

OsmoSMLC VTY Reference

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Contents

1	VTY reference	1
1.1	Common Commands	1
1.1.1	end	2
1.1.2	exit	2
1.1.3	help	2
1.1.4	list [with-flags]	2
1.1.5	show running-config	3
1.1.6	show vty-attributes	3
1.1.7	show vty-attributes (application library global)	3
1.1.8	write	4
1.1.9	write file [PATH]	4
1.1.10	write memory	4
1.1.11	write terminal	5
1.2	view	5
1.2.1	enable [expert-mode]	5
1.2.2	logging color (0 1)	5
1.2.3	logging disable	6
1.2.4	logging enable	6
1.2.5	logging filter all (0 1)	6
1.2.6	logging level (smlc refl blcs lglobal lapd linpl mux lmill mib lsm lctrl lgtpl...)	7
1.2.7	logging level force-all (debug info notice error fatal)	9
1.2.8	logging level set-all (debug info notice error fatal)	10
1.2.9	logging print category (0 1)	10
1.2.10	logging print category-hex (0 1)	11
1.2.11	logging print extended-timestamp (0 1)	11
1.2.12	logging print file (0 1 basename) [last]	12
1.2.13	logging print level (0 1)	12
1.2.14	logging print thread-id (0 1)	13
1.2.15	logging set-log-mask MASK	13
1.2.16	logging timestamp (0 1)	14

1.2.17	logp (smclreflblcsllgloballlapdllinpllmuxllmillmibllsmsllctrlllgtplstatsllg...	14
1.2.18	no logging level force-all	16
1.2.19	show alarms	17
1.2.20	show asciidoc counters	17
1.2.21	show cells	17
1.2.22	show cs7 (sualm3ualipa) (sctpltcp) [<0-65534>]	18
1.2.23	show cs7 (sualm3ualipa) [<0-65534>]	18
1.2.24	show cs7 config	19
1.2.25	show cs7 instance <0-15> as (activealallm3ualsua)	19
1.2.26	show cs7 instance <0-15> as binding-table name AS_NAME	20
1.2.27	show cs7 instance <0-15> as name AS_NAME	20
1.2.28	show cs7 instance <0-15> asp	21
1.2.29	show cs7 instance <0-15> asp name ASP_NAME	21
1.2.30	show cs7 instance <0-15> asp-assoc-status	22
1.2.31	show cs7 instance <0-15> asp-assoc-status name ASP_NAME	22
1.2.32	show cs7 instance <0-15> asp-remaddr	23
1.2.33	show cs7 instance <0-15> asp-remaddr name ASP_NAME	23
1.2.34	show cs7 instance <0-15> route [POINT_CODE]	24
1.2.35	show cs7 instance <0-15> route binding-table [POINT_CODE] [all-matches]	25
1.2.36	show cs7 instance <0-15> route-lookup POINT_CODE from POINT_CODE sls <0-15> [lis...	25
1.2.37	show cs7 instance <0-15> sccp addressbook	26
1.2.38	show cs7 instance <0-15> sccp connections	27
1.2.39	show cs7 instance <0-15> sccp ssn <0-65535>	27
1.2.40	show cs7 instance <0-15> sccp timers	28
1.2.41	show cs7 instance <0-15> sccp users	28
1.2.42	show cs7 instance <0-15> users	29
1.2.43	show fsm NAME	29
1.2.44	show fsm all	29
1.2.45	show fsm-instances NAME	30
1.2.46	show fsm-instances all	30
1.2.47	show fsm-state-graph NAME	30
1.2.48	show history	31
1.2.49	show logging vty	31
1.2.50	show online-help	31
1.2.51	show pid	32
1.2.52	show rate-counters [skip-zero]	32
1.2.53	show runtime	32
1.2.54	show stats [skip-zero]	33
1.2.55	show stats level (globalpeerlsubscriber) [skip-zero]	33

1.2.56	show talloc-context (application global all) (full brief DEPTH)	34
1.2.57	show talloc-context (application global all) (full brief DEPTH) filter REGEXP	34
1.2.58	show talloc-context (application global all) (full brief DEPTH) tree ADDRESS	35
1.2.59	show uptime	36
1.2.60	show version	36
1.2.61	terminal length <0-512>	36
1.2.62	terminal no length	37
1.2.63	who	37
1.3	enable	37
1.3.1	configure [terminal]	37
1.3.2	copy running-config startup-config	38
1.3.3	cs7 instance <0-15> asp NAME audit point-code POINT_CODE	38
1.3.4	cs7 instance <0-15> asp NAME disconnect	39
1.3.5	disable	39
1.3.6	logging color (0 1)	39
1.3.7	logging disable	40
1.3.8	logging enable	40
1.3.9	logging filter all (0 1)	40
1.3.10	logging level (smlc refl bl cs l global l lapd linp lmux lmill mib l sms l ctrl l gtpl ...	41
1.3.11	logging level force-all (debug info notice error fatal)	43
1.3.12	logging level set-all (debug info notice error fatal)	44
1.3.13	logging print category (0 1)	44
1.3.14	logging print category-hex (0 1)	45
1.3.15	logging print extended-timestamp (0 1)	45
1.3.16	logging print file (0 1 basename) [last]	46
1.3.17	logging print level (0 1)	46
1.3.18	logging print thread-id (0 1)	47
1.3.19	logging set-log-mask MASK	47
1.3.20	logging timestamp (0 1)	48
1.3.21	logp (smlc refl bl cs l global l lapd linp lmux lmill mib l sms l ctrl l gtpl stats lg...	48
1.3.22	no logging level force-all	50
1.3.23	show alarms	51
1.3.24	show asciidoc counters	51
1.3.25	show cells	51
1.3.26	show cs7 (su alm3 ual ipa) (sctp tcp) [<0-65534>]	52
1.3.27	show cs7 (su alm3 ual ipa) [<0-65534>]	52
1.3.28	show cs7 config	53
1.3.29	show cs7 instance <0-15> as (active all m3 ual sua)	53
1.3.30	show cs7 instance <0-15> as binding-table name AS_NAME	54

1.3.31	show cs7 instance <0-15> as name AS_NAME	54
1.3.32	show cs7 instance <0-15> asp	55
1.3.33	show cs7 instance <0-15> asp name ASP_NAME	55
1.3.34	show cs7 instance <0-15> asp-assoc-status	56
1.3.35	show cs7 instance <0-15> asp-assoc-status name ASP_NAME	56
1.3.36	show cs7 instance <0-15> asp-remaddr	57
1.3.37	show cs7 instance <0-15> asp-remaddr name ASP_NAME	57
1.3.38	show cs7 instance <0-15> route [POINT_CODE]	58
1.3.39	show cs7 instance <0-15> route binding-table [POINT_CODE] [all-matches]	59
1.3.40	show cs7 instance <0-15> route-lookup POINT_CODE from POINT_CODE sls <0-15> [lis...	59
1.3.41	show cs7 instance <0-15> sccp addressbook	60
1.3.42	show cs7 instance <0-15> sccp connections	61
1.3.43	show cs7 instance <0-15> sccp ssn <0-65535>	61
1.3.44	show cs7 instance <0-15> sccp timers	62
1.3.45	show cs7 instance <0-15> sccp users	62
1.3.46	show cs7 instance <0-15> users	63
1.3.47	show fsm NAME	63
1.3.48	show fsm all	63
1.3.49	show fsm-instances NAME	64
1.3.50	show fsm-instances all	64
1.3.51	show fsm-state-graph NAME	64
1.3.52	show history	65
1.3.53	show logging vty	65
1.3.54	show online-help	65
1.3.55	show rate-counters [skip-zero]	66
1.3.56	show runtime	66
1.3.57	show startup-config	66
1.3.58	show stats [skip-zero]	67
1.3.59	show stats level (global peer subscriber) [skip-zero]	67
1.3.60	show talloc-context (application global all) (full brief DEPTH)	68
1.3.61	show talloc-context (application global all) (full brief DEPTH) filter REGEXP	68
1.3.62	show talloc-context (application global all) (full brief DEPTH) tree ADDRESS	69
1.3.63	show version	70
1.3.64	shutdown	70
1.3.65	stats report	70
1.3.66	stats reset	70
1.3.67	terminal length <0-512>	71
1.3.68	terminal monitor	71
1.3.69	terminal no length	71

1.3.70	terminal no monitor	72
1.3.71	who	72
1.4	config	72
1.4.1	banner motd default	72
1.4.2	banner motd file [FILE]	73
1.4.3	cells	73
1.4.4	cs7 instance <0-15>	73
1.4.5	ctrl	74
1.4.6	enable password (8l) WORD	74
1.4.7	enable password LINE	74
1.4.8	hostname WORD	75
1.4.9	line vty	75
1.4.10	log alarms <2-32700>	75
1.4.11	log file FILENAME [blocking-io]	76
1.4.12	log gsmmap [HOSTNAME]	76
1.4.13	log stderr [blocking-io]	76
1.4.14	log syslog (authpriv cron daemon ftp lpr mail news user uucp)	77
1.4.15	log syslog local <0-7>	77
1.4.16	log systemd-journal [raw]	78
1.4.17	no banner motd	78
1.4.18	no enable password	79
1.4.19	no hostname [HOSTNAME]	79
1.4.20	no log alarms	79
1.4.21	no log file FILENAME	80
1.4.22	no log gsmmap [HOSTNAME]	80
1.4.23	no log stderr	80
1.4.24	no log syslog	81
1.4.25	no log systemd-journal	81
1.4.26	no service advanced-vty	81
1.4.27	no service terminal-length [<0-512>]	82
1.4.28	no stats reporter log [NAME]	82
1.4.29	no stats reporter statsd [NAME]	83
1.4.30	password (8l) WORD	83
1.4.31	password LINE	83
1.4.32	service advanced-vty	84
1.4.33	service terminal-length <0-512>	84
1.4.34	show history	84
1.4.35	stats interval <0-65535>	85
1.4.36	stats reporter log [NAME]	85

1.4.37	stats reporter statsd [NAME]	85
1.4.38	stats-tcp batch-size <1-65535>	86
1.4.39	stats-tcp interval <0-65535>	86
1.5	config-log	86
1.5.1	logging color (0 1)	87
1.5.2	logging filter all (0 1)	87
1.5.3	logging level (smllc refl blcs lglobal llapd linpl mux lmill mibl sms lctrl lgtpl...	88
1.5.4	logging level force-all (debug info notice error fatal)	90
1.5.5	logging level set-all (debug info notice error fatal)	91
1.5.6	logging print category (0 1)	91
1.5.7	logging print category-hex (0 1)	92
1.5.8	logging print extended-timestamp (0 1)	92
1.5.9	logging print file (0 1 basename) [last]	93
1.5.10	logging print level (0 1)	93
1.5.11	logging print thread-id (0 1)	94
1.5.12	logging timestamp (0 1)	94
1.5.13	no logging level force-all	95
1.6	config-stats	95
1.6.1	disable	95
1.6.2	enable	95
1.6.3	flush-period <0-65535>	96
1.6.4	level (global peer subscriber)	96
1.6.5	local-ip ADDR	96
1.6.6	mtu <100-65535>	97
1.6.7	no local-ip	97
1.6.8	no mtu	97
1.6.9	no prefix	98
1.6.10	prefix PREFIX	98
1.6.11	remote-ip ADDR	98
1.6.12	remote-port <1-65535>	99
1.7	config-line	99
1.7.1	bind A.B.C.D [<0-65535>]	99
1.7.2	login	99
1.7.3	no login	100
1.8	config-ctrl	100
1.8.1	bind A.B.C.D [<0-65535>]	100
1.9	config-cs7	100
1.9.1	as NAME (su alm3 ual ipa)	100
1.9.2	asp NAME <0-65535> <0-65535> (su alm3 ual ipa)	101

1.9.3	asp NAME <0-65535> <0-65535> (sualm3ualipa) (sctpltcp)	102
1.9.4	description .TEXT	102
1.9.5	network-indicator (international national reserved spare)	103
1.9.6	no as NAME	103
1.9.7	no asp NAME	104
1.9.8	no sccp-address NAME	104
1.9.9	point-code POINT_CODE	105
1.9.10	point-code delimiter (defaultldash)	105
1.9.11	point-code format <1-24> [<1-23>] [<1-22>]	106
1.9.12	point-code format default	106
1.9.13	sccp max-optional-data (<0-999999> standard)	107
1.9.14	sccp-address NAME	107
1.9.15	sccp-timer (conn_estliarlrrelrepeat_rellintlguardresetreassemble) <1-99999...>	108
1.9.16	secondary-pc POINT_CODE	109
1.9.17	sls-opc-dpc [opc-shift] [<0-8>] [dpc-shift] [<0-8>]	109
1.9.18	sls-shift <0-6>	110
1.9.19	xua rkm routing-key-allocation (static-only dynamic-permitted)	110
1.10	config-cs7-as	111
1.10.1	asp NAME	111
1.10.2	binding-table reset	111
1.10.3	description .TEXT	111
1.10.4	no asp NAME	112
1.10.5	no point-code override (opclldpc)	112
1.10.6	no tcap-routing	113
1.10.7	no traffic-mode	113
1.10.8	point-code override (opclldpc) PC	113
1.10.9	point-code override patch-sccp (disabled both)	114
1.10.10	qos-class <0-7>	114
1.10.11	recovery-timeout <1-2000>	115
1.10.12	routing-key RCONTEXT DPC	115
1.10.13	routing-key RCONTEXT DPC si (aal2lbicclb-isuplh248lisuplsat-isuplsccpltup)	116
1.10.14	routing-key RCONTEXT DPC si (aal2lbicclb-isuplh248lisuplsat-isuplsccpltup) ssn S...	117
1.10.15	routing-key RCONTEXT DPC ssn SSN	118
1.10.16	sls-shift <0-3>	118
1.10.17	tcap-routing	119
1.10.18	traffic-mode (broadcast roundrobin override)	119
1.10.19	traffic-mode loadshare [bindings] [sls] [opc-sls] [opc-shift] [<0-2>]	119
1.11	config-cs7-asp	120
1.11.1	block	120

1.11.2	description .TEXT	120
1.11.3	destination-audit asp-active	121
1.11.4	local-ip (A.B.C.D X:X::X:X) [primary]	121
1.11.5	no destination-audit asp-active	122
1.11.6	no local-ip (A.B.C.D X:X::X:X)	122
1.11.7	no quirk (no_notify daud_in_asplnm_inactive)	123
1.11.8	no remote-ip (A.B.C.D X:X::X:X)	123
1.11.9	no sctp-param init (num-ostreamslmax-instreamslmax-attempts timeout)	124
1.11.10	no shutdown	124
1.11.11	no tcp-param keepalive	125
1.11.12	no tcp-param keepalive (timelintvllprobes)	125
1.11.13	no tcp-param user-timeout	126
1.11.14	qos-class <0-7>	126
1.11.15	quirk (no_notify daud_in_asplnm_inactive)	127
1.11.16	remote-ip (A.B.C.D X:X::X:X) [primary]	127
1.11.17	role (sglasplisp)	128
1.11.18	sctp-param init (num-ostreamslmax-instreamslmax-attempts timeout) <0-65535>	128
1.11.19	shutdown	129
1.11.20	tcp-param keepalive (timelintvllprobes) <0-65535>	129
1.11.21	tcp-param keepalive enabled	130
1.11.22	tcp-param user-timeout <0-65535>	130
1.11.23	timer lm (wait_asp_up wait_notify wait_notify_rkm wait_rk_reg_resp) <1-999999>	131
1.11.24	timer xua (acklbeat) <1-999999>	131
1.11.25	transport-role (client server)	132
1.12	config-cs7-sccpaddr	132
1.12.1	global-title	132
1.12.2	no global-title	133
1.12.3	no point-code	133
1.12.4	no subsystem-number	133
1.12.5	point-code POINT_CODE	134
1.12.6	routing-indicator (GT PC IP)	134
1.12.7	subsystem-number <0-4294967295>	135
1.13	config-cs7-sccpaddr-gt	135
1.13.1	digits DIGITS	135
1.13.2	global-title-indicator <0-15>	136
1.13.3	nature-of-address-indicator <0-127>	136
1.13.4	numbering-plan-indicator <0-15>	136
1.13.5	translation-type <0-255>	137
1.14	config-cells	137
1.14.1	cgi <0-999> <0-999> <0-65535> <0-65535> lat LATITUDE lon LONGITUDE	137
1.14.2	lac-ci <0-65535> <0-65535> lat LATITUDE lon LONGITUDE	138
1.14.3	no cgi <0-999> <0-999> <0-65535> <0-65535>	139
1.14.4	no lac-ci <0-65535> <0-65535>	139

List of Tables

1.1	VTY Parameter Patterns	1
1.2	VTY port numbers	1

Chapter 1

VTY reference

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

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

Table 1.1: VTY Parameter Patterns

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

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

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

Table 1.2: VTY port numbers

1.1 Common Commands

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

1.1.1 end

Command

```
end
```

Parameters

end

End current mode and change to enable mode.

1.1.2 exit

Command

```
exit
```

Parameters

exit

Exit current mode and down to previous mode

1.1.3 help

Command

```
help
```

Parameters

help

Description of the interactive help system

1.1.4 list [with-flags]

Command

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

Parameters

list

Print command list

[with-flags]

Also print the VTY attribute flags

1.1.5 show running-config

Command

```
show running-config
```

Parameters

show

Show running system information

running-config

running configuration

1.1.6 show vty-attributes

Command

```
show vty-attributes
```

Parameters

show

Show running system information

vty-attributes

List of VTY attributes

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

Command

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

Parameters

show

Show running system information

vty-attributes

List of VTY attributes

application

Application specific attributes only

library

Library specific attributes only

global

Global attributes only

1.1.8 write

Command

```
write
```

Parameters

write

Write running configuration to memory, network, or terminal

1.1.9 write file [PATH]

Command

```
write file [PATH]
```

Parameters

write

Write running configuration to memory, network, or terminal

file

Write to configuration file

[PATH]

Set file path to store the config, or replace if already exists

1.1.10 write memory

Command

```
write memory
```

Parameters

write

Write running configuration to memory, network, or terminal

memory

Write configuration to the file (same as write file)

1.1.11 write terminal

Command

```
write terminal
```

Parameters

write

Write running configuration to memory, network, or terminal

terminal

Write to terminal

1.2 view

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

1.2.1 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 (smlc|ref|lb|lcs|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|...

Command

```
logging level (smlc|ref|lb|lcs|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats| ↵
lgsup|loap|lss7|lscdp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lms|lbssgp|lmsdata|lmsignal| ↵
liuup|lpfcp|lcsn1|lio|ltcap) (debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

smlc

Serving Mobile Location Center

ref

Reference Counting

lb

Lb interface

lcs

Location Services

lglobal

Library-internal global log family

llapd

LAPD in libosmogsm

linp

A-bis Input Subsystem

lmux

A-bis B-Subchannel TRAU Frame Multiplex

lmi

A-bis Input Driver for Signalling

lmib

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

- lsms
 - Layer3 Short Message Service (SMS)
- lctrl
 - Control Interface
- lgtp
 - GPRS GTP library
- lstats
 - Statistics messages and logging
- lgsup
 - Generic Subscriber Update Protocol
- loap
 - Osmocom Authentication Protocol
- lss7
 - libosmo-sigtran Signalling System 7
- lsccp
 - libosmo-sigtran SCCP Implementation
- lsua
 - libosmo-sigtran SCCP User Adaptation
- lm3ua
 - libosmo-sigtran MTP3 User Adaptation
- lmgcp
 - libosmo-mgcp Media Gateway Control Protocol
- ljibuf
 - libosmo-netif Jitter Buffer
- lrspro
 - Remote SIM protocol
- lns
 - GPRS NS layer
- lbssgp
 - GPRS BSSGP layer
- lndata
 - GPRS NS layer data PDU
- lnsignal
 - 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 (smlc|ref|lb|lcs|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lg...

Command

```
logp (smlc|ref|lb|lcs|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup| ↵
    loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lndata|lnsignal|liuup| ↵
    lpfcplcsn1|lio|ltcap) (debug|info|notice|error|fatal) .LOGMESSAGE
```

Parameters

logp

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

smlc

Serving Mobile Location Center

ref

Reference Counting

lb

Lb interface

lcs

Location Services

lglobal

Library-internal global log family

llapd

LAPD in libosmogsm

linp
A-bis Input Subsystem

lmux
A-bis B-Subchannel TRAU Frame Multiplex

lmi
A-bis Input Driver for Signalling

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

lsms
Layer3 Short Message Service (SMS)

lctrl
Control Interface

lgtp
GPRS GTP library

lstats
Statistics messages and logging

lgsup
Generic Subscriber Update Protocol

loap
Osmocom Authentication Protocol

lss7
libosmo-sigtran Signalling System 7

lsccp
libosmo-sigtran SCCP Implementation

lsua
libosmo-sigtran SCCP User Adaptation

lm3ua
libosmo-sigtran MTP3 User Adaptation

lmgcp
libosmo-mgcp Media Gateway Control Protocol

ljibuf
libosmo-netif Jitter Buffer

lrspro
Remote SIM protocol

lns
GPRS NS layer

lbssgp
GPRS BSSGP layer

Insdata
GPRS NS layer data PDU

Inssignal
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 cells

Command

```
show cells
```

Parameters

show

Show running system information

cells

Show configured cell locations

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 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

1.2.50 show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

1.2.51 show pid

Command

```
show pid
```

Parameters

show

Show running system information

pid

Displays the process ID

1.2.52 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

1.2.53 show runtime

Command

```
show runtime
```

Parameters

show

Show running system information

runtime

Display runtime information

1.2.54 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

1.2.55 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

1.2.56 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

1.2.57 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

1.2.58 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)

1.2.59 show uptime

Command

```
show uptime
```

Parameters

show

Show running system information

uptime

Displays how long the program has been running

1.2.60 show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

1.2.61 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)

1.2.62 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

1.2.63 who

Command

```
who
```

Parameters

who

Display who is on vty

1.3 enable

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

1.3.1 configure [terminal]

Command

```
configure [terminal]
```

Parameters

configure

Configuration from vty interface

[terminal]

Configuration terminal

1.3.2 copy running-config startup-config

Command

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

Parameters

copy

Copy configuration

running-config

Copy running config to...

startup-config

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

1.3.3 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

1.3.4 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)

1.3.5 disable

Command

```
disable
```

Parameters

disable

Turn off privileged mode command

1.3.6 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

1.3.7 logging disable

Command

```
logging disable
```

Parameters

logging

Configure logging

disable

Disables logging to this vty

1.3.8 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

1.3.9 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

1.3.10 logging level (smlc|ref|lb|lcs|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|...

Command

```
logging level (smlc|ref|lb|lcs|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats| ↵
lgsup|loap|lss7|lscpp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lms|lbssgp|lmsdata|lmsignal| ↵
liuup|lpfcp|lcsn1|lio|ltcap) (debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

smlc

Serving Mobile Location Center

ref

Reference Counting

lb

Lb interface

lcs

Location Services

lglobal

Library-internal global log family

llapd

LAPD in libosmogsm

linp

A-bis Input Subsystem

lmux

A-bis B-Subchannel TRAU Frame Multiplex

lmi

A-bis Input Driver for Signalling

lmib

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

lsms

Layer3 Short Message Service (SMS)

lctrl

Control Interface

lgtp

GPRS GTP library

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

libosmo-sigtran MTP3 User Adaptation

lmgcp

libosmo-mgcp Media Gateway Control Protocol

ljibuf

libosmo-netif Jitter Buffer

lrspro

Remote SIM protocol

lns

GPRS NS layer

lbssgp

GPRS BSSGP layer

lndata

GPRS NS layer data PDU

lnsignal

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

1.3.11 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

1.3.12 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

1.3.13 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

1.3.14 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>')

1.3.15 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

1.3.16 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.

1.3.17 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

1.3.18 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

1.3.19 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

1.3.20 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

1.3.21 logp (smlc|ref|lb|lcs|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lg...

Command

```
logp (smlc|ref|lb|lcs|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup| ↵
    loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lndata|lnsignal|liuup| ↵
    lpfcplcsn1|lio|ltcap) (debug|info|notice|error|fatal) .LOGMESSAGE
```

Parameters

logp

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

smlc

Serving Mobile Location Center

ref

Reference Counting

lb

Lb interface

lcs

Location Services

lglobal

Library-internal global log family

llapd

LAPD in libosmogsm

linp
A-bis Input Subsystem

lmux
A-bis B-Subchannel TRAU Frame Multiplex

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A-bis Input Driver for Signalling

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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

Insdata
GPRS NS layer data PDU

Inssignal
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

1.3.22 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>'

1.3.23 show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

1.3.24 show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

1.3.25 show cells

Command

```
show cells
```

Parameters

show

Show running system information

cells

Show configured cell locations

1.3.26 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

1.3.27 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

1.3.28 show cs7 config

Command

```
show cs7 config
```

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

config

Currently running cs7 configuration

1.3.29 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

1.3.30 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)

1.3.31 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)

1.3.32 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)

1.3.33 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)

1.3.34 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

1.3.35 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)

1.3.36 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

1.3.37 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)

1.3.38 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

1.3.39 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

1.3.40 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

1.3.41 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

1.3.42 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

1.3.43 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)

1.3.44 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

1.3.45 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

1.3.46 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

1.3.47 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

1.3.48 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

1.3.49 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

1.3.50 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

1.3.51 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

1.3.52 show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

1.3.53 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

1.3.54 show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

1.3.55 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

1.3.56 show runtime

Command

```
show runtime
```

Parameters

show

Show running system information

runtime

Display runtime information

1.3.57 show startup-config

Command

```
show startup-config
```

Parameters

show

Show running system information

startup-config

Contentes of startup configuration

1.3.58 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

1.3.59 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

1.3.60 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

1.3.61 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

1.3.62 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)

1.3.63 show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

1.3.64 shutdown

Command

```
shutdown
```

Parameters

shutdown

Request a shutdown of the program

1.3.65 stats report

Command

```
stats report
```

Parameters

stats

Stats related commands

report

Manurally trigger reporting of stats

1.3.66 stats reset

Command

```
stats reset
```

Parameters

stats

Stats related commands

reset

Reset all rate counter stats

1.3.67 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)

1.3.68 terminal monitor

Command

```
terminal monitor
```

Parameters

terminal

Set terminal line parameters

monitor

Copy debug output to the current terminal line

1.3.69 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

1.3.70 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

1.3.71 who

Command

```
who
```

Parameters

who

Display who is on vty

1.4 config

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

1.4.1 banner motd default

Command

```
banner motd default
```

Parameters

banner

Set banner string

motd

Strings for motd

default

Default string

1.4.2 banner motd file [FILE]

Command

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

Parameters

banner

Set banner

motd

Banner for motd

file

Banner from a file

[FILE]

Filename

1.4.3 cells

Command

```
cells
```

Parameters

cells

Configure cell locations

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 hostname WORD

Command

```
hostname WORD
```

Parameters

hostname

Set system's network name

WORD

This system's network name

1.4.9 line vty

Command

```
line vty
```

Parameters

line

Configure a terminal line

vty

Virtual terminal

1.4.10 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

1.4.11 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

1.4.12 log gsmtap [HOSTNAME]

Command

```
log gsmtap [HOSTNAME]
```

Parameters

log

Configure logging sub-system

gsmtap

Logging via GSMTAP

[HOSTNAME]

Host name to send the GSMTAP logging to (UDP port 4729)

1.4.13 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

1.4.14 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

1.4.15 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

1.4.16 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

1.4.17 no banner motd

Command

```
no banner motd
```

Parameters

no

Negate a command or set its defaults

banner

Set banner string

motd

Strings for motd

1.4.18 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

1.4.19 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

1.4.20 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_strb

1.4.21 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

1.4.22 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)

1.4.23 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

1.4.24 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

1.4.25 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

1.4.26 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

1.4.27 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)

1.4.28 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

1.4.29 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

1.4.30 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

1.4.31 password LINE

Command

```
password LINE
```

Parameters

password

Assign the terminal connection password

LINE

The UNENCRYPTED (cleartext) line password

1.4.32 service advanced-vty

Command

```
service advanced-vty
```

Parameters

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

1.4.33 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)

1.4.34 show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

1.4.35 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)

1.4.36 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

1.4.37 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

1.4.38 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

1.4.39 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 (smlc|ref|lb|lcs|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|...

Command

```
logging level (smlc|ref|lb|lcs|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats| ↵
             lgsup|loap|lss7|lscdp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lndata|lnsignal| ↵
             liuup|lpfcp|lcsn1|lio|ltcap) (debug|info|notice|error|fatal)
```

Parameters

logging

Configure logging

level

Set the log level for a specified category

smlc

Serving Mobile Location Center

ref

Reference Counting

lb

Lb interface

lcs

Location Services

lglobal

Library-internal global log family

llapd

LAPD in libosmogsm

linp

A-bis Input Subsystem

lmux

A-bis B-Subchannel TRAU Frame Multiplex

lmi

A-bis Input Driver for Signalling

lmib

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

lsms

Layer3 Short Message Service (SMS)

lctrl

Control Interface

lgtp

GPRS GTP library

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

libosmo-sigtran MTP3 User Adaptation

lmgcp

libosmo-mgcp Media Gateway Control Protocol

ljibuf

libosmo-netif Jitter Buffer

lrspro

Remote SIM protocol

lms

GPRS NS layer

lbssgp

GPRS BSSGP layer

lmsdata

GPRS NS layer data PDU

lmsignal

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 tcap-routing

Command

```
no tcap-routing
```

Parameters

no

Negate a command or set its defaults

tcap-routing

Disable TCAP-based routing when in traffic-mode loadshare

1.10.7 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

1.10.8 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

1.10.9 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

1.10.10 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

1.10.11 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

1.10.12 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

1.10.13 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

1.10.14 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

1.10.15 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

1.10.16 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

1.10.17 tcap-routing

Command

```
tcap-routing
```

Parameters

tcap-routing

Enable TCAP-based routing when in traffic-mode loadshare

1.10.18 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

1.10.19 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 beginning 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 beginning 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-cells

1.14.1 cgi <0-999> <0-999> <0-65535> <0-65535> lat LATITUDE lon LONGITUDE

Command

```
cgi <0-999> <0-999> <0-65535> <0-65535> lat LATITUDE lon LONGITUDE
```

Parameters

cgi

Cell location by Cell-Global ID

<0-999>

MCC

<0-999>

MNC

<0-65535>

LAC

<0-65535>

CI

lat

Global latitude coordinate

LATITUDE

Latitude floating-point number, -90.0 (S) to 90.0 (N)

lon

Global longitude coordinate

LONGITUDE

Longitude as floating-point number, -180.0 (W) to 180.0 (E)

1.14.2 lac-ci <0-65535> <0-65535> lat LATITUDE lon LONGITUDE

Command

```
lac-ci <0-65535> <0-65535> lat LATITUDE lon LONGITUDE
```

Parameters

lac-ci

Cell location by LAC and CI

<0-65535>

LAC

<0-65535>

CI

lat

Global latitude coordinate

LATITUDE

Latitude floating-point number, -90.0 (S) to 90.0 (N)

lon

Global longitude coordinate

LONGITUDE

Longitude as floating-point number, -180.0 (W) to 180.0 (E)

1.14.3 no cgi <0-999> <0-999> <0-65535> <0-65535>

Command

```
no cgi <0-999> <0-999> <0-65535> <0-65535>
```

Parameters

no

Negate a command or set its defaults

cgi

Remove Cell location by Cell-Global ID

<0-999>

MCC

<0-999>

MNC

<0-65535>

LAC

<0-65535>

CI

1.14.4 no lac-ci <0-65535> <0-65535>

Command

```
no lac-ci <0-65535> <0-65535>
```

Parameters

no

Negate a command or set its defaults

lac-ci

Remove Cell location by LAC and CI

<0-65535>

LAC

<0-65535>

CI