

OsmoCBC VTY Reference

Copyright © 2021

This work is copyright by sysmocom - s.f.m.c. GmbH. All rights reserved.

| COLLABORATORS | | | |
|---------------|----------------------------------|-------------------|-----------|
| | TITLE : OsmoCBC VTY Reference | | |
| ACTION | NAME | DATE | SIGNATURE |
| WRITTEN BY | | December 13, 2023 | |

| REVISION HISTORY | | | |
|------------------|---------|---------------------------------------|------|
| NUMBER | DATE | DESCRIPTION | NAME |
| DRAFT | unknown | Automatically Generated VTY Reference | hw |

Contents

| | | |
|----------|--|----------|
| 1 | VTY reference | 1 |
| 1.1 | Common Commands | 1 |
| 1.1.1 | end | 2 |
| 1.1.2 | exit | 2 |
| 1.1.3 | help | 2 |
| 1.1.4 | list [with-flags] | 2 |
| 1.1.5 | show running-config | 3 |
| 1.1.6 | show vty-attributes | 3 |
| 1.1.7 | show vty-attributes (application library global) | 3 |
| 1.1.8 | write | 4 |
| 1.1.9 | write file [PATH] | 4 |
| 1.1.10 | write memory | 4 |
| 1.1.11 | write terminal | 5 |
| 1.2 | view | 5 |
| 1.2.1 | delete message expired id <0-65535> | 5 |
| 1.2.2 | enable [expert-mode] | 6 |
| 1.2.3 | show history | 6 |
| 1.2.4 | show message id <0-65535> | 6 |
| 1.2.5 | show messages cbs | 7 |
| 1.2.6 | show messages etws | 7 |
| 1.2.7 | show online-help | 7 |
| 1.2.8 | show peers | 8 |
| 1.2.9 | show pid | 8 |
| 1.2.10 | show uptime | 8 |
| 1.2.11 | show version | 9 |
| 1.2.12 | terminal length <0-512> | 9 |
| 1.2.13 | terminal no length | 9 |
| 1.2.14 | who | 10 |
| 1.3 | enable | 10 |
| 1.3.1 | configure [terminal] | 10 |

| | | |
|--------|--|----|
| 1.3.2 | copy running-config startup-config | 10 |
| 1.3.3 | delete message expired id <0-65535> | 11 |
| 1.3.4 | disable | 11 |
| 1.3.5 | show history | 11 |
| 1.3.6 | show message id <0-65535> | 12 |
| 1.3.7 | show messages cbs | 12 |
| 1.3.8 | show messages etws | 12 |
| 1.3.9 | show online-help | 13 |
| 1.3.10 | show peers | 13 |
| 1.3.11 | show startup-config | 13 |
| 1.3.12 | show version | 14 |
| 1.3.13 | shutdown | 14 |
| 1.3.14 | terminal length <0-512> | 14 |
| 1.3.15 | terminal monitor | 15 |
| 1.3.16 | terminal no length | 15 |
| 1.3.17 | terminal no monitor | 15 |
| 1.3.18 | who | 16 |
| 1.4 | config | 16 |
| 1.4.1 | banner motd default | 16 |
| 1.4.2 | banner motd file [FILE] | 16 |
| 1.4.3 | cbc | 17 |
| 1.4.4 | enable password (8l) WORD | 17 |
| 1.4.5 | enable password LINE | 17 |
| 1.4.6 | hostname WORD | 18 |
| 1.4.7 | line vty | 18 |
| 1.4.8 | no banner motd | 18 |
| 1.4.9 | no enable password | 19 |
| 1.4.10 | no hostname [HOSTNAME] | 19 |
| 1.4.11 | no service advanced-vty | 19 |
| 1.4.12 | no service terminal-length [<0-512>] | 20 |
| 1.4.13 | password (8l) WORD | 20 |
| 1.4.14 | password LINE | 20 |
| 1.4.15 | service advanced-vty | 21 |
| 1.4.16 | service terminal-length <0-512> | 21 |
| 1.4.17 | show history | 21 |
| 1.5 | config-line | 22 |
| 1.5.1 | bind A.B.C.D [<0-65535>] | 22 |
| 1.5.2 | login | 22 |
| 1.5.3 | no login | 22 |

| | | |
|--------|---|----|
| 1.6 | config-cbc | 22 |
| 1.6.1 | cbsp | 23 |
| 1.6.2 | ecbe | 23 |
| 1.6.3 | no peer NAME | 23 |
| 1.6.4 | peer (cbsplsbcap) NAME | 24 |
| 1.6.5 | peer NAME | 24 |
| 1.6.6 | sbcap | 24 |
| 1.6.7 | unknown-peers (acceptreject) | 25 |
| 1.6.8 | unknown-peers (acceptreject) | 25 |
| 1.7 | config-cbc-peer | 25 |
| 1.7.1 | mode (server/client/disabled) | 25 |
| 1.7.2 | no remote-ip (A.B.C.D X:X::X:X) | 26 |
| 1.7.3 | no remote-port | 26 |
| 1.7.4 | remote-ip (A.B.C.D X:X::X:X) | 27 |
| 1.7.5 | remote-port <0-65535> | 27 |
| 1.8 | config-cbsp | 27 |
| 1.8.1 | local-ip (A.B.C.D X:X::X:X) | 27 |
| 1.8.2 | local-port <0-65535> | 28 |
| 1.9 | config-sbcap | 28 |
| 1.9.1 | local-ip (A.B.C.D X:X::X:X) | 28 |
| 1.9.2 | local-port <0-65535> | 28 |
| 1.9.3 | no local-ip (A.B.C.D X:X::X:X) | 29 |
| 1.10 | config-ecbe | 29 |
| 1.10.1 | local-ip (A.B.C.D X:X::X:X) | 29 |
| 1.10.2 | local-port <0-65535> | 29 |

List of Tables

| | | |
|-----|----------------------------------|---|
| 1.1 | VTY Parameter Patterns | 1 |
| 1.2 | VTY port numbers | 1 |

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 uptime

Command

```
show uptime
```

Parameters

show

Show running system information

uptime

Displays how long the program has been running

1.2.11 show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

1.2.12 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)

1.2.13 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

1.2.14 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 startup-config

Command

```
show startup-config
```

Parameters

show

Show running system information

startup-config

Contentes of startup configuration

1.3.12 show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

1.3.13 shutdown

Command

```
shutdown
```

Parameters

shutdown

Request a shutdown of the program

1.3.14 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)

1.3.15 terminal monitor

Command

```
terminal monitor
```

Parameters

terminal

Set terminal line parameters

monitor

Copy debug output to the current terminal line

1.3.16 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

1.3.17 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

1.3.18 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

vtty

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
