

# **OsmoSGSN VTY Reference**

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**COLLABORATORS**

	<i>TITLE :</i> OsmoSGSN VTY Reference		
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# Contents

<b>1</b>	<b>VTY reference</b>	<b>1</b>
1.1	Common Commands	1
1.1.1	end	2
1.1.2	exit	2
1.1.3	help	2
1.1.4	list	2
1.1.5	show running-config	3
1.1.6	write	3
1.1.7	write file [PATH]	3
1.1.8	write memory	3
1.1.9	write terminal	4
1.2	view	4
1.2.1	bssgp bvc nsei <0-65535> bvci <0-65535> reset	4
1.2.2	enable	5
1.2.3	logging color (0 1)	5
1.2.4	logging disable	5
1.2.5	logging enable	6
1.2.6	logging filter all (0 1)	6
1.2.7	logging filter bvc nsei <0-65535> bvci <0-65535>	6
1.2.8	logging filter nsvc (nsei nsvci) <0-65535>	7
1.2.9	logging level (lmm paglmeas refl grs nslbssgplllclsndcplslhclranaplsualv42bis gt...	8
1.2.10	logging level force-all (debug info notice error fatal)	10
1.2.11	logging level set-all (debug info notice error fatal)	11
1.2.12	logging print category (0 1)	11
1.2.13	logging print category-hex (0 1)	12
1.2.14	logging print extended-timestamp (0 1)	12
1.2.15	logging print file (0 1 basename) [last]	13
1.2.16	logging print level (0 1)	13
1.2.17	logging set-log-mask MASK	14
1.2.18	logging timestamp (0 1)	14

1.2.19	logp (lmm pag meas ref gprs ns bssgp llc s ndcp s hcl ranap sua v42bis gtp l global...	14
1.2.20	no logging level force-all	17
1.2.21	show alarms	17
1.2.22	show asciidoc counters	17
1.2.23	show bssgp	18
1.2.24	show bssgp nsei <0-65535> [stats]	18
1.2.25	show bssgp stats	18
1.2.26	show cpu-sched threads	19
1.2.27	show cs7 (sualm3ualipa) [<0-65534>]	19
1.2.28	show cs7 config	19
1.2.29	show cs7 instance <0-15> as (active all m3ualsua)	20
1.2.30	show cs7 instance <0-15> asp	20
1.2.31	show cs7 instance <0-15> sccp addressbook	21
1.2.32	show cs7 instance <0-15> sccp connections	21
1.2.33	show cs7 instance <0-15> sccp ssn <0-65535>	22
1.2.34	show cs7 instance <0-15> sccp timers	22
1.2.35	show cs7 instance <0-15> sccp users	23
1.2.36	show cs7 instance <0-15> users	23
1.2.37	show history	24
1.2.38	show llc	24
1.2.39	show logging vty	25
1.2.40	show mm-context all [pdp]	25
1.2.41	show mm-context imsi IMSI [pdp]	25
1.2.42	show ns	26
1.2.43	show ns (nsei nsvc) <0-65535> [stats]	26
1.2.44	show ns persistent	27
1.2.45	show ns stats	27
1.2.46	show online-help	27
1.2.47	show pdp-context all	28
1.2.48	show rate-counters	28
1.2.49	show sgsn	28
1.2.50	show sndcp	29
1.2.51	show stats	29
1.2.52	show stats level (global peer subscriber)	29
1.2.53	show subscriber cache	30
1.2.54	show talloc-context (application all) (full brief DEPTH)	30
1.2.55	show talloc-context (application all) (full brief DEPTH) filter REGEXP	31
1.2.56	show talloc-context (application all) (full brief DEPTH) tree ADDRESS	31
1.2.57	show timer [TNNNN]	32

1.2.58	show version . . . . .	32
1.2.59	terminal length <0-512> . . . . .	33
1.2.60	terminal no length . . . . .	33
1.2.61	who . . . . .	33
1.3	enable . . . . .	33
1.3.1	bssgp bvc nsei <0-65535> bvci <0-65535> reset . . . . .	34
1.3.2	configure terminal . . . . .	34
1.3.3	copy running-config startup-config . . . . .	34
1.3.4	disable . . . . .	35
1.3.5	logging color (01) . . . . .	35
1.3.6	logging disable . . . . .	35
1.3.7	logging enable . . . . .	36
1.3.8	logging filter all (01) . . . . .	36
1.3.9	logging filter bvc nsei <0-65535> bvci <0-65535> . . . . .	36
1.3.10	logging filter nsvc (nseilnsvci) <0-65535> . . . . .	37
1.3.11	logging level (lmm paglmeas refl gpr sl bssgp llc s ndc pl hcl ranap sualv42bis gt... . . . .	38
1.3.12	logging level force-all (debug info notice error fatal) . . . . .	40
1.3.13	logging level set-all (debug info notice error fatal) . . . . .	41
1.3.14	logging print category (01) . . . . .	41
1.3.15	logging print category-hex (01) . . . . .	42
1.3.16	logging print extended-timestamp (01) . . . . .	42
1.3.17	logging print file (01 basename) [last] . . . . .	43
1.3.18	logging print level (01) . . . . .	43
1.3.19	logging set-log-mask MASK . . . . .	44
1.3.20	logging timestamp (01) . . . . .	44
1.3.21	logp (lmm paglmeas refl gpr sl bssgp llc s ndc pl hcl ranap sualv42bis gt pl global... . . . .	44
1.3.22	no logging level force-all . . . . .	47
1.3.23	nsvc (nseilnsvci) <0-65535> (block unblock reset) . . . . .	47
1.3.24	show alarms . . . . .	48
1.3.25	show asciidoc counters . . . . .	48
1.3.26	show bssgp . . . . .	48
1.3.27	show bssgp nsei <0-65535> [stats] . . . . .	49
1.3.28	show bssgp stats . . . . .	49
1.3.29	show cpu-sched threads . . . . .	49
1.3.30	show cs7 (sualm3ualipa) [<0-65534>] . . . . .	50
1.3.31	show cs7 config . . . . .	50
1.3.32	show cs7 instance <0-15> as (active all m3ualsua) . . . . .	50
1.3.33	show cs7 instance <0-15> asp . . . . .	51
1.3.34	show cs7 instance <0-15> sccp addressbook . . . . .	52

1.3.35	show cs7 instance <0-15> sccp connections . . . . .	52
1.3.36	show cs7 instance <0-15> sccp ssn <0-65535> . . . . .	53
1.3.37	show cs7 instance <0-15> sccp timers . . . . .	53
1.3.38	show cs7 instance <0-15> sccp users . . . . .	54
1.3.39	show cs7 instance <0-15> users . . . . .	54
1.3.40	show history . . . . .	55
1.3.41	show llc . . . . .	55
1.3.42	show logging vty . . . . .	55
1.3.43	show mm-context all [pdp] . . . . .	56
1.3.44	show mm-context imsi IMSI [pdp] . . . . .	56
1.3.45	show ns . . . . .	56
1.3.46	show ns (nseilnsvc) <0-65535> [stats] . . . . .	57
1.3.47	show ns persistent . . . . .	57
1.3.48	show ns stats . . . . .	57
1.3.49	show online-help . . . . .	58
1.3.50	show pdp-context all . . . . .	58
1.3.51	show rate-counters . . . . .	58
1.3.52	show sgsn . . . . .	59
1.3.53	show sndcp . . . . .	59
1.3.54	show startup-config . . . . .	59
1.3.55	show stats . . . . .	59
1.3.56	show stats level (globalpeer subscriber) . . . . .	60
1.3.57	show subscriber cache . . . . .	60
1.3.58	show talloc-context (application all) (full brief DEPTH) . . . . .	60
1.3.59	show talloc-context (application all) (full brief DEPTH) filter REGEXP . . . . .	61
1.3.60	show talloc-context (application all) (full brief DEPTH) tree ADDRESS . . . . .	62
1.3.61	show timer [TNNNN] . . . . .	62
1.3.62	show version . . . . .	63
1.3.63	stats report . . . . .	63
1.3.64	stats reset . . . . .	63
1.3.65	terminal length <0-512> . . . . .	64
1.3.66	terminal monitor . . . . .	64
1.3.67	terminal no length . . . . .	64
1.3.68	terminal no monitor . . . . .	65
1.3.69	update-subscriber imsi IMSI cancel (update-procedure subscription-withdraw) . . . . .	65
1.3.70	update-subscriber imsi IMSI create . . . . .	65
1.3.71	update-subscriber imsi IMSI destroy . . . . .	66
1.3.72	update-subscriber imsi IMSI insert auth-triplet <1-5> sres SRES rand RAND kc KC . . . . .	66
1.3.73	update-subscriber imsi IMSI update-auth-info . . . . .	67

1.3.74	update-subscriber imsi IMSI update-location-result (ok system-failure data-missi...	67
1.3.75	who	68
1.4	config	68
1.4.1	banner motd default	69
1.4.2	banner motd file [FILE]	69
1.4.3	bssgp	69
1.4.4	cpu-sched	70
1.4.5	cs7 instance <0-15>	70
1.4.6	ctrl	70
1.4.7	enable password (8l) WORD	70
1.4.8	enable password LINE	71
1.4.9	hostname WORD	71
1.4.10	line vty	72
1.4.11	log alarms <2-32700>	72
1.4.12	log file .FILENAME	72
1.4.13	log gsmtp [HOSTNAME]	73
1.4.14	log stderr	73
1.4.15	log syslog (authpriv cron daemon ftp lpr mail news user uucp)	73
1.4.16	log syslog local <0-7>	74
1.4.17	no banner motd	74
1.4.18	no enable password	75
1.4.19	no hostname [HOSTNAME]	75
1.4.20	no log alarms	75
1.4.21	no log file .FILENAME	76
1.4.22	no log stderr	76
1.4.23	no log syslog	76
1.4.24	no service advanced-vty	77
1.4.25	no service terminal-length [<0-512>]	77
1.4.26	no stats reporter log	77
1.4.27	no stats reporter statsd	78
1.4.28	ns	78
1.4.29	password (8l) WORD	78
1.4.30	password LINE	79
1.4.31	service advanced-vty	79
1.4.32	service terminal-length <0-512>	79
1.4.33	sgsn	80
1.4.34	show history	80
1.4.35	stats interval <0-65535>	80
1.4.36	stats reporter log	81



1.4.37	stats reporter statsd . . . . .	81
1.5	config-log . . . . .	81
1.5.1	logging color (0 1) . . . . .	81
1.5.2	logging filter all (0 1) . . . . .	82
1.5.3	logging filter bvc nsei <0-65535> bvci <0-65535> . . . . .	82
1.5.4	logging filter nsvc (nsei nsvci) <0-65535> . . . . .	83
1.5.5	logging level (lmm paglmeas refl gpr ns bss gpl lcl s ndcp slhcl ranap sualv42bis gt... . . . .	83
1.5.6	logging level force-all (debug info notice error fatal) . . . . .	86
1.5.7	logging level set-all (debug info notice error fatal) . . . . .	86
1.5.8	logging print category (0 1) . . . . .	87
1.5.9	logging print category-hex (0 1) . . . . .	87
1.5.10	logging print extended-timestamp (0 1) . . . . .	88
1.5.11	logging print file (0 1 basename) [last] . . . . .	88
1.5.12	logging print level (0 1) . . . . .	89
1.5.13	logging timestamp (0 1) . . . . .	89
1.5.14	no logging level force-all . . . . .	90
1.6	config-stats . . . . .	90
1.6.1	disable . . . . .	90
1.6.2	enable . . . . .	90
1.6.3	flush-period <0-65535> . . . . .	91
1.6.4	level (global peer subscriber) . . . . .	91
1.6.5	local-ip ADDR . . . . .	91
1.6.6	mtu <100-65535> . . . . .	92
1.6.7	no local-ip . . . . .	92
1.6.8	no mtu . . . . .	92
1.6.9	no prefix . . . . .	92
1.6.10	prefix PREFIX . . . . .	93
1.6.11	remote-ip ADDR . . . . .	93
1.6.12	remote-port <1-65535> . . . . .	93
1.7	config-line . . . . .	94
1.7.1	bind A.B.C.D [<0-65535>] . . . . .	94
1.7.2	login . . . . .	94
1.7.3	no login . . . . .	94
1.8	config-ns . . . . .	95
1.8.1	encapsulation framerelay-gre enabled (1 0) . . . . .	95
1.8.2	encapsulation framerelay-gre local-ip A.B.C.D . . . . .	95
1.8.3	encapsulation udp dscp <0-255> . . . . .	96
1.8.4	encapsulation udp local-ip A.B.C.D . . . . .	96
1.8.5	encapsulation udp local-port <0-65535> . . . . .	96

1.8.6	encapsulation udp use-reset-block-unblock (enabled disabled)	97
1.8.7	no nse <0-65535>	97
1.8.8	nse <0-65535> encapsulation (udp framerelay-gre)	98
1.8.9	nse <0-65535> fr-dlci <16-1007>	98
1.8.10	nse <0-65535> nsvci <0-65534>	98
1.8.11	nse <0-65535> remote-ip A.B.C.D	99
1.8.12	nse <0-65535> remote-port <0-65535>	99
1.8.13	nse <0-65535> remote-role (sgsn bss)	100
1.8.14	timer (tns-block tns-block-retries tns-reset tns-reset-retries tns-test tns-aliv...	100
1.9	config-bssgp	101
1.10	config-ctrl	101
1.10.1	bind A.B.C.D	101
1.11	config-cs7	101
1.11.1	as NAME (su alm3 ualipa)	101
1.11.2	asp NAME <0-65535> <0-65535> (su alm3 ualipa)	102
1.11.3	description .TEXT	102
1.11.4	network-indicator (international   national   reserved   spare)	102
1.11.5	no as NAME	103
1.11.6	no asp NAME	103
1.11.7	no sccp-address NAME	104
1.11.8	point-code POINT_CODE	104
1.11.9	point-code delimiter (default dash)	104
1.11.10	point-code format <1-24> [<1-23>] [<1-22>]	105
1.11.11	point-code format default	105
1.11.12	sccp-address NAME	105
1.11.13	sccp-timer (conn_est ias iar rell repeat_rell nt guard reset reassembly) <1-99999...	106
1.11.14	xua rkm routing-key-allocation (static-only dynamic-permitted)	106
1.12	config-cs7-as	107
1.12.1	asp NAME	107
1.12.2	description .TEXT	107
1.12.3	no asp NAME	108
1.12.4	no traffic-mode	108
1.12.5	point-code override dpc PC	108
1.12.6	point-code override patch-sccp (disabled both)	109
1.12.7	qos-class <0-255>	109
1.12.8	recovery-timeout <1-2000>	109
1.12.9	routing-key RCONTEXT DPC	110
1.12.10	routing-key RCONTEXT DPC si (aal2 bic b-isup h248 isup sat-isup sccp tup)	110
1.12.11	routing-key RCONTEXT DPC si (aal2 bic b-isup h248 isup sat-isup sccp tup) ssn S...	111

1.12.12 routing-key RCONTEXT DPC ssn SSN . . . . .	112
1.12.13 traffic-mode (broadcast   loadshare   roundrobin   override) . . . . .	112
1.13 config-cs7-asp . . . . .	113
1.13.1 block . . . . .	113
1.13.2 description TEXT . . . . .	113
1.13.3 local-ip A.B.C.D . . . . .	113
1.13.4 qos-class <0-255> . . . . .	113
1.13.5 remote-ip A.B.C.D . . . . .	114
1.13.6 role (sglasplisp) . . . . .	114
1.13.7 sctp-role (client server) . . . . .	114
1.13.8 shutdown . . . . .	115
1.14 config-cs7-sccpaddr . . . . .	115
1.14.1 global-title . . . . .	115
1.14.2 no global-title . . . . .	115
1.14.3 no point-code . . . . .	115
1.14.4 no subsystem-number . . . . .	116
1.14.5 point-code POINT_CODE . . . . .	116
1.14.6 routing-indicator (GT PC IP) . . . . .	116
1.14.7 subsystem-number <0-4294967295> . . . . .	117
1.15 config-cs7-sccpaddr-gt . . . . .	117
1.15.1 digits DIGITS . . . . .	117
1.15.2 global-title-indicator <0-15> . . . . .	117
1.15.3 nature-of-address-indicator <0-127> . . . . .	118
1.15.4 numbering-plan-indicator <0-15> . . . . .	118
1.15.5 translation-type <0-255> . . . . .	118
1.16 config-cpu-sched . . . . .	119
1.16.1 cpu-affinity (self all <0-4294967295> THREADNAME) CPUHEXMASK [delay] . . . . .	119
1.16.2 policy rr <1-32> . . . . .	119
1.17 config-sgsn . . . . .	119
1.17.1 access-point-name NAME . . . . .	120
1.17.2 apn APNAME ggsn <0-255> . . . . .	120
1.17.3 apn APNAME imsi-prefix IMSIPRE ggsn <0-255> . . . . .	120
1.17.4 asn1 debug (1 0) . . . . .	121
1.17.5 asn1 xer-print (1 0) . . . . .	121
1.17.6 auth-policy (accept-all closed acl-only remote) . . . . .	122
1.17.7 authentication (optional required) . . . . .	122
1.17.8 cdr filename NAME . . . . .	122
1.17.9 cdr interval <1-2147483647> . . . . .	123
1.17.10 cdr trap . . . . .	123

1.17.11 compression rfc1144 active slots <1-256> . . . . .	123
1.17.12 compression rfc1144 passive . . . . .	124
1.17.13 compression v42bis active direction (mslsgsnlboth) codewords <512-65535> strlen ... . . . .	124
1.17.14 compression v42bis passive . . . . .	125
1.17.15 cs7-instance-iu <0-15> . . . . .	125
1.17.16 encryption (GEA0 GEA1 GEA2 GEA3 GEA4) . . . . .	125
1.17.17 ggsn <0-255> echo-interval <1-36000> . . . . .	126
1.17.18 ggsn <0-255> gtp-version (0 1) . . . . .	126
1.17.19 ggsn <0-255> no echo-interval . . . . .	126
1.17.20 ggsn <0-255> remote-ip A.B.C.D . . . . .	127
1.17.21 ggsn dynamic . . . . .	127
1.17.22 grx-dns-add A.B.C.D . . . . .	128
1.17.23 gsup ipa-name NAME . . . . .	128
1.17.24 gsup oap-id <0-65535> . . . . .	128
1.17.25 gsup oap-k K . . . . .	129
1.17.26 gsup oap-opc OPC . . . . .	129
1.17.27 gsup remote-ip A.B.C.D . . . . .	129
1.17.28 gsup remote-port <0-65535> . . . . .	130
1.17.29 gtp local-ip A.B.C.D . . . . .	130
1.17.30 imsi-acl (add del) IMSI . . . . .	130
1.17.31 iu rab-assign-addr-enc (x213 v4raw) . . . . .	131
1.17.32 no access-point-name NAME . . . . .	131
1.17.33 no cdr filename . . . . .	131
1.17.34 no cdr trap . . . . .	132
1.17.35 no compression rfc1144 . . . . .	132
1.17.36 no compression v42bis . . . . .	132
1.17.37 timer [TNNNN] [(<0-2147483647> default)] . . . . .	133

# 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

## Common Commands

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

## end

### Command

```
end
```

### Parameters

end

End current mode and change to enable mode.

## exit

### Command

```
exit
```

### Parameters

exit

Exit current mode and down to previous mode

## help

### Command

```
help
```

### Parameters

help

Description of the interactive help system

## list

### Command

```
list
```

### Parameters

list

Print command list

---

## show running-config

### Command

```
show running-config
```

### Parameters

show

Show running system information

running-config

running configuration

## write

### Command

```
write
```

### Parameters

write

Write running configuration to memory, network, or terminal

## write file [PATH]

### Command

```
write file [PATH]
```

### Parameters

write

Write running configuration to memory, network, or terminal

file

Write to configuration file

[PATH]

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

## write memory

### Command

```
write memory
```

### Parameters

write

Write running configuration to memory, network, or terminal

memory

Write configuration to the file (same as write file)

---



## write terminal

### Command

```
write terminal
```

### Parameters

#### write

Write running configuration to memory, network, or terminal

#### terminal

Write to terminal

## view

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

## bssgp bvc nsei <0-65535> bvci <0-65535> reset

### Command

```
bssgp bvc nsei <0-65535> bvci <0-65535> reset
```

### Parameters

#### bssgp

Initiate BVC RESET procedure for a given NSEI and BVCI

#### bvc

Filter based on BSSGP Virtual Connection

#### nsei

NSEI of the BVC to be filtered

#### <0-65535>

Network Service Entity Identifier (NSEI)

#### bvci

BVCI of the BVC to be filtered

#### <0-65535>

BSSGP Virtual Connection Identifier (BVCI)

#### reset

Perform reset procedure

---

## enable

### Command

```
enable
```

### Parameters

#### enable

Turn on privileged mode command

## logging color (0|1)

### Command

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

### Parameters

#### logging

Configure logging

#### color

Configure color-printing for log messages

#### 0

Don't use color for printing messages

#### 1

Use color for printing messages

## logging disable

### Command

```
logging disable
```

### Parameters

#### logging

Configure logging

#### disable

Disables logging to this vty

---

## logging enable

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

### Command

```
logging enable
```

### Parameters

logging

Configure logging

enable

Enables logging to this vty

## logging filter all (0|1)

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

### Command

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

### Parameters

logging

Configure logging

filter

Filter log messages

all

Do you want to log all messages?

0

Only print messages matched by other filters

1

Bypass filter and print all messages

## logging filter bvc nsei <0-65535> bvci <0-65535>

### Command

```
logging filter bvc nsei <0-65535> bvci <0-65535>
```

### Parameters

---

**logging**

Configure logging

**filter**

Filter log messages

**bvc**

Filter based on BSSGP Virtual Connection

**nsei**

NSEI of the BVC to be filtered

<0-65535>

Network Service Entity Identifier (NSEI)

**bvci**

BVCI of the BVC to be filtered

<0-65535>

BSSGP Virtual Connection Identifier (BVCI)

**logging filter nsvc (nsei|nsvci) <0-65535>****Command**

```
logging filter nsvc (nsei|nsvci) <0-65535>
```

**Parameters****logging**

Configure logging

**filter**

Filter log messages

**nsvc**

Filter based on NS Virtual Connection

**nsei**

Identify NS-VC by NSEI

**nsvci**

Identify NS-VC by NSVCI

<0-65535>

Numeric identifier

**logging level (|mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|gt...**

## Command

```
logging level (|mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|gtp| ↔  
lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua| ↔  
lm3ua|lmgcp|ljibuf|lrspro) (debug|info|notice|error|fatal)
```

## Parameters

## logging

Configure logging

## level

Set the log level for a specified category

## mm

Layer3 Mobility Management (MM)

## pag

Paging Subsystem

## meas

Radio Measurement Processing

## ref

Reference Counting

## gprs

GPRS Packet Service

## ns

GPRS Network Service (NS)

## bssgp

GPRS BSS Gateway Protocol (BSSGP)

## llc

GPRS Logical Link Control Protocol (LLC)

## sndcp

GPRS Sub-Network Dependent Control Protocol (SND CP)

## slhc

RFC1144 TCP/IP Header compression (SLHC)

## ranap

RAN Application Part (RANAP)

## sua

SCCP User Adaptation (SUA)

## v42bis

V.42bis data compression (SND CP)

gtp  
GPRS Tunnelling Protocol (GTP)

lglobal  
Library-internal global log family

llapd  
LAPD in libosmogsm

linp  
A-bis Input Subsystem

lmux  
A-bis B-Subchannel TRAU Frame Multiplex

lmi  
A-bis Input Driver for Signalling

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

lsms  
Layer3 Short Message Service (SMS)

lctrl  
Control Interface

lgtp  
GPRS GTP library

lstats  
Statistics messages and logging

lgsup  
Generic Subscriber Update Protocol

loap  
Osmocom Authentication Protocol

lss7  
libosmo-sigtran Signalling System 7

lsccp  
libosmo-sigtran SCCP Implementation

lsua  
libosmo-sigtran SCCP User Adaptation

lm3ua  
libosmo-sigtran MTP3 User Adaptation

lmgcp  
libosmo-mgcp Media Gateway Control Protocol

ljibuf  
libosmo-netif Jitter Buffer

---

**lrspro**

Remote SIM protocol

**debug**

Log debug messages and higher levels

**info**

Log informational messages and higher levels

**notice**

Log noticeable messages and higher levels

**error**

Log error messages and higher levels

**fatal**

Log only fatal messages

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

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

**Parameters****logging**

Configure logging

**level**

Set the log level for a specified category

**force-all**

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

**debug**

Log debug messages and higher levels

**info**

Log informational messages and higher levels

**notice**

Log noticeable messages and higher levels

**error**

Log error messages and higher levels

**fatal**

Log only fatal messages

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

### Command

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

### Parameters

#### logging

Configure logging

#### level

Set the log level for a specified category

#### set-all

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

#### debug

Log debug messages and higher levels

#### info

Log informational messages and higher levels

#### notice

Log noticeable messages and higher levels

#### error

Log error messages and higher levels

#### fatal

Log only fatal messages

## logging print category (0|1)

### Command

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

### Parameters

#### logging

Configure logging

#### print

Log output settings

#### category

Configure log message

#### 0

Don't prefix each log message

#### 1

Prefix each log message with category/subsystem name

---



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

### Command

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

### Parameters

#### logging

Configure logging

#### print

Log output settings

#### category-hex

Configure log message

0

Don't prefix each log message

1

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

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

### Command

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

### Parameters

#### logging

Configure logging

#### print

Log output settings

#### extended-timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

---

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

### Command

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

### Parameters

#### logging

Configure logging

#### print

Log output settings

#### file

Configure log message

#### 0

Don't prefix each log message

#### 1

Prefix each log message with the source file and line

#### basename

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

#### [last]

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

## logging print level (0|1)

### Command

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

### Parameters

#### logging

Configure logging

#### print

Log output settings

#### level

Configure log message

#### 0

Don't prefix each log message

#### 1

Prefix each log message with the log level name

---

## logging set-log-mask MASK

### Command

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

### Parameters

#### logging

Configure logging

#### set-log-mask

Set the logmask of this logging target

#### MASK

List of logging categories to log, e.g. 'abc:mno:xyz'. Available log categories depend on the specific application, refer to the 'logging level' command. Optionally add individual log levels like 'abc,1:mno,3:xyz,5', where the level numbers are LOGL\_DEBUG=1 LOGL\_INFO=3 LOGL\_NOTICE=5 LOGL\_ERROR=7 LOGL\_FATAL=8

## logging timestamp (0|1)

### Command

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

### Parameters

#### logging

Configure logging

#### timestamp

Configure log message timestamping

#### 0

Don't prefix each log message

#### 1

Prefix each log message with current timestamp

## logp ([mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|gtp|lglobal...

### Command

```
logp ([mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|gtp|lglobal|llapd| ↵  
linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp| ↵  
ljibuf|lrspro) (debug|info|notice|error|fatal) .LOGMESSAGE
```

### Parameters

#### logp

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

---

mm  
Layer3 Mobility Management (MM)

pag  
Paging Subsystem

meas  
Radio Measurement Processing

ref  
Reference Counting

gprs  
GPRS Packet Service

ns  
GPRS Network Service (NS)

bssgp  
GPRS BSS Gateway Protocol (BSSGP)

llc  
GPRS Logical Link Control Protocol (LLC)

sndcp  
GPRS Sub-Network Dependent Control Protocol (SNDCP)

slhc  
RFC1144 TCP/IP Header compression (SLHC)

ranap  
RAN Application Part (RANAP)

sua  
SCCP User Adaptation (SUA)

v42bis  
V.42bis data compression (SNDCP)

gtp  
GPRS Tunnelling Protocol (GTP)

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

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libosmo-sigtran Signalling System 7

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libosmo-sigtran SCCP Implementation

lsua  
libosmo-sigtran SCCP User Adaptation

lm3ua  
libosmo-sigtran MTP3 User Adaptation

lmgcp  
libosmo-mgcp Media Gateway Control Protocol

ljibuf  
libosmo-netif Jitter Buffer

lrspro  
Remote SIM protocol

debug  
Log debug messages and higher levels

info  
Log informational messages and higher levels

notice  
Log noticeable messages and higher levels

error  
Log error messages and higher levels

fatal  
Log only fatal messages

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

---

## no logging level force-all

### Command

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

### Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

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

## show alarms

### Command

```
show alarms
```

### Parameters

show

Show running system information

alarms

Show current logging configuration

## show asciidoc counters

### Command

```
show asciidoc counters
```

### Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

---

## show bssgp

### Command

```
show bssgp
```

### Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

## show bssgp nsei <0-65535> [stats]

### Command

```
show bssgp nsei <0-65535> [stats]
```

### Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

nsei

Show all BVCs on one NSE

<0-65535>

The NSEI

[stats]

Include Statistics

## show bssgp stats

### Command

```
show bssgp stats
```

### Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

stats

Include statistics

## show cpu-sched threads

### Command

```
show cpu-sched threads
```

### Parameters

show

Show running system information

cpu-sched

Show Sched section information

threads

Show information about running threads)

## 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>]

Port Number

## show cs7 config

### Command

```
show cs7 config
```

### Parameters

---



show

Show running system information

cs7

ITU-T Signaling System 7

config

Currently running cs7 configuration

## **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

## **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)

### **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

### **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

### **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)

### **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

### **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

### **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

## show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

## show llc

Command

```
show llc
```

Parameters

show

Show running system information

llc

Display information about the LLC protocol

## show logging vty

### Command

```
show logging vty
```

### Parameters

show

Show running system information

logging

Show current logging configuration

vtty

Show current logging configuration for this vty

## show mm-context all [pdp]

### Command

```
show mm-context all [pdp]
```

### Parameters

show

Show running system information

mm-context

MM Context

all

All MM Contexts

[pdp]

Include PDP Context Information

## show mm-context imsi IMSI [pdp]

### Command

```
show mm-context imsi IMSI [pdp]
```

### Parameters

show

Show running system information

mm-context

MM Context

---

imsi

Identify by IMSI

IMSI

IMSI of the MM Context

[pdp]

Include PDP Context Information

## show ns

Command

```
show ns
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

## show ns (nsei|nsvc) <0-65535> [stats]

Command

```
show ns (nsei|nsvc) <0-65535> [stats]
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

nsei

Select one NSE by its NSE Identifier

nsvc

Select one NSE by its NS-VC Identifier

<0-65535>

The Identifier of selected type

[stats]

Include Statistics

## show ns persistent

### Command

```
show ns persistent
```

### Parameters

show

Show running system information

ns

Display information about the NS protocol

persistent

Show only persistent NS

## show ns stats

### Command

```
show ns stats
```

### Parameters

show

Show running system information

ns

Display information about the NS protocol

stats

Include statistics

## show online-help

### Command

```
show online-help
```

### Parameters

show

Show running system information

online-help

Online help



## show pdp-context all

### Command

```
show pdp-context all
```

### Parameters

show

Show running system information

pdp-context

Display information on PDP Context

all

Show everything

## show rate-counters

### Command

```
show rate-counters
```

### Parameters

show

Show running system information

rate-counters

Show all rate counters

## show sgsn

### Command

```
show sgsn
```

### Parameters

show

Show running system information

sgsn

Display information about the SGSN

## show sndcp

### Command

```
show sndcp
```

### Parameters

#### show

Show running system information

#### sndcp

Display information about the SNDCP protocol

## show stats

### Command

```
show stats
```

### Parameters

#### show

Show running system information

#### stats

Show statistical values

## show stats level (global|peer|subscriber)

### Command

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

### Parameters

#### show

Show running system information

#### stats

Show statistical values

#### level

Set the maximum group level

#### global

Show global groups only

#### peer

Show global and network peer related groups

#### subscriber

Show global, peer, and subscriber groups

---

## show subscriber cache

### Command

```
show subscriber cache
```

### Parameters

show

Show running system information

subscriber

Show information about subscribers

cache

Display contents of subscriber cache

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

### Command

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

### Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

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

---

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

## Command

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

## Parameters

## show

Show running system information

## talloc-context

Show talloc memory hierarchy

## application

Application's context

## 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

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

## Command

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

## Parameters

## show

Show running system information

## talloc-context

Show talloc memory hierarchy

## application

Application's context

## 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)

## show timer [TNNNN]

Command

```
show timer [TNNNN]
```

Parameters

show

Show running system information

timer

Show timers

[TNNNN]

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

## show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

## terminal length <0-512>

### Command

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

### Parameters

#### terminal

Set terminal line parameters

#### length

Set number of lines on a screen

#### <0-512>

Number of lines on screen (0 for no pausing)

## terminal no length

### Command

```
terminal no length
```

### Parameters

#### terminal

Set terminal line parameters

#### no

Negate a command or set its defaults

#### length

Set number of lines on a screen

## who

### Command

```
who
```

### Parameters

#### who

Display who is on vty

## enable

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

---

**bssgp bvc nsei <0-65535> bvci <0-65535> reset**

## Command

```
bssgp bvc nsei <0-65535> bvci <0-65535> reset
```

## Parameters

## bssgp

Initiate BVC RESET procedure for a given NSEI and BVCI

## bvc

Filter based on BSSGP Virtual Connection

## nsei

NSEI of the BVC to be filtered

## &lt;0-65535&gt;

Network Service Entity Identifier (NSEI)

## bvci

BVCI of the BVC to be filtered

## &lt;0-65535&gt;

BSSGP Virtual Connection Identifier (BVCI)

## reset

Perform reset procedure

**configure terminal**

## Command

```
configure terminal
```

## Parameters

## configure

Configuration from vty interface

## terminal

Configuration terminal

**copy running-config startup-config**

## Command

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

## Parameters

copy

Copy configuration

running-config

Copy running config to...

startup-config

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

## disable

Command

```
disable
```

Parameters

disable

Turn off privileged mode command

## logging color (0|1)

Command

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

Parameters

logging

Configure logging

color

Configure color-printing for log messages

0

Don't use color for printing messages

1

Use color for printing messages

## logging disable

Command

```
logging disable
```

Parameters

logging

Configure logging

disable

Disables logging to this vty

---



## logging enable

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

### Command

```
logging enable
```

### Parameters

#### logging

Configure logging

#### enable

Enables logging to this vty

## logging filter all (0|1)

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

### Command

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

### Parameters

#### logging

Configure logging

#### filter

Filter log messages

#### all

Do you want to log all messages?

#### 0

Only print messages matched by other filters

#### 1

Bypass filter and print all messages

## logging filter bvc nsei <0-65535> bvci <0-65535>

### Command

```
logging filter bvc nsei <0-65535> bvci <0-65535>
```

### Parameters

---

**logging**

Configure logging

**filter**

Filter log messages

**bvc**

Filter based on BSSGP Virtual Connection

**nsei**

NSEI of the BVC to be filtered

<0-65535>

Network Service Entity Identifier (NSEI)

**bvci**

BVCI of the BVC to be filtered

<0-65535>

BSSGP Virtual Connection Identifier (BVCI)

**logging filter nsvc (nsei|nsvci) <0-65535>****Command**

```
logging filter nsvc (nsei|nsvci) <0-65535>
```

**Parameters****logging**

Configure logging

**filter**

Filter log messages

**nsvc**

Filter based on NS Virtual Connection

**nsei**

Identify NS-VC by NSEI

**nsvci**

Identify NS-VC by NSVCI

<0-65535>

Numeric identifier

**logging level (|mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|gt...**

## Command

```
logging level (|mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|gtp| ↔  
lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua| ↔  
lm3ua|lmgcp|ljibuf|lrspro) (debug|info|notice|error|fatal)
```

## Parameters

## logging

Configure logging

## level

Set the log level for a specified category

## mm

Layer3 Mobility Management (MM)

## pag

Paging Subsystem

## meas

Radio Measurement Processing

## ref

Reference Counting

## gprs

GPRS Packet Service

## ns

GPRS Network Service (NS)

## bssgp

GPRS BSS Gateway Protocol (BSSGP)

## llc

GPRS Logical Link Control Protocol (LLC)

## sndcp

GPRS Sub-Network Dependent Control Protocol (SND CP)

## slhc

RFC1144 TCP/IP Header compression (SLHC)

## ranap

RAN Application Part (RANAP)

## sua

SCCP User Adaptation (SUA)

## v42bis

V.42bis data compression (SND CP)

---

gtp  
GPRS Tunnelling Protocol (GTP)

lglobal  
Library-internal global log family

llapd  
LAPD in libosmogsm

linp  
A-bis Input Subsystem

lmux  
A-bis B-Subchannel TRAU Frame Multiplex

lmi  
A-bis Input Driver for Signalling

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

lsms  
Layer3 Short Message Service (SMS)

lctrl  
Control Interface

lgtp  
GPRS GTP library

lstats  
Statistics messages and logging

lgsup  
Generic Subscriber Update Protocol

loap  
Osmocom Authentication Protocol

lss7  
libosmo-sigtran Signalling System 7

lsccp  
libosmo-sigtran SCCP Implementation

lsua  
libosmo-sigtran SCCP User Adaptation

lm3ua  
libosmo-sigtran MTP3 User Adaptation

lmgcp  
libosmo-mgcp Media Gateway Control Protocol

ljibuf  
libosmo-netif Jitter Buffer

---

**lrspro**

Remote SIM protocol

**debug**

Log debug messages and higher levels

**info**

Log informational messages and higher levels

**notice**

Log noticeable messages and higher levels

**error**

Log error messages and higher levels

**fatal**

Log only fatal messages

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

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

**Parameters****logging**

Configure logging

**level**

Set the log level for a specified category

**force-all**

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

**debug**

Log debug messages and higher levels

**info**

Log informational messages and higher levels

**notice**

Log noticeable messages and higher levels

**error**

Log error messages and higher levels

**fatal**

Log only fatal messages

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

### Command

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

### Parameters

#### logging

Configure logging

#### level

Set the log level for a specified category

#### set-all

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

#### debug

Log debug messages and higher levels

#### info

Log informational messages and higher levels

#### notice

Log noticeable messages and higher levels

#### error

Log error messages and higher levels

#### fatal

Log only fatal messages

## logging print category (0|1)

### Command

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

### Parameters

#### logging

Configure logging

#### print

Log output settings

#### category

Configure log message

#### 0

Don't prefix each log message

#### 1

Prefix each log message with category/subsystem name

---

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

### Command

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

### Parameters

#### logging

Configure logging

#### print

Log output settings

#### category-hex

Configure log message

0

Don't prefix each log message

1

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

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

### Command

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

### Parameters

#### logging

Configure logging

#### print

Log output settings

#### extended-timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

---

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

### Command

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

### Parameters

#### logging

Configure logging

#### print

Log output settings

#### file

Configure log message

#### 0

Don't prefix each log message

#### 1

Prefix each log message with the source file and line

#### basename

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

#### [last]

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

## logging print level (0|1)

### Command

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

### Parameters

#### logging

Configure logging

#### print

Log output settings

#### level

Configure log message

#### 0

Don't prefix each log message

#### 1

Prefix each log message with the log level name



## logging set-log-mask MASK

### Command

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

### Parameters

#### logging

Configure logging

#### set-log-mask

Set the logmask of this logging target

#### MASK

List of logging categories to log, e.g. 'abc:mno:xyz'. Available log categories depend on the specific application, refer to the 'logging level' command. Optionally add individual log levels like 'abc,1:mno,3:xyz,5', where the level numbers are LOGL\_DEBUG=1 LOGL\_INFO=3 LOGL\_NOTICE=5 LOGL\_ERROR=7 LOGL\_FATAL=8

## logging timestamp (0|1)

### Command

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

### Parameters

#### logging

Configure logging

#### timestamp

Configure log message timestamping

#### 0

Don't prefix each log message

#### 1

Prefix each log message with current timestamp

## logp ([mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|gtp|lglobal...

### Command

```
logp ([mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|gtp|lglobal|llapd| ↵  
linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp| ↵  
ljibuf|lrspro) (debug|info|notice|error|fatal) .LOGMESSAGE
```

### Parameters

#### logp

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

---

mm  
Layer3 Mobility Management (MM)

pag  
Paging Subsystem

meas  
Radio Measurement Processing

ref  
Reference Counting

gprs  
GPRS Packet Service

ns  
GPRS Network Service (NS)

bssgp  
GPRS BSS Gateway Protocol (BSSGP)

llc  
GPRS Logical Link Control Protocol (LLC)

sndcp  
GPRS Sub-Network Dependent Control Protocol (SNDCP)

slhc  
RFC1144 TCP/IP Header compression (SLHC)

ranap  
RAN Application Part (RANAP)

sua  
SCCP User Adaptation (SUA)

v42bis  
V.42bis data compression (SNDCP)

gtp  
GPRS Tunnelling Protocol (GTP)

lglobal  
Library-internal global log family

llapd  
LAPD in libosmogsm

linp  
A-bis Input Subsystem

lmux  
A-bis B-Subchannel TRAU Frame Multiplex

lmi  
A-bis Input Driver for Signalling

---

---

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

lsms  
Layer3 Short Message Service (SMS)

lctrl  
Control Interface

lgtp  
GPRS GTP library

lstats  
Statistics messages and logging

lgsup  
Generic Subscriber Update Protocol

loap  
Osmocom Authentication Protocol

lss7  
libosmo-sigtran Signalling System 7

lsccp  
libosmo-sigtran SCCP Implementation

lsua  
libosmo-sigtran SCCP User Adaptation

lm3ua  
libosmo-sigtran MTP3 User Adaptation

lmgcp  
libosmo-mgcp Media Gateway Control Protocol

ljibuf  
libosmo-netif Jitter Buffer

lrspro  
Remote SIM protocol

debug  
Log debug messages and higher levels

info  
Log informational messages and higher levels

notice  
Log noticeable messages and higher levels

error  
Log error messages and higher levels

fatal  
Log only fatal messages

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

---

## no logging level force-all

### Command

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

### Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

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

## nsvc (nsei|nsvci) <0-65535> (block|unblock|reset)

### Command

```
nsvc (nsei|nsvci) <0-65535> (block|unblock|reset)
```

### Parameters

nsvc

Perform an operation on a NSVC

nsei

NSEI to identify NS-VC Identifier (NS-VCI)

nsvci

NS-VC Identifier (NS-VCI)

<0-65535>

The NSEI

block

Initiate BLOCK procedure

unblock

Initiate UNBLOCK procedure

reset

Initiate RESET procedure

## show alarms

### Command

```
show alarms
```

### Parameters

show

Show running system information

alarms

Show current logging configuration

## show asciidoc counters

### Command

```
show asciidoc counters
```

### Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

## show bssgp

### Command

```
show bssgp
```

### Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

## show bssgp nsei <0-65535> [stats]

### Command

```
show bssgp nsei <0-65535> [stats]
```

### Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

nsei

Show all BVCs on one NSE

<0-65535>

The NSEI

[stats]

Include Statistics

## show bssgp stats

### Command

```
show bssgp stats
```

### Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

stats

Include statistics

## show cpu-sched threads

### Command

```
show cpu-sched threads
```

### Parameters

show

Show running system information

cpu-sched

Show Sched section information

threads

Show information about running threads)

---

**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)

[&lt;0-65534&gt;]

Port Number

**show cs7 config**

## Command

```
show cs7 config
```

## Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

config

Currently running cs7 configuration

**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

### **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)



**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

## &lt;0-15&gt;

An instance of the SS7 stack

## sccp

Signalling Connection Control Part

## addressbook

List all SCCP addressbook entries

**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

## &lt;0-15&gt;

An instance of the SS7 stack

## sccp

Signalling Connection Control Part

## connections

Show List of active SCCP connections

---

**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

&lt;0-15&gt;

An instance of the SS7 stack

sccp

Signalling Connection Control Part

ssn

Find an SCCP User registered for the given SSN

&lt;0-65535&gt;

Subsystem Number (SSN)

**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

&lt;0-15&gt;

An instance of the SS7 stack

sccp

Signaling Connection Control Part

timers

Show List of SCCP timers

**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

&lt;0-15&gt;

An instance of the SS7 stack

sccp

Signalling Connection Control Part

users

Show List of SCCP Users registered

**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

&lt;0-15&gt;

An instance of the SS7 stack

users

User Table

## show history

### Command

```
show history
```

### Parameters

#### show

Show running system information

#### history

Display the session command history

## show llc

### Command

```
show llc
```

### Parameters

#### show

Show running system information

#### llc

Display information about the LLC protocol

## show logging vty

### Command

```
show logging vty
```

### Parameters

#### show

Show running system information

#### logging

Show current logging configuration

#### vty

Show current logging configuration for this vty

---

## show mm-context all [pdp]

### Command

```
show mm-context all [pdp]
```

### Parameters

show

Show running system information

mm-context

MM Context

all

All MM Contexts

[pdp]

Include PDP Context Information

## show mm-context imsi IMSI [pdp]

### Command

```
show mm-context imsi IMSI [pdp]
```

### Parameters

show

Show running system information

mm-context

MM Context

imsi

Identify by IMSI

IMSI

IMSI of the MM Context

[pdp]

Include PDP Context Information

## show ns

### Command

```
show ns
```

### Parameters

show

Show running system information

ns

Display information about the NS protocol

**show ns (nsei|nsvc) <0-65535> [stats]**

## Command

```
show ns (nsei|nsvc) <0-65535> [stats]
```

## Parameters

## show

Show running system information

## ns

Display information about the NS protocol

## nsei

Select one NSE by its NSE Identifier

## nsvc

Select one NSE by its NS-VC Identifier

## &lt;0-65535&gt;

The Identifier of selected type

## [stats]

Include Statistics

**show ns persistent**

## Command

```
show ns persistent
```

## Parameters

## show

Show running system information

## ns

Display information about the NS protocol

## persistent

Show only persistent NS

**show ns stats**

## Command

```
show ns stats
```

## Parameters

show

Show running system information

ns

Display information about the NS protocol

stats

Include statistics

## show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

## show pdp-context all

Command

```
show pdp-context all
```

Parameters

show

Show running system information

pdp-context

Display information on PDP Context

all

Show everything

## show rate-counters

Command

```
show rate-counters
```

Parameters

show

Show running system information

rate-counters

Show all rate counters

## show sgsn

### Command

```
show sgsn
```

### Parameters

show

Show running system information

sgsn

Display information about the SGSN

## show sndcp

### Command

```
show sndcp
```

### Parameters

show

Show running system information

sndcp

Display information about the SNDTCP protocol

## show startup-config

### Command

```
show startup-config
```

### Parameters

show

Show running system information

startup-config

Contentes of startup configuration

## show stats

### Command

```
show stats
```

### Parameters

show

Show running system information

stats

Show statistical values

---



## show stats level (global|peer|subscriber)

### Command

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

### Parameters

#### show

Show running system information

#### stats

Show statistical values

#### level

Set the maximum group level

#### global

Show global groups only

#### peer

Show global and network peer related groups

#### subscriber

Show global, peer, and subscriber groups

## show subscriber cache

### Command

```
show subscriber cache
```

### Parameters

#### show

Show running system information

#### subscriber

Show information about subscribers

#### cache

Display contents of subscriber cache

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

### Command

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

### Parameters

---

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

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

## **show talloc-context (application|all) (full|brief|DEPTH) filter REGEXP**

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

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

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

## Command

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

## Parameters

## show

Show running system information

## talloc-context

Show talloc memory hierarchy

## application

Application's context

## 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)

**show timer [TNNNN]**

## Command

```
show timer [TNNNN]
```

## Parameters

## show

Show running system information

## timer

Show timers

## [TNNNN]

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

## show version

### Command

```
show version
```

### Parameters

#### show

Show running system information

#### version

Displays program version

## stats report

### Command

```
stats report
```

### Parameters

#### stats

Stats related commands

#### report

Manurally trigger reporting of stats

## stats reset

### Command

```
stats reset
```

### Parameters

#### stats

Stats related commands

#### reset

Reset all stats

## terminal length <0-512>

### Command

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

### Parameters

#### terminal

Set terminal line parameters

#### length

Set number of lines on a screen

#### <0-512>

Number of lines on screen (0 for no pausing)

## terminal monitor

### Command

```
terminal monitor
```

### Parameters

#### terminal

Set terminal line parameters

#### monitor

Copy debug output to the current terminal line

## terminal no length

### Command

```
terminal no length
```

### Parameters

#### terminal

Set terminal line parameters

#### no

Negate a command or set its defaults

#### length

Set number of lines on a screen

---

## terminal no monitor

### Command

```
terminal no monitor
```

### Parameters

#### terminal

Set terminal line parameters

#### no

Negate a command or set its defaults

#### monitor

Copy debug output to the current terminal line

## update-subscriber imsi IMSI cancel (update-procedure|subscription-withdraw)

### Command

```
update-subscriber imsi IMSI cancel (update-procedure|subscription-withdraw)
```

### Parameters

#### update-subscriber

Update subscriber list

#### imsi

Use the IMSI to select the subscriber

#### IMSI

The IMSI

#### cancel

Cancel (remove) subscriber record

#### update-procedure

The MS moved to another SGSN

#### subscription-withdraw

The subscription is no longer valid

## update-subscriber imsi IMSI create

### Command

```
update-subscriber imsi IMSI create
```

### Parameters

---

update-subscriber

Update subscriber list

imsi

Use the IMSI to select the subscriber

IMSI

The IMSI

create

Create a subscriber entry

### **update-subscriber imsi IMSI destroy**

Command

```
update-subscriber imsi IMSI destroy
```

Parameters

update-subscriber

Update subscriber list

imsi

Use the IMSI to select the subscriber

IMSI

The IMSI

destroy

Destroy a subscriber entry

### **update-subscriber imsi IMSI insert auth-triplet <1-5> sres SRES rand RAND kc KC**

Command

```
update-subscriber imsi IMSI insert auth-triplet <1-5> sres SRES rand RAND kc KC
```

Parameters

update-subscriber

Update subscriber list

imsi

Use the IMSI to select the subscriber

IMSI

The IMSI

insert

Insert data into the subscriber record

auth-triplet

Update authentication triplet

<1-5>

Triplet index

sres

Set SRES value

SRES

SRES value (4 byte) in hex

rand

Set RAND value

RAND

RAND value (16 byte) in hex

kc

Set Kc value

KC

Kc value (8 byte) in hex

## update-subscriber imsi IMSI update-auth-info

Command

```
update-subscriber imsi IMSI update-auth-info
```

Parameters

update-subscriber

Update subscriber list

imsi

Use the IMSI to select the subscriber

IMSI

The IMSI

update-auth-info

Complete the send authentication info procedure

## update-subscriber imsi IMSI update-location-result (ok|system-failure|data-missi...

Command

```
update-subscriber imsi IMSI update-location-result (ok|system-failure|data-missing| ↵  
unexpected-data-value|unknown-subscriber|roaming-not-allowed)
```

Parameters

---



**update-subscriber**

Update subscriber list

**imsi**

Use the IMSI to select the subscriber

**IMSI**

The IMSI

**update-location-result**

Complete the update location procedure

**ok**

The update location request succeeded

**system-failure**

Force error code SystemFailure

**data-missing**

Force error code DataMissing

**unexpected-data-value**

Force error code UnexpectedDataValue

**unknown-subscriber**

Force error code UnknownSubscriber

**roaming-not-allowed**

Force error code RoamingNotAllowed

## who

**Command**

```
who
```

**Parameters****who**

Display who is on vty

## config

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

## banner motd default

### Command

```
banner motd default
```

### Parameters

#### banner

Set banner string

#### motd

Strings for motd

#### default

Default string

## banner motd file [FILE]

### Command

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

### Parameters

#### banner

Set banner

#### motd

Banner for motd

#### file

Banner from a file

#### [FILE]

Filename

## bssgp

### Command

```
bssgp
```

### Parameters

#### bssgp

Configure the GPRS BSS Gateway Protocol

## cpu-sched

### Command

```
cpu-sched
```

### Parameters

cpu-sched

Configure CPU Scheduler related settings

## cs7 instance <0-15>

### Command

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

### Parameters

cs7

ITU-T Signaling System 7

instance

Configure a SS7 Instance

<0-15>

An instance of the SS7 stack

## ctrl

### Command

```
ctrl
```

### Parameters

ctrl

Configure the Control Interface

## enable password (8|) WORD

### Command

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

### Parameters

enable

Modify enable password parameters

password

Assign the privileged level password

8

Specifies a HIDDEN password will follow

dummy string

WORD

The HIDDEN 'enable' password string

## enable password LINE

Command

```
enable password LINE
```

Parameters

enable

Modify enable password parameters

password

Assign the privileged level password

LINE

The UNENCRYPTED (cleartext) 'enable' password

## hostname WORD

Command

```
hostname WORD
```

Parameters

hostname

Set system's network name

WORD

This system's network name

## line vty

### Command

```
line vty
```

### Parameters

line

Configure a terminal line

vtty

Virtual terminal

## log alarms <2-32700>

### Command

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

### Parameters

log

Configure logging sub-system

alarms

Logging alarms to osmo\_strrb

<2-32700>

Maximum number of messages to log

## log file .FILENAME

### Command

```
log file .FILENAME
```

### Parameters

log

Configure logging sub-system

file

Logging to text file

.FILENAME

Filename

## log gsmtap [HOSTNAME]

### Command

```
log gsmtap [HOSTNAME]
```

### Parameters

#### log

Configure logging sub-system

#### gsmtap

Logging via GSMTAP

#### [HOSTNAME]

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

## log stderr

### Command

```
log stderr
```

### Parameters

#### log

Configure logging sub-system

#### stderr

Logging via STDERR of the process

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

### Command

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

### Parameters

#### log

Configure logging sub-system

#### syslog

Logging via syslog

#### authpriv

Security/authorization messages facility

#### cron

Clock daemon (cron/at) facility

---

daemon

General system daemon facility

ftp

Ftp daemon facility

lpr

Line printer facility

mail

Mail facility

news

News facility

user

Generic facility

uucp

UUCP facility

## log syslog local <0-7>

Command

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

Parameters

log

Configure logging sub-system

syslog

Logging via syslog

local

Syslog LOCAL facility

<0-7>

Local facility number

## no banner motd

Command

```
no banner motd
```

Parameters

no

Negate a command or set its defaults

banner

Set banner string

motd

Strings for motd

## no enable password

### Command

```
no enable password
```

### Parameters

no

Negate a command or set its defaults

enable

Modify enable password parameters

password

Assign the privileged level password

## no hostname [HOSTNAME]

### Command

```
no hostname [HOSTNAME]
```

### Parameters

no

Negate a command or set its defaults

hostname

Reset system's network name

[HOSTNAME]

Host name of this router

## no log alarms

### Command

```
no log alarms
```

### Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

alarms

Logging alarms to osmo\_strrb

---



## no log file .FILENAME

### Command

```
no log file .FILENAME
```

### Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

file

Logging to text file

.FILENAME

Filename

## no log stderr

### Command

```
no log stderr
```

### Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

stderr

Logging via STDERR of the process

## no log syslog

### Command

```
no log syslog
```

### Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

syslog

Logging via syslog

## no service advanced-vty

### Command

```
no service advanced-vty
```

### Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

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

### Command

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

### Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

terminal-length

System wide terminal length configuration

[<0-512>]

Number of lines of VTY (0 means no line control)

## no stats reporter log

### Command

```
no stats reporter log
```

### Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

## no stats reporter statsd

### Command

```
no stats reporter statsd
```

### Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

## ns

### Command

```
ns
```

### Parameters

ns

Configure the GPRS Network Service

## password (8|) WORD

### Command

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

### Parameters

password

Assign the terminal connection password

8

Specifies a HIDDEN password will follow

dummy string

WORD

The HIDDEN line password string

---

## password LINE

### Command

```
password LINE
```

### Parameters

#### password

Assign the terminal connection password

#### LINE

The UNENCRYPTED (cleartext) line password

## service advanced-vty

### Command

```
service advanced-vty
```

### Parameters

#### service

Set up miscellaneous service

#### advanced-vty

Enable advanced mode vty interface

## service terminal-length <0-512>

### Command

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

### Parameters

#### service

Set up miscellaneous service

#### terminal-length

System wide terminal length configuration

#### <0-512>

Number of lines of VTY (0 means no line control)

---

## sgsn

### Command

```
sgsn
```

### Parameters

sgsn

Configure the SGSN

## show history

### Command

```
show history
```

### Parameters

show

Show running system information

history

Display the session command history

## 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)

---

## stats reporter log

### Command

```
stats reporter log
```

### Parameters

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

## stats reporter statsd

### Command

```
stats reporter statsd
```

### Parameters

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

## config-log

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

## logging color (0|1)

### Command

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

### Parameters

## logging

Configure logging

## color

Configure color-printing for log messages

0

Don't use color for printing messages

1

Use color for printing messages

## logging filter all (0|1)

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

### Command

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

### Parameters

## logging

Configure logging

## filter

Filter log messages

all

Do you want to log all messages?

0

Only print messages matched by other filters

1

Bypass filter and print all messages

## logging filter bvc nsei <0-65535> bvci <0-65535>

### Command

```
logging filter bvc nsei <0-65535> bvci <0-65535>
```

### Parameters

## logging

Configure logging

filter

Filter log messages

bvc

Filter based on BSSGP Virtual Connection

nsei

NSEI of the BVC to be filtered

<0-65535>

Network Service Entity Identifier (NSEI)

bvci

BVCI of the BVC to be filtered

<0-65535>

BSSGP Virtual Connection Identifier (BVCI)

## logging filter nsvc (nsei|nsvci) <0-65535>

Command

```
logging filter nsvc (nsei|nsvci) <0-65535>
```

Parameters

logging

Configure logging

filter

Filter log messages

nsvc

Filter based on NS Virtual Connection

nsei

Identify NS-VC by NSEI

nsvci

Identify NS-VC by NSVCI

<0-65535>

Numeric identifier

## logging level (|mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|gt...

Command

```
logging level (|mm|pag|meas|ref|gprs|ns|bssgp|llc|sndcp|slhc|ranap|sua|v42bis|gtp| ↔
lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtpl|lstats|lgsup|loap|lss7|lsccp|lsua| ↔
lm3ua|lmgcp|ljibuf|lrspro) (debug|info|notice|error|fatal)
```



## Parameters

### logging

Configure logging

### level

Set the log level for a specified category

### mm

Layer3 Mobility Management (MM)

### pag

Paging Subsystem

### meas

Radio Measurement Processing

### ref

Reference Counting

### gprs

GPRS Packet Service

### ns

GPRS Network Service (NS)

### bssgp

GPRS BSS Gateway Protocol (BSSGP)

### llc

GPRS Logical Link Control Protocol (LLC)

### sndcp

GPRS Sub-Network Dependent Control Protocol (SND CP)

### slhc

RFC1144 TCP/IP Header compression (SLHC)

### ranap

RAN Application Part (RANAP)

### sua

SCCP User Adaptation (SUA)

### v42bis

V.42bis data compression (SND CP)

### gtp

GPRS Tunnelling Protocol (GTP)

### lglobal

Library-internal global log family

### llapd

LAPD in libosmogsm

### linp

A-bis Input Subsystem

---

---

lmux  
A-bis B-Subchannel TRAU Frame Multiplex

lmi  
A-bis Input Driver for Signalling

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

lsms  
Layer3 Short Message Service (SMS)

lctrl  
Control Interface

lgtp  
GPRS GTP library

lstats  
Statistics messages and logging

lgsup  
Generic Subscriber Update Protocol

loap  
Osmocom Authentication Protocol

lss7  
libosmo-sigtran Signalling System 7

lsccp  
libosmo-sigtran SCCP Implementation

lsua  
libosmo-sigtran SCCP User Adaptation

lm3ua  
libosmo-sigtran MTP3 User Adaptation

lmgcp  
libosmo-mgcp Media Gateway Control Protocol

ljibuf  
libosmo-netif Jitter Buffer

lrspro  
Remote SIM protocol

debug  
Log debug messages and higher levels

info  
Log informational messages and higher levels

notice  
Log noticeable messages and higher levels

---

error

Log error messages and higher levels

fatal

Log only fatal messages

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

force-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

---

**set-all**

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

**debug**

Log debug messages and higher levels

**info**

Log informational messages and higher levels

**notice**

Log noticeable messages and higher levels

**error**

Log error messages and higher levels

**fatal**

Log only fatal messages

**logging print category (0|1)****Command**

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

**Parameters****logging**

Configure logging

**print**

Log output settings

**category**

Configure log message

**0**

Don't prefix each log message

**1**

Prefix each log message with category/subsystem name

**logging print category-hex (0|1)****Command**

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

**Parameters****logging**

Configure logging

---

print

Log output settings

category-hex

Configure log message

0

Don't prefix each log message

1

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

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

Command

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

Parameters

logging

Configure logging

print

Log output settings

extended-timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

Command

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

Parameters

logging

Configure logging

print

Log output settings

file

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the source file and line

basename

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

[last]

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

## logging print level (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

level

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the log level name

## logging timestamp (0|1)

Command

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

Parameters

logging

Configure logging

timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

## no logging level force-all

### Command

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

### Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

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

## config-stats

### disable

### Command

```
disable
```

### Parameters

disable

Disable the reporter

### enable

### Command

```
enable
```

### Parameters

enable

Enable the reporter

---

## 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).

## level (global|peer|subscriber)

### Command

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

### Parameters

#### level

Set the maximum group level

#### global

Report global groups only

#### peer

Report global and network peer related groups

#### subscriber

Report global, peer, and subscriber groups

## local-ip ADDR

### Command

```
local-ip ADDR
```

### Parameters

#### local-ip

Set the IP address to which we bind locally

#### ADDR

IP Address

---



**mtu <100-65535>**

## Command

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

## Parameters

mtu

Set the maximum packet size

<100-65535>

Size in byte

**no local-ip**

## Command

```
no local-ip
```

## Parameters

no

Negate a command or set its defaults

local-ip

Set the IP address to which we bind locally

**no mtu**

## Command

```
no mtu
```

## Parameters

no

Negate a command or set its defaults

mtu

Set the maximum packet size

**no prefix**

## Command

```
no prefix
```

## Parameters

no

Negate a command or set its defaults

prefix

Set the item name prefix

---

## prefix PREFIX

### Command

```
prefix PREFIX
```

### Parameters

#### prefix

Set the item name prefix

#### PREFIX

The prefix string

## remote-ip ADDR

### Command

```
remote-ip ADDR
```

### Parameters

#### remote-ip

Set the remote IP address to which we connect

#### ADDR

IP Address

## remote-port <1-65535>

### Command

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

### Parameters

#### remote-port

Set the remote port to which we connect

#### <1-65535>

Remote port number

---

## config-line

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

#### Command

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

#### Parameters

##### bind

Accept VTY telnet connections on local interface

##### A.B.C.D

Local interface IP address (default: 127.0.0.1)

##### [<0-65535>]

Local TCP port number

## login

#### Command

```
login
```

#### Parameters

##### login

Enable password checking

## no login

#### Command

```
no login
```

#### Parameters

##### no

Negate a command or set its defaults

##### login

Enable password checking

## config-ns

### encapsulation framerelay-gre enabled (1|0)

#### Command

```
encapsulation framerelay-gre enabled (1|0)
```

#### Parameters

##### encapsulation

NS encapsulation options

##### framerelay-gre

NS over Frame Relay over GRE Encapsulation

##### enabled

Enable or disable Frame Relay over GRE

1

Enable

0

Disable

### encapsulation framerelay-gre local-ip A.B.C.D

#### Command

```
encapsulation framerelay-gre local-ip A.B.C.D
```

#### Parameters

##### encapsulation

NS encapsulation options

##### framerelay-gre

NS over Frame Relay over GRE Encapsulation

##### local-ip

Set the IP address on which we listen for NS/FR/GRE

A.B.C.D

IP Address

## encapsulation udp dscp <0-255>

### Command

```
encapsulation udp dscp <0-255>
```

### Parameters

#### encapsulation

NS encapsulation options

#### udp

NS over UDP Encapsulation

#### dscp

Set DSCP/TOS on the UDP socket

#### <0-255>

DSCP Value

## encapsulation udp local-ip A.B.C.D

### Command

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

### Parameters

#### encapsulation

NS encapsulation options

#### udp

NS over UDP Encapsulation

#### local-ip

Set the IP address on which we listen for NS/UDP

#### A.B.C.D

IP Address

## encapsulation udp local-port <0-65535>

### Command

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

### Parameters

#### encapsulation

NS encapsulation options

---

udp

NS over UDP Encapsulation

local-port

Set the UDP port on which we listen for NS/UDP

<0-65535>

UDP port number

## **encapsulation udp use-reset-block-unblock (enabled|disabled)**

Command

```
encapsulation udp use-reset-block-unblock (enabled|disabled)
```

Parameters

encapsulation

NS encapsulation options

udp

NS over UDP Encapsulation

use-reset-block-unblock

Use NS-{RESET,BLOCK,UNBLOCK} procedures in violation of 3GPP TS 48.016

enabled

Enable NS-{RESET,BLOCK,UNBLOCK}

disabled

Disable NS-{RESET,BLOCK,UNBLOCK}

## **no nse <0-65535>**

Command

```
no nse <0-65535>
```

Parameters

no

Delete Persistent NS Entity

nse

Delete Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

**nse <0-65535> encapsulation (udp|framerelay-gre)**

## Command

```
nse <0-65535> encapsulation (udp|framerelay-gre)
```

## Parameters

nse

Persistent NS Entity

&lt;0-65535&gt;

NS Entity ID (NSEI)

encapsulation

Encapsulation for NS

udp

UDP/IP Encapsulation

framerelay-gre

Frame-Relay/GRE/IP Encapsulation

**nse <0-65535> fr-dlci <16-1007>**

## Command

```
nse <0-65535> fr-dlci <16-1007>
```

## Parameters

nse

Persistent NS Entity

&lt;0-65535&gt;

NS Entity ID (NSEI)

fr-dlci

Frame Relay DLCI

&lt;16-1007&gt;

Frame Relay DLCI Number

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

## Command

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

## Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

nsvci

NS Virtual Connection

<0-65534>

NS Virtual Connection ID (NSVCI)

## **nse <0-65535> remote-ip A.B.C.D**

Command

```
nse <0-65535> remote-ip A.B.C.D
```

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

remote-ip

Remote IP Address

A.B.C.D

Remote IP Address

## **nse <0-65535> remote-port <0-65535>**

Command

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

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

remote-port

Remote UDP Port

<0-65535>

Remote UDP Port Number



**nse <0-65535> remote-role (sgsn|bss)**

## Command

```
nse <0-65535> remote-role (sgsn|bss)
```

## Parameters

nse

Persistent NS Entity

&lt;0-65535&gt;

NS Entity ID (NSEI)

remote-role

Remote NSE Role

sgsn

Remote Peer is SGSN

bss

Remote Peer is BSS

**timer (tns-block|tns-block-retries|tns-reset|tns-reset-retries|tns-test|tns-aliv...**

## Command

```
timer (tns-block|tns-block-retries|tns-reset|tns-reset-retries|tns-test|tns-alive|tns- ↵  
    alive-retries|tsns-prov) <0-65535>
```

## Parameters

timer

Network Service Timer

tns-block

(un)blocking Timer (Tns-block) timeout

tns-block-retries

(un)blocking Timer (Tns-block) number of retries

tns-reset

Reset Timer (Tns-reset) timeout

tns-reset-retries

Reset Timer (Tns-reset) number of retries

tns-test

Test Timer (Tns-test) timeout

tns-alive

Alive Timer (Tns-alive) timeout

tns-alive-retries

Alive Timer (Tns-alive) number of retries

tsns-prov

SNS Provision Timer (Tsns-prov) timeout

<0-65535>

Timer Value

## config-bssgp

## config-ctrl

### bind A.B.C.D

Command

```
bind A.B.C.D
```

Parameters

bind

Set bind address to listen for Control connections

A.B.C.D

Local IP address (default 127.0.0.1)

## config-cs7

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

Command

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

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)

---

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

## Command

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

## Parameters

## asp

Configure Application Server Process

## NAME

Name of ASP

## &lt;0-65535&gt;

Remote SCTP port number

## &lt;0-65535&gt;

Local SCTP port number

## sua

SCCP User Adaptation

## m3ua

MTP3 User Adaptation

## ipa

IPA Multiplex (SCCP Lite)

**description .TEXT**

## Command

```
description .TEXT
```

## Parameters

## description

Save human-readable description of the object

## .TEXT

Text until the end of the line

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

## Command

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

## Parameters

network-indicator

Configure the Network Indicator

international

International Network

national

National Network

reserved

Reserved Network

spare

Spare Network

## no as NAME

Command

```
no as NAME
```

Parameters

no

Negate a command or set its defaults

as

Disable Application Server

NAME

Name of AS

## no asp NAME

Command

```
no asp NAME
```

Parameters

no

Negate a command or set its defaults

asp

Disable Application Server Process

NAME

Name of ASP

## no sccp-address NAME

### Command

```
no sccp-address NAME
```

### Parameters

no

Negate a command or set its defaults

sccp-address

Delete an SCCP addressbook entry

NAME

Name of the SCCP Address

## point-code POINT\_CODE

### Command

```
point-code POINT_CODE
```

### Parameters

point-code

Configure the local Point Code

POINT\_CODE

Point Code

## point-code delimiter (default|dash)

### Command

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

### Parameters

point-code

Point Code

delimiter

Configure Point Code Delimiter

default

Use dot as delimiter

dash

User dash as delimiter

---

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

### Command

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

### 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

## point-code format default

### Command

```
point-code format default
```

### Parameters

point-code

Point Code

format

Configure Point Code Format

default

Default Point Code Format (3.8.3)

## sccp-address NAME

### Command

```
sccp-address NAME
```

### Parameters

sccp-address

Create/Modify an SCCP addressbook entry

NAME

Name of the SCCP Address

---

**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>
```

## 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)

## &lt;1-999999&gt;

Timer value, in seconds

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

## Command

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

## 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

## config-cs7-as

### asp NAME

Command

```
asp NAME
```

Parameters

asp

Specify that a given ASP is part of this AS

NAME

Name of ASP to be added to AS

### description .TEXT

Command

```
description .TEXT
```

Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line



## no asp NAME

### Command

```
no asp NAME
```

### 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

## 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

## point-code override dpc PC

### Command

```
point-code override dpc PC
```

### Parameters

point-code

Point Code Specific Features

override

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

dpc

Override Source Point Code

PC

Override Destination Point Code

---

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

## Command

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

## 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

**qos-class <0-255>**

## Command

```
qos-class <0-255>
```

## Parameters

## qos-class

Specity QoS Class of AS

## &lt;0-255&gt;

QoS Class of AS

**recovery-timeout <1-2000>**

## Command

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

## Parameters

## recovery-timeout

Specifies the recovery timeout value in milliseconds

## &lt;1-2000&gt;

Recovery Timeout in Milliseconds

---

## routing-key RCONTEXT DPC

### Command

```
routing-key RCONTEXT DPC
```

### Parameters

#### routing-key

Define a routing key

#### RCONTEXT

Routing context number

#### DPC

Destination Point Code

## 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)
```

### 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

## **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
```

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

---

## routing-key RCONTEXT DPC ssn SSN

### Command

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

### 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

## traffic-mode (broadcast | loadshare | roundrobin | override)

### Command

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

### Parameters

#### traffic-mode

Specifies traffic mode of operation of the ASP within the AS

#### broadcast

Broadcast to all ASP within AS

#### loadshare

Share Load among all ASP within AS

#### roundrobin

Round-Robin between all ASP within AS

#### override

Override

---

## config-cs7-asp

### block

#### Command

```
block
```

#### Parameters

block

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

### description .TEXT

#### Command

```
description .TEXT
```

#### Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line

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

#### Command

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

#### Parameters

local-ip

Specify Local IP Address from which to contact ASP

A.B.C.D

Local IP Address from which to contact of ASP

### qos-class <0-255>

#### Command

```
qos-class <0-255>
```

#### Parameters

qos-class

Specify QoS Class of ASP

<0-255>

QoS Class of ASP

---

## remote-ip A.B.C.D

### Command

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

### Parameters

#### remote-ip

Specify Remote IP Address of ASP

#### A.B.C.D

Remote IP Address of ASP

## role (sg|asp|ipsp)

### Command

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

### Parameters

#### role

Specify the xUA role for this ASP

#### sg

SG (Signaling Gateway)

#### asp

ASP (Application Server Process)

#### ipsp

IPSP (IP Signalling Point)

## sctp-role (client|server)

### Command

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

### Parameters

#### sctp-role

Specify the SCTP role for this ASP

#### client

Operate as SCTP client; connect to a server

#### server

Operate as SCTP server; wait for client connections

---

## shutdown

### Command

```
shutdown
```

### Parameters

#### shutdown

Terminates SCTP association; New associations will be rejected

## config-cs7-sccpaddr

### global-title

### Command

```
global-title
```

### Parameters

#### global-title

Add/Modify Global Title

### no global-title

### Command

```
no global-title
```

### Parameters

#### no

Negate a command or set its defaults

#### global-title

Remove Global Title

### no point-code

### Command

```
no point-code
```

### Parameters

#### no

Negate a command or set its defaults

#### point-code

Remove point-code Number

---



## no subsystem-number

### Command

```
no subsystem-number
```

### Parameters

no

Negate a command or set its defaults

subsystem-number

Remove Subsystem Number

## point-code POINT\_CODE

### Command

```
point-code POINT_CODE
```

### Parameters

point-code

Add point-code Number

POINT\_CODE

PC

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

### Command

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

### Parameters

routing-indicator

Add Routing Indicator

GT

by global-title

PC

by point-code

IP

by ip-address

---

**subsystem-number <0-4294967295>**

## Command

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

## Parameters

subsystem-number

Add Subsystem Number

<0-4294967295>

SSN

**config-cs7-sccpaddr-gt****digits DIGITS**

## Command

```
digits DIGITS
```

## Parameters

digits

Set Global Title Digits

DIGITS

Number digits

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

## Command

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

## Parameters

global-title-indicator

Set Global Title Indicator

<0-15>

GTI

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

## Command

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

## Parameters

nature-of-address-indicator

Set Global Title Nature of Address Indicator

&lt;0-127&gt;

NAI

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

## Command

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

## Parameters

numbering-plan-indicator

Set Global Title Numbering Plan Indicator

&lt;0-15&gt;

NPI

**translation-type <0-255>**

## Command

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

## Parameters

translation-type

Set Global Title Translation Type

&lt;0-255&gt;

TT

---

## config-cpu-sched

### cpu-affinity (self|all|<0-4294967295>|THREADNAME) CPUHEXMASK [delay]

#### Command

```
cpu-affinity (self|all|<0-4294967295>|THREADNAME) CPUHEXMASK [delay]
```

#### Parameters

##### cpu-affinity

Set CPU affinity mask on a (group of) thread(s)

##### self

Set CPU affinity mask on thread running the VTY

##### all

Set CPU affinity mask on all process' threads

##### <0-4294967295>

Set CPU affinity mask on a thread with specified PID

##### THREADNAME

Set CPU affinity mask on a thread with specified thread name

##### CPUHEXMASK

CPU affinity mask

##### [delay]

If set, delay applying the affinity mask now and let the app handle it at a later point

### policy rr <1-32>

#### Command

```
policy rr <1-32>
```

#### Parameters

##### policy

Set the scheduling policy to use for the process

##### rr

Use the SCHED\_RR real-time scheduling algorithm

##### <1-32>

Set the SCHED\_RR real-time priority

## config-sgsn

Configure the remote GGSN, access-control and other attributes of the SGSN

---

## access-point-name NAME

### Command

```
access-point-name NAME
```

### Parameters

#### access-point-name

Globally allow the given APN name for all subscribers.

#### NAME

Add this NAME to the list

## apn APNAME ggsn <0-255>

### Command

```
apn APNAME ggsn <0-255>
```

### Parameters

#### apn

Configure the information per APN

#### APNAME

The APN gateway name optionally prefixed by '\*' (wildcard)

#### ggsn

Select the GGSN to use for the given APN gateway prefix

#### <0-255>

The GGSN id

## apn APNAME imsi-prefix IMSIPRE ggsn <0-255>

### Command

```
apn APNAME imsi-prefix IMSIPRE ggsn <0-255>
```

### Parameters

#### apn

Configure the information per APN

#### APNAME

The APN gateway name optionally prefixed by '\*' (wildcard)

#### imsi-prefix

Select the GGSN to use for the given APN gateway prefix if and only if the IMSI matches the given prefix.

---

## IMSIPRE

An IMSI prefix

## ggsn

Select the GGSN to use when APN gateway and IMSI prefix match

<0-255>

The GGSN id

## asn1 debug (1|0)

### Command

```
asn1 debug (1|0)
```

### Parameters

#### asn1

ASN.1 settings

#### debug

Enable ASN.1 debug messages

1

Log ASN.1 debug messages to stderr

0

Do not log ASN.1 debug messages to stderr

## asn1 xer-print (1|0)

### Command

```
asn1 xer-print (1|0)
```

### Parameters

#### asn1

ASN.1 settings

#### xer-print

Log human readable representations of all ASN.1 messages to stderr

1

Log XML representation of all ASN.1 messages to stderr

0

Do not log decoded ASN.1 messages to stderr

## auth-policy (accept-all|closed|acl-only|remote)

### Command

```
auth-policy (accept-all|closed|acl-only|remote)
```

### Parameters

#### auth-policy

Configure the Authorization policy of the SGSN. This setting determines which subscribers are permitted to register to the network.

#### accept-all

Accept all IMSIs (DANGEROUS)

#### closed

Accept only home network subscribers or those in the ACL

#### acl-only

Accept only subscribers in the ACL

#### remote

Use remote subscription data only (HLR)

## authentication (optional|required)

### Command

```
authentication (optional|required)
```

### Parameters

#### authentication

Whether to enforce MS authentication in GERAN (only with auth-policy remote)

#### optional

Allow MS to attach via GERAN without authentication (default and only possible value for non-remote auth-policy)

#### required

Always require authentication (only available for auth-policy remote, default with that auth-policy)

## cdr filename NAME

### Command

```
cdr filename NAME
```

### Parameters

#### cdr

CDR

#### filename

Set the file name for the call-data-record file, logging the data usage of each subscriber.

#### NAME

filename

---

**cdr interval <1-2147483647>**

## Command

```
cdr interval <1-2147483647>
```

## Parameters

cdr

CDR

interval

Set the interval for the call-data-record file

&lt;1-2147483647&gt;

interval in seconds

**cdr trap**

## Command

```
cdr trap
```

## Parameters

cdr

CDR

trap

Enable sending CDR via TRAP CTRL messages

**compression rfc1144 active slots <1-256>**

## Command

```
compression rfc1144 active slots <1-256>
```

## Parameters

compression

Configure compression

rfc1144

RFC1144 Header compression scheme

active

Compression is actively proposed

slots

Number of compression state slots

&lt;1-256&gt;

Number of compression state slots

---



## compression rfc1144 passive

### Command

```
compression rfc1144 passive
```

### Parameters

#### compression

Configure compression

#### rfc1144

RFC1144 Header compression scheme

#### passive

Compression is available on request

## compression v42bis active direction (ms|sgsn|both) codewords <512-65535> strlen ...

### Command

```
compression v42bis active direction (ms|sgsn|both) codewords <512-65535> strlen <6-250>
```

### Parameters

#### compression

Configure compression

#### v42bis

V.42bis data compression scheme

#### active

Compression is actively proposed

#### direction

Direction in which the compression shall be active (p0)

#### ms

Compress ms->sgsn direction only

#### sgsn

Compress sgsn->ms direction only

#### both

Both directions

#### codewords

Number of codewords (p1)

#### <512-65535>

Number of codewords

#### strlen

Maximum string length (p2)

#### <6-250>

Maximum string length

---

## compression v42bis passive

### Command

```
compression v42bis passive
```

### Parameters

#### compression

Configure compression

#### v42bis

V.42bis data compression scheme

#### passive

Compression is available on request

## cs7-instance-iu <0-15>

### Command

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

### Parameters

#### cs7-instance-iu

Set SS7 to be used by the Iu-Interface.

#### <0-15>

SS7 instance reference number (default: 0)

## encryption (GEA0|GEA1|GEA2|GEA3|GEA4)

### Command

```
encryption (GEA0|GEA1|GEA2|GEA3|GEA4)
```

### Parameters

#### encryption

Set encryption algorithm for SGSN

#### GEA0

Use GEA0 (no encryption)

#### GEA1

Use GEA1

#### GEA2

Use GEA2

#### GEA3

Use GEA3

#### GEA4

Use GEA4

---

**ggsn <0-255> echo-interval <1-36000>**

## Command

```
ggsn <0-255> echo-interval <1-36000>
```

## Parameters

ggsn

Configure the GGSN information

&lt;0-255&gt;

GGSN Number

echo-interval

Send an echo request to this static GGSN every interval.

&lt;1-36000&gt;

Interval between echo requests in seconds.

**ggsn <0-255> gtp-version (0|1)**

## Command

```
ggsn <0-255> gtp-version (0|1)
```

## Parameters

ggsn

Configure the GGSN information

&lt;0-255&gt;

GGSN Number

gtp-version

GTP Version

0

Version 0

1

Version 1

**ggsn <0-255> no echo-interval**

## Command

```
ggsn <0-255> no echo-interval
```

## Parameters

ggsn

Configure the GGSN information

<0-255>

GGSN Number

no

Negate a command or set its defaults

echo-interval

Send an echo request to this static GGSN every interval.

## **ggsn <0-255> remote-ip A.B.C.D**

Command

```
ggsn <0-255> remote-ip A.B.C.D
```

Parameters

ggsn

Configure the GGSN information

<0-255>

GGSN Number

remote-ip

Configure this static GGSN to use the specified remote IP address.

A.B.C.D

IPv4 Address

## **ggsn dynamic**

Command

```
ggsn dynamic
```

Parameters

ggsn

Configure the GGSN information

dynamic

Enable dynamic resolving of GGSNs based on DNS resolving the APN name like in a GRX-style setup. Changing this setting requires a restart.

---

## grx-dns-add A.B.C.D

### Command

```
grx-dns-add A.B.C.D
```

### Parameters

#### grx-dns-add

Use the specified IP address for DNS-resolving the AP names to GGSN IP addresses

#### A.B.C.D

IPv4 address

## gsup ipa-name NAME

### Command

```
gsup ipa-name NAME
```

### Parameters

#### gsup

GSUP Parameters

#### ipa-name

Set the IPA name of this SGSN

#### NAME

A unique name for this SGSN. For example: PLMN + redundancy server number: SGSN-901-70-0. This name is used for GSUP routing and must be set if more than one SGSN is connected to the network. The default is 'SGSN-00-00-00-00-00-00'.

## gsup oap-id <0-65535>

### Command

```
gsup oap-id <0-65535>
```

### Parameters

#### gsup

GSUP Parameters

#### oap-id

Set the OAP client ID for authentication on the GSUP protocol. This setting only applies if 'auth-policy remote' is used.

#### <0-65535>

OAP client ID (0 == disabled)

---

## gsup oap-k K

### Command

```
gsup oap-k K
```

### Parameters

gsup

GSUP Parameters

oap-k

Set the OAP shared secret key K for authentication on the GSUP protocol. This setting only applies if auth-policy remote is used.

K

K value (16 byte) hex

## gsup oap-opc OPC

### Command

```
gsup oap-opc OPC
```

### Parameters

gsup

GSUP Parameters

oap-opc

Set the OAP shared secret OPC for authentication on the GSUP protocol. This setting only applies if auth-policy remote is used.

OPC

OPC value (16 byte) hex

## gsup remote-ip A.B.C.D

### Command

```
gsup remote-ip A.B.C.D
```

### Parameters

gsup

GSUP Parameters

remote-ip

Set the IP address of the remote GSUP server (e.g. OsmoHLR). This setting only applies if 'auth-policy remote' is used.

A.B.C.D

IPv4 Address

---

## gsup remote-port <0-65535>

### Command

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

### Parameters

gsup

GSUP Parameters

remote-port

Set the TCP port of the remote GSUP server, see also 'gsup remote-ip'

<0-65535>

Remote TCP port

## gtp local-ip A.B.C.D

### Command

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

### Parameters

gtp

GTP Parameters

local-ip

Set the IP address for the local GTP bind for the Gp interface (towards the GGSNs). Note: in case you would like to run the GGSN on the same machine as the SGSN, you can not run both on the same IP address, since both sides are specified to use the same GTP port numbers (2123 and 2152). For example, you could use 127.0.0.1 for the SGSN and 127.0.0.2 for the GGSN in such situations.

A.B.C.D

IPv4 Address

## imsi-acl (add|del) IMSI

### Command

```
imsi-acl (add|del) IMSI
```

### Parameters

imsi-acl

Access Control List of foreign IMSIs

add

Add IMSI to ACL

del

Remove IMSI from ACL

IMSI

IMSI of subscriber

---

## **iu rab-assign-addr-enc (x213|v4raw)**

### Command

```
iu rab-assign-addr-enc (x213|v4raw)
```

### Parameters

iu

Iu interface protocol options

rab-assign-addr-enc

Choose RAB Assignment's Transport Layer Address encoding

x213

ITU-T X.213 compliant address encoding (default)

v4raw

32bit length raw IPv4 address (for ip.access nano3G)

## **no access-point-name NAME**

### Command

```
no access-point-name NAME
```

### Parameters

no

Negate a command or set its defaults

access-point-name

Configure a global list of allowed APNs

NAME

Remove entry with NAME

## **no cdr filename**

### Command

```
no cdr filename
```

### Parameters

no

Negate a command or set its defaults

cdr

CDR

filename

Disable saving CDR to file

---



## no cdr trap

### Command

```
no cdr trap
```

### Parameters

no

Negate a command or set its defaults

cdr

CDR

trap

Disable sending CDR via TRAP CTRL messages

## no compression rfc1144

### Command

```
no compression rfc1144
```

### Parameters

no

Negate a command or set its defaults

compression

Configure compression

rfc1144

disable rfc1144 TCP/IP header compression

## no compression v42bis

### Command

```
no compression v42bis
```

### Parameters

no

Negate a command or set its defaults

compression

Configure compression

v42bis

disable V.42bis data compression

---

**timer [TNNNN] [(**<0-2147483647>**|default)]**

## Command

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

## Parameters

## timer

Configure or show timers

## [TNNNN]

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

## [&lt;0-2147483647&gt;]

New timer value

## [default]

Set to default timer value