OsmoHNBGW VTY Reference

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COLLABORATORS

	TITLE : OsmoHNBGW 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 enable [expert-mode]

Command

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

Parameters

enable
: Turn on privileged mode command

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

1.2.2 logging color (0|1)

Command

```
logging color (0|1)
```

Parameters

logging
: Configure logging

color
: Configure color-printing for log messages

0
: Don't use color for printing messages

1
: Use color for printing messages

1.2.3 logging disable

Command

```
logging disable
```

Parameters

logging
: Configure logging

disable
: Disables logging to this vty

1.2.4 logging enable

This command is required to make logging commands available on the telnet VTY.

Command

```
logging enable
```

Parameters

logging
: Configure logging

enable
: Enables logging to this vty

1.2.5 logging filter all (0|1)

Disable/enable general log output on a given target. Typically, 'logging filter all 1' allows to see the usual log output on a given target. Setting to '0' can be useful when logging to the telnet VTY console: mute all log output to allow typing VTY commands on the telnet prompt without interference from log output; 'logging filter all 1' then re-enables logging in the same log output configuration as before. Some applications provide more specific filters, e.g. to log a given IMSI only. To employ such filters, set 'logging filter all 0' to disable general logging, and then enable a more specific filter instead.

Command

```
logging filter all (0|1)
```

Parameters

logging
: Configure logging

filter
: Filter log messages

all

Do you want to log all messages?

0

Only print messages matched by other filters

1

Bypass filter and print all messages

1.2.6 logging level (main|hnbap|rua|ranap|mgw|hnb|cn|nft|lglobal|llapd|linp|lmux|lmi|l...

Command

```
logging level (main|hnbap|rua|ranap|mgw|hnb|cn|nft|lglobal|llapd|linp|lmux|lmi|lmib| ↩
    lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns| ↩
    lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio|ltcap) (debug|info|notice|error| ↩
    fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

main

Main program

hnbap

Home Node B Application Part

rua

RANAP User Adaptation

ranap

RAN Application Part

mgw

Media Gateway

hnb

HNB side (via RUA)

cn

Core Network side (via SCCP)

nft

nftables interaction for retrieving stats

lglobal

Library-internal global log family

llapd
: LAPD in libosmogsm

linp
: A-bis Intput Subsystem

lmux
: A-bis B-Subchannel TRAU Frame Multiplex

lmi
: A-bis Input Driver for Signalling

lmib
: A-bis Input Driver for B-Channels (voice)

lsms
: Layer3 Short Message Service (SMS)

lctrl
: Control Interface

lgtp
: GPRS GTP library

lstats
: Statistics messages and logging

lgsup
: Generic Subscriber Update Protocol

loap
: Osmocom Authentication Protocol

lss7
: libosmo-sigtran Signalling System 7

lsccp
: libosmo-sigtran SCCP Implementation

lsua
: libosmo-sigtran SCCP User Adaptation

lm3ua
: libosmo-sigtran MTP3 User Adaptation

lmgcp
: libosmo-mgcp Media Gateway Control Protocol

ljibuf
: libosmo-netif Jitter Buffer

lrspro
: Remote SIM protocol

lns
: GPRS NS layer

lbssgp
: GPRS BSSGP layer

lnsdata
: GPRS NS layer data PDU

lnssignal
: GPRS NS layer signal PDU

liuup
: Iu UP layer

lpfcp
: libosmo-pfcp Packet Forwarding Control Protocol

lcsn1
: libosmo-csn1 Concrete Syntax Notation 1 codec

lio
: libosmocore IO Subsystem

ltcap
: TCAP

debug
: Log debug messages and higher levels

info
: Log informational messages and higher levels

notice
: Log noticeable messages and higher levels

error
: Log error messages and higher levels

fatal
: Log only fatal messages

1.2.7 logging level force-all (debug|info|notice|error|fatal)

Command

```
logging level force-all (debug|info|notice|error|fatal)
```

Parameters

logging
: Configure logging

level
: Set the log level for a specified category

force-all

Globally force all logging categories to a specific level. This is released by the 'no logging level force-all' command. Note: any 'logging level <category> <level>' commands will have no visible effect after this, until the forced level is released.

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

1.2.8 logging level set-all (debug|info|notice|error|fatal)

Command

```
logging level set-all (debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

set-all

Once-off set all categories to the given log level. There is no single command to take back these changes -- each category is set to the given level, period.

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

1.2.9 logging print category (0|1)

Command

```
logging print category (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

category
: Configure log message

0
: Don't prefix each log message

1
: Prefix each log message with category/subsystem name

1.2.10 logging print category-hex (0|1)

Command

```
logging print category-hex (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

category-hex
: Configure log message

0
: Don't prefix each log message

1
: Prefix each log message with category/subsystem nr in hex ('<000b>')

1.2.11 logging print extended-timestamp (0|1)

Command

```
logging print extended-timestamp (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

extended-timestamp
: Configure log message timestamping

0
: Don't prefix each log message

1
: Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

1.2.12 logging print file (0|1|basename) [last]

Command

```
logging print file (0|1|basename) [last]
```

Parameters

logging
: Configure logging

print
: Log output settings

file
: Configure log message

0
: Don't prefix each log message

1
: Prefix each log message with the source file and line

basename
: Prefix each log message with the source file's basename (strip leading paths) and line

[last]
: Log source file info at the end of a log line. If omitted, log source file info just before the log text.

1.2.13 logging print level (0|1)

Command

```
logging print level (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

level
: Configure log message

0
: Don't prefix each log message

1
: Prefix each log message with the log level name

1.2.14 logging print thread-id (0|1)

Command

```
logging print thread-id (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

thread-id
: Configure log message logging Thread ID

0
: Don't prefix each log message

1
: Prefix each log message with current Thread ID

1.2.15 logging set-log-mask MASK

Command

```
logging set-log-mask MASK
```

Parameters

logging
: Configure logging

set-log-mask
: Set the logmask of this logging target

MASK
: List of logging categories to log, e.g. 'abc:mno:xyz'. Available log categories depend on the specific application, refer to the 'logging level' command. Optionally add individual log levels like 'abc,1:mno,3:xyz,5', where the level numbers are LOGL_DEBUG=1 LOGL_INFO=3 LOGL_NOTICE=5 LOGL_ERROR=7 LOGL_FATAL=8

1.2.16 logging timestamp (0|1)

Command

```
logging timestamp (0|1)
```

Parameters

logging
: Configure logging

timestamp
: Configure log message timestamping

0
: Don't prefix each log message

1
: Prefix each log message with current timestamp

1.2.17 logp (main|hnbap|rua|ranap|mgw|hnb|cn|nft|lglobal|llapd|linp|lmux|lmi|lmib|lsms|...

Command

```
logp (main|hnbap|rua|ranap|mgw|hnb|cn|nft|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl| ↩
    lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata ↩
    |lnssignal|liuup|lpfcp|lcsn1|lio|ltcap) (debug|info|notice|error|fatal) .LOGMESSAGE
```

Parameters

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

main
: Main program

hnbap
: Home Node B Application Part

rua
: RANAP User Adaptation

ranap
: RAN Application Part

mgw
: Media Gateway

hnb
: HNB side (via RUA)

cn
: Core Network side (via SCCP)

nft
: nftables interaction for retrieving stats

lglobal
: Library-internal global log family

llapd
: LAPD in libosmogsm

linp
: A-bis Intput Subsystem

lmux
: A-bis B-Subchannel TRAU Frame Multiplex

lmi
: A-bis Input Driver for Signalling

lmib
: A-bis Input Driver for B-Channels (voice)

lsms
: Layer3 Short Message Service (SMS)

lctrl
: Control Interface

lgtp
: GPRS GTP library

lstats
: Statistics messages and logging

lgsup
: Generic Subscriber Update Protocol

loap
: Osmocom Authentication Protocol

lss7
: libosmo-sigtran Signalling System 7

lsccp
: libosmo-sigtran SCCP Implementation

lsua
: libosmo-sigtran SCCP User Adaptation

lm3ua
: libosmo-sigtran MTP3 User Adaptation

lmgcp
: libosmo-mgcp Media Gateway Control Protocol

ljibuf
: libosmo-netif Jitter Buffer

lrspro
: Remote SIM protocol

lns
: GPRS NS layer

lbssgp
: GPRS BSSGP layer

lnsdata
: GPRS NS layer data PDU

lnssignal
: GPRS NS layer signal PDU

liuup
: Iu UP layer

lpfcp
: libosmo-pfcp Packet Forwarding Control Protocol

lcsn1
: libosmo-csn1 Concrete Syntax Notation 1 codec

lio
: libosmocore IO Subsystem

ltcap
: TCAP

debug
: Log debug messages and higher levels

info
: Log informational messages and higher levels

notice
: Log noticeable messages and higher levels

error
: Log error messages and higher levels

fatal
: Log only fatal messages

.LOGMESSAGE
: Arbitrary message to log on given category and log level

1.2.18 no logging level force-all

Command

```
no logging level force-all
```

Parameters

no
: Negate a command or set its defaults

logging
: Configure logging

level
: Set the log level for a specified category

force-all
: Release any globally forced log level set with 'logging level force-all <level>'

1.2.19 show alarms

Command

```
show alarms
```

Parameters

show
: Show running system information

alarms
: Show current logging configuration

1.2.20 show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show
: Show running system information

asciidoc
: Asciidoc generation

counters
: Generate table of all registered counters

1.2.21 show cnlink

Command

```
show cnlink
```

Parameters

show
: Show running system information

cnlink
: Display information on core network link

1.2.22 show cs7 (sua|m3ua|ipa) (sctp|tcp) [<0-65534>]

Command

```
show cs7 (sua|m3ua|ipa) (sctp|tcp) [<0-65534>]
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

sua
: SCCP User Adaptation

m3ua
: MTP3 User Adaptation

ipa
: IPA Multiplex (SCCP Lite)

sctp
: SCTP (Stream Control Transmission Protocol)

tcp
: TCP (Transmission Control Protocol)

[<0-65534>]
: Local Port Number

1.2.23 show cs7 (sua|m3ua|ipa) [<0-65534>]

Command

```
show cs7 (sua|m3ua|ipa) [<0-65534>]
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

sua
: SCCP User Adaptation

m3ua
: MTP3 User Adaptation

ipa
: IPA Multiplex (SCCP Lite)

[<0-65534>]
: Local Port Number

1.2.24 show cs7 config

Command

```
show cs7 config
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

config
: Currently running cs7 configuration

1.2.25 show cs7 instance <0-15> as (active|all|m3ua|sua)

Command

```
show cs7 instance <0-15> as (active|all|m3ua|sua)
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

as
: Application Server (AS)

active
: Display all active ASs

all
: Display all ASs (default)

m3ua
: Display all m3ua ASs

sua
: Display all SUA ASs

1.2.26 show cs7 instance <0-15> as binding-table name AS_NAME

Command

```
show cs7 instance <0-15> as binding-table name AS_NAME
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
An instance of the SS7 stack

as
Application Server (AS)

binding-table
Display binding table

name
Look up AS with a given name

AS_NAME
Name of the Application Server (AS)

1.2.27 show cs7 instance <0-15> as name AS_NAME

Command

```
show cs7 instance <0-15> as name AS_NAME
```

Parameters

show
Show running system information

cs7
ITU-T Signaling System 7

instance
An instance of the SS7 stack

<0-15>
An instance of the SS7 stack

as
Application Server (AS)

name
Look up AS with a given name

AS_NAME
Name of the Application Server (AS)

1.2.28 show cs7 instance <0-15> asp

Command

```
show cs7 instance <0-15> asp
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

asp
: Application Server Process (ASP)

1.2.29 show cs7 instance <0-15> asp name ASP_NAME

Command

```
show cs7 instance <0-15> asp name ASP_NAME
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

asp
: Application Server Process (ASP)

name
: Lookup ASP with a given name

ASP_NAME
: Name of the Application Server Process (ASP)

1.2.30 show cs7 instance <0-15> asp-assoc-status

Command

```
show cs7 instance <0-15> asp-assoc-status
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

asp-assoc-status
: Application Server Process (ASP) SCTP association status

1.2.31 show cs7 instance <0-15> asp-assoc-status name ASP_NAME

Command

```
show cs7 instance <0-15> asp-assoc-status name ASP_NAME
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

asp-assoc-status
: Application Server Process (ASP) SCTP association information

name
: Lookup ASP with a given name

ASP_NAME
: Name of the Application Server Process (ASP)

1.2.32 show cs7 instance <0-15> asp-remaddr

Command

```
show cs7 instance <0-15> asp-remaddr
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

asp-remaddr
: Application Server Process (ASP) remote addresses information

1.2.33 show cs7 instance <0-15> asp-remaddr name ASP_NAME

Command

```
show cs7 instance <0-15> asp-remaddr name ASP_NAME
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

asp-remaddr
: Application Server Process (ASP) remote addresses information

name
: Lookup ASP with a given name

ASP_NAME
: Name of the Application Server Process (ASP)

1.2.34 show cs7 instance <0-15> route [POINT_CODE]

Command

```
show cs7 instance <0-15> route [POINT_CODE]
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

route
: Routing Table

[POINT_CODE]
: Destination Point Code

1.2.35 show cs7 instance <0-15> route binding-table [POINT_CODE] [all-matches]

Command

```
show cs7 instance <0-15> route binding-table [POINT_CODE] [all-matches]
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

route
: Routing Table

binding-table
: Display binding table

[POINT_CODE]
: Destination Point Code

[all-matches]
: Display all matching Combination Links

1.2.36 show cs7 instance <0-15> route-lookup POINT_CODE from POINT_CODE sls <0-15> [lis...

Command

```
show cs7 instance <0-15> route-lookup POINT_CODE from POINT_CODE sls <0-15> [list-asps]
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

route-lookup
: Look up route

POINT_CODE
: Destination PC

from
: From

POINT_CODE
: Origin PC

sls
: SLS

<0-15>
: SLS value

[list-asps]
: List ASPs of the AS if route points to an AS

1.2.37 show cs7 instance <0-15> sccp addressbook

Command

```
show cs7 instance <0-15> sccp addressbook
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

sccp
: Signalling Connection Control Part

addressbook
: List all SCCP addressbook entries

1.2.38 show cs7 instance <0-15> sccp connections

Command

```
show cs7 instance <0-15> sccp connections
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

sccp
: Signalling Connection Control Part

connections
: Show List of active SCCP connections

1.2.39 show cs7 instance <0-15> sccp ssn <0-65535>

Command

```
show cs7 instance <0-15> sccp ssn <0-65535>
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

sccp
: Signalling Connection Control Part

ssn
: Find an SCCP User registered for the given SSN

<0-65535>
: Subsystem Number (SSN)

1.2.40 show cs7 instance <0-15> sccp timers

Command

```
show cs7 instance <0-15> sccp timers
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

sccp
: Signaling Connection Control Part

timers
: Show List of SCCP timers

1.2.41 show cs7 instance <0-15> sccp users

Command

```
show cs7 instance <0-15> sccp users
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

sccp
: Signalling Connection Control Part

users
: Show List of SCCP Users registered

1.2.42 show cs7 instance <0-15> users

Command

```
show cs7 instance <0-15> users
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

users
: User Table

1.2.43 show fsm NAME

Command

```
show fsm NAME
```

Parameters

show
: Show running system information

fsm
: Show information about finite state machines

NAME
: Display information about a single named finite state machine

1.2.44 show fsm all

Command

```
show fsm all
```

Parameters

show
: Show running system information

fsm
: Show information about finite state machines

all
: Display a list of all registered finite state machines

1.2.45 show fsm-instances NAME

Command

```
show fsm-instances NAME
```

Parameters

show
: Show running system information

fsm-instances
: Show information about finite state machine instances

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

1.2.46 show fsm-instances all

Command

```
show fsm-instances all
```

Parameters

show
: Show running system information

fsm-instances
: Show information about finite state machine instances

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

1.2.47 show fsm-state-graph NAME

Command

```
show fsm-state-graph NAME
```

Parameters

show
: Show running system information

fsm-state-graph
: Generate a state transition graph (using DOT language)

NAME
: FSM name

1.2.48 show history

Command

```
show history
```

Parameters

show
: Show running system information

history
: Display the session command history

1.2.49 show hnb

Command

```
show hnb
```

Parameters

show
: Show running system information

hnb
: Display information about HNB

1.2.50 show hnb name NAME

Command

```
show hnb name NAME
```

Parameters

show
: Show running system information

hnb
: Display information about HNB

name
: HNB name

NAME
: HNB name

1.2.51 show logging vty

Command

```
show logging vty
```

Parameters

show
: Show running system information

logging
: Show current logging configuration

vty
: Show current logging configuration for this vty

1.2.52 show mgw-pool

Command

```
show mgw-pool
```

Parameters

show
: Show running system information

mgw-pool
: Display information about the MGW-Pool

1.2.53 show nri

Command

```
show nri
```

Parameters

show
: Show running system information

nri
: Mapping of Network Resource Indicators to this CN peer, for CN pooling

1.2.54 show online-help

Command

```
show online-help
```

Parameters

show
: Show running system information

online-help
: Online help

1.2.55 show pid

Command

```
show pid
```

Parameters

show
: Show running system information

pid
: Displays the process ID

1.2.56 show rate-counters [skip-zero]

Command

```
show rate-counters [skip-zero]
```

Parameters

show
: Show running system information

rate-counters
: Show all rate counters

[skip-zero]
: Skip items with total count zero

1.2.57 show runtime

Command

```
show runtime
```

Parameters

show
: Show running system information

runtime
: Display runtime information

1.2.58 show stats [skip-zero]

Command

```
show stats [skip-zero]
```

Parameters

show
: Show running system information

stats
: Show statistical values

[skip-zero]
: Skip items with total count zero

1.2.59 show stats level (global|peer|subscriber) [skip-zero]

Command

```
show stats level (global|peer|subscriber) [skip-zero]
```

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

[skip-zero]
: Skip items with total count zero

1.2.60 show talloc

Command

```
show talloc
```

Parameters

show
: Show running system information

talloc
: Display talloc info

1.2.61 show talloc-context (application|global|all) (full|brief|DEPTH)

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH)
```

Parameters

show
: Show running system information

talloc-context
: Show talloc memory hierarchy

application
: Application's context

global
: Global context (OTC_GLOBAL)

all
: All contexts, if NULL-context tracking is enabled

full
: Display a full talloc memory hierarchy

brief
: Display a brief talloc memory hierarchy

DEPTH
: Specify required maximal depth value

1.2.62 show talloc-context (application|global|all) (full|brief|DEPTH) filter REGEXP

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH) filter REGEXP
```

Parameters

show
: Show running system information

talloc-context
: Show talloc memory hierarchy

application
: Application's context

global
: Global context (OTC_GLOBAL)

all
: All contexts, if NULL-context tracking is enabled

full
: Display a full talloc memory hierarchy

brief
: Display a brief talloc memory hierarchy

DEPTH
: Specify required maximal depth value

filter
: Filter chunks using regular expression

REGEXP
: Regular expression

1.2.63 show talloc-context (application|global|all) (full|brief|DEPTH) tree ADDRESS

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH) tree ADDRESS
```

Parameters

show
: Show running system information

talloc-context
: Show talloc memory hierarchy

application
: Application's context

global
: Global context (OTC_GLOBAL)

all
: All contexts, if NULL-context tracking is enabled

full
: Display a full talloc memory hierarchy

brief
: Display a brief talloc memory hierarchy

DEPTH
: Specify required maximal depth value

tree
: Display only a specific memory chunk

ADDRESS
: Chunk address (e.g. 0xdeadbeef)

1.2.64 show timer [(mgw|hnbgw|pfcp)] [TNNNN]

Command

```
show timer [(mgw|hnbgw|pfcp)] [TNNNN]
```

Parameters

show
: Show running system information

timer
: Show timers

[mgw]
: MGW (Media Gateway) interface

[hnbgw]
: Timers

[pfcp]
: PFCP timers

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

1.2.65 show uptime

Command

```
show uptime
```

Parameters

show
: Show running system information

uptime
: Displays how long the program has been running

1.2.66 show version

Command

```
show version
```

Parameters

show
: Show running system information

version
: Displays program version

1.2.67 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)

1.2.68 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

1.2.69 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 (msc|sgsn) <0-1000> ranap reset

Command

```
(msc|sgsn) <0-1000> ranap reset
```

Parameters

msc
: Manipulate an IuCS link to an MSC

sgsn
: Manipulate an IuPS link to an SGSN

<0-1000>
MSC/SGSN nr

ranap
Manipulate RANAP layer of Iu-interface

reset
Flip this CN link to disconnected state and re-send RANAP RESET

1.3.2 configure [terminal]

Command

```
configure [terminal]
```

Parameters

configure
Configuration from vty interface

[terminal]
Configuration terminal

1.3.3 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)

1.3.4 cs7 instance <0-15> asp NAME audit point-code POINT_CODE

Command

```
cs7 instance <0-15> asp NAME audit point-code POINT_CODE
```

Global attributes

Flag: !

This command applies immediately

Parameters

cs7

ITU-T Signaling System 7

instance

Instance related commands

<0-15>

SS7 Instance Number

asp

ASP related commands

NAME

Name of ASP

audit

Audit destination Point Code (xUA DAUD)

point-code

Destination Point Code to audit

POINT_CODE

Destination Point Code value

1.3.5 cs7 instance <0-15> asp NAME disconnect

Command

```
cs7 instance <0-15> asp NAME disconnect
```

Parameters

cs7

ITU-T Signaling System 7

instance

Instance related commands

<0-15>
SS7 Instance Number

asp
ASP related commands

NAME
Name of ASP

disconnect
Disconnect the ASP (client will reconnect)

1.3.6 disable

Command

```
disable
```

Parameters

disable
Turn off privileged mode command

1.3.7 logging color (0|1)

Command

```
logging color (0|1)
```

Parameters

logging
Configure logging

color
Configure color-printing for log messages

0
Don’t use color for printing messages

1
Use color for printing messages

1.3.8 logging disable

Command

```
logging disable
```

Parameters

logging
: Configure logging

disable
: Disables logging to this vty

1.3.9 logging enable

This command is required to make logging commands available on the telnet VTY.

Command

```
logging enable
```

Parameters

logging
: Configure logging

enable
: Enables logging to this vty

1.3.10 logging filter all (0|1)

Disable/enable general log output on a given target. Typically, 'logging filter all 1' allows to see the usual log output on a given target. Setting to '0' can be useful when logging to the telnet VTY console: mute all log output to allow typing VTY commands on the telnet prompt without interference from log output; 'logging filter all 1' then re-enables logging in the same log output configuration as before. Some applications provide more specific filters, e.g. to log a given IMSI only. To employ such filters, set 'logging filter all 0' to disable general logging, and then enable a more specific filter instead.

Command

```
logging filter all (0|1)
```

Parameters

logging
: Configure logging

filter
: Filter log messages

all
: Do you want to log all messages?

0
: Only print messages matched by other filters

1
: Bypass filter and print all messages

1.3.11 logging level (main|hnbap|rua|ranap|mgw|hnb|cn|nft|lglobal|llapd|linp|lmux|lmi|l...

Command

```
logging level (main|hnbap|rua|ranap|mgw|hnb|cn|nft|lglobal|llapd|linp|lmux|lmi|lmib| ↩
    lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns| ↩
    lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio|ltcap) (debug|info|notice|error| ↩
    fatal)
```

Parameters

logging
: Configure logging

level
: Set the log level for a specified category

main
: Main program

hnbap
: Home Node B Application Part

rua
: RANAP User Adaptation

ranap
: RAN Application Part

mgw
: Media Gateway

hnb
: HNB side (via RUA)

cn
: Core Network side (via SCCP)

nft
: nftables interaction for retrieving stats

lglobal
: Library-internal global log family

llapd
: LAPD in libosmogsm

linp
: A-bis Intput Subsystem

lmux
: A-bis B-Subchannel TRAU Frame Multiplex

lmi
: A-bis Input Driver for Signalling

lmib
: A-bis Input Driver for B-Channels (voice)

lsms
: Layer3 Short Message Service (SMS)

lctrl
: Control Interface

lgtp
: GPRS GTP library

lstats
: Statistics messages and logging

lgsup
: Generic Subscriber Update Protocol

loap
: Osmocom Authentication Protocol

lss7
: libosmo-sigtran Signalling System 7

lsccp
: libosmo-sigtran SCCP Implementation

lsua
: libosmo-sigtran SCCP User Adaptation

lm3ua
: libosmo-sigtran MTP3 User Adaptation

lmgcp
: libosmo-mgcp Media Gateway Control Protocol

ljibuf
: libosmo-netif Jitter Buffer

lrspro
: Remote SIM protocol

lns
: GPRS NS layer

lbssgp
: GPRS BSSGP layer

lnsdata
: GPRS NS layer data PDU

lnssignal
: GPRS NS layer signal PDU

liuup
: Iu UP layer

lpfcp
: libosmo-pfcp Packet Forwarding Control Protocol

lcsn1
: libosmo-csn1 Concrete Syntax Notation 1 codec

lio
: libosmocore IO Subsystem

ltcap
: TCAP

debug
: Log debug messages and higher levels

info
: Log informational messages and higher levels

notice
: Log noticeable messages and higher levels

error
: Log error messages and higher levels

fatal
: Log only fatal messages

1.3.12 logging level force-all (debug|info|notice|error|fatal)

Command

```
logging level force-all (debug|info|notice|error|fatal)
```

Parameters

logging
: Configure logging

level
: Set the log level for a specified category

force-all

Globally force all logging categories to a specific level. This is released by the 'no logging level force-all' command. Note: any 'logging level <category> <level>' commands will have no visible effect after this, until the forced level is released.

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

1.3.13 logging level set-all (debug|info|notice|error|fatal)

Command

```
logging level set-all (debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

set-all

Once-off set all categories to the given log level. There is no single command to take back these changes -- each category is set to the given level, period.

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

1.3.14 logging print category (0|1)

Command

```
logging print category (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

category
: Configure log message

0
: Don't prefix each log message

1
: Prefix each log message with category/subsystem name

1.3.15 logging print category-hex (0|1)

Command

```
logging print category-hex (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

category-hex
: Configure log message

0
: Don't prefix each log message

1
: Prefix each log message with category/subsystem nr in hex ('<000b>')

1.3.16 logging print extended-timestamp (0|1)

Command

```
logging print extended-timestamp (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

extended-timestamp
: Configure log message timestamping

0
: Don't prefix each log message

1
: Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

1.3.17 logging print file (0|1|basename) [last]

Command

```
logging print file (0|1|basename) [last]
```

Parameters

logging
: Configure logging

print
: Log output settings

file
: Configure log message

0
: Don't prefix each log message

1
: Prefix each log message with the source file and line

basename
: Prefix each log message with the source file's basename (strip leading paths) and line

[last]
: Log source file info at the end of a log line. If omitted, log source file info just before the log text.

1.3.18 logging print level (0|1)

Command

```
logging print level (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

level
: Configure log message

0
: Don't prefix each log message

1
: Prefix each log message with the log level name

1.3.19 logging print thread-id (0|1)

Command

```
logging print thread-id (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

thread-id
: Configure log message logging Thread ID

0
: Don't prefix each log message

1
: Prefix each log message with current Thread ID

1.3.20 logging set-log-mask MASK

Command

```
logging set-log-mask MASK
```

Parameters

logging
: Configure logging

set-log-mask
: Set the logmask of this logging target

MASK
: List of logging categories to log, e.g. 'abc:mno:xyz'. Available log categories depend on the specific application, refer to the 'logging level' command. Optionally add individual log levels like 'abc,1:mno,3:xyz,5', where the level numbers are LOGL_DEBUG=1 LOGL_INFO=3 LOGL_NOTICE=5 LOGL_ERROR=7 LOGL_FATAL=8

1.3.21 logging timestamp (0|1)

Command

```
logging timestamp (0|1)
```

Parameters

logging
: Configure logging

timestamp
: Configure log message timestamping

0
: Don't prefix each log message

1
: Prefix each log message with current timestamp

1.3.22 logp (main|hnbap|rua|ranap|mgw|hnb|cn|nft|lglobal|llapd|linp|lmux|lmi|lmib|lsms|...

Command

```
logp (main|hnbap|rua|ranap|mgw|hnb|cn|nft|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl| ↩
    lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata ↩
    |lnssignal|liuup|lpfcp|lcsn1|lio|ltcap) (debug|info|notice|error|fatal) .LOGMESSAGE
```

Parameters

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

main
: Main program

hnbap
: Home Node B Application Part

rua
: RANAP User Adaptation

ranap
: RAN Application Part

mgw
: Media Gateway

hnb
: HNB side (via RUA)

cn
: Core Network side (via SCCP)

nft
: nftables interaction for retrieving stats

lglobal
: Library-internal global log family

llapd
: LAPD in libosmogsm

linp
: A-bis Intput Subsystem

lmux
: A-bis B-Subchannel TRAU Frame Multiplex

lmi
: A-bis Input Driver for Signalling

lmib
: A-bis Input Driver for B-Channels (voice)

lsms
: Layer3 Short Message Service (SMS)

lctrl
: Control Interface

lgtp
: GPRS GTP library

lstats
: Statistics messages and logging

lgsup
: Generic Subscriber Update Protocol

loap
: Osmocom Authentication Protocol

lss7
: libosmo-sigtran Signalling System 7

lsccp
: libosmo-sigtran SCCP Implementation

lsua
: libosmo-sigtran SCCP User Adaptation

lm3ua
: libosmo-sigtran MTP3 User Adaptation

lmgcp
: libosmo-mgcp Media Gateway Control Protocol

ljibuf
: libosmo-netif Jitter Buffer

lrspro
: Remote SIM protocol

lns
: GPRS NS layer

lbssgp
: GPRS BSSGP layer

lnsdata
: GPRS NS layer data PDU

lnssignal
: GPRS NS layer signal PDU

liuup
: Iu UP layer

lpfcp
: libosmo-pfcp Packet Forwarding Control Protocol

lcsn1
: libosmo-csn1 Concrete Syntax Notation 1 codec

lio
: libosmocore IO Subsystem

ltcap
: TCAP

debug
: Log debug messages and higher levels

info
: Log informational messages and higher levels

notice
: Log noticeable messages and higher levels

error
: Log error messages and higher levels

fatal
: Log only fatal messages

.LOGMESSAGE
: Arbitrary message to log on given category and log level

1.3.23 mgw <0-255> block

Command

```
mgw <0-255> block
```

Global attributes

Flag: !
: This command applies immediately

Parameters

mgw
: Configure MGCP connection to Media Gateway

<0-255>
: reference number

block
: block MGCP client so that it won't be used for new calls

1.3.24 mgw <0-255> reconnect

Command

```
mgw <0-255> reconnect
```

Global attributes

Flag: !
: This command applies immediately

Parameters

mgw
: Configure MGCP connection to Media Gateway

<0-255>
: reference number

reconnect
: reconfigure and reconnect MGCP client

1.3.25 mgw <0-255> unblock

Command

```
mgw <0-255> unblock
```

Global attributes

Flag: !
: This command applies immediately

Parameters

mgw
: Configure MGCP connection to Media Gateway

<0-255>
: reference number

unblock
: unblock MGCP client so that it will be available for new calls

1.3.26 no logging level force-all

Command

```
no logging level force-all
```

Parameters

no
: Negate a command or set its defaults

logging
: Configure logging

level
: Set the log level for a specified category

force-all
: Release any globally forced log level set with 'logging level force-all <level>'

1.3.27 show alarms

Command

```
show alarms
```

Parameters

show
: Show running system information

alarms
: Show current logging configuration

1.3.28 show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show
: Show running system information

asciidoc
: Asciidoc generation

counters
: Generate table of all registered counters

1.3.29 show cnlink

Command

```
show cnlink
```

Parameters

show
: Show running system information

cnlink
: Display information on core network link

1.3.30 show cs7 (sua|m3ua|ipa) (sctp|tcp) [<0-65534>]

Command

```
show cs7 (sua|m3ua|ipa) (sctp|tcp) [<0-65534>]
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

sua
: SCCP User Adaptation

m3ua
: MTP3 User Adaptation

ipa
: IPA Multiplex (SCCP Lite)

sctp
: SCTP (Stream Control Transmission Protocol)

tcp
: TCP (Transmission Control Protocol)

[<0-65534>]
: Local Port Number

1.3.31 show cs7 (sua|m3ua|ipa) [<0-65534>]

Command

```
show cs7 (sua|m3ua|ipa) [<0-65534>]
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

sua
: SCCP User Adaptation

m3ua
: MTP3 User Adaptation

ipa
: IPA Multiplex (SCCP Lite)

[<0-65534>]
: Local Port Number

1.3.32 show cs7 config

Command

```
show cs7 config
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

config
: Currently running cs7 configuration

1.3.33 show cs7 instance <0-15> as (active|all|m3ua|sua)

Command

```
show cs7 instance <0-15> as (active|all|m3ua|sua)
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

as
: Application Server (AS)

active
: Display all active ASs

all
: Display all ASs (default)

m3ua
: Display all m3ua ASs

sua
: Display all SUA ASs

1.3.34 show cs7 instance <0-15> as binding-table name AS_NAME

Command

```
show cs7 instance <0-15> as binding-table name AS_NAME
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

as
: Application Server (AS)

binding-table
: Display binding table

name
: Look up AS with a given name

AS_NAME
: Name of the Application Server (AS)

1.3.35 show cs7 instance <0-15> as name AS_NAME

Command

```
show cs7 instance <0-15> as name AS_NAME
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

as
: Application Server (AS)

name
: Look up AS with a given name

AS_NAME
: Name of the Application Server (AS)

1.3.36 show cs7 instance <0-15> asp

Command

```
show cs7 instance <0-15> asp
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

asp
: Application Server Process (ASP)

1.3.37 show cs7 instance <0-15> asp name ASP_NAME

Command

```
show cs7 instance <0-15> asp name ASP_NAME
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
An instance of the SS7 stack

asp
Application Server Process (ASP)

name
Lookup ASP with a given name

ASP_NAME
Name of the Application Server Process (ASP)

1.3.38 show cs7 instance <0-15> asp-assoc-status

Command

```
show cs7 instance <0-15> asp-assoc-status
```

Parameters

show
Show running system information

cs7
ITU-T Signaling System 7

instance
An instance of the SS7 stack

<0-15>
An instance of the SS7 stack

asp-assoc-status
Application Server Process (ASP) SCTP association status

1.3.39 show cs7 instance <0-15> asp-assoc-status name ASP_NAME

Command

```
show cs7 instance <0-15> asp-assoc-status name ASP_NAME
```

Parameters

show
Show running system information

cs7
ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

asp-assoc-status
: Application Server Process (ASP) SCTP association information

name
: Lookup ASP with a given name

ASP_NAME
: Name of the Application Server Process (ASP)

1.3.40 show cs7 instance <0-15> asp-remaddr

Command

```
show cs7 instance <0-15> asp-remaddr
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

asp-remaddr
: Application Server Process (ASP) remote addresses information

1.3.41 show cs7 instance <0-15> asp-remaddr name ASP_NAME

Command

```
show cs7 instance <0-15> asp-remaddr name ASP_NAME
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

asp-remaddr
: Application Server Process (ASP) remote addresses information

name
: Lookup ASP with a given name

ASP_NAME
: Name of the Application Server Process (ASP)

1.3.42 show cs7 instance <0-15> route [POINT_CODE]

Command

```
show cs7 instance <0-15> route [POINT_CODE]
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

route
: Routing Table

[POINT_CODE]
: Destination Point Code

1.3.43 show cs7 instance <0-15> route binding-table [POINT_CODE] [all-matches]

Command

```
show cs7 instance <0-15> route binding-table [POINT_CODE] [all-matches]
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

route
: Routing Table

binding-table
: Display binding table

[POINT_CODE]
: Destination Point Code

[all-matches]
: Display all matching Combination Links

1.3.44 show cs7 instance <0-15> route-lookup POINT_CODE from POINT_CODE sls <0-15> [lis...

Command

```
show cs7 instance <0-15> route-lookup POINT_CODE from POINT_CODE sls <0-15> [list-asps]
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

route-lookup
: Look up route

POINT_CODE
: Destination PC

from
: From

POINT_CODE
: Origin PC

sls
: SLS

<0-15>
: SLS value

[list-asps]
: List ASPs of the AS if route points to an AS

1.3.45 show cs7 instance <0-15> sccp addressbook

Command

```
show cs7 instance <0-15> sccp addressbook
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

sccp
: Signalling Connection Control Part

addressbook
: List all SCCP addressbook entries

1.3.46 show cs7 instance <0-15> sccp connections

Command

```
show cs7 instance <0-15> sccp connections
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

sccp
: Signalling Connection Control Part

connections
: Show List of active SCCP connections

1.3.47 show cs7 instance <0-15> sccp ssn <0-65535>

Command

```
show cs7 instance <0-15> sccp ssn <0-65535>
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

sccp
: Signalling Connection Control Part

ssn
: Find an SCCP User registered for the given SSN

<0-65535>
: Subsystem Number (SSN)

1.3.48 show cs7 instance <0-15> sccp timers

Command

```
show cs7 instance <0-15> sccp timers
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

sccp
: Signaling Connection Control Part

timers
: Show List of SCCP timers

1.3.49 show cs7 instance <0-15> sccp users

Command

```
show cs7 instance <0-15> sccp users
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

sccp
: Signalling Connection Control Part

users
: Show List of SCCP Users registered

1.3.50 show cs7 instance <0-15> users

Command

```
show cs7 instance <0-15> users
```

Parameters

show
: Show running system information

cs7
: ITU-T Signaling System 7

instance
: An instance of the SS7 stack

<0-15>
: An instance of the SS7 stack

users
: User Table

1.3.51 show fsm NAME

Command

```
show fsm NAME
```

Parameters

show
: Show running system information

fsm
: Show information about finite state machines

NAME
: Display information about a single named finite state machine

1.3.52 show fsm all

Command

```
show fsm all
```

Parameters

show
: Show running system information

fsm
: Show information about finite state machines

all
: Display a list of all registered finite state machines

1.3.53 show fsm-instances NAME

Command

```
show fsm-instances NAME
```

Parameters

show
: Show running system information

fsm-instances
: Show information about finite state machine instances

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

1.3.54 show fsm-instances all

Command

```
show fsm-instances all
```

Parameters

show
: Show running system information

fsm-instances
: Show information about finite state machine instances

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

1.3.55 show fsm-state-graph NAME

Command

```
show fsm-state-graph NAME
```

Parameters

show
: Show running system information

fsm-state-graph
: Generate a state transition graph (using DOT language)

NAME
: FSM name

1.3.56 show history

Command

```
show history
```

Parameters

show
: Show running system information

history
: Display the session command history

1.3.57 show hnb

Command

```
show hnb
```

Parameters

show
: Show running system information

hnb
: Display information about HNB

1.3.58 show hnb name NAME

Command

```
show hnb name NAME
```

Parameters

show
: Show running system information

hnb
: Display information about HNB

name
: HNB name

NAME
: HNB name

1.3.59 show logging vty

Command

```
show logging vty
```

Parameters

show
: Show running system information

logging
: Show current logging configuration

vty
: Show current logging configuration for this vty

1.3.60 show mgw-pool

Command

```
show mgw-pool
```

Parameters

show
: Show running system information

mgw-pool
: Display information about the MGW-Pool

1.3.61 show nri

Command

```
show nri
```

Parameters

show
: Show running system information

nri
: Mapping of Network Resource Indicators to this CN peer, for CN pooling

1.3.62 show online-help

Command

```
show online-help
```

Parameters

show
: Show running system information

online-help
: Online help

1.3.63 show rate-counters [skip-zero]

Command

```
show rate-counters [skip-zero]
```

Parameters

show
: Show running system information

rate-counters
: Show all rate counters

[skip-zero]
: Skip items with total count zero

1.3.64 show runtime

Command

```
show runtime
```

Parameters

show
: Show running system information

runtime
: Display runtime information

1.3.65 show startup-config

Command

```
show startup-config
```

Parameters

show
: Show running system information

startup-config
: Contentes of startup configuration

1.3.66 show stats [skip-zero]

Command

```
show stats [skip-zero]
```

Parameters

show
: Show running system information

stats
: Show statistical values

[skip-zero]
: Skip items with total count zero

1.3.67 show stats level (global|peer|subscriber) [skip-zero]

Command

```
show stats level (global|peer|subscriber) [skip-zero]
```

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

[skip-zero]
: Skip items with total count zero

1.3.68 show talloc

Command

```
show talloc
```

Parameters

show
: Show running system information

talloc
: Display talloc info

1.3.69 show talloc-context (application|global|all) (full|brief|DEPTH)

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH)
```

Parameters

show
: Show running system information

talloc-context
: Show talloc memory hierarchy

application
: Application's context

global
: Global context (OTC_GLOBAL)

all
: All contexts, if NULL-context tracking is enabled

full
: Display a full talloc memory hierarchy

brief
: Display a brief talloc memory hierarchy

DEPTH
: Specify required maximal depth value

1.3.70 show talloc-context (application|global|all) (full|brief|DEPTH) filter REGEXP

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH) filter REGEXP
```

Parameters

show
: Show running system information

talloc-context
: Show talloc memory hierarchy

application
: Application's context

global
: Global context (OTC_GLOBAL)

all
: All contexts, if NULL-context tracking is enabled

full
: Display a full talloc memory hierarchy

brief
: Display a brief talloc memory hierarchy

DEPTH
: Specify required maximal depth value

filter
: Filter chunks using regular expression

REGEXP
: Regular expression

1.3.71 show talloc-context (application|global|all) (full|brief|DEPTH) tree ADDRESS

Command

```
show talloc-context (application|global|all) (full|brief|DEPTH) tree ADDRESS
```

Parameters

show
: Show running system information

talloc-context
: Show talloc memory hierarchy

application
: Application's context

global
: Global context (OTC_GLOBAL)

all
: All contexts, if NULL-context tracking is enabled

full
: Display a full talloc memory hierarchy

brief
: Display a brief talloc memory hierarchy

DEPTH
: Specify required maximal depth value

tree
: Display only a specific memory chunk

ADDRESS
: Chunk address (e.g. 0xdeadbeef)

1.3.72 show timer [(mgw|hnbgw|pfcp)] [TNNNN]

Command

```
show timer [(mgw|hnbgw|pfcp)] [TNNNN]
```

Parameters

show
: Show running system information

timer
: Show timers

[mgw]
: MGW (Media Gateway) interface

[hnbgw]
: Timers

[pfcp]
: PFCP timers

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

1.3.73 show version

Command

```
show version
```

Parameters

show
: Show running system information

version
: Displays program version

1.3.74 shutdown

Command

```
shutdown
```

Parameters

shutdown
: Request a shutdown of the program

1.3.75 stats report

Command

```
stats report
```

Parameters

stats
: Stats related commands

report
: Manurally trigger reporting of stats

1.3.76 stats reset

Command

```
stats reset
```

Parameters

stats
: Stats related commands

reset
: Reset all rate counter stats

1.3.77 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)

1.3.78 terminal monitor

Command

```
terminal monitor
```

Parameters

terminal
: Set terminal line parameters

monitor
: Copy debug output to the current terminal line

1.3.79 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

1.3.80 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

1.3.81 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 apply sccp

Command

```
apply sccp
```

Parameters

apply
: Immediately use configuration modified via telnet VTY, and restart components as needed.

sccp
: For telnet VTY: apply all SCCP and NRI config changes made to any CN pools and CN links in the running osmo-hnbgw process. If 'remote-addr' changed, related SCCP links will be restarted, possibly dropping active UE contexts. This is run implicitly on program startup, only useful to apply changes made later via telnet VTY.

1.4.2 banner motd default

Command

```
banner motd default
```

Parameters

banner
: Set banner string

motd
: Strings for motd

default
: Default string

1.4.3 banner motd file [FILE]

Command

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

Parameters

banner
: Set banner

motd
: Banner for motd

file
: Banner from a file

[FILE]
: Filename

1.4.4 cs7 instance <0-15>

Command

```
cs7 instance <0-15>
```

Global attributes

Flag: !
: This command applies immediately

Parameters

cs7
: ITU-T Signaling System 7

instance
: Configure a SS7 Instance

<0-15>
: An instance of the SS7 stack

1.4.5 ctrl

Command

```
ctrl
```

Parameters

ctrl
: Configure the Control Interface

1.4.6 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

1.4.7 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

1.4.8 hnbgw

Command

```
hnbgw
```

Parameters

hnbgw
: Configure HNBGW options

1.4.9 hostname WORD

Command

```
hostname WORD
```

Parameters

hostname
: Set system's network name

WORD
: This system's network name

1.4.10 line vty

Command

```
line vty
```

Parameters

line
: Configure a terminal line

vty
: Virtual terminal

1.4.11 log alarms <2-32700>

Command

```
log alarms <2-32700>
```

Parameters

log
: Configure logging sub-system

alarms
: Logging alarms to osmo_strrb

<2-32700>
: Maximum number of messages to log

1.4.12 log file FILENAME [blocking-io]

Command

```
log file FILENAME [blocking-io]
```

Parameters

log
: Configure logging sub-system

file
: Logging to text file

FILENAME
: Filename

[blocking-io]
: Use blocking, synchronous I/O

1.4.13 log gsmtap [HOSTNAME] [(nonblocking-io|blocking-io|wq)]

Command

```
log gsmtap [HOSTNAME] [(nonblocking-io|blocking-io|wq)]
```

Parameters

log
: Configure logging sub-system

gsmtap
: Logging via GSMTAP

[HOSTNAME]
: Host name to send the GSMTAP logging to (UDP port 4729)

[nonblocking-io]
: Use non-blocking, synchronous I/O (may lose msgs if UDP socket send buffer becomes full) (default)

[blocking-io]
: Use blocking, synchronous I/O (only for debug purposes or when blocking is acceptable)

[wq]
: Use Tx workqueue, asynchronous I/O (may lose msgs if queue becomes full)

1.4.14 log stderr [blocking-io]

Command

```
log stderr [blocking-io]
```

Parameters

log
: Configure logging sub-system

stderr
: Logging via STDERR of the process

[blocking-io]
: Use blocking, synchronous I/O

1.4.15 log syslog (authpriv|cron|daemon|ftp|lpr|mail|news|user|uucp)

Command

```
log syslog (authpriv|cron|daemon|ftp|lpr|mail|news|user|uucp)
```

Parameters

log
: Configure logging sub-system

syslog
: Logging via syslog

authpriv
: Security/authorization messages facility

cron
: Clock daemon (cron/at) facility

daemon
: General system daemon facility

ftp
: Ftp daemon facility

lpr
: Line printer facility

mail
: Mail facility

news
: News facility

user
: Generic facility

uucp
: UUCP facility

1.4.16 log syslog local <0-7>

Command

```
log syslog local <0-7>
```

Parameters

log
: Configure logging sub-system

syslog
: Logging via syslog

local
: Syslog LOCAL facility

<0-7>
: Local facility number

1.4.17 log systemd-journal [raw]

Command

```
log systemd-journal [raw]
```

Parameters

log
: Configure logging sub-system

systemd-journal
: Logging to systemd-journal

[raw]
: Offload rendering of the meta information (location, category) to systemd

1.4.18 msc <0-1000>

Command

```
msc <0-1000>
```

Parameters

msc
: Configure an IuCS link to an MSC

<0-1000>
: MSC nr

1.4.19 no banner motd

Command

```
no banner motd
```

Parameters

no
: Negate a command or set its defaults

banner
: Set banner string

motd
: Strings for motd

1.4.20 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

1.4.21 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

1.4.22 no log alarms

Command

```
no log alarms
```

Parameters

no
: Negate a command or set its defaults

log
: Configure logging sub-system

alarms
: Logging alarms to osmo_strrb

1.4.23 no log file FILENAME

Command

```
no log file FILENAME
```

Parameters

no
: Negate a command or set its defaults

log
: Configure logging sub-system

file
: Logging to text file

FILENAME
: Filename

1.4.24 no log gsmtap [HOSTNAME]

Command

```
no log gsmtap [HOSTNAME]
```

Parameters

no
: Negate a command or set its defaults

log
: Configure logging sub-system

gsmtap
: Logging via GSMTAP

[HOSTNAME]
: Host name to send the GSMTAP logging to (UDP port 4729)

1.4.25 no log stderr

Command

```
no log stderr
```

Parameters

no
: Negate a command or set its defaults

log
: Configure logging sub-system

stderr
: Logging via STDERR of the process

1.4.26 no log syslog

Command

```
no log syslog
```

Parameters

no
: Negate a command or set its defaults

log
: Configure logging sub-system

syslog
: Logging via syslog

1.4.27 no log systemd-journal

Command

```
no log systemd-journal
```

Parameters

no
: Negate a command or set its defaults

log
: Configure logging sub-system

systemd-journal
: Logging to systemd-journal

1.4.28 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

1.4.29 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)

1.4.30 no stats reporter log [NAME]

Command

```
no stats reporter log [NAME]
```

Parameters

no
: Negate a command or set its defaults

stats
: Configure stats sub-system

reporter
: Configure a stats reporter

log
: Report to the logger

[NAME]
: Name of the reporter

1.4.31 no stats reporter statsd [NAME]

Command

```
no stats reporter statsd [NAME]
```

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

[NAME]
: Name of the reporter

1.4.32 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

1.4.33 password LINE

Command

```
password LINE
```

Parameters

password
: Assign the terminal connection password

LINE
: The UNENCRYPTED (cleartext) line password

1.4.34 service advanced-vty

Command

```
service advanced-vty
```

Parameters

service
: Set up miscellaneous service

advanced-vty
: Enable advanced mode vty interface

1.4.35 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)

1.4.36 sgsn <0-1000>

Command

```
sgsn <0-1000>
```

Parameters

sgsn
: Configure an IuPS link to an SGSN

<0-1000>
: SGSN nr

1.4.37 show history

Command

```
show history
```

Parameters

show
: Show running system information

history
: Display the session command history

1.4.38 stats interval <0-65535>

Command

```
stats interval <0-65535>
```

Parameters

stats
: Configure stats sub-system

interval
: Set the reporting interval

<0-65535>
: Interval in seconds (0 disables the reporting interval)

1.4.39 stats reporter log [NAME]

Command

```
stats reporter log [NAME]
```

Parameters

stats
: Configure stats sub-system

reporter
: Configure a stats reporter

log
: Report to the logger

[NAME]
: Name of the reporter

1.4.40 stats reporter statsd [NAME]

Command

```
stats reporter statsd [NAME]
```

Parameters

stats
: Configure stats sub-system

reporter
: Configure a stats reporter

statsd
: Report to a STATSD server

[NAME]
: Name of the reporter

1.4.41 stats-tcp batch-size <1-65535>

Command

```
stats-tcp batch-size <1-65535>
```

Parameters

stats-tcp
: Configure stats sub-system

batch-size
: Set the number of tcp sockets that are processed per stats polling interval

<1-65535>
: Number of sockets per interval

1.4.42 stats-tcp interval <0-65535>

Command

```
stats-tcp interval <0-65535>
```

Parameters

stats-tcp
: Configure stats sub-system

interval
: Set the tcp socket stats polling interval

<0-65535>
: Interval in seconds (0 disables the polling interval)

1.5 config-log

The log node is commonly available in all Osmocom programs and allows configuring logging to stderr and/or log files, including logging category and level filtering as well as output formatting options. Note that the 'logging enable' command is required to make logging commands available on the telnet VTY.

1.5.1 logging color (0|1)

Command

```
logging color (0|1)
```

Parameters

logging
: Configure logging

color
: Configure color-printing for log messages

0
: Don't use color for printing messages

1
: Use color for printing messages

1.5.2 logging filter all (0|1)

Disable/enable general log output on a given target. Typically, 'logging filter all 1' allows to see the usual log output on a given target. Setting to '0' can be useful when logging to the telnet VTY console: mute all log output to allow typing VTY commands on the telnet prompt without interference from log output; 'logging filter all 1' then re-enables logging in the same log output configuration as before. Some applications provide more specific filters, e.g. to log a given IMSI only. To employ such filters, set 'logging filter all 0' to disable general logging, and then enable a more specific filter instead.

Command

```
logging filter all (0|1)
```

Parameters

logging
: Configure logging

filter
: Filter log messages

all
: Do you want to log all messages?

0
: Only print messages matched by other filters

1
: Bypass filter and print all messages

1.5.3 logging level (main|hnbap|rua|ranap|mgw|hnb|cn|nft|lglobal|llapd|linp|lmux|lmi|l...

Command

```
logging level (main|hnbap|rua|ranap|mgw|hnb|cn|nft|lglobal|llapd|linp|lmux|lmi|lmib| ↩
    lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns| ↩
    lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio|ltcap) (debug|info|notice|error| ↩
    fatal)
```

Parameters

logging
: Configure logging

level
: Set the log level for a specified category

main
: Main program

hnbap
: Home Node B Application Part

rua
: RANAP User Adaptation

ranap
: RAN Application Part

mgw
: Media Gateway

hnb
: HNB side (via RUA)

cn
: Core Network side (via SCCP)

nft
: nftables interaction for retrieving stats

lglobal
: Library-internal global log family

llapd
: LAPD in libosmogsm

linp
: A-bis Intput Subsystem

lmux
: A-bis B-Subchannel TRAU Frame Multiplex

lmi
: A-bis Input Driver for Signalling

lmib
: A-bis Input Driver for B-Channels (voice)

lsms
: Layer3 Short Message Service (SMS)

lctrl
: Control Interface

lgtp
: GPRS GTP library

lstats
: Statistics messages and logging

lgsup
: Generic Subscriber Update Protocol

loap
: Osmocom Authentication Protocol

lss7
: libosmo-sigtran Signalling System 7

lsccp
: libosmo-sigtran SCCP Implementation

lsua
: libosmo-sigtran SCCP User Adaptation

lm3ua
: libosmo-sigtran MTP3 User Adaptation

lmgcp
: libosmo-mgcp Media Gateway Control Protocol

ljibuf
: libosmo-netif Jitter Buffer

lrspro
: Remote SIM protocol

lns
: GPRS NS layer

lbssgp
: GPRS BSSGP layer

lnsdata
: GPRS NS layer data PDU

lnssignal
: GPRS NS layer signal PDU

liuup
: Iu UP layer

lpfcp
: libosmo-pfcp Packet Forwarding Control Protocol

lcsn1
: libosmo-csn1 Concrete Syntax Notation 1 codec

lio
: libosmocore IO Subsystem

ltcap
: TCAP

debug
: Log debug messages and higher levels

info
: Log informational messages and higher levels

notice
: Log noticeable messages and higher levels

error
: Log error messages and higher levels

fatal
: Log only fatal messages

1.5.4 logging level force-all (debug|info|notice|error|fatal)

Command

```
logging level force-all (debug|info|notice|error|fatal)
```

Parameters

logging
: Configure logging

level
: Set the log level for a specified category

force-all
: Globally force all logging categories to a specific level. This is released by the 'no logging level force-all' command. Note: any 'logging level <category> <level>' commands will have no visible effect after this, until the forced level is released.

debug
: Log debug messages and higher levels

info
: Log informational messages and higher levels

notice
: Log noticeable messages and higher levels

error
: Log error messages and higher levels

fatal
: Log only fatal messages

1.5.5 logging level set-all (debug|info|notice|error|fatal)

Command

```
logging level set-all (debug|info|notice|error|fatal)
```

Parameters

logging
: Configure logging

level
: Set the log level for a specified category

set-all
: Once-off set all categories to the given log level. There is no single command to take back these changes -- each category is set to the given level, period.

debug
: Log debug messages and higher levels

info
: Log informational messages and higher levels

notice
: Log noticeable messages and higher levels

error
: Log error messages and higher levels

fatal
: Log only fatal messages

1.5.6 logging print category (0|1)

Command

```
logging print category (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

category
: Configure log message

0
: Don't prefix each log message

1
: Prefix each log message with category/subsystem name

1.5.7 logging print category-hex (0|1)

Command

```
logging print category-hex (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

category-hex
: Configure log message

0
: Don’t prefix each log message

1
: Prefix each log message with category/subsystem nr in hex (’<000b>’)

1.5.8 logging print extended-timestamp (0|1)

Command

```
logging print extended-timestamp (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

extended-timestamp
: Configure log message timestamping

0
: Don’t prefix each log message

1
: Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

1.5.9 logging print file (0|1|basename) [last]

Command

```
logging print file (0|1|basename) [last]
```

Parameters

logging
: Configure logging

print
: Log output settings

file
: Configure log message

0
: Don't prefix each log message

1
: Prefix each log message with the source file and line

basename
: Prefix each log message with the source file's basename (strip leading paths) and line

[last]
: Log source file info at the end of a log line. If omitted, log source file info just before the log text.

1.5.10 logging print level (0|1)

Command

```
logging print level (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

level
: Configure log message

0
: Don't prefix each log message

1
: Prefix each log message with the log level name

1.5.11 logging print thread-id (0|1)

Command

```
logging print thread-id (0|1)
```

Parameters

logging
: Configure logging

print
: Log output settings

thread-id
: Configure log message logging Thread ID

0
: Don’t prefix each log message

1
: Prefix each log message with current Thread ID

1.5.12 logging timestamp (0|1)

Command

```
logging timestamp (0|1)
```

Parameters

logging
: Configure logging

timestamp
: Configure log message timestamping

0
: Don’t prefix each log message

1
: Prefix each log message with current timestamp

1.5.13 no logging level force-all

Command

```
no logging level force-all
```

Parameters

no
: Negate a command or set its defaults

logging
: Configure logging

level
: Set the log level for a specified category

force-all
: Release any globally forced log level set with ’logging level force-all <level>’

1.6 config-stats

1.6.1 disable

Command

```
disable
```

Parameters

disable
Disable the reporter

1.6.2 enable

Command

```
enable
```

Parameters

enable
Enable the reporter

1.6.3 flush-period <0-65535>

Command

```
flush-period <0-65535>
```

Parameters

flush-period
Configure stats sub-system

<0-65535>
Send all stats even if they have not changed (i.e. force the flush)every N-th reporting interval. Set to 0 to disable regular flush (default).

1.6.4 level (global|peer|subscriber)

Command

```
level (global|peer|subscriber)
```

Parameters

level
: Set the maximum group level

global
: Report global groups only

peer
: Report global and network peer related groups

subscriber
: Report global, peer, and subscriber groups

1.6.5 local-ip ADDR

Command

```
local-ip ADDR
```

Parameters

local-ip
: Set the IP address to which we bind locally

ADDR
: IP Address

1.6.6 mtu <100-65535>

Command

```
mtu <100-65535>
```

Parameters

mtu
: Set the maximum packet size

<100-65535>
: Size in byte

1.6.7 no local-ip

Command

```
no local-ip
```

Parameters

no
: Negate a command or set its defaults

local-ip
: Set the IP address to which we bind locally

1.6.8 no mtu

Command

```
no mtu
```

Parameters

no
: Negate a command or set its defaults

mtu
: Set the maximum packet size

1.6.9 no prefix

Command

```
no prefix
```

Parameters

no
: Negate a command or set its defaults

prefix
: Set the item name prefix

1.6.10 prefix PREFIX

Command

```
prefix PREFIX
```

Parameters

prefix
: Set the item name prefix

PREFIX
: The prefix string

1.6.11 remote-ip ADDR

Command

```
remote-ip ADDR
```

Parameters

remote-ip
: Set the remote IP address to which we connect

ADDR
: IP Address

1.6.12 remote-port <1-65535>

Command

```
remote-port <1-65535>
```

Parameters

remote-port
: Set the remote port to which we connect

<1-65535>
: Remote port number

1.7 config-line

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

Command

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

Parameters

bind
: Accept VTY telnet connections on local interface

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

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

1.7.2 login

Command

```
login
```

Parameters

login
: Enable password checking

1.7.3 no login

Command

```
no login
```

Parameters

no
: Negate a command or set its defaults

login
: Enable password checking

1.8 config-ctrl

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

Command

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

Parameters

bind
: Set bind address to listen for Control connections

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

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

1.9 config-cs7

1.9.1 as NAME (sua|m3ua|ipa)

Command

```
as NAME (sua|m3ua|ipa)
```

Global attributes

Flag: !
: This command applies immediately

Parameters

as
: Configure an Application Server

NAME
: Name of the Application Server

sua
: SCCP User Adaptation

m3ua
: MTP3 User Adaptation

ipa
: IPA Multiplex (SCCP Lite)

1.9.2 asp NAME <0-65535> <0-65535> (sua|m3ua|ipa)

Command

```
asp NAME <0-65535> <0-65535> (sua|m3ua|ipa)
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

asp

Configure Application Server Process

NAME

Name of ASP

<0-65535>

Remote port number

<0-65535>

Local port number

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

1.9.3 asp NAME <0-65535> <0-65535> (sua|m3ua|ipa) (sctp|tcp)

Command

```
asp NAME <0-65535> <0-65535> (sua|m3ua|ipa) (sctp|tcp)
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

asp

Configure Application Server Process

NAME
: Name of ASP

<0-65535>
: Remote port number

<0-65535>
: Local port number

sua
: SCCP User Adaptation

m3ua
: MTP3 User Adaptation

ipa
: IPA Multiplex (SCCP Lite)

sctp
: SCTP (Stream Control Transmission Protocol)

tcp
: TCP (Transmission Control Protocol)

1.9.4 description .TEXT

Command

```
description .TEXT
```

Parameters

description
: Save human-readable description of the object

.TEXT
: Text until the end of the line

1.9.5 network-indicator (international | national | reserved | spare)

Command

```
network-indicator (international | national | reserved | spare)
```

Global attributes

Flag: !
: This command applies immediately

Parameters

network-indicator
: Configure the Network Indicator

international
: International Network

national
: National Network

reserved
: Reserved Network

spare
: Spare Network

1.9.6 no as NAME

Command

```
no as NAME
```

Global attributes

Flag: !
: This command applies immediately

Parameters

no
: Negate a command or set its defaults

as
: Disable Application Server

NAME
: Name of AS

1.9.7 no asp NAME

Command

```
no asp NAME
```

Global attributes

Flag: !
: This command applies immediately

Parameters

no
: Negate a command or set its defaults

asp
: Disable Application Server Process

NAME
: Name of ASP

1.9.8 no sccp-address NAME

Command

```
no sccp-address NAME
```

Global attributes

Flag: !
: This command applies immediately

Parameters

no
: Negate a command or set its defaults

sccp-address
: Delete an SCCP addressbook entry

NAME
: Name of the SCCP Address

1.9.9 point-code POINT_CODE

Command

```
point-code POINT_CODE
```

Global attributes

Flag: !
: This command applies immediately

Parameters

point-code
: Configure the local Point Code

POINT_CODE
: Point Code

1.9.10 point-code delimiter (default|dash)

Command

```
point-code delimiter (default|dash)
```

Global attributes

Flag: !

This command applies immediately

Parameters

point-code

Point Code

delimiter

Configure Point Code Delimiter

default

Use dot as delimiter

dash

User dash as delimiter

1.9.11 point-code format <1-24> [<1-23>] [<1-22>]

Command

```
point-code format <1-24> [<1-23>] [<1-22>]
```

Global attributes

Flag: !

This command applies immediately

Parameters

point-code

Point Code

format

Configure Point Code Format

<1-24>

Length of first PC component

[<1-23>]

Length of second PC component

[<1-22>]

Length of third PC component

1.9.12 point-code format default

Command

```
point-code format default
```

Global attributes

Flag: !

This command applies immediately

Parameters

point-code

Point Code

format

Configure Point Code Format

default

Default Point Code Format (3.8.3)

1.9.13 sccp max-optional-data (<0-999999>|standard)

Command

```
sccp max-optional-data (<0-999999>|standard)
```

Global attributes

Flag: !

This command applies immediately

Parameters

sccp

Configure SCCP behavior

max-optional-data

Adjust the upper bound for the optional data length (the payload) for CR, CC, CREF and RLSD messages. For any Optional Data part larger than this value in octets, send CR, CC, CREF and RLSD messages without any payload, and send the data payload in a separate Data Form 1 message. ITU-T Q.713 sections 4.2 thru 4.5 define a limit of 128 bytes for the 'Data' parameter. This limit can be adjusted here. May be useful for interop with nonstandard SCCP peers.

<0-999999>

Set a non-standard maximum allowed number of bytes

standard

Use the ITU-T Q.713 4.2 to 4.5 standard value of 128

1.9.14 sccp-address NAME

Command

```
sccp-address NAME
```

Global attributes

Flag: !

This command applies immediately

Parameters

sccp-address

Create/Modify an SCCP addressbook entry

NAME

Name of the SCCP Address

1.9.15 sccp-timer (conn_est|ias|iar|rel|repeat_rel|int|guard|reset|reassembly) <1-99999...

Command

```
sccp-timer (conn_est|ias|iar|rel|repeat_rel|int|guard|reset|reassembly) <1-999999>
```

Global attributes

Flag: !

This command applies immediately

Parameters

sccp-timer

Configure SCCP timer values, see ITU-T Q.714

conn_est

Waiting for connection confirm message, 1 to 2 minutes (default: 60)

ias

Send keep-alive: on an idle connection, delay before sending an Idle Timer message, 5 to 10 minutes (default: 420)

iar

Receive keep-alive: on an idle connection, delay until considering a connection as stale, 11 to 21 minutes (default: 900)

rel

Waiting for release complete message, 10 to 20 seconds (default: 10)

repeat_rel

Waiting for release complete message; or to repeat sending released message after the initial expiry, 10 to 20 seconds (default: 10)

int

Waiting for release complete message; or to release connection resources, freeze the LRN and alert a maintenance function after the initial expiry, extending to 1 minute (default: 60)

guard

Waiting to resume normal procedure for temporary connection sections during the restart procedure, 23 to 25 minutes (default: 1380)

reset

Waiting to release temporary connection section or alert maintenance function after reset request message is sent, 10 to 20 seconds (default: 10)

reassembly

Waiting to receive all the segments of the remaining segments, single segmented message after receiving the first segment, 10 to 20 seconds (default: 10)

<1-999999>

Timer value, in seconds

1.9.16 secondary-pc POINT_CODE

Command

```
secondary-pc POINT_CODE
```

Global attributes

Flag: !

This command applies immediately

Parameters

secondary-pc

Configure the local Secondary Point Code

POINT_CODE

Point Code

1.9.17 sls-opc-dpc [opc-shift] [<0-8>] [dpc-shift] [<0-8>]

Command

```
sls-opc-dpc [opc-shift] [<0-8>] [dpc-shift] [<0-8>]
```

Global attributes

Flag: !

This command applies immediately

Parameters

sls-opc-dpc
: Shift OPC and DPC bits used during routing decision

[opc-shift]
: Shift OPC bits used during routing decision

[<0-8>]
: How many bits from ITU OPC field (starting from least-significant-bit) to skip (default=0). 6 bits are always used

[dpc-shift]
: Shift DPC bits used during routing decision

[<0-8>]
: How many bits from ITU DPC field (starting from least-significant-bit) to skip (default=0). 6 bits are always used

1.9.18 sls-shift <0-6>

Command

```
sls-shift <0-6>
```

Global attributes

Flag: !
: This command applies immediately

Parameters

sls-shift
: Shift SLS bits used during routing decision

<0-6>
: How many bits from derivated 7-bit extended-SLS (OPC, DPC, SLS) field (starting from least-significant-bit) to skip

1.9.19 xua rkm routing-key-allocation (static-only|dynamic-permitted)

Command

```
xua rkm routing-key-allocation (static-only|dynamic-permitted)
```

Global attributes

Flag: !
: This command applies immediately

Parameters

xua
: SIGTRAN xxxUA related

rkm
: Routing Key Management

routing-key-allocation
: Routing Key Management Allocation Policy

static-only
: Only static (pre-configured) Routing Keys permitted

dynamic-permitted
: Dynamically allocate Routing Keys for what ASPs request

1.10 config-cs7-as

1.10.1 asp NAME

Command

```
asp NAME
```

Global attributes

Flag: !
: This command applies immediately

Parameters

asp
: Specify that a given ASP is part of this AS

NAME
: Name of ASP to be added to AS

1.10.2 binding-table reset

Command

```
binding-table reset
```

Global attributes

Flag: !
: This command applies immediately

Parameters

binding-table
: AS Loadshare binding table operations

reset
: Reset loadshare binding table

1.10.3 description .TEXT

Command

```
description .TEXT
```

Parameters

description
: Save human-readable description of the object

.TEXT
: Text until the end of the line

1.10.4 no asp NAME

Command

```
no asp NAME
```

Global attributes

Flag: !
: This command applies immediately

Parameters

no
: Negate a command or set its defaults

asp
: Specify ASP to be removed from this AS

NAME
: Name of ASP to be removed

1.10.5 no point-code override (opc|dpc)

Command

```
no point-code override (opc|dpc)
```

Global attributes

Flag: !
: This command applies immediately

Parameters

no
: Negate a command or set its defaults

point-code
: Point Code Specific Features

override
: Override (force) a point-code of messages received at the AS

opc
: Override Source Point Code of received messages

dpc
: Override Destination Point Code of received messages

1.10.6 no traffic-mode

Command

```
no traffic-mode
```

Parameters

no
: Negate a command or set its defaults

traffic-mode
: Remove explicit traffic mode of operation of this AS

1.10.7 point-code override (opc|dpc) PC

Command

```
point-code override (opc|dpc) PC
```

Global attributes

Flag: !
: This command applies immediately

Parameters

point-code
: Point Code Specific Features

override
: Override (force) a point-code of messages received at the AS

opc
: Override Source Point Code of received messages

dpc
: Override Destination Point Code of received messages

PC
: New Point Code

1.10.8 point-code override patch-sccp (disabled|both)

Command

```
point-code override patch-sccp (disabled|both)
```

Global attributes

Flag: !
: This command applies immediately

Parameters

point-code
: Point Code Specific Features

override
: Override (force) a point-code to hard-coded value

patch-sccp
: Patch point code values into SCCP called/calling address

disabled
: Don't patch any point codes into SCCP called/calling address

both
: Patch both origin and destination point codes into SCCP called/calling address

1.10.9 qos-class <0-7>

Command

```
qos-class <0-7>
```

Global attributes

Flag: !
: This command applies immediately

Parameters

qos-class
: Specity QoS Class of AS

<0-7>
: QoS Class

1.10.10 recovery-timeout <1-2000>

Command

```
recovery-timeout <1-2000>
```

Global attributes

Flag: !

This command applies immediately

Parameters

recovery-timeout

Specifies RFC4666 recovery timer T(r) timeout

<1-2000>

Recovery Timeout in Milliseconds

1.10.11 routing-key RCONTEXT DPC

Command

```
routing-key RCONTEXT DPC
```

Global attributes

Flag: !

This command applies immediately

Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

1.10.12 routing-key RCONTEXT DPC si (aal2|bicc|b-isup|h248|isup|sat-isup|sccp|tup)

Command

```
routing-key RCONTEXT DPC si (aal2|bicc|b-isup|h248|isup|sat-isup|sccp|tup)
```

Global attributes

Flag: !

This command applies immediately

Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

si

Match on Service Indicator

aal2

ATM Adaption Layer 2

bicc

Bearer Independent Call Control

b-isup

Broadband ISDN User Part

h248

H.248

isup

ISDN User Part

sat-isup

Sattelite ISDN User Part

sccp

Signalling Connection Control Part

tup

Telephony User Part

1.10.13 routing-key RCONTEXT DPC si (aal2|bicc|b-isup|h248|isup|sat-isup|sccp|tup) ssn S...

Command

```
routing-key RCONTEXT DPC si (aal2|bicc|b-isup|h248|isup|sat-isup|sccp|tup) ssn SSN
```

Global attributes

Flag: !

This command applies immediately

Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

si

Match on Service Indicator

aal2

ATM Adaption Layer 2

bicc

Bearer Independent Call Control

b-isup

Broadband ISDN User Part

h248

H.248

isup

ISDN User Part

sat-isup

Sattelite ISDN User Part

sccp

Signalling Connection Control Part

tup

Telephony User Part

ssn

Match on Sub-System Number

SSN

Sub-System Number to match on

1.10.14 routing-key RCONTEXT DPC ssn SSN

Command

```
routing-key RCONTEXT DPC ssn SSN
```

Global attributes

Flag: !

This command applies immediately

Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

ssn

Match on Sub-System Number

SSN

Sub-System Number to match on

1.10.15 sls-shift <0-3>

Command

```
sls-shift <0-3>
```

Global attributes

Flag: !

This command applies immediately

Parameters

sls-shift

Shift SLS bits used during routing decision

<0-3>

How many bits from SLS field (starting from least-significant-bit) to skip

1.10.16 traffic-mode (broadcast | roundrobin | override)

Command

```
traffic-mode (broadcast | roundrobin | override)
```

Parameters

traffic-mode
: Specifies traffic mode of operation of the ASP within the AS

broadcast
: Broadcast to all ASP within AS

roundrobin
: Round-Robin between all ASP within AS

override
: Override

1.10.17 traffic-mode loadshare [bindings] [sls] [opc-sls] [opc-shift] [<0-2>]

Command

```
traffic-mode loadshare [bindings] [sls] [opc-sls] [opc-shift] [<0-2>]
```

Parameters

traffic-mode
: Specifies traffic mode of operation of the ASP within the AS

loadshare
: Share Load among all ASP within AS

[bindings]
: Configure Loadshare parameters

[sls]
: Configure Loadshare SLS generation parameters

[opc-sls]
: Generate extended SLS with OPC information

[opc-shift]
: Shift OPC bits used during routing decision

[<0-2>]
: How many bits from ITU OPC field (starting from least-significant-bit) to skip (default=0). 6 bits are always used

1.11 config-cs7-asp

1.11.1 block

Command

```
block
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

block

Allows a SCTP Association with ASP, but doesn't let it become active

1.11.2 description .TEXT

Command

```
description .TEXT
```

Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line

1.11.3 destination-audit asp-active

Command

```
destination-audit asp-active
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

destination-audit

Configure ASP Auditing (xUA DAUD)

asp-active

Transmit DAUD after ASP successful activate (for remote PCs in sccp address-book)

1.11.4 local-ip (A.B.C.D|X:X::X:X) [primary]

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

local-ip

Specify Local IP Address from which to contact ASP

A.B.C.D

Local IPv4 Address from which to contact of ASP

X:X::X:X

Local IPv6 Address from which to contact of ASP

[primary]

Signal the SCTP peer to use this address as Primary Address

1.11.5 no destination-audit asp-active

Command

```
no destination-audit asp-active
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

no

Negate a command or set its defaults

destination-audit

Configure ASP Auditing (xUA DAUD)

asp-active

Transmit xUA DAUD after ASP successful activate (for remote PCs in sccp address-book)

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

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

no

Negate a command or set its defaults

local-ip

Specify Local IP Address from which to contact ASP

A.B.C.D

Local IPv4 Address from which to contact of ASP

X:X::X:X

Local IPv6 Address from which to contact of ASP

1.11.7 no quirk (no_notify|daud_in_asp|snm_inactive)

Command

```
no quirk (no_notify|daud_in_asp|snm_inactive)
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

quirk

Disable quirk to work around interop issues

no_notify

Peer SG doesn't send NTFY(AS-INACTIVE) after ASP-UP

daud_in_asp

Allow Rx of DAUD in ASP role

snm_inactive

Allow Rx of [S]SNM in AS-INACTIVE state

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

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

no

Negate a command or set its defaults

remote-ip

Specify Remote IP Address of ASP

A.B.C.D

Remote IPv4 Address of ASP

X:X::X:X

Remote IPv6 Address of ASP

1.11.9 no sctp-param init (num-ostreams|max-instreams|max-attempts|timeout)

Command

```
no sctp-param init (num-ostreams|max-instreams|max-attempts|timeout)
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

no

Negate a command or set its defaults

sctp-param

Configure SCTP parameters

init

Configure INIT related parameters

num-ostreams

Configure INIT Number of Outbound Streams

max-instreams
: Configure INIT Maximum Inboud Streams

max-attempts
: Configure INIT Maximum Attempts

timeout
: Configure INIT Timeout (milliseconds)

1.11.10 no shutdown

Command

```
no shutdown
```

Global attributes

Flag: @
: This command applies on VTY node exit

Parameters

no
: Negate a command or set its defaults

shutdown
: Terminates SCTP association; New associations will be rejected

1.11.11 no tcp-param keepalive

Command

```
no tcp-param keepalive
```

Global attributes

Flag: @
: This command applies on VTY node exit

Parameters

no
: Negate a command or set its defaults

tcp-param
: Configure TCP parameters

keepalive
: Configure TCP keep-alive related parameters

1.11.12 no tcp-param keepalive (time|intvl|probes)

Command

```
no tcp-param keepalive (time|intvl|probes)
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

no

Negate a command or set its defaults

tcp-param

Configure TCP parameters

keepalive

Configure TCP keep-alive related parameters

time

Configure number of seconds a connection needs to be idle before beggining to send probes

intvl

Configure number of seconds between probes

probes

Configure max number of probes to send before giving up if no response is obtained

1.11.13 no tcp-param user-timeout

Command

```
no tcp-param user-timeout
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

no

Negate a command or set its defaults

tcp-param

Configure TCP parameters

user-timeout

Configure TCP User Timeout socket option (TCP_USER_TIMEOUT)

1.11.14 qos-class <0-7>

Command

```
qos-class <0-7>
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

qos-class

Specify QoS Class of ASP

<0-7>

QoS Class

1.11.15 quirk (no_notify|daud_in_asp|snm_inactive)

Command

```
quirk (no_notify|daud_in_asp|snm_inactive)
```

Global attributes

Flag: !

This command applies immediately

Parameters

quirk

Enable quirk to work around interop issues

no_notify

Peer SG doesn't send NTFY(AS-INACTIVE) after ASP-UP

daud_in_asp

Allow Rx of DAUD in ASP role

snm_inactive

Allow Rx of [S]SNM in AS-INACTIVE state

1.11.16 remote-ip (A.B.C.D|X:X::X:X) [primary]

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

remote-ip

Specify Remote IP Address of ASP

A.B.C.D

Remote IPv4 Address of ASP

X:X::X:X

Remote IPv6 Address of ASP

[primary]

Set remote address as SCTP Primary Address

1.11.17 role (sg|asp|ipsp)

Command

```
role (sg|asp|ipsp)
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

role

Specify the xUA role for this ASP

sg

SG (Signaling Gateway)

asp

ASP (Application Server Process)

ipsp

IPSP (IP Signalling Point)

1.11.18 sctp-param init (num-ostreams|max-instreams|max-attempts|timeout) <0-65535>

Command

```
sctp-param init (num-ostreams|max-instreams|max-attempts|timeout) <0-65535>
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

sctp-param

Configure SCTP parameters

init

Configure INIT related parameters

num-ostreams

Configure INIT Number of Outbound Streams

max-instreams

Configure INIT Maximum Inboud Streams

max-attempts

Configure INIT Maximum Attempts

timeout

Configure INIT Timeout (milliseconds)

<0-65535>

Value of the parameter

1.11.19 shutdown

Command

```
shutdown
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

shutdown

Terminates SCTP association; New associations will be rejected

1.11.20 tcp-param keepalive (time|intvl|probes) <0-65535>

Command

```
tcp-param keepalive (time|intvl|probes) <0-65535>
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

tcp-param

Configure TCP parameters

keepalive

Configure TCP keep-alive related parameters

time

Configure number of seconds a connection needs to be idle before beggining to send probes

intvl

Configure number of seconds between probes

probes

Configure max number of probes to send before giving up if no response is obtained

<0-65535>

Value of the parameter

1.11.21 tcp-param keepalive enabled

Command

```
tcp-param keepalive enabled
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

tcp-param

Configure TCP parameters

keepalive

Configure TCP keep-alive related parameters

enabled

Enable TCP keep-alive

1.11.22 tcp-param user-timeout <0-65535>

Command

```
tcp-param user-timeout <0-65535>
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

tcp-param

Configure TCP parameters

user-timeout

Configure TCP User Timeout socket option (TCP_USER_TIMEOUT)

<0-65535>

Value of the parameter

1.11.23 timer lm (wait_asp_up|wait_notify|wait_notify_rkm|wait_rk_reg_resp) <1-999999>

Command

```
timer lm (wait_asp_up|wait_notify|wait_notify_rkm|wait_rk_reg_resp) <1-999999>
```

Global attributes

Flag: !

This command applies immediately

Parameters

timer

Configure ASP default timer values

lm

Configure ASP default lm timer values

wait_asp_up

Restart ASP after timeout waiting for ASP UP (SG role) / ASP UP ACK (ASP role) (s) (default: 20)

wait_notify

Restart ASP after timeout waiting for NOTIFY (s) (default: 2)

wait_notify_rkm

Restart ASP after timeout waiting for NOTIFY after RKM registration (s) (default: 20)

wait_rk_reg_resp

Restart ASP after timeout waiting for RK_REG_RESP (s) (default: 10)

<1-999999>

Timer value, in seconds

1.11.24 timer xua (ack|beat) <1-999999>

Command

```
timer xua (ack|beat) <1-999999>
```

Global attributes

Flag: !

This command applies immediately

Parameters

timer

Configure ASP default timer values

xua

Configure ASP default xua timer values

ack

Resend ASP Up/Down/Active/Inactive after timeout waiting for ASP Up/Down/Active/Inactive ACK (ASP role)(s) (default: 2)

beat

Heartbeat Timer (0 = disabled) (s) (default: 30)

<1-999999>

Timer value, in seconds

1.11.25 transport-role (client|server)

Command

```
transport-role (client|server)
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

transport-role

Specify the transport layer role for this ASP

client

Operate as a client; connect to a server

server

Operate as a server; wait for client connections

1.12 config-cs7-sccpaddr

1.12.1 global-title

Command

```
global-title
```

Global attributes

Flag: !

This command applies immediately

Parameters

global-title

Add/Modify Global Title

1.12.2 no global-title

Command

```
no global-title
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

global-title

Remove Global Title

1.12.3 no point-code

Command

```
no point-code
```

Global attributes

Flag: !
This command applies immediately

Parameters

no
Negate a command or set its defaults

point-code
Remove point-code Number

1.12.4 no subsystem-number

Command

```
no subsystem-number
```

Global attributes

Flag: !
This command applies immediately

Parameters

no
Negate a command or set its defaults

subsystem-number
Remove Subsystem Number

1.12.5 point-code POINT_CODE

Command

```
point-code POINT_CODE
```

Global attributes

Flag: !
This command applies immediately

Parameters

point-code
Add point-code Number

POINT_CODE
PC

1.12.6 routing-indicator (GT|PC|IP)

Command

```
routing-indicator (GT|PC|IP)
```

Global attributes

Flag: !

This command applies immediately

Parameters

routing-indicator

Add Routing Indicator

GT

by global-title

PC

by point-code

IP

by ip-address

1.12.7 subsystem-number <0-4294967295>

Command

```
subsystem-number <0-4294967295>
```

Global attributes

Flag: !

This command applies immediately

Parameters

subsystem-number

Add Subsystem Number

<0-4294967295>

SSN

1.13 config-cs7-sccpaddr-gt

1.13.1 digits DIGITS

Command

```
digits DIGITS
```

Global attributes

Flag: !

This command applies immediately

Parameters

digits

Set Global Title Digits

DIGITS

Number digits

1.13.2 global-title-indicator <0-15>

Command

```
global-title-indicator <0-15>
```

Global attributes

Flag: !

This command applies immediately

Parameters

global-title-indicator

Set Global Title Indicator

<0-15>

GTI

1.13.3 nature-of-address-indicator <0-127>

Command

```
nature-of-address-indicator <0-127>
```

Global attributes

Flag: !

This command applies immediately

Parameters

nature-of-address-indicator

Set Global Title Nature of Address Indicator

<0-127>

NAI

1.13.4 numbering-plan-indicator <0-15>

Command

```
numbering-plan-indicator <0-15>
```

Global attributes

Flag: !

This command applies immediately

Parameters

numbering-plan-indicator

Set Global Title Numbering Plan Indicator

<0-15>

NPI

1.13.5 translation-type <0-255>

Command

```
translation-type <0-255>
```

Global attributes

Flag: !

This command applies immediately

Parameters

translation-type

Set Global Title Translation Type

<0-255>

TT

1.14 config-hnbgw

1.14.1 hnb UMTS_CELL_ID

Command

```
hnb UMTS_CELL_ID
```

Parameters

hnb

hNodeB specific configuration

UMTS_CELL_ID

Identity of hNodeB in xxx-yyy-Llac-Rrac-Ssac-Ccid format

1.14.2 hnb-policy (accept-all|closed)

Command

```
hnb-policy (accept-all|closed)
```

Parameters

hnb-policy

Configure the policy of which HNB connections to accept

accept-all

Accept HNB of any identity

closed

Accept only HNB whose identity is explicitly configured via VTY

1.14.3 iucs

Command

```
iucs
```

Parameters

iucs
: Configure IuCS options

1.14.4 iuh

Command

```
iuh
```

Parameters

iuh
: Configure Iuh options

1.14.5 iups

Command

```
iups
```

Parameters

iups
: Configure IuPS options

1.14.6 log-prefix (hnb-id|umts-cell-id)

Command

```
log-prefix (hnb-id|umts-cell-id)
```

Parameters

log-prefix
: Configure the log message prefix

hnb-id
: Use the hNB-ID as log message prefix

umts-cell-id
: Use the UMTS Cell ID as log message prefix

1.14.7 mgcp

Command

```
mgcp
```

Parameters

mgcp
: Configure MGCP client

1.14.8 mgw <0-255>

Command

```
mgw <0-255>
```

Global attributes

Flag: !
: This command applies immediately

Parameters

mgw
: Select a MGCP client config to setup

<0-255>
: reference number

1.14.9 nft-kpi [TABLE_NAME]

Command

```
nft-kpi [TABLE_NAME]
```

Parameters

nft-kpi
: Retrieve traffic counters from nftables

[TABLE_NAME]
: Set a custom nft table name to use, instead of 'osmo-hnbgw'

1.14.10 no hnb IDENTITY_INFO

Command

```
no hnb IDENTITY_INFO
```

Parameters

no
: Negate a command or set its defaults

hnb
: Remove configuration for specified hNodeB

IDENTITY_INFO
: Identity of hNodeB

1.14.11 no mgw <0-255>

Command

```
no mgw <0-255>
```

Global attributes

Flag: !
: This command applies immediately

Parameters

no
: Negate a command or set its defaults

mgw
: Select a MGCP client config to remove

<0-255>
: reference number

1.14.12 no nft-kpi

Command

```
no nft-kpi
```

Parameters

no
: Negate a command or set its defaults

nft-kpi
: Retrieve traffic counters from nftables

1.14.13 pfcp

Command

```
pfcp
```

Parameters

pfcp

Configure PFCP for GTP tunnel mapping

1.14.14 plmn <1-999> <0-999>

Command

```
plmn <1-999> <0-999>
```

Parameters

plmn

Configure the HNBGW's PLMN. The PLMN is transmitted in RANAP RESET towards the CN.

<1-999>

MCC, Mobile Country Code

<0-999>

MNC, Mobile Network Code

1.14.15 rnc-id <0-65535>

Command

```
rnc-id <0-65535>
```

Parameters

rnc-id

Configure the HNBGW's RNC Id, the common RNC Id used for all connected hNodeB. It is sent to each hNodeB upon HNBAP HNB-Register-Accept, and the hNodeB will subsequently send this as RANAP InitialUE Messages' GlobalRNC-ID IE. Takes effect as soon as the hNodeB re-registers.

<0-65535>

RNC Id value

1.14.16 timer [(mgw|hnbgw|pfcp)] [TNNNN] [(<0-2147483647>|default)]

Command

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

Parameters

timer
: Configure or show timers

[mgw]
: MGW (Media Gateway) interface

[hnbgw]
: Timers

[pfcp]
: PFCP timers

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

[<0-2147483647>]
: New timer value

[default]
: Set to default timer value

1.15 config-hnbgw-hnb

1.15.1 tx-queue-max-length <-1-65535>

Command

```
tx-queue-max-length <-1-65535>
```

Parameters

tx-queue-max-length
: Maximum transmit queue length, in msgbs

<-1-65535>
: Amount of msgbs which can be queued at maximum in the tramist queue (-1: Use hnbgw default)

1.16 config-hnbgw-iuh

1.16.1 hnbap-allow-tmsi (0|1)

Command

```
hnbap-allow-tmsi (0|1)
```

Parameters

hnbap-allow-tmsi
: Allow HNBAP UE Register messages with TMSI or PTMSI identity

0
: Only accept IMSI identity, reject TMSI or PTMSI

1
: Accept IMSI, TMSI or PTMSI as UE identity (default)

1.16.2 local-ip A.B.C.D

Command

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

Parameters

local-ip
: Accept Iuh connections on local interface

A.B.C.D
: Local interface IP address (default: 0.0.0.0)

1.16.3 local-port <1-65535>

Command

```
local-port <1-65535>
```

Parameters

local-port
: Accept Iuh connections on local port

<1-65535>
: Local interface port (default: 29169)

1.16.4 tx-queue-max-length <0-65535>

Command

```
tx-queue-max-length <0-65535>
```

Parameters

tx-queue-max-length
: Maximum transmit queue length, in msgbs

<0-65535>
: Amount of msgbs which can be queued at maximum in the transmit queue

1.17 config-hnbgw-iucs

1.17.1 nri bitlen <1-15>

Command

```
nri bitlen <1-15>
```

Parameters

nri
: Mapping of Network Resource Indicators to this CN peer, for CN pooling

bitlen
: Set number of bits that an NRI has, to extract from TMSI identities (always starting just after the TMSI's most significant octet).

<1-15>
: bit count (default: 10)

1.17.2 nri null add <0-32767> [<0-32767>]

Command

```
nri null add <0-32767> [<0-32767>]
```

Parameters

nri
: Mapping of Network Resource Indicators to this CN peer, for CN pooling

null
: Define NULL-NRI values that cause re-assignment of an MS to a different CN peer, for CN pooling.

add

Add NULL-NRI value (or range)

<0-32767>

First value of the NRI value range, should not surpass the configured 'nri bitlen'.

[<0-32767>]

Last value of the NRI value range, should not surpass the configured 'nri bitlen' and be larger than the first value; if omitted, apply only the first value.

1.17.3 nri null del <0-32767> [<0-32767>]

Command

```
nri null del <0-32767> [<0-32767>]
```

Parameters

nri

Mapping of Network Resource Indicators to this CN peer, for CN pooling

null

Define NULL-NRI values that cause re-assignment of an MS to a different CN peer, for CN pooling.

del

Remove NRI value or range from the NRI mapping for this CN link

<0-32767>

First value of the NRI value range, should not surpass the configured 'nri bitlen'.

[<0-32767>]

Last value of the NRI value range, should not surpass the configured 'nri bitlen' and be larger than the first value; if omitted, apply only the first value.

1.18 config-hnbgw-iups

1.18.1 nri bitlen <1-15>

Command

```
nri bitlen <1-15>
```

Parameters

nri

Mapping of Network Resource Indicators to this CN peer, for CN pooling

bitlen

Set number of bits that an NRI has, to extract from TMSI identities (always starting just after the TMSI's most significant octet).

<1-15>

bit count (default: 10)

1.18.2 nri null add <0-32767> [<0-32767>]

Command

```
nri null add <0-32767> [<0-32767>]
```

Parameters

nri

Mapping of Network Resource Indicators to this CN peer, for CN pooling

null

Define NULL-NRI values that cause re-assignment of an MS to a different CN peer, for CN pooling.

add

Add NULL-NRI value (or range)

<0-32767>

First value of the NRI value range, should not surpass the configured 'nri bitlen'.

[<0-32767>]

Last value of the NRI value range, should not surpass the configured 'nri bitlen' and be larger than the first value; if omitted, apply only the first value.

1.18.3 nri null del <0-32767> [<0-32767>]

Command

```
nri null del <0-32767> [<0-32767>]
```

Parameters

nri

Mapping of Network Resource Indicators to this CN peer, for CN pooling

null

Define NULL-NRI values that cause re-assignment of an MS to a different CN peer, for CN pooling.

del

Remove NRI value or range from the NRI mapping for this CN link

<0-32767>

First value of the NRI value range, should not surpass the configured 'nri bitlen'.

[<0-32767>]

Last value of the NRI value range, should not surpass the configured 'nri bitlen' and be larger than the first value; if omitted, apply only the first value.

1.19 config-hnbgw-mgcp

1.19.1 keepalive request-endpoint NAME

Command

```
keepalive request-endpoint NAME
```

Parameters

keepalive
: Monitor if the MGCP link against MGW is still usable

request-endpoint
: Use a given endpoint name when sending an MGCP command to the MGW for keepalive purposes

NAME
: The name of the endpoint to use

1.19.2 keepalive request-interval <0-4294967295>

Command

```
keepalive request-interval <0-4294967295>
```

Parameters

keepalive
: Monitor if the MGCP link against MGW is still usable

request-interval
: Send an MGCP command to the MGW at given interval if no other commands are sent

<0-4294967295>
: The interval at which send MGCP commands (s), 0 to disable

1.19.3 keepalive timeout <0-4294967295>

Command

```
keepalive timeout <0-4294967295>
```

Parameters

keepalive
: Monitor if the MGCP link against MGW is still usable

timeout
: Consider the link to the MGW to be down after time without receiving any message from it

<0-4294967295>
: The timeout (s), 0 to disable

1.20 config-mgw

1.20.1 description .TEXT

Command

```
description .TEXT
```

Parameters

description
: Save human-readable description of the object

.TEXT
: Text until the end of the line

1.20.2 endpoint-domain NAME

Command

```
endpoint-domain NAME
```

Parameters

endpoint-domain
: Set the domain name to send in MGCP messages, e.g. the part 'foo' in 'rtpbridge/*@foo'.

NAME
: Domain name, should be alphanumeric.

1.20.3 keepalive request-endpoint NAME

Command

```
keepalive request-endpoint NAME
```

Parameters

keepalive
: Monitor if the MGCP link against MGW is still usable

request-endpoint
: Use a given endpoint name when sending an MGCP command to the MGW for keepalive purposes

NAME
: The name of the endpoint to use

1.20.4 keepalive request-interval <0-4294967295>

Command

```
keepalive request-interval <0-4294967295>
```

Parameters

keepalive
: Monitor if the MGCP link against MGW is still usable

request-interval
: Send an MGCP command to the MGW at given interval if no other commands are sent

<0-4294967295>
: The interval at which send MGCP commands (s), 0 to disable

1.20.5 keepalive timeout <0-4294967295>

Command

```
keepalive timeout <0-4294967295>
```

Parameters

keepalive
: Monitor if the MGCP link against MGW is still usable

timeout
: Consider the link to the MGW to be down after time without receiving any message from it

<0-4294967295>
: The timeout (s), 0 to disable

1.20.6 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 bind to connect to MGW from

A.B.C.D
: local bind IPv4 address

X:X::X:X
: local bind IPv6 address

1.20.7 local-port <0-65535>

Command

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

Parameters

local-port
: local port to connect to MGW from

<0-65535>
: local bind port

1.20.8 no reset-endpoint NAME

Command

```
no reset-endpoint NAME
```

Parameters

no
: Negate a command or set its defaults

reset-endpoint
: remove an endpoint name from the reset-endpoint list, e.g. 'rtpbridge/*'

NAME
: Endpoint name, e.g. 'rtpbridge/*' or 'ds/e1-0/s-3/su16-4'.

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

Command

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

Parameters

remote-ip
: remote IP address to reach the MGW at

A.B.C.D
: remote IPv4 address

X:X::X:X
: remote IPv6 address

1.20.10 remote-port <0-65535>

Command

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

Parameters

remote-port
: remote port to reach the MGW at

<0-65535>
: remote port

1.20.11 reset-endpoint NAME

Command

```
reset-endpoint NAME
```

Parameters

reset-endpoint
: Add an endpoint name that should be reset (DLCX) on connect to the reset-endpoint list,e.g. 'rtpbridge/*'

NAME
: Endpoint name, e.g. 'rtpbridge/*' or 'ds/e1-0/s-3/su16-4'.

1.21 config-hnbgw-pfcp

1.21.1 local-addr IP_ADDR

Command

```
local-addr IP_ADDR
```

Parameters

local-addr
: Local address for PFCP

IP_ADDR
: IP address

1.21.2 local-port <1-65535>

Command

```
local-port <1-65535>
```

Parameters

local-port
: Local port for PFCP

<1-65535>
: UDP port

1.21.3 netinst (access|core) NAME

Command

```
netinst (access|core) NAME
```

Parameters

netinst
: Add a Network Instance IE to all outgoing PFCP rule sets, so that the UPF may choose the correct interface to open GTP tunnels on.

access
: Set the Network Instance name for the access side (towards RAN).

core
: Set the Network Instance name for the core side.

NAME
: The Network Instance name as a dotted string, typically a domain name like 'ran23.example.com'. A matching osmo-upf.cfg could be: 'netinst' / 'add ran23.example.com 10.0.0.23'. See 3GPP TS 29.244 8.2.4.

1.21.4 remote-addr IP_ADDR

Command

```
remote-addr IP_ADDR
```

Parameters

remote-addr
: Remote UPF's listen IP address; where to send PFCP requests

IP_ADDR
: IP address

1.22 config-msc

1.22.1 allow-attach

Command

```
allow-attach
```

Global attributes

Flag: !

This command applies immediately

Parameters

allow-attach

Allow this CN link to attach new subscribers (default).

1.22.2 allow-emergency

Command

```
allow-emergency
```

Global attributes

Flag: !

This command applies immediately

Parameters

allow-emergency

Allow CM ServiceRequests with type emergency on this CN link

1.22.3 apply sccp

Command

```
apply sccp
```

Parameters

apply

Immediately use configuration modified via telnet VTY, and restart components as needed.

sccp

For telnet VTY: apply SCCP and NRI config changes made to this CN link in the running osmo-hnbgw process. If 'remote-addr' changed, related SCCP links will be restarted, possibly dropping active UE contexts. This is run implicitly on program startup, only useful to apply changes made later via telnet VTY.

1.22.4 name NAME

Command

```
name NAME
```

Parameters

name
: Set user defined name for this msc/sgsn

NAME
: The user defined name to be set for this msc/sgsn

1.22.5 no allow-attach

Command

```
no allow-attach
```

Global attributes

Flag: !
: This command applies immediately

Parameters

no
: Negate a command or set its defaults

allow-attach
: Do not assign new subscribers to this CN link. Useful if an CN link in an CN link pool is configured to off-load subscribers. The CN link will still be operational for already IMSI-Attached subscribers, but the NAS node selection function will skip this CN link for new subscribers

1.22.6 no allow-emergency

Command

```
no allow-emergency
```

Global attributes

Flag: !
: This command applies immediately

Parameters

no
: Negate a command or set its defaults

allow-emergency
: Do not serve CM ServiceRequests with type emergency on this CN link

1.22.7 nri add <0-32767> [<0-32767>]

Command

```
nri add <0-32767> [<0-32767>]
```

Global attributes

Flag: !

This command applies immediately

Parameters

nri

Mapping of Network Resource Indicators to this CN peer, for CN pooling

add

Add NRI value or range to the NRI mapping for this CN link

<0-32767>

First value of the NRI value range, should not surpass the configured 'nri bitlen'.

[<0-32767>]

Last value of the NRI value range, should not surpass the configured 'nri bitlen' and be larger than the first value; if omitted, apply only the first value.

1.22.8 nri del <0-32767> [<0-32767>]

Command

```
nri del <0-32767> [<0-32767>]
```

Global attributes

Flag: !

This command applies immediately

Parameters

nri

Mapping of Network Resource Indicators to this CN peer, for CN pooling

del

Remove NRI value or range from the NRI mapping for this CN link

<0-32767>

First value of the NRI value range, should not surpass the configured 'nri bitlen'.

[<0-32767>]

Last value of the NRI value range, should not surpass the configured 'nri bitlen' and be larger than the first value; if omitted, apply only the first value.

1.22.9 remote-addr NAME

Command

```
remote-addr NAME
```

Parameters

remote-addr
: SCCP address to send RANAP/SCCP to

NAME
: SCCP address book entry name (see 'cs7 instance' / 'sccp-address')

1.22.10 show nri

Command

```
show nri
```

Parameters

show
: Show running system information

nri
: Mapping of Network Resource Indicators to this CN peer, for CN pooling

1.23 config-sgsn

1.23.1 allow-attach

Command

```
allow-attach
```

Global attributes

Flag: !
: This command applies immediately

Parameters

allow-attach
: Allow this CN link to attach new subscribers (default).

1.23.2 allow-emergency

Command

```
allow-emergency
```

Global attributes

Flag: !

This command applies immediately

Parameters

allow-emergency

Allow CM ServiceRequests with type emergency on this CN link

1.23.3 apply sccp

Command

```
apply sccp
```

Parameters

apply

Immediately use configuration modified via telnet VTY, and restart components as needed.

sccp

For telnet VTY: apply SCCP and NRI config changes made to this CN link in the running osmo-hnbgw process. If 'remote-addr' changed, related SCCP links will be restarted, possibly dropping active UE contexts. This is run implicitly on program startup, only useful to apply changes made later via telnet VTY.

1.23.4 name NAME

Command

```
name NAME
```

Parameters

name

Set user defined name for this msc/sgsn

NAME

The user defined name to be set for this msc/sgsn

1.23.5 no allow-attach

Command

```
no allow-attach
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

allow-attach

Do not assign new subscribers to this CN link. Useful if an CN link in an CN link pool is configured to off-load subscribers. The CN link will still be operational for already IMSI-Attached subscribers, but the NAS node selection function will skip this CN link for new subscribers

1.23.6 no allow-emergency

Command

```
no allow-emergency
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

allow-emergency

Do not serve CM ServiceRequests with type emergency on this CN link

1.23.7 nri add <0-32767> [<0-32767>]

Command

```
nri add <0-32767> [<0-32767>]
```

Global attributes

Flag: !

This command applies immediately

Parameters

nri

Mapping of Network Resource Indicators to this CN peer, for CN pooling

add

Add NRI value or range to the NRI mapping for this CN link

<0-32767>

First value of the NRI value range, should not surpass the configured 'nri bitlen'.

[<0-32767>]

Last value of the NRI value range, should not surpass the configured 'nri bitlen' and be larger than the first value; if omitted, apply only the first value.

1.23.8 nri del <0-32767> [<0-32767>]

Command

```
nri del <0-32767> [<0-32767>]
```

Global attributes

Flag: !

This command applies immediately

Parameters

nri

Mapping of Network Resource Indicators to this CN peer, for CN pooling

del

Remove NRI value or range from the NRI mapping for this CN link

<0-32767>

First value of the NRI value range, should not surpass the configured 'nri bitlen'.

[<0-32767>]

Last value of the NRI value range, should not surpass the configured 'nri bitlen' and be larger than the first value; if omitted, apply only the first value.

1.23.9 remote-addr NAME

Command

```
remote-addr NAME
```

Parameters

remote-addr

SCCP address to send RANAP/SCCP to

NAME

SCCP address book entry name (see 'cs7 instance' / 'sccp-address')

1.23.10 show nri

Command

```
show nri
```

Parameters

show

Show running system information

nri

Mapping of Network Resource Indicators to this CN peer, for CN pooling