that peer can be configured. The NAME has local significance only (for VTY and logging).

Command

```
peer NAME
```

Parameters

### 1.6.6 sbcap

Command

```
sbcap
```

Parameters

sbcap
: SBc Application Part

### 1.6.7 unknown-peers (accept|reject)

Whether or not the CBC should accept incoming CBSP/TCP connections from unknown peers, i.e. such peers that don't have an explicit 'peer' configuration.

Command

```
unknown-peers (accept|reject)
```

Parameters

unknown-peers
: What to do with peers from unknown IP/port

accept
: Accept peers from unknown/unconfigured source IP/port

reject
: Reject peers from unknown/unconfigured source IP/port

### 1.6.8 unknown-peers (accept|reject)

Whether or not the CBC should accept incoming CBSP/TCP connections from unknown peers, i.e. such peers that don't have an explicit 'peer' configuration.

Command

```
unknown-peers (accept|reject)
```

Parameters

## 1.7 config-cbc-peer

This node allows to configure one CBC RAN peer (BSC, ...)

### 1.7.1 mode (server|client|disabled)

Command

```
mode (server|client|disabled)
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

mode

Connect to peer as TCP(CBSP)/SCTP(SBc-AP) server or client

server

server: listen for inbound TCP (CBSP) / SCTP (SBc-AP) connections from a remote peer

client

client: establish outbound TCP (CBSP) / SCTP (SBc-AP) connection to a remote peer

disabled

Disable CBSP link

### 1.7.2 no remote-ip (A.B.C.D|X:X::X:X)

Command

```
no remote-ip (A.B.C.D|X:X::X:X)
```

Parameters

no

Negate a command or set its defaults

remote-ip

Keep remote IP of peer

A.B.C.D

IPv4 address of peer

X:X::X:X

IPv6 address of peer

### 1.7.3 no remote-port

Command

```
no remote-port
```

Parameters

no

Negate a command or set its defaults

remote-port

Configure remote (TCP) port of peer

### 1.7.4 remote-ip (A.B.C.D|X:X::X:X)

Command

```
remote-ip (A.B.C.D|X:X::X:X)
```

Parameters

remote-ip
: Configure remote IP of peer

A.B.C.D
: IPv4 address of peer

X:X::X:X
: IPv6 address of peer

### 1.7.5 remote-port <0-65535>

Command

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

Parameters

remote-port
: Configure remote (TCP) port of peer

<0-65535>
: Remote (TCP) port number of peer

## 1.8 config-cbsp

### 1.8.1 local-ip (A.B.C.D|X:X::X:X)

Command

```
local-ip (A.B.C.D|X:X::X:X)
```

Parameters

local-ip
: Local IP address for CBSP

A.B.C.D
: Local IPv4 address for CBSP

X:X::X:X
: Local IPv6 address for CBSP

### 1.8.2 local-port <0-65535>

Command

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

Parameters

local-port
: Local TCP port for CBSP

<0-65535>
: Local TCP port for CBSP

## 1.9 config-sbcap

### 1.9.1 local-ip (A.B.C.D|X:X::X:X)

Command

```
local-ip (A.B.C.D|X:X::X:X)
```

Parameters

local-ip
: Local IP address for SBc-AP

A.B.C.D
: Local IPv4 address for SBc-AP Interface

X:X::X:X
: Local IPv6 address for SBc-AP Interface

### 1.9.2 local-port <0-65535>

Command

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

Parameters

local-port
: Local TCP port for SBc-AP Interface

<0-65535>
: Local TCP port for SBc-AP Interface

### 1.9.3 no local-ip (A.B.C.D|X:X::X:X)

Command

```
no local-ip (A.B.C.D|X:X::X:X)
```

Parameters

no
: Negate a command or set its defaults

local-ip
: Local IP address for SBc-AP

A.B.C.D
: Local IPv4 address for SBc-AP Interface

X:X::X:X
: Local IPv6 address for SBc-AP Interface

## 1.10 config-ecbe

### 1.10.1 local-ip (A.B.C.D|X:X::X:X)

Command

```
local-ip (A.B.C.D|X:X::X:X)
```

Parameters

local-ip
: Local IP address for CBSP

A.B.C.D
: Local IPv4 address for ECBE REST Interface

X:X::X:X
: Local IPv6 address for ECBE REST Interface

### 1.10.2 local-port <0-65535>

Command

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

Parameters

local-port
: Local TCP port for ECBE REST Interface

<0-65535>
: Local TCP port for ECBE REST Interface