

## **OsmoSGSN VTY Reference**

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	<i>TITLE :</i> OsmoSGSN VTY Reference		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
WRITTEN BY		July 7, 2025	

<b>REVISION HISTORY</b>
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NUMBER	DATE	DESCRIPTION	NAME
DRAFT	unknown	Automatically Generated VTY Reference	hf

# 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 [with-flags]	2
1.1.5	show running-config	3
1.1.6	show vty-attributes	3
1.1.7	show vty-attributes (application library global)	3
1.1.8	write	4
1.1.9	write file [PATH]	4
1.1.10	write memory	4
1.1.11	write terminal	5
1.2	view	5
1.2.1	bssgp bvc nsei <0-65535> bvci <0-65535> reset	5
1.2.2	enable [expert-mode]	6
1.2.3	logging color (0 1)	6
1.2.4	logging disable	6
1.2.5	logging enable	7
1.2.6	logging filter all (0 1)	7
1.2.7	logging filter bvc nsei <0-65535> bvci <0-65535>	8
1.2.8	logging filter nse nsei <0-65535>	8
1.2.9	logging filter nsvc nsvci <0-65535>	9
1.2.10	logging level (mml pagl meas refl gprs llc sndcp sl hcr anap sua v42bis gt prim rrl ...	9
1.2.11	logging level force-all (debug info notice error fatal)	12
1.2.12	logging level set-all (debug info notice error fatal)	13
1.2.13	logging print category (0 1)	13
1.2.14	logging print category-hex (0 1)	14
1.2.15	logging print extended-timestamp (0 1)	14
1.2.16	logging print file (0 1 basename) [last]	15

1.2.17	logging print level (01)	15
1.2.18	logging print thread-id (01)	16
1.2.19	logging set-log-mask MASK	16
1.2.20	logging timestamp (01)	17
1.2.21	logp (mm pag meas ref gprs llc s ndcp slh cl ranap sua v42bis gt prim ral global lll...)	17
1.2.22	no logging level force-all	20
1.2.23	show alarms	20
1.2.24	show asciidoc counters	21
1.2.25	show bssgp	21
1.2.26	show bssgp nsei <0-65535> [stats]	21
1.2.27	show bssgp stats	22
1.2.28	show cpu-sched threads	22
1.2.29	show cs7 (sualm3ualipa) (sctpltcp) [<0-65534>]	22
1.2.30	show cs7 (sualm3ualipa) [<0-65534>]	23
1.2.31	show cs7 config	24
1.2.32	show cs7 instance <0-15> as (activelallm3ualsua)	24
1.2.33	show cs7 instance <0-15> as binding-table name AS_NAME	25
1.2.34	show cs7 instance <0-15> as name AS_NAME	25
1.2.35	show cs7 instance <0-15> asp	26
1.2.36	show cs7 instance <0-15> asp name ASP_NAME	26
1.2.37	show cs7 instance <0-15> asp-assoc-status	27
1.2.38	show cs7 instance <0-15> asp-assoc-status name ASP_NAME	27
1.2.39	show cs7 instance <0-15> asp-remaddr	28
1.2.40	show cs7 instance <0-15> asp-remaddr name ASP_NAME	28
1.2.41	show cs7 instance <0-15> route [POINT_CODE]	29
1.2.42	show cs7 instance <0-15> route binding-table [POINT_CODE] [all-matches]	30
1.2.43	show cs7 instance <0-15> route-lookup POINT_CODE from POINT_CODE sls <0-15> [lis...	30
1.2.44	show cs7 instance <0-15> sccp addressbook	31
1.2.45	show cs7 instance <0-15> sccp connections	32
1.2.46	show cs7 instance <0-15> sccp ssn <0-65535>	32
1.2.47	show cs7 instance <0-15> sccp timers	33
1.2.48	show cs7 instance <0-15> sccp users	33
1.2.49	show cs7 instance <0-15> users	34
1.2.50	show history	34
1.2.51	show llc	34
1.2.52	show logging vty	35
1.2.53	show mm-context all [pdp]	35
1.2.54	show mm-context imsi IMSI [pdp]	35
1.2.55	show ns (nseilnsvc) <0-65535> [stats]	36

1.2.56	show ns binds [stats]	36
1.2.57	show ns entities [stats]	37
1.2.58	show ns persistent	37
1.2.59	show online-help	37
1.2.60	show pdp-context all	38
1.2.61	show pid	38
1.2.62	show rate-counters [skip-zero]	38
1.2.63	show runtime	39
1.2.64	show sgsn	39
1.2.65	show sndcp	39
1.2.66	show stats [skip-zero]	40
1.2.67	show stats level (global peer subscriber) [skip-zero]	40
1.2.68	show subscriber cache	41
1.2.69	show talloc-context (application global all) (full brief DEPTH)	41
1.2.70	show talloc-context (application global all) (full brief DEPTH) filter REGEXP	42
1.2.71	show talloc-context (application global all) (full brief DEPTH) tree ADDRESS	42
1.2.72	show timer [TNNNN]	43
1.2.73	show timer gtp [TNNNN]	43
1.2.74	show uptime	44
1.2.75	show version	44
1.2.76	terminal length <0-512>	45
1.2.77	terminal no length	45
1.2.78	who	45
1.3	enable	46
1.3.1	bssgp bvc nsei <0-65535> bvci <0-65535> reset	46
1.3.2	configure [terminal]	46
1.3.3	copy running-config startup-config	47
1.3.4	cs7 instance <0-15> asp NAME disconnect	47
1.3.5	disable	47
1.3.6	logging color (0 1)	48
1.3.7	logging disable	48
1.3.8	logging enable	48
1.3.9	logging filter all (0 1)	49
1.3.10	logging filter bvc nsei <0-65535> bvci <0-65535>	49
1.3.11	logging filter nse nsei <0-65535>	50
1.3.12	logging filter nsvc nsvci <0-65535>	50
1.3.13	logging level (mml pag meas refl gprs llc sndcp slhcl ranap sua v42bis gtpl mrll ...	51
1.3.14	logging level force-all (debug info notice error fatal)	53
1.3.15	logging level set-all (debug info notice error fatal)	54

1.3.16	logging print category (0 1) . . . . .	55
1.3.17	logging print category-hex (0 1) . . . . .	55
1.3.18	logging print extended-timestamp (0 1) . . . . .	56
1.3.19	logging print file (0 1 basename) [last] . . . . .	56
1.3.20	logging print level (0 1) . . . . .	57
1.3.21	logging print thread-id (0 1) . . . . .	57
1.3.22	logging set-log-mask MASK . . . . .	58
1.3.23	logging timestamp (0 1) . . . . .	58
1.3.24	logp (mm pag meas refl gprs llc s ndc pls hcl ran ap sua v42bis gtp prim lral global ll... . . . .	58
1.3.25	no logging level force-all . . . . .	61
1.3.26	nse <0-65535> restart-sns . . . . .	62
1.3.27	nsvc <0-65535> (block unblock reset) . . . . .	62
1.3.28	page imsi IMSI . . . . .	62
1.3.29	show alarms . . . . .	63
1.3.30	show asciidoc counters . . . . .	63
1.3.31	show bssgp . . . . .	63
1.3.32	show bssgp nsei <0-65535> [stats] . . . . .	64
1.3.33	show bssgp stats . . . . .	64
1.3.34	show cpu-sched threads . . . . .	64
1.3.35	show cs7 (sua lm3 ual ipa) (sctp tcp) [<0-65534>] . . . . .	65
1.3.36	show cs7 (sua lm3 ual ipa) [<0-65534>] . . . . .	65
1.3.37	show cs7 config . . . . .	66
1.3.38	show cs7 instance <0-15> as (active all lm3 ual sua) . . . . .	66
1.3.39	show cs7 instance <0-15> as binding-table name AS_NAME . . . . .	67
1.3.40	show cs7 instance <0-15> as name AS_NAME . . . . .	67
1.3.41	show cs7 instance <0-15> asp . . . . .	68
1.3.42	show cs7 instance <0-15> asp name ASP_NAME . . . . .	68
1.3.43	show cs7 instance <0-15> asp-assoc-status . . . . .	69
1.3.44	show cs7 instance <0-15> asp-assoc-status name ASP_NAME . . . . .	69
1.3.45	show cs7 instance <0-15> asp-remaddr . . . . .	70
1.3.46	show cs7 instance <0-15> asp-remaddr name ASP_NAME . . . . .	70
1.3.47	show cs7 instance <0-15> route [POINT_CODE] . . . . .	71
1.3.48	show cs7 instance <0-15> route binding-table [POINT_CODE] [all-matches] . . . . .	72
1.3.49	show cs7 instance <0-15> route-lookup POINT_CODE from POINT_CODE sls <0-15> [lis... . . . .	72
1.3.50	show cs7 instance <0-15> sccp addressbook . . . . .	73
1.3.51	show cs7 instance <0-15> sccp connections . . . . .	74
1.3.52	show cs7 instance <0-15> sccp ssn <0-65535> . . . . .	74
1.3.53	show cs7 instance <0-15> sccp timers . . . . .	75
1.3.54	show cs7 instance <0-15> sccp users . . . . .	75

1.3.55	show cs7 instance <0-15> users	76
1.3.56	show history	76
1.3.57	show llc	76
1.3.58	show logging vty	77
1.3.59	show mm-context all [pdp]	77
1.3.60	show mm-context imsi IMSI [pdp]	77
1.3.61	show ns (nseilnsvc) <0-65535> [stats]	78
1.3.62	show ns binds [stats]	78
1.3.63	show ns entities [stats]	79
1.3.64	show ns persistent	79
1.3.65	show online-help	79
1.3.66	show pdp-context all	80
1.3.67	show rate-counters [skip-zero]	80
1.3.68	show runtime	80
1.3.69	show sgsn	81
1.3.70	show sndcp	81
1.3.71	show startup-config	81
1.3.72	show stats [skip-zero]	82
1.3.73	show stats level (global peer subscriber) [skip-zero]	82
1.3.74	show subscriber cache	83
1.3.75	show talloc-context (application global all) (full brief DEPTH)	83
1.3.76	show talloc-context (application global all) (full brief DEPTH) filter REGEXP	84
1.3.77	show talloc-context (application global all) (full brief DEPTH) tree ADDRESS	84
1.3.78	show timer [TNNNN]	85
1.3.79	show timer gtp [TNNNN]	85
1.3.80	show version	86
1.3.81	shutdown	86
1.3.82	stats report	86
1.3.83	stats reset	87
1.3.84	terminal length <0-512>	87
1.3.85	terminal monitor	87
1.3.86	terminal no length	88
1.3.87	terminal no monitor	88
1.3.88	update-subscriber imsi IMSI cancel (update-procedure subscription-withdraw)	88
1.3.89	update-subscriber imsi IMSI create	89
1.3.90	update-subscriber imsi IMSI destroy	89
1.3.91	update-subscriber imsi IMSI insert auth-triplet <1-5> sres SRES rand RAND kc KC	90
1.3.92	update-subscriber imsi IMSI update-auth-info	90
1.3.93	update-subscriber imsi IMSI update-location-result (ok system-failure data-missi...	91



1.3.94	who . . . . .	92
1.4	config . . . . .	92
1.4.1	banner motd default . . . . .	92
1.4.2	banner motd file [FILE] . . . . .	92
1.4.3	bssgp . . . . .	93
1.4.4	cpu-sched . . . . .	93
1.4.5	cs7 instance <0-15> . . . . .	93
1.4.6	ctrl . . . . .	94
1.4.7	enable password (8l) WORD . . . . .	94
1.4.8	enable password LINE . . . . .	94
1.4.9	hostname WORD . . . . .	95
1.4.10	line vty . . . . .	95
1.4.11	log alarms <2-32700> . . . . .	95
1.4.12	log file FILENAME [blocking-io] . . . . .	96
1.4.13	log gsmtap [HOSTNAME] . . . . .	96
1.4.14	log stderr [blocking-io] . . . . .	96
1.4.15	log syslog (authpriv cron daemon ftp lpr mail news user uucp) . . . . .	97
1.4.16	log syslog local <0-7> . . . . .	97
1.4.17	log systemd-journal [raw] . . . . .	98
1.4.18	no banner motd . . . . .	98
1.4.19	no enable password . . . . .	99
1.4.20	no hostname [HOSTNAME] . . . . .	99
1.4.21	no log alarms . . . . .	99
1.4.22	no log file FILENAME . . . . .	100
1.4.23	no log gsmtap [HOSTNAME] . . . . .	100
1.4.24	no log stderr . . . . .	100
1.4.25	no log syslog . . . . .	101
1.4.26	no log systemd-journal . . . . .	101
1.4.27	no service advanced-vty . . . . .	101
1.4.28	no service terminal-length [<0-512>] . . . . .	102
1.4.29	no stats reporter log [NAME] . . . . .	102
1.4.30	no stats reporter statsd [NAME] . . . . .	103
1.4.31	ns . . . . .	103
1.4.32	password (8l) WORD . . . . .	103
1.4.33	password LINE . . . . .	104
1.4.34	service advanced-vty . . . . .	104
1.4.35	service terminal-length <0-512> . . . . .	104
1.4.36	sgsn . . . . .	105
1.4.37	show history . . . . .	105

---

1.4.38	stats interval <0-65535>	105
1.4.39	stats reporter log [NAME]	106
1.4.40	stats reporter statsd [NAME]	106
1.4.41	stats-tcp batch-size <1-65535>	106
1.4.42	stats-tcp interval <0-65535>	107
1.5	config-log	107
1.5.1	logging color (0 1)	107
1.5.2	logging filter all (0 1)	108
1.5.3	logging filter bvc nsei <0-65535> bvci <0-65535>	108
1.5.4	logging filter nse nsei <0-65535>	109
1.5.5	logging filter nsvc nsvci <0-65535>	109
1.5.6	logging level (mmlpaglmeasreflgprslldclsndcplslhclranaplsualv42bislgtpprimlrall...	110
1.5.7	logging level force-all (debug info notice error fatal)	112
1.5.8	logging level set-all (debug info notice error fatal)	113
1.5.9	logging print category (0 1)	114
1.5.10	logging print category-hex (0 1)	114
1.5.11	logging print extended-timestamp (0 1)	115
1.5.12	logging print file (0 1 basename) [last]	115
1.5.13	logging print level (0 1)	116
1.5.14	logging print thread-id (0 1)	116
1.5.15	logging timestamp (0 1)	117
1.5.16	no logging level force-all	117
1.6	config-stats	117
1.6.1	disable	117
1.6.2	enable	118
1.6.3	flush-period <0-65535>	118
1.6.4	level (global peer subscriber)	118
1.6.5	local-ip ADDR	119
1.6.6	mtu <100-65535>	119
1.6.7	no local-ip	119
1.6.8	no mtu	120
1.6.9	no prefix	120
1.6.10	prefix PREFIX	120
1.6.11	remote-ip ADDR	121
1.6.12	remote-port <1-65535>	121
1.7	config-line	121
1.7.1	bind A.B.C.D [<0-65535>]	121
1.7.2	login	122
1.7.3	no login	122

1.8	config-ns	122
1.8.1	bind (frludp) ID	122
1.8.2	ip-sns-default bind ID	123
1.8.3	no bind ID	123
1.8.4	no ip-sns-default bind ID	123
1.8.5	no nse <0-65535>	124
1.8.6	nse <0-65535> [ip-sns-role-sgsn]	124
1.8.7	timer (tns-block tns-block-retries tns-reset tns-reset-retries tns-test tns-aliv...	124
1.8.8	txqueue-max-length <1-4096>	125
1.9	config-bssgp	126
1.10	config-ctrl	126
1.10.1	bind A.B.C.D [<0-65535>]	126
1.11	config-cs7	126
1.11.1	as NAME (sualm3ualipa)	126
1.11.2	asp NAME <0-65535> <0-65535> (sualm3ualipa)	127
1.11.3	asp NAME <0-65535> <0-65535> (sualm3ualipa) (sctpltcp)	127
1.11.4	description .TEXT	128
1.11.5	network-indicator (international   national   reserved   spare)	128
1.11.6	no as NAME	129
1.11.7	no asp NAME	129
1.11.8	no sccp-address NAME	130
1.11.9	point-code POINT_CODE	130
1.11.10	point-code delimiter (default dash)	131
1.11.11	point-code format <1-24> [<1-23>] [<1-22>]	131
1.11.12	point-code format default	132
1.11.13	sccp max-optional-data (<0-999999> standard)	132
1.11.14	sccp-address NAME	133
1.11.15	sccp-timer (conn_est ias iar rellrepeat_rellint guard reset reassembly) <1-99999...	133
1.11.16	secondary-pc POINT_CODE	134
1.11.17	sls-opc-dpc [opc-shift] [<0-8>] [dpc-shift] [<0-8>]	134
1.11.18	sls-shift <0-6>	135
1.11.19	xua rkm routing-key-allocation (static-only dynamic-permitted)	135
1.12	config-cs7-as	136
1.12.1	asp NAME	136
1.12.2	binding-table reset	136
1.12.3	description .TEXT	137
1.12.4	no asp NAME	137
1.12.5	no traffic-mode	137
1.12.6	point-code override dpc PC	138

1.12.7	point-code override patch-sccp (disabledlboth)	138
1.12.8	qos-class <0-7>	139
1.12.9	recovery-timeout <1-2000>	139
1.12.10	routing-key RCONTEXT DPC	139
1.12.11	routing-key RCONTEXT DPC si (aal2lbicclb-isuplh248lisuplsat-isuplsccpltup)	140
1.12.12	routing-key RCONTEXT DPC si (aal2lbicclb-isuplh248lisuplsat-isuplsccpltup) ssn S...	141
1.12.13	routing-key RCONTEXT DPC ssn SSN	142
1.12.14	sls-shift <0-3>	143
1.12.15	traffic-mode (broadcast   roundrobin   override)	143
1.12.16	traffic-mode loadshare [bindings] [sls] [opc-sls] [opc-shift] [<0-2>]	143
1.13	config-cs7-asp	144
1.13.1	block	144
1.13.2	description .TEXT	144
1.13.3	local-ip (A.B.C.D X::X:X) [primary]	145
1.13.4	no local-ip (A.B.C.D X::X:X)	145
1.13.5	no quirk (no_notify daud_in_asplsnm_inactive)	146
1.13.6	no remote-ip (A.B.C.D X::X:X)	146
1.13.7	no sctp-param init (num-ostreams max-instreams max-attempts timeout)	147
1.13.8	no shutdown	147
1.13.9	no tcp-param keepalive	148
1.13.10	no tcp-param keepalive (timelintvllprobes)	148
1.13.11	no tcp-param user-timeout	149
1.13.12	qos-class <0-7>	149
1.13.13	quirk (no_notify daud_in_asplsnm_inactive)	150
1.13.14	remote-ip (A.B.C.D X::X:X) [primary]	150
1.13.15	role (sglasplisp)	151
1.13.16	sctp-param init (num-ostreams max-instreams max-attempts timeout) <0-65535>	151
1.13.17	shutdown	152
1.13.18	tcp-param keepalive (timelintvllprobes) <0-65535>	152
1.13.19	tcp-param keepalive enabled	153
1.13.20	tcp-param user-timeout <0-65535>	153
1.13.21	timer lm (wait_asp_up wait_notify wait_notify_rkmlwait_rk_reg_resp) <1-999999>	154
1.13.22	timer xua (acklbeat) <1-999999>	154
1.13.23	transport-role (client server)	155
1.14	config-cs7-sccpaddr	155
1.14.1	global-title	155
1.14.2	no global-title	156
1.14.3	no point-code	156
1.14.4	no subsystem-number	156

1.14.5	point-code POINT_CODE	157
1.14.6	routing-indicator (GTIPCLIP)	157
1.14.7	subsystem-number <0-4294967295>	158
1.15	config-cs7-sccpaddr-gt	158
1.15.1	digits DIGITS	158
1.15.2	global-title-indicator <0-15>	159
1.15.3	nature-of-address-indicator <0-127>	159
1.15.4	numbering-plan-indicator <0-15>	159
1.15.5	translation-type <0-255>	160
1.16	config-cpu-sched	160
1.16.1	cpu-affinity (self all <0-4294967295> THREADNAME) CPUHEXMASK [delay]	160
1.16.2	policy rr <1-32>	161
1.17	config-ns-bind	161
1.17.1	accept-dynamic-ip-sns	161
1.17.2	accept-ipaccess	162
1.17.3	dscp <0-63>	162
1.17.4	fr NETIF (fr frnet)	162
1.17.5	ip-sns signalling-weight <0-254> data-weight <0-254>	163
1.17.6	listen (A.B.C.D X::X::X:X) <1-65535>	163
1.17.7	no accept-dynamic-ip-sns	163
1.17.8	no accept-ipaccess	164
1.17.9	no dscp	164
1.17.10	no fr NETIF	164
1.17.11	no listen	165
1.17.12	socket-priority <0-255>	165
1.18	config-ns-nse	165
1.18.1	ip-sns-bind BINDID	165
1.18.2	ip-sns-remote (A.B.C.D X::X::X:X) <1-65535>	166
1.18.3	no ip-sns-bind BINDID	166
1.18.4	no ip-sns-remote (A.B.C.D X::X::X:X) <1-65535>	166
1.18.5	no nsvc fr NETIF dlci <16-1007>	167
1.18.6	no nsvc ipa BIND (A.B.C.D X::X::X:X) <1-65535> nsvci <0-65535>	167
1.18.7	no nsvc nsvci <0-65535>	168
1.18.8	no nsvc udp BIND (A.B.C.D X::X::X:X) <1-65535>	169
1.18.9	nsvc fr NETIF dlci <16-1007> nsvci <0-65535>	169
1.18.10	nsvc ipa BIND (A.B.C.D X::X::X:X) <1-65535> nsvci <0-65535>	170
1.18.11	nsvc udp BIND (A.B.C.D X::X::X:X) <1-65535>	170
1.18.12	nsvc udp BIND (A.B.C.D X::X::X:X) <1-65535> signalling-weight <0-254> data-weight...	171
1.19	config-sgsn	171

1.19.1	access-point-name NAME	171
1.19.2	apn APNAME ggsn <0-255>	172
1.19.3	apn APNAME imsi-prefix IMSIPRE ggsn <0-255>	172
1.19.4	asn1 debug (1 0)	173
1.19.5	asn1 xer-print (1 0)	173
1.19.6	auth-policy (accept-all closed acl-only remote)	173
1.19.7	authentication (optional required)	174
1.19.8	cdr filename NAME	174
1.19.9	cdr interval <1-2147483647>	175
1.19.10	cdr trap	175
1.19.11	compression rfc1144 active slots <1-256>	175
1.19.12	compression rfc1144 passive	176
1.19.13	compression v42bis active direction (ms sgsn both) codewords <512-65535> strlen ...	176
1.19.14	compression v42bis passive	177
1.19.15	cs7-instance-iu <0-15>	177
1.19.16	encryption cipher-plugin-path PATH	177
1.19.17	encryption gea <0-4> [<0-4>] [<0-4>] [<0-4>] [<0-4>]	178
1.19.18	encryption uea <0-2> [<0-2>] [<0-2>]	178
1.19.19	ggsn <0-255> echo-interval <1-36000>	179
1.19.20	ggsn <0-255> gtp-version (0 1)	179
1.19.21	ggsn <0-255> no echo-interval	180
1.19.22	ggsn <0-255> remote-ip A.B.C.D	180
1.19.23	ggsn dynamic	180
1.19.24	grx-dns-add A.B.C.D	181
1.19.25	gsup ipa-name NAME	181
1.19.26	gsup oap-id <0-65535>	181
1.19.27	gsup oap-k K	182
1.19.28	gsup oap-opc OPC	182
1.19.29	gsup remote-ip A.B.C.D	182
1.19.30	gsup remote-port <0-65535>	183
1.19.31	gtp local-ip A.B.C.D	183
1.19.32	gtp state-dir PATH	183
1.19.33	imsi-acl (add del) IMSI	184
1.19.34	iu rab-assign-addr-enc (x213 v4raw)	184
1.19.35	mme NAME	184
1.19.36	no access-point-name NAME	185
1.19.37	no cdr filename	185
1.19.38	no cdr trap	185
1.19.39	no compression rfc1144	186

1.19.40 no compression v42bis . . . . .	186
1.19.41 no encryption cipher-plugin-path PATH . . . . .	186
1.19.42 no mme NAME . . . . .	187
1.19.43 timer [TNNNN] [(<0-2147483647> default)] . . . . .	187
1.19.44 timer gtp [TNNNN] [(<0-2147483647> default)] . . . . .	187
1.20 config-sgsn-mme . . . . .	188
1.20.1 gtp ran-info-relay <0-999> <0-999> <0-65535> . . . . .	188
1.20.2 gtp ran-info-relay default . . . . .	188
1.20.3 gtp remote-ip A.B.C.D . . . . .	189
1.20.4 gummei <0-999> <0-999> <0-65535> <0-254> . . . . .	189
1.20.5 no gtp ran-info-relay <0-999> <0-999> <0-65535> . . . . .	189
1.20.6 no gtp ran-info-relay default . . . . .	190
1.20.7 no gummei . . . . .	190

# List of Tables

1.1	VTY Parameter Patterns . . . . .	1
1.2	VTY port numbers . . . . .	1



# Chapter 1

## VTY reference

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

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

Table 1.1: VTY Parameter Patterns

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

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

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

Table 1.2: VTY port numbers

### 1.1 Common Commands

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

### 1.1.1 end

#### Command

```
end
```

#### Parameters

end

End current mode and change to enable mode.

### 1.1.2 exit

#### Command

```
exit
```

#### Parameters

exit

Exit current mode and down to previous mode

### 1.1.3 help

#### Command

```
help
```

#### Parameters

help

Description of the interactive help system

### 1.1.4 list [with-flags]

#### Command

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

#### Parameters

list

Print command list

[with-flags]

Also print the VTY attribute flags

---

### 1.1.5 show running-config

#### Command

```
show running-config
```

#### Parameters

##### show

Show running system information

##### running-config

running configuration

### 1.1.6 show vty-attributes

#### Command

```
show vty-attributes
```

#### Parameters

##### show

Show running system information

##### vty-attributes

List of VTY attributes

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

#### Command

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

#### Parameters

##### show

Show running system information

##### vty-attributes

List of VTY attributes

##### application

Application specific attributes only

##### library

Library specific attributes only

##### global

Global attributes only

---

### 1.1.8 write

#### Command

```
write
```

#### Parameters

##### write

Write running configuration to memory, network, or terminal

### 1.1.9 write file [PATH]

#### Command

```
write file [PATH]
```

#### Parameters

##### write

Write running configuration to memory, network, or terminal

##### file

Write to configuration file

##### [PATH]

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

### 1.1.10 write memory

#### Command

```
write memory
```

#### Parameters

##### write

Write running configuration to memory, network, or terminal

##### memory

Write configuration to the file (same as write file)

### 1.1.11 write terminal

#### Command

```
write terminal
```

#### Parameters

##### write

Write running configuration to memory, network, or terminal

##### terminal

Write to terminal

## 1.2 view

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

### 1.2.1 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

---

### 1.2.2 enable [expert-mode]

#### Command

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

#### Parameters

##### enable

Turn on privileged mode command

##### [expert-mode]

Enable the expert mode (show hidden commands)

### 1.2.3 logging color (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### color

Configure color-printing for log messages

##### 0

Don't use color for printing messages

##### 1

Use color for printing messages

### 1.2.4 logging disable

#### Command

```
logging disable
```

#### Parameters

##### logging

Configure logging

##### disable

Disables logging to this vty

---

### 1.2.5 logging enable

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

#### Command

```
logging enable
```

#### Parameters

logging

Configure logging

enable

Enables logging to this vty

### 1.2.6 logging filter all (0|1)

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

#### Command

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

#### Parameters

logging

Configure logging

filter

Filter log messages

all

Do you want to log all messages?

0

Only print messages matched by other filters

1

Bypass filter and print all messages

---

### 1.2.7 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)

### 1.2.8 logging filter nse nsei <0-65535>

#### Command

```
logging filter nse nsei <0-65535>
```

#### Parameters

##### logging

Configure logging

##### filter

Filter log messages

##### nse

Filter based on NS Entity

##### nsei

Identify NSE by NSEI

##### <0-65535>

Numeric identifier

---



### 1.2.9 logging filter nsvc nsvci <0-65535>

#### Command

```
logging filter nsvc nsvci <0-65535>
```

#### Parameters

##### logging

Configure logging

##### filter

Filter log messages

##### nsvc

Filter based on NS Virtual Connection

##### nsvci

Identify NS-VC by NSVCI

##### <0-65535>

Numeric identifier

### 1.2.10 logging level (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|ra|l...

#### Command

```
logging level (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|ra|lglobal| ↔  
llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscdp|lsua|lm3ua| ↔  
lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio) (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

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)

rim  
RAN Information Management (RIM)

ra  
Routing Area

lglobal  
Library-internal global log family

llapd  
LAPD in libosmogsm

linp  
A-bis Input Subsystem

lmux  
A-bis B-Subchannel TRAU Frame Multiplex

lmi  
A-bis Input Driver for Signalling

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

lsms  
Layer3 Short Message Service (SMS)

lctrl  
Control Interface

lgtp  
GPRS GTP library

---

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

libosmo-sigtran MTP3 User Adaptation

lmgcp

libosmo-mgcp Media Gateway Control Protocol

ljibuf

libosmo-netif Jitter Buffer

lrspro

Remote SIM protocol

lns

GPRS NS layer

lbssgp

GPRS BSSGP layer

lndata

GPRS NS layer data PDU

lnsignal

GPRS NS layer signal PDU

liuup

Iu UP layer

lpfcp

libosmo-pfcp Packet Forwarding Control Protocol

lcsn1

libosmo-csn1 Concrete Syntax Notation 1 codec

lio

libosmocore IO Subsystem

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

force-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

---

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### level

Set the log level for a specified category

##### set-all

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

##### debug

Log debug messages and higher levels

##### info

Log informational messages and higher levels

##### notice

Log noticeable messages and higher levels

##### error

Log error messages and higher levels

##### fatal

Log only fatal messages

### 1.2.13 logging print category (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### category

Configure log message

##### 0

Don't prefix each log message

##### 1

Prefix each log message with category/subsystem name

---

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### category-hex

Configure log message

0

Don't prefix each log message

1

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

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### extended-timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

---

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### file

Configure log message

##### 0

Don't prefix each log message

##### 1

Prefix each log message with the source file and line

##### basename

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

##### [last]

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

### 1.2.17 logging print level (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### level

Configure log message

##### 0

Don't prefix each log message

##### 1

Prefix each log message with the log level name

---

### 1.2.18 logging print thread-id (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### thread-id

Configure log message logging Thread ID

0

Don't prefix each log message

1

Prefix each log message with current Thread ID

### 1.2.19 logging set-log-mask MASK

#### Command

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

#### Parameters

##### logging

Configure logging

##### set-log-mask

Set the logmask of this logging target

##### MASK

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



### 1.2.20 logging timestamp (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

### 1.2.21 logp (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|ra|lglobal|ll...

#### Command

```
logp (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|ra|lglobal|llapd| ↵
linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp| ↵
ljibuf|lrspro|lns|lbssgp|lndata|lnssignal|liuup|lpfcp|lcsn1|lio) (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

##### 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)

rim  
RAN Information Management (RIM)

ra  
Routing Area

lglobal  
Library-internal global log family

llapd  
LAPD in libosmogsm

linp  
A-bis Input Subsystem

lmux  
A-bis B-Subchannel TRAU Frame Multiplex

lmi  
A-bis Input Driver for Signalling

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

lsms  
Layer3 Short Message Service (SMS)

lctrl  
Control Interface

lgtp  
GPRS GTP library

lstats  
Statistics messages and logging

lgsup  
Generic Subscriber Update Protocol

---

---

loap  
Osmocom Authentication Protocol

lss7  
libosmo-sigtran Signalling System 7

lsccp  
libosmo-sigtran SCCP Implementation

lsua  
libosmo-sigtran SCCP User Adaptation

lm3ua  
libosmo-sigtran MTP3 User Adaptation

lmgcp  
libosmo-mgcp Media Gateway Control Protocol

ljibuf  
libosmo-netif Jitter Buffer

lrspro  
Remote SIM protocol

lns  
GPRS NS layer

lbssgp  
GPRS BSSGP layer

lnsdata  
GPRS NS layer data PDU

lnssignal  
GPRS NS layer signal PDU

liuup  
Iu UP layer

lpfcp  
libosmo-pfcp Packet Forwarding Control Protocol

lcsn1  
libosmo-csn1 Concrete Syntax Notation 1 codec

lio  
libosmocore IO Subsystem

debug  
Log debug messages and higher levels

info  
Log informational messages and higher levels

notice  
Log noticeable messages and higher levels

---

error

Log error messages and higher levels

fatal

Log only fatal messages

.LOGMESSAGE

Arbitrary message to log on given category and log level

### 1.2.22 no logging level force-all

Command

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

Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

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

### 1.2.23 show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

### 1.2.24 show asciidoc counters

#### Command

```
show asciidoc counters
```

#### Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

### 1.2.25 show bssgp

#### Command

```
show bssgp
```

#### Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

### 1.2.26 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

---

### 1.2.27 show bssgp stats

#### Command

```
show bssgp stats
```

#### Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

stats

Include statistics

### 1.2.28 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)

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

#### Command

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

#### Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

---

sua  
    SCCP User Adaptation

m3ua  
    MTP3 User Adaptation

ipa  
    IPA Multiplex (SCCP Lite)

sctp  
    SCTP (Stream Control Transmission Protocol)

tcp  
    TCP (Transmission Control Protocol)

[<0-65534>]  
    Local Port Number

### 1.2.30 **show cs7 (sua|m3ua|ipa) [<0-65534>]**

#### Command

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

#### Parameters

show  
    Show running system information

cs7  
    ITU-T Signaling System 7

sua  
    SCCP User Adaptation

m3ua  
    MTP3 User Adaptation

ipa  
    IPA Multiplex (SCCP Lite)

[<0-65534>]  
    Local Port Number

### 1.2.31 show cs7 config

#### Command

```
show cs7 config
```

#### Parameters

##### show

Show running system information

##### cs7

ITU-T Signaling System 7

##### config

Currently running cs7 configuration

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

#### Command

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

#### Parameters

##### show

Show running system information

##### cs7

ITU-T Signaling System 7

##### instance

An instance of the SS7 stack

##### <0-15>

An instance of the SS7 stack

##### as

Application Server (AS)

##### active

Display all active ASs

##### all

Display all ASs (default)

##### m3ua

Display all m3ua ASs

##### sua

Display all SUA ASs

---



### 1.2.33 show cs7 instance <0-15> as binding-table name AS\_NAME

#### Command

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

#### Parameters

##### show

Show running system information

##### cs7

ITU-T Signaling System 7

##### instance

An instance of the SS7 stack

##### <0-15>

An instance of the SS7 stack

##### as

Application Server (AS)

##### binding-table

Display binding table

##### name

Look up AS with a given name

##### AS\_NAME

Name of the Application Server (AS)

### 1.2.34 show cs7 instance <0-15> as name AS\_NAME

#### Command

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

#### Parameters

##### show

Show running system information

##### cs7

ITU-T Signaling System 7

##### instance

An instance of the SS7 stack

##### <0-15>

An instance of the SS7 stack

---

as

Application Server (AS)

name

Look up AS with a given name

AS\_NAME

Name of the Application Server (AS)

### 1.2.35 show cs7 instance <0-15> asp

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp

Application Server Process (ASP)

### 1.2.36 show cs7 instance <0-15> asp name ASP\_NAME

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp

Application Server Process (ASP)

name

Lookup ASP with a given name

ASP\_NAME

Name of the Application Server Process (ASP)

### 1.2.37 show cs7 instance <0-15> asp-assoc-status

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp-assoc-status

Application Server Process (ASP) SCTP association status

### 1.2.38 show cs7 instance <0-15> asp-assoc-status name ASP\_NAME

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp-assoc-status

Application Server Process (ASP) SCTP association information

name

Lookup ASP with a given name

ASP\_NAME

Name of the Application Server Process (ASP)

### 1.2.39 show cs7 instance <0-15> asp-remaddr

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp-remaddr

Application Server Process (ASP) remote addresses information

### 1.2.40 show cs7 instance <0-15> asp-remaddr name ASP\_NAME

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp-remaddr

Application Server Process (ASP) remote addresses information

name

Lookup ASP with a given name

ASP\_NAME

Name of the Application Server Process (ASP)

### 1.2.41 **show cs7 instance <0-15> route [POINT\_CODE]**

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

route

Routing Table

[POINT\_CODE]

Destination Point Code

### 1.2.42 show cs7 instance <0-15> route binding-table [POINT\_CODE] [all-matches]

#### Command

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

#### Parameters

##### show

Show running system information

##### cs7

ITU-T Signaling System 7

##### instance

An instance of the SS7 stack

##### <0-15>

An instance of the SS7 stack

##### route

Routing Table

##### binding-table

Display binding table

##### [POINT\_CODE]

Destination Point Code

##### [all-matches]

Display all matching Combination Links

### 1.2.43 show cs7 instance <0-15> route-lookup POINT\_CODE from POINT\_CODE sls <0-15> [lis...

#### Command

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

#### Parameters

##### show

Show running system information

##### cs7

ITU-T Signaling System 7

##### instance

An instance of the SS7 stack

##### <0-15>

An instance of the SS7 stack

---

route-lookup

Look up route

POINT\_CODE

Destination PC

from

From

POINT\_CODE

Origin PC

sls

SLS

<0-15>

SLS value

[list-asps]

List ASPs of the AS if route points to an AS

#### 1.2.44 show cs7 instance <0-15> sccp addressbook

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

addressbook

List all SCCP addressbook entries

### 1.2.45 show cs7 instance <0-15> sccp connections

#### Command

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

#### Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

connections

Show List of active SCCP connections

### 1.2.46 show cs7 instance <0-15> sccp ssn <0-65535>

#### Command

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

#### Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

ssn

Find an SCCP User registered for the given SSN

<0-65535>

Subsystem Number (SSN)

---



### 1.2.47 show cs7 instance <0-15> sccp timers

#### Command

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

#### Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signaling Connection Control Part

timers

Show List of SCCP timers

### 1.2.48 show cs7 instance <0-15> sccp users

#### Command

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

#### Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

users

Show List of SCCP Users registered

---

### 1.2.49 show cs7 instance <0-15> users

#### Command

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

#### Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

users

User Table

### 1.2.50 show history

#### Command

```
show history
```

#### Parameters

show

Show running system information

history

Display the session command history

### 1.2.51 show llc

#### Command

```
show llc
```

#### Parameters

show

Show running system information

llc

Display information about the LLC protocol

---

### 1.2.52 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

### 1.2.53 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

### 1.2.54 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

### 1.2.55 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

### 1.2.56 show ns binds [stats]

Command

```
show ns binds [stats]
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

binds

Display information about the NS protocol binds

[stats]

Include statistic

### 1.2.57 show ns entities [stats]

#### Command

```
show ns entities [stats]
```

#### Parameters

##### show

Show running system information

##### ns

Display information about the NS protocol

##### entities

Display information about the NS protocol entities (NSEs)

##### [stats]

Include statistics

### 1.2.58 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

### 1.2.59 show online-help

#### Command

```
show online-help
```

#### Parameters

##### show

Show running system information

##### online-help

Online help

---

### 1.2.60 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

### 1.2.61 show pid

#### Command

```
show pid
```

#### Parameters

##### show

Show running system information

##### pid

Displays the process ID

### 1.2.62 show rate-counters [skip-zero]

#### Command

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

#### Parameters

##### show

Show running system information

##### rate-counters

Show all rate counters

##### [skip-zero]

Skip items with total count zero

---

### 1.2.63 show runtime

#### Command

```
show runtime
```

#### Parameters

##### show

Show running system information

##### runtime

Display runtime information

### 1.2.64 show sgsn

#### Command

```
show sgsn
```

#### Parameters

##### show

Show running system information

##### sgsn

Display information about the SGSN

### 1.2.65 show sndcp

#### Command

```
show sndcp
```

#### Parameters

##### show

Show running system information

##### sndcp

Display information about the SNDTCP protocol

### 1.2.66 show stats [skip-zero]

#### Command

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

#### Parameters

##### show

Show running system information

##### stats

Show statistical values

##### [skip-zero]

Skip items with total count zero

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

#### Command

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

#### Parameters

##### show

Show running system information

##### stats

Show statistical values

##### level

Set the maximum group level

##### global

Show global groups only

##### peer

Show global and network peer related groups

##### subscriber

Show global, peer, and subscriber groups

##### [skip-zero]

Skip items with total count zero

---



### 1.2.68 show subscriber cache

#### Command

```
show subscriber cache
```

#### Parameters

##### show

Show running system information

##### subscriber

Show information about subscribers

##### cache

Display contents of subscriber cache

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

#### Command

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

#### Parameters

##### show

Show running system information

##### talloc-context

Show talloc memory hierarchy

##### application

Application's context

##### global

Global context (OTC\_GLOBAL)

##### all

All contexts, if NULL-context tracking is enabled

##### full

Display a full talloc memory hierarchy

##### brief

Display a brief talloc memory hierarchy

##### DEPTH

Specify required maximal depth value

---

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

#### Command

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

#### Parameters

##### show

Show running system information

##### talloc-context

Show talloc memory hierarchy

##### application

Application's context

##### global

Global context (OTC\_GLOBAL)

##### all

All contexts, if NULL-context tracking is enabled

##### full

Display a full talloc memory hierarchy

##### brief

Display a brief talloc memory hierarchy

##### DEPTH

Specify required maximal depth value

##### filter

Filter chunks using regular expression

##### REGEXP

Regular expression

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

#### Command

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

#### Parameters

##### show

Show running system information

##### talloc-context

Show talloc memory hierarchy

application

Application's context

global

Global context (OTC\_GLOBAL)

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

tree

Display only a specific memory chunk

ADDRESS

Chunk address (e.g. 0xdeadbeef)

### 1.2.72 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'.

### 1.2.73 show timer gtp [TNNNN]

Command

```
show timer gtp [TNNNN]
```

Parameters

---

show

Show running system information

timer

Show timers

gtp

GTP (libgtp) timers

[TNNNN]

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

### 1.2.74 show uptime

Command

```
show uptime
```

Parameters

show

Show running system information

uptime

Displays how long the program has been running

### 1.2.75 show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

### 1.2.76 terminal length <0-512>

#### Command

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

#### Parameters

##### terminal

Set terminal line parameters

##### length

Set number of lines on a screen

##### <0-512>

Number of lines on screen (0 for no pausing)

### 1.2.77 terminal no length

#### Command

```
terminal no length
```

#### Parameters

##### terminal

Set terminal line parameters

##### no

Negate a command or set its defaults

##### length

Set number of lines on a screen

### 1.2.78 who

#### Command

```
who
```

#### Parameters

##### who

Display who is on vty

---

## 1.3 enable

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

### 1.3.1 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

### 1.3.2 configure [terminal]

#### Command

```
configure [terminal]
```

#### Parameters

##### configure

Configuration from vty interface

##### [terminal]

Configuration terminal

### 1.3.3 copy running-config startup-config

#### Command

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

#### Parameters

copy

Copy configuration

running-config

Copy running config to...

startup-config

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

### 1.3.4 cs7 instance <0-15> asp NAME disconnect

#### Command

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

#### Parameters

cs7

ITU-T Signaling System 7

instance

Instance related commands

<0-15>

SS7 Instance Number

asp

ASP related commands

NAME

Name of ASP

disconnect

Disconnect the ASP (client will reconnect)

### 1.3.5 disable

#### Command

```
disable
```

#### Parameters

disable

Turn off privileged mode command

### 1.3.6 logging color (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### color

Configure color-printing for log messages

0

Don't use color for printing messages

1

Use color for printing messages

### 1.3.7 logging disable

#### Command

```
logging disable
```

#### Parameters

##### logging

Configure logging

##### disable

Disables logging to this vty

### 1.3.8 logging enable

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

#### Command

```
logging enable
```

#### Parameters

##### logging

Configure logging

##### enable

Enables logging to this vty

---



### 1.3.9 logging filter all (0|1)

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### filter

Filter log messages

##### all

Do you want to log all messages?

##### 0

Only print messages matched by other filters

##### 1

Bypass filter and print all messages

### 1.3.10 logging 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)

### 1.3.11 logging filter nse nsei <0-65535>

#### Command

```
logging filter nse nsei <0-65535>
```

#### Parameters

##### logging

Configure logging

##### filter

Filter log messages

##### nse

Filter based on NS Entity

##### nsei

Identify NSE by NSEI

<0-65535>

Numeric identifier

### 1.3.12 logging filter nsvc nsvci <0-65535>

#### Command

```
logging filter nsvc nsvci <0-65535>
```

#### Parameters

##### logging

Configure logging

##### filter

Filter log messages

##### nsvc

Filter based on NS Virtual Connection

##### nsvci

Identify NS-VC by NSVCI

<0-65535>

Numeric identifier

### 1.3.13 logging level (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|ra|l...

#### Command

```
logging level (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|ra|lglobal| ↵
llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscdp|lsua|lm3ua| ↵
lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio) (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

##### llc

GPRS Logical Link Control Protocol (LLC)

##### sndcp

GPRS Sub-Network Dependent Control Protocol (SNDP)

##### slhc

RFC1144 TCP/IP Header compression (SLHC)

##### ranap

RAN Application Part (RANAP)

##### sua

SCCP User Adaptation (SUA)

##### v42bis

V.42bis data compression (SNDP)

##### gtp

GPRS Tunnelling Protocol (GTP)

##### rim

RAN Information Management (RIM)

ra  
Routing Area

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
lrs	GPRS NS layer
lbssgp	GPRS BSSGP layer
lrsdata	GPRS NS layer data PDU
lrsignal	GPRS NS layer signal PDU
liuup	Iu UP layer
lpfcp	libosmo-pfcp Packet Forwarding Control Protocol
lcsn1	libosmo-csn1 Concrete Syntax Notation 1 codec
lio	libosmocore IO Subsystem
debug	Log debug messages and higher levels
info	Log informational messages and higher levels
notice	Log noticeable messages and higher levels
error	Log error messages and higher levels
fatal	Log only fatal messages

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

#### Command

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

#### Parameters

##### logging

Configure logging

**level**

Set the log level for a specified category

**force-all**

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

**debug**

Log debug messages and higher levels

**info**

Log informational messages and higher levels

**notice**

Log noticeable messages and higher levels

**error**

Log error messages and higher levels

**fatal**

Log only fatal messages

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

**Command**

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

**Parameters****logging**

Configure logging

**level**

Set the log level for a specified category

**set-all**

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

**debug**

Log debug messages and higher levels

**info**

Log informational messages and higher levels

**notice**

Log noticeable messages and higher levels

**error**

Log error messages and higher levels

**fatal**

Log only fatal messages

---

### 1.3.16 logging print category (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### category

Configure log message

0

Don't prefix each log message

1

Prefix each log message with category/subsystem name

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### category-hex

Configure log message

0

Don't prefix each log message

1

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

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### extended-timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### file

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the source file and line

##### basename

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

##### [last]

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

---



### 1.3.20 logging print level (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### level

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the log level name

### 1.3.21 logging print thread-id (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### thread-id

Configure log message logging Thread ID

0

Don't prefix each log message

1

Prefix each log message with current Thread ID

### 1.3.22 logging set-log-mask MASK

#### Command

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

#### Parameters

##### logging

Configure logging

##### set-log-mask

Set the logmask of this logging target

##### MASK

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

### 1.3.23 logging timestamp (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

### 1.3.24 logp (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|ra|lglobal|ll...

#### Command

```
logp (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|ra|lglobal|llapd| ↵
linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp| ↵
ljibuf|lrspro|lns|lbssgp|lndata|lnssignal|liuup|lpfcp|lcsn1|lio) (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

### 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)

### rim

RAN Information Management (RIM)

### ra

Routing Area

### lglobal

Library-internal global log family

### llapd

LAPD in libosmogsm

### linp

A-bis Input Subsystem

### lmux

A-bis B-Subchannel TRAU Frame Multiplex

---

---

lmi  
A-bis Input Driver for Signalling

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

lsms  
Layer3 Short Message Service (SMS)

lctrl  
Control Interface

lgtp  
GPRS GTP library

lstats  
Statistics messages and logging

lgsup  
Generic Subscriber Update Protocol

loap  
Osmocom Authentication Protocol

lss7  
libosmo-sigtran Signalling System 7

lsccp  
libosmo-sigtran SCCP Implementation

lsua  
libosmo-sigtran SCCP User Adaptation

lm3ua  
libosmo-sigtran MTP3 User Adaptation

lmgcp  
libosmo-mgcp Media Gateway Control Protocol

ljibuf  
libosmo-netif Jitter Buffer

lrspro  
Remote SIM protocol

lns  
GPRS NS layer

lbssgp  
GPRS BSSGP layer

lndata  
GPRS NS layer data PDU

lnsignal  
GPRS NS layer signal PDU

---

liuup

Iu UP layer

lpfcp

libosmo-pfcp Packet Forwarding Control Protocol

lcsn1

libosmo-csn1 Concrete Syntax Notation 1 codec

lio

libosmocore IO Subsystem

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

.LOGMESSAGE

Arbitrary message to log on given category and log level

### 1.3.25 no logging level force-all

Command

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

Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

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

### 1.3.26 nse <0-65535> restart-sns

#### Command

```
nse <0-65535> restart-sns
```

#### Parameters

nse

NSE specific commands

<0-65535>

NS Entity ID (NSEI)

restart-sns

Restart SNS procedure

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

#### Command

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

#### Parameters

nsvc

NS Virtual Connection

<0-65535>

NS Virtual Connection ID (NS-VCI)

block

Block a NSVC. As cause code O&M intervention will be used.

unblock

Unblock a NSVC. As cause code O&M intervention will be used.

reset

Reset a NSVC. As cause code O&M intervention will be used.

### 1.3.28 page imsi IMSI

#### Command

```
page imsi IMSI
```

#### Parameters

page

Send a PS paging request to subscriber

imsi

Use the IMSI to select the subscriber

IMSI

The IMSI

### 1.3.29 show alarms

#### Command

```
show alarms
```

#### Parameters

##### show

Show running system information

##### alarms

Show current logging configuration

### 1.3.30 show asciidoc counters

#### Command

```
show asciidoc counters
```

#### Parameters

##### show

Show running system information

##### asciidoc

Asciidoc generation

##### counters

Generate table of all registered counters

### 1.3.31 show bssgp

#### Command

```
show bssgp
```

#### Parameters

##### show

Show running system information

##### bssgp

Show information about the BSSGP protocol

---

### 1.3.32 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

### 1.3.33 show bssgp stats

#### Command

```
show bssgp stats
```

#### Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

stats

Include statistics

### 1.3.34 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)



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

#### Command

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

#### Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

sctp

SCTP (Stream Control Transmission Protocol)

tcp

TCP (Transmission Control Protocol)

[<0-65534>]

Local Port Number

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

#### Command

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

#### Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

[<0-65534>]

Local Port Number

### 1.3.37 show cs7 config

#### Command

```
show cs7 config
```

#### Parameters

##### show

Show running system information

##### cs7

ITU-T Signaling System 7

##### config

Currently running cs7 configuration

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

#### Command

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

#### Parameters

##### show

Show running system information

##### cs7

ITU-T Signaling System 7

##### instance

An instance of the SS7 stack

##### <0-15>

An instance of the SS7 stack

##### as

Application Server (AS)

##### active

Display all active ASs

##### all

Display all ASs (default)

##### m3ua

Display all m3ua ASs

##### sua

Display all SUA ASs

---

### 1.3.39 show cs7 instance <0-15> as binding-table name AS\_NAME

#### Command

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

#### Parameters

##### show

Show running system information

##### cs7

ITU-T Signaling System 7

##### instance

An instance of the SS7 stack

##### <0-15>

An instance of the SS7 stack

##### as

Application Server (AS)

##### binding-table

Display binding table

##### name

Look up AS with a given name

##### AS\_NAME

Name of the Application Server (AS)

### 1.3.40 show cs7 instance <0-15> as name AS\_NAME

#### Command

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

#### Parameters

##### show

Show running system information

##### cs7

ITU-T Signaling System 7

##### instance

An instance of the SS7 stack

##### <0-15>

An instance of the SS7 stack

---

as

Application Server (AS)

name

Look up AS with a given name

AS\_NAME

Name of the Application Server (AS)

### 1.3.41 show cs7 instance <0-15> asp

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp

Application Server Process (ASP)

### 1.3.42 show cs7 instance <0-15> asp name ASP\_NAME

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp

Application Server Process (ASP)

name

Lookup ASP with a given name

ASP\_NAME

Name of the Application Server Process (ASP)

### 1.3.43 show cs7 instance <0-15> asp-assoc-status

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp-assoc-status

Application Server Process (ASP) SCTP association status

### 1.3.44 show cs7 instance <0-15> asp-assoc-status name ASP\_NAME

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp-assoc-status

Application Server Process (ASP) SCTP association information

name

Lookup ASP with a given name

ASP\_NAME

Name of the Application Server Process (ASP)

### 1.3.45 show cs7 instance <0-15> asp-remaddr

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp-remaddr

Application Server Process (ASP) remote addresses information

### 1.3.46 show cs7 instance <0-15> asp-remaddr name ASP\_NAME

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp-remaddr

Application Server Process (ASP) remote addresses information

name

Lookup ASP with a given name

ASP\_NAME

Name of the Application Server Process (ASP)

### 1.3.47 **show cs7 instance <0-15> route [POINT\_CODE]**

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

route

Routing Table

[POINT\_CODE]

Destination Point Code

### 1.3.48 show cs7 instance <0-15> route binding-table [POINT\_CODE] [all-matches]

#### Command

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

#### Parameters

##### show

Show running system information

##### cs7

ITU-T Signaling System 7

##### instance

An instance of the SS7 stack

##### <0-15>

An instance of the SS7 stack

##### route

Routing Table

##### binding-table

Display binding table

##### [POINT\_CODE]

Destination Point Code

##### [all-matches]

Display all matching Combination Links

### 1.3.49 show cs7 instance <0-15> route-lookup POINT\_CODE from POINT\_CODE sls <0-15> [lis...

#### Command

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

#### Parameters

##### show

Show running system information

##### cs7

ITU-T Signaling System 7

##### instance

An instance of the SS7 stack

##### <0-15>

An instance of the SS7 stack

---



route-lookup

Look up route

POINT\_CODE

Destination PC

from

From

POINT\_CODE

Origin PC

sls

SLS

<0-15>

SLS value

[list-asps]

List ASPs of the AS if route points to an AS

### 1.3.50 show cs7 instance <0-15> sccp addressbook

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

addressbook

List all SCCP addressbook entries

### 1.3.51 show cs7 instance <0-15> sccp connections

#### Command

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

#### Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

connections

Show List of active SCCP connections

### 1.3.52 show cs7 instance <0-15> sccp ssn <0-65535>

#### Command

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

#### Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

ssn

Find an SCCP User registered for the given SSN

<0-65535>

Subsystem Number (SSN)

---

### 1.3.53 show cs7 instance <0-15> sccp timers

#### Command

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

#### Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signaling Connection Control Part

timers

Show List of SCCP timers

### 1.3.54 show cs7 instance <0-15> sccp users

#### Command

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

#### Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

users

Show List of SCCP Users registered

---

### 1.3.55 show cs7 instance <0-15> users

#### Command

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

#### Parameters

##### show

Show running system information

##### cs7

ITU-T Signaling System 7

##### instance

An instance of the SS7 stack

##### <0-15>

An instance of the SS7 stack

##### users

User Table

### 1.3.56 show history

#### Command

```
show history
```

#### Parameters

##### show

Show running system information

##### history

Display the session command history

### 1.3.57 show llc

#### Command

```
show llc
```

#### Parameters

##### show

Show running system information

##### llc

Display information about the LLC protocol

---

### 1.3.58 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

### 1.3.59 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

### 1.3.60 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

### 1.3.61 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

### 1.3.62 show ns binds [stats]

#### Command

```
show ns binds [stats]
```

#### Parameters

show  
    Show running system information

ns  
    Display information about the NS protocol

binds  
    Display information about the NS protocol binds

[stats]  
    Include statistic

### 1.3.63 show ns entities [stats]

#### Command

```
show ns entities [stats]
```

#### Parameters

show

Show running system information

ns

Display information about the NS protocol

entities

Display information about the NS protocol entities (NSEs)

[stats]

Include statistics

### 1.3.64 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

### 1.3.65 show online-help

#### Command

```
show online-help
```

#### Parameters

show

Show running system information

online-help

Online help

### 1.3.66 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

### 1.3.67 show rate-counters [skip-zero]

#### Command

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

#### Parameters

##### show

Show running system information

##### rate-counters

Show all rate counters

##### [skip-zero]

Skip items with total count zero

### 1.3.68 show runtime

#### Command

```
show runtime
```

#### Parameters

##### show

Show running system information

##### runtime

Display runtime information

---



### 1.3.69 show sgsn

#### Command

```
show sgsn
```

#### Parameters

##### show

Show running system information

##### sgsn

Display information about the SGSN

### 1.3.70 show sndcp

#### Command

```
show sndcp
```

#### Parameters

##### show

Show running system information

##### sndcp

Display information about the SNDTCP protocol

### 1.3.71 show startup-config

#### Command

```
show startup-config
```

#### Parameters

##### show

Show running system information

##### startup-config

Contentes of startup configuration

### 1.3.72 show stats [skip-zero]

#### Command

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

#### Parameters

##### show

Show running system information

##### stats

Show statistical values

##### [skip-zero]

Skip items with total count zero

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

#### Command

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

#### Parameters

##### show

Show running system information

##### stats

Show statistical values

##### level

Set the maximum group level

##### global

Show global groups only

##### peer

Show global and network peer related groups

##### subscriber

Show global, peer, and subscriber groups

##### [skip-zero]

Skip items with total count zero

---

### 1.3.74 show subscriber cache

#### Command

```
show subscriber cache
```

#### Parameters

##### show

Show running system information

##### subscriber

Show information about subscribers

##### cache

Display contents of subscriber cache

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

#### Command

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

#### Parameters

##### show

Show running system information

##### talloc-context

Show talloc memory hierarchy

##### application

Application's context

##### global

Global context (OTC\_GLOBAL)

##### all

All contexts, if NULL-context tracking is enabled

##### full

Display a full talloc memory hierarchy

##### brief

Display a brief talloc memory hierarchy

##### DEPTH

Specify required maximal depth value

---

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

#### Command

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

#### Parameters

##### show

Show running system information

##### talloc-context

Show talloc memory hierarchy

##### application

Application's context

##### global

Global context (OTC\_GLOBAL)

##### all

All contexts, if NULL-context tracking is enabled

##### full

Display a full talloc memory hierarchy

##### brief

Display a brief talloc memory hierarchy

##### DEPTH

Specify required maximal depth value

##### filter

Filter chunks using regular expression

##### REGEXP

Regular expression

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

#### Command

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

#### Parameters

##### show

Show running system information

##### talloc-context

Show talloc memory hierarchy

application

Application's context

global

Global context (OTC\_GLOBAL)

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

tree

Display only a specific memory chunk

ADDRESS

Chunk address (e.g. 0xdeadbeef)

### 1.3.78 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'.

### 1.3.79 show timer gtp [TNNNN]

Command

```
show timer gtp [TNNNN]
```

Parameters

---

show

Show running system information

timer

Show timers

gtp

GTP (libgtp) timers

[TNNNN]

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

### 1.3.80 show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

### 1.3.81 shutdown

Command

```
shutdown
```

Parameters

shutdown

Request a shutdown of the program

### 1.3.82 stats report

Command

```
stats report
```

Parameters

stats

Stats related commands

report

Manurally trigger reporting of stats

### 1.3.83 stats reset

#### Command

```
stats reset
```

#### Parameters

stats

Stats related commands

reset

Reset all rate counter stats

### 1.3.84 terminal length <0-512>

#### Command

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

#### Parameters

terminal

Set terminal line parameters

length

Set number of lines on a screen

<0-512>

Number of lines on screen (0 for no pausing)

### 1.3.85 terminal monitor

#### Command

```
terminal monitor
```

#### Parameters

terminal

Set terminal line parameters

monitor

Copy debug output to the current terminal line

### 1.3.86 terminal no length

#### Command

```
terminal no length
```

#### Parameters

##### terminal

Set terminal line parameters

##### no

Negate a command or set its defaults

##### length

Set number of lines on a screen

### 1.3.87 terminal no monitor

#### Command

```
terminal no monitor
```

#### Parameters

##### terminal

Set terminal line parameters

##### no

Negate a command or set its defaults

##### monitor

Copy debug output to the current terminal line

### 1.3.88 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

### 1.3.89 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

### 1.3.90 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

### 1.3.91 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

### 1.3.92 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

### 1.3.93 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

### 1.3.94 who

#### Command

```
who
```

#### Parameters

who

Display who is on vty

## 1.4 config

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

### 1.4.1 banner motd default

#### Command

```
banner motd default
```

#### Parameters

banner

Set banner string

motd

Strings for motd

default

Default string

### 1.4.2 banner motd file [FILE]

#### Command

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

#### Parameters

banner

Set banner

motd

Banner for motd

file

Banner from a file

[FILE]

Filename

### 1.4.3 bssgp

#### Command

```
bssgp
```

#### Parameters

bssgp

Configure the GPRS BSS Gateway Protocol

### 1.4.4 cpu-sched

#### Command

```
cpu-sched
```

#### Parameters

cpu-sched

Configure CPU Scheduler related settings

### 1.4.5 cs7 instance <0-15>

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

cs7

ITU-T Signaling System 7

instance

Configure a SS7 Instance

<0-15>

An instance of the SS7 stack

### 1.4.6 ctrl

#### Command

```
ctrl
```

#### Parameters

ctrl

Configure the Control Interface

### 1.4.7 enable password (8|) WORD

#### Command

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

#### Parameters

enable

Modify enable password parameters

password

Assign the privileged level password

8

Specifies a HIDDEN password will follow

dummy string

WORD

The HIDDEN 'enable' password string

### 1.4.8 enable password LINE

#### Command

```
enable password LINE
```

#### Parameters

enable

Modify enable password parameters

password

Assign the privileged level password

LINE

The UNENCRYPTED (cleartext) 'enable' password

---

### 1.4.9 hostname WORD

#### Command

```
hostname WORD
```

#### Parameters

##### hostname

Set system's network name

##### WORD

This system's network name

### 1.4.10 line vty

#### Command

```
line vty
```

#### Parameters

##### line

Configure a terminal line

##### vty

Virtual terminal

### 1.4.11 log alarms <2-32700>

#### Command

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

#### Parameters

##### log

Configure logging sub-system

##### alarms

Logging alarms to osmo\_strrb

##### <2-32700>

Maximum number of messages to log

---

### 1.4.12 log file FILENAME [blocking-io]

#### Command

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

#### Parameters

log

Configure logging sub-system

file

Logging to text file

FILENAME

Filename

[blocking-io]

Use blocking, synchronous I/O

### 1.4.13 log gsmtap [HOSTNAME]

#### Command

```
log gsmtap [HOSTNAME]
```

#### Parameters

log

Configure logging sub-system

gsmtap

Logging via GSMTAP

[HOSTNAME]

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

### 1.4.14 log stderr [blocking-io]

#### Command

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

#### Parameters

log

Configure logging sub-system

stderr

Logging via STDERR of the process

[blocking-io]

Use blocking, synchronous I/O

---



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

#### Command

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

#### Parameters

##### log

Configure logging sub-system

##### syslog

Logging via syslog

##### authpriv

Security/authorization messages facility

##### cron

Clock daemon (cron/at) facility

##### daemon

General system daemon facility

##### ftp

Ftp daemon facility

##### lpr

Line printer facility

##### mail

Mail facility

##### news

News facility

##### user

Generic facility

##### uucp

UUCP facility

### 1.4.16 log syslog local <0-7>

#### Command

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

#### Parameters

##### log

Configure logging sub-system

---

syslog

Logging via syslog

local

Syslog LOCAL facility

<0-7>

Local facility number

### 1.4.17 log systemd-journal [raw]

Command

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

Parameters

log

Configure logging sub-system

systemd-journal

Logging to systemd-journal

[raw]

Offload rendering of the meta information (location, category) to systemd

### 1.4.18 no banner motd

Command

```
no banner motd
```

Parameters

no

Negate a command or set its defaults

banner

Set banner string

motd

Strings for motd

### 1.4.19 no enable password

#### Command

```
no enable password
```

#### Parameters

no

Negate a command or set its defaults

enable

Modify enable password parameters

password

Assign the privileged level password

### 1.4.20 no hostname [HOSTNAME]

#### Command

```
no hostname [HOSTNAME]
```

#### Parameters

no

Negate a command or set its defaults

hostname

Reset system's network name

[HOSTNAME]

Host name of this router

### 1.4.21 no log alarms

#### Command

```
no log alarms
```

#### Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

alarms

Logging alarms to osmo\_strrb

### 1.4.22 no log file FILENAME

#### Command

```
no log file FILENAME
```

#### Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

file

Logging to text file

FILENAME

Filename

### 1.4.23 no log gsmtap [HOSTNAME]

#### Command

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

#### Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

gsmtap

Logging via GSMTAP

[HOSTNAME]

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

### 1.4.24 no log stderr

#### Command

```
no log stderr
```

#### Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

stderr

Logging via STDERR of the process

---

### 1.4.25 no log syslog

#### Command

```
no log syslog
```

#### Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

syslog

Logging via syslog

### 1.4.26 no log systemd-journal

#### Command

```
no log systemd-journal
```

#### Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

systemd-journal

Logging to systemd-journal

### 1.4.27 no service advanced-vty

#### Command

```
no service advanced-vty
```

#### Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

---

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

#### Command

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

#### Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

terminal-length

System wide terminal length configuration

[<0-512>]

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

### 1.4.29 no stats reporter log [NAME]

#### Command

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

#### Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

[NAME]

Name of the reporter

### 1.4.30 no stats reporter statsd [NAME]

#### Command

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

#### Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

[NAME]

Name of the reporter

### 1.4.31 ns

#### Command

```
ns
```

#### Parameters

ns

Configure the GPRS Network Service

### 1.4.32 password (8|) WORD

#### Command

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

#### Parameters

password

Assign the terminal connection password

8

Specifies a HIDDEN password will follow

dummy string

WORD

The HIDDEN line password string

---

### 1.4.33 password LINE

#### Command

```
password LINE
```

#### Parameters

##### password

Assign the terminal connection password

##### LINE

The UNENCRYPTED (cleartext) line password

### 1.4.34 service advanced-vty

#### Command

```
service advanced-vty
```

#### Parameters

##### service

Set up miscellaneous service

##### advanced-vty

Enable advanced mode vty interface

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

#### Command

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

#### Parameters

##### service

Set up miscellaneous service

##### terminal-length

System wide terminal length configuration

##### <0-512>

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

---



### 1.4.36 sgsn

#### Command

```
sgsn
```

#### Parameters

sgsn

Configure the SGSN

### 1.4.37 show history

#### Command

```
show history
```

#### Parameters

show

Show running system information

history

Display the session command history

### 1.4.38 stats interval <0-65535>

#### Command

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

#### Parameters

stats

Configure stats sub-system

interval

Set the reporting interval

<0-65535>

Interval in seconds (0 disables the reporting interval)

---

### 1.4.39 stats reporter log [NAME]

#### Command

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

#### Parameters

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

[NAME]

Name of the reporter

### 1.4.40 stats reporter statsd [NAME]

#### Command

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

#### Parameters

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

[NAME]

Name of the reporter

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

#### Command

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

#### Parameters

stats-tcp

Configure stats sub-system

batch-size

Set the number of tcp sockets that are processed per stats polling interval

<1-65535>

Number of sockets per interval

### 1.4.42 stats-tcp interval <0-65535>

#### Command

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

#### Parameters

##### stats-tcp

Configure stats sub-system

##### interval

Set the tcp socket stats polling interval

##### <0-65535>

Interval in seconds (0 disables the polling interval)

## 1.5 config-log

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

### 1.5.1 logging color (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### color

Configure color-printing for log messages

##### 0

Don't use color for printing messages

##### 1

Use color for printing messages

---

### 1.5.2 logging filter all (0|1)

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### filter

Filter log messages

##### all

Do you want to log all messages?

##### 0

Only print messages matched by other filters

##### 1

Bypass filter and print all messages

### 1.5.3 logging 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)

### 1.5.4 logging filter nse nsei <0-65535>

#### Command

```
logging filter nse nsei <0-65535>
```

#### Parameters

##### logging

Configure logging

##### filter

Filter log messages

##### nse

Filter based on NS Entity

##### nsei

Identify NSE by NSEI

##### <0-65535>

Numeric identifier

### 1.5.5 logging filter nsvc nsvci <0-65535>

#### Command

```
logging filter nsvc nsvci <0-65535>
```

#### Parameters

##### logging

Configure logging

##### filter

Filter log messages

##### nsvc

Filter based on NS Virtual Connection

##### nsvci

Identify NS-VC by NSVCI

##### <0-65535>

Numeric identifier

### 1.5.6 logging level (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|ra|l...

#### Command

```
logging level (mm|pag|meas|ref|gprs|llc|sndcp|slhc|ranap|sua|v42bis|gtp|rim|ra|lglobal| ↵
llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|lsccp|lsua|lm3ua| ↵
lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal|liuup|lpfcp|lcsn1|lio) (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

##### 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)

##### rim

RAN Information Management (RIM)

---

ra  
Routing Area

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
lrs	GPRS NS layer
lbssgp	GPRS BSSGP layer
lrsdata	GPRS NS layer data PDU
lrsignal	GPRS NS layer signal PDU
liuup	Iu UP layer
lpfcp	libosmo-pfcp Packet Forwarding Control Protocol
lcsn1	libosmo-csn1 Concrete Syntax Notation 1 codec
lio	libosmocore IO Subsystem
debug	Log debug messages and higher levels
info	Log informational messages and higher levels
notice	Log noticeable messages and higher levels
error	Log error messages and higher levels
fatal	Log only fatal messages

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

#### Command

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

#### Parameters

##### logging

Configure logging



**level**

Set the log level for a specified category

**force-all**

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

**debug**

Log debug messages and higher levels

**info**

Log informational messages and higher levels

**notice**

Log noticeable messages and higher levels

**error**

Log error messages and higher levels

**fatal**

Log only fatal messages

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

**Command**

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

**Parameters****logging**

Configure logging

**level**

Set the log level for a specified category

**set-all**

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

**debug**

Log debug messages and higher levels

**info**

Log informational messages and higher levels

**notice**

Log noticeable messages and higher levels

**error**

Log error messages and higher levels

**fatal**

Log only fatal messages

---

### 1.5.9 logging print category (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### category

Configure log message

0

Don't prefix each log message

1

Prefix each log message with category/subsystem name

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### category-hex

Configure log message

0

Don't prefix each log message

1

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

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### extended-timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### file

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the source file and line

##### basename

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

##### [last]

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

---

### 1.5.13 logging print level (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### level

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the log level name

### 1.5.14 logging print thread-id (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### print

Log output settings

##### thread-id

Configure log message logging Thread ID

0

Don't prefix each log message

1

Prefix each log message with current Thread ID

### 1.5.15 logging timestamp (0|1)

#### Command

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

#### Parameters

##### logging

Configure logging

##### timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

### 1.5.16 no logging level force-all

#### Command

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

#### Parameters

no

Negate a command or set its defaults

##### logging

Configure logging

##### level

Set the log level for a specified category

##### force-all

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

## 1.6 config-stats

### 1.6.1 disable

#### Command

```
disable
```

#### Parameters

##### disable

Disable the reporter

---

### 1.6.2 enable

#### Command

```
enable
```

#### Parameters

enable

Enable the reporter

### 1.6.3 flush-period <0-65535>

#### Command

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

#### Parameters

flush-period

Configure stats sub-system

<0-65535>

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

### 1.6.4 level (global|peer|subscriber)

#### Command

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

#### Parameters

level

Set the maximum group level

global

Report global groups only

peer

Report global and network peer related groups

subscriber

Report global, peer, and subscriber groups

---

### 1.6.5 local-ip ADDR

#### Command

```
local-ip ADDR
```

#### Parameters

##### local-ip

Set the IP address to which we bind locally

##### ADDR

IP Address

### 1.6.6 mtu <100-65535>

#### Command

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

#### Parameters

##### mtu

Set the maximum packet size

##### <100-65535>

Size in byte

### 1.6.7 no local-ip

#### Command

```
no local-ip
```

#### Parameters

##### no

Negate a command or set its defaults

##### local-ip

Set the IP address to which we bind locally

---

### 1.6.8 no mtu

#### Command

```
no mtu
```

#### Parameters

no

Negate a command or set its defaults

mtu

Set the maximum packet size

### 1.6.9 no prefix

#### Command

```
no prefix
```

#### Parameters

no

Negate a command or set its defaults

prefix

Set the item name prefix

### 1.6.10 prefix PREFIX

#### Command

```
prefix PREFIX
```

#### Parameters

prefix

Set the item name prefix

PREFIX

The prefix string



### 1.6.11 remote-ip ADDR

#### Command

```
remote-ip ADDR
```

#### Parameters

##### remote-ip

Set the remote IP address to which we connect

##### ADDR

IP Address

### 1.6.12 remote-port <1-65535>

#### Command

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

#### Parameters

##### remote-port

Set the remote port to which we connect

##### <1-65535>

Remote port number

## 1.7 config-line

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

#### Command

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

#### Parameters

##### bind

Accept VTY telnet connections on local interface

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

Local interface IP address (default: 127.0.0.1)

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

Local TCP port number

---

### 1.7.2 login

#### Command

```
login
```

#### Parameters

login

Enable password checking

### 1.7.3 no login

#### Command

```
no login
```

#### Parameters

no

Negate a command or set its defaults

login

Enable password checking

## 1.8 config-ns

### 1.8.1 bind (fr|udp) ID

#### Command

```
bind (fr|udp) ID
```

#### Parameters

bind

Configure local Bind

fr

Frame Relay

udp

UDP/IP

ID

Unique identifier for this bind (to reference from NS-VCs, NSEs, ...)

---

### 1.8.2 ip-sns-default bind ID

#### Command

```
ip-sns-default bind ID
```

#### Parameters

##### ip-sns-default

Defaults for dynamically created NSEs created by IP-SNS in SGSN role

##### bind

IP SNS binds

##### ID

Name of NS udp bind whose IP endpoint will be used as IP-SNS local endpoint. Can be given multiple times.

### 1.8.3 no bind ID

#### Command

```
no bind ID
```

#### Parameters

##### no

Negate a command or set its defaults

##### bind

Delete a bind

##### ID

Unique identifier for this bind

### 1.8.4 no ip-sns-default bind ID

#### Command

```
no ip-sns-default bind ID
```

#### Parameters

##### no

Negate a command or set its defaults

##### ip-sns-default

Defaults for dynamically created NSEs created by IP-SNS in SGSN role

##### bind

IP SNS binds

##### ID

Name of NS udp bind whose IP endpoint will be removed as IP-SNS local endpoint.

---

### 1.8.5 no nse <0-65535>

#### Command

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

#### Parameters

no

Negate a command or set its defaults

nse

Delete a Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

### 1.8.6 nse <0-65535> [ip-sns-role-sgsn]

#### Command

```
nse <0-65535> [ip-sns-role-sgsn]
```

#### Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

[ip-sns-role-sgsn]

Create NSE in SGSN role (default: BSS)

### 1.8.7 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|tsns-size-retries|tsns-config-retries|tsns-procedures- ↵  
    retries) <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

**tsns-size-retries**

SNS Size number of retries

**tsns-config-retries**

SNS Config number of retries

**tsns-procedures-retries**

SNS Procedures number of retries

**<0-65535>**

Timer Value

## 1.8.8 txqueue-max-length <1-4096>

**Command**

```
txqueue-max-length <1-4096>
```

**Parameters****txqueue-max-length**

Set the maximum length of the txqueue (for UDP)

**<1-4096>**

Maximum length of the txqueue

## 1.9 config-bssgp

## 1.10 config-ctrl

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

#### Command

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

#### Parameters

##### bind

Set bind address to listen for Control connections

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

Local IP address (default 127.0.0.1)

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

Local TCP port number

## 1.11 config-cs7

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

#### Command

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

#### Global attributes

##### Flag: !

This command applies immediately

#### Parameters

##### as

Configure an Application Server

##### NAME

Name of the Application Server

##### sua

SCCP User Adaptation

##### m3ua

MTP3 User Adaptation

##### ipa

IPA Multiplex (SCCP Lite)

---

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

#### Command

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

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

asp

Configure Application Server Process

NAME

Name of ASP

<0-65535>

Remote port number

<0-65535>

Local port number

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

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

#### Command

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

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

asp

Configure Application Server Process

**NAME**

Name of ASP

<0-65535>

Remote port number

<0-65535>

Local port number

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

sctp

SCTP (Stream Control Transmission Protocol)

tcp

TCP (Transmission Control Protocol)

#### 1.11.4 **description .TEXT**

**Command**

```
description .TEXT
```

**Parameters**

description

Save human-readable description of the object

.TEXT

Text until the end of the line

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

**Command**

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

**Global attributes**

Flag: !

This command applies immediately



#### Parameters

##### network-indicator

Configure the Network Indicator

##### international

International Network

##### national

National Network

##### reserved

Reserved Network

##### spare

Spare Network

### 1.11.6 no as NAME

#### Command

```
no as NAME
```

#### Global attributes

##### Flag: !

This command applies immediately

#### Parameters

##### no

Negate a command or set its defaults

##### as

Disable Application Server

##### NAME

Name of AS

### 1.11.7 no asp NAME

#### Command

```
no asp NAME
```

#### Global attributes

##### Flag: !

This command applies immediately

---

#### Parameters

no

Negate a command or set its defaults

asp

Disable Application Server Process

NAME

Name of ASP

### 1.11.8 no sccp-address NAME

#### Command

```
no sccp-address NAME
```

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

no

Negate a command or set its defaults

sccp-address

Delete an SCCP addressbook entry

NAME

Name of the SCCP Address

### 1.11.9 point-code POINT\_CODE

#### Command

```
point-code POINT_CODE
```

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

point-code

Configure the local Point Code

POINT\_CODE

Point Code

### 1.11.10 point-code delimiter (default|dash)

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

point-code

Point Code

delimiter

Configure Point Code Delimiter

default

Use dot as delimiter

dash

User dash as delimiter

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

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

point-code

Point Code

format

Configure Point Code Format

<1-24>

Length of first PC component

[<1-23>]

Length of second PC component

[<1-22>]

Length of third PC component

### 1.11.12 point-code format default

#### Command

```
point-code format default
```

#### Global attributes

#### Flag: !

This command applies immediately

#### Parameters

##### point-code

Point Code

##### format

Configure Point Code Format

##### default

Default Point Code Format (3.8.3)

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

#### Command

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

#### Global attributes

#### Flag: !

This command applies immediately

#### Parameters

##### sccp

Configure SCCP behavior

##### max-optional-data

Adjust the upper bound for the optional data length (the payload) for CR, CC, CREF and RLSD messages. For any Optional Data part larger than this value in octets, send CR, CC, CREF and RLSD messages without any payload, and send the data payload in a separate Data Form 1 message. ITU-T Q.713 sections 4.2 thru 4.5 define a limit of 130 bytes for the 'Data' parameter. This limit can be adjusted here. May be useful for interop with nonstandard SCCP peers.

##### <0-999999>

Set a non-standard maximum allowed number of bytes

##### standard

Use the ITU-T Q.713 4.2 to 4.5 standard value of 130

---

### 1.11.14 sccp-address NAME

#### Command

```
sccp-address NAME
```

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

sccp-address

Create/Modify an SCCP addressbook entry

NAME

Name of the SCCP Address

### 1.11.15 sccp-timer (conn\_est|ias|iar|rel|repeat\_rel|int|guard|reset|reassembly) <1-99999...

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

sccp-timer

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

conn\_est

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

ias

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

iar

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

rel

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

repeat\_rel

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

---

int

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

guard

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

reset

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

reassembly

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

<1-999999>

Timer value, in seconds

### 1.11.16 secondary-pc POINT\_CODE

Command

```
secondary-pc POINT_CODE
```

Global attributes

Flag: !

This command applies immediately

Parameters

secondary-pc

Configure the local Secondary Point Code

POINT\_CODE

Point Code

### 1.11.17 sls-opc-dpc [opc-shift] [<0-8>] [dpc-shift] [<0-8>]

Command

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

Global attributes

Flag: !

This command applies immediately

#### Parameters

##### sls-opc-dpc

Shift OPC and DPC bits used during routing decision

##### [opc-shift]

Shift OPC bits used during routing decision

##### [<0-8>]

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

##### [dpc-shift]

Shift DPC bits used during routing decision

##### [<0-8>]

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

### 1.11.18 sls-shift <0-6>

#### Command

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

#### Global attributes

##### Flag: !

This command applies immediately

#### Parameters

##### sls-shift

Shift SLS bits used during routing decision

##### <0-6>

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

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

#### Command

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

#### Global attributes

##### Flag: !

This command applies immediately

#### Parameters

---

xua  
    SIGTRAN xxxUA related

rkm  
    Routing Key Management

routing-key-allocation  
    Routing Key Management Allocation Policy

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

dynamic-permitted  
    Dynamically allocate Routing Keys for what ASPs request

## 1.12 config-cs7-as

### 1.12.1 asp NAME

Command

```
asp NAME
```

Global attributes

Flag: !

    This command applies immediately

Parameters

asp

    Specify that a given ASP is part of this AS

NAME

    Name of ASP to be added to AS

### 1.12.2 binding-table reset

Command

```
binding-table reset
```

Global attributes

Flag: !

    This command applies immediately

Parameters

binding-table

    AS Loadshare binding table operations

reset

    Reset loadshare binding table



### 1.12.3 description .TEXT

#### Command

```
description .TEXT
```

#### Parameters

##### description

Save human-readable description of the object

##### .TEXT

Text until the end of the line

### 1.12.4 no asp NAME

#### Command

```
no asp NAME
```

#### Global attributes

##### Flag: !

This command applies immediately

#### Parameters

##### no

Negate a command or set its defaults

##### asp

Specify ASP to be removed from this AS

##### NAME

Name of ASP to be removed

### 1.12.5 no traffic-mode

#### Command

```
no traffic-mode
```

#### Parameters

##### no

Negate a command or set its defaults

##### traffic-mode

Remove explicit traffic mode of operation of this AS

---

### 1.12.6 point-code override dpc PC

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### 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

### 1.12.7 point-code override patch-sccp (disabled|both)

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

point-code

Point Code Specific Features

override

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

patch-sccp

Patch point code values into SCCP called/calling address

disabled

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

both

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

---

### 1.12.8 qos-class <0-7>

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

qos-class

Specify QoS Class of AS

<0-7>

QoS Class

### 1.12.9 recovery-timeout <1-2000>

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

recovery-timeout

Specifies RFC4666 recovery timer T(r) timeout

<1-2000>

Recovery Timeout in Milliseconds

### 1.12.10 routing-key RCONTEXT DPC

#### Command

```
routing-key RCONTEXT DPC
```

#### Global attributes

---

Flag: !

This command applies immediately

#### Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

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

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

si

Match on Service Indicator

aal2

ATM Adaption Layer 2

bicc

Bearer Independent Call Control

b-isup

Broadband ISDN User Part

h248

H.248

isup

ISDN User Part

sat-isup

Sattelite ISDN User Part

sccp

Signalling Connection Control Part

tup

Telephony User Part

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

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

si

Match on Service Indicator

aal2

ATM Adaption Layer 2

bicc

Bearer Independent Call Control

b-isup

Broadband ISDN User Part

h248

H.248

isup

ISDN User Part

sat-isup

Sattelite ISDN User Part

sccp

Signalling Connection Control Part

tup

Telephony User Part

ssn

Match on Sub-System Number

SSN

Sub-System Number to match on

### 1.12.13 routing-key RCONTEXT DPC ssn SSN

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

ssn

Match on Sub-System Number

SSN

Sub-System Number to match on

### 1.12.14 sls-shift <0-3>

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

sls-shift

Shift SLS bits used during routing decision

<0-3>

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

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

#### Command

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

#### Parameters

traffic-mode

Specifies traffic mode of operation of the ASP within the AS

broadcast

Broadcast to all ASP within AS

roundrobin

Round-Robin between all ASP within AS

override

Override

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

#### Command

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

#### Parameters

---

**traffic-mode**

Specifies traffic mode of operation of the ASP within the AS

**loadshare**

Share Load among all ASP within AS

**[bindings]**

Configure Loadshare parameters

**[sls]**

Configure Loadshare SLS generation parameters

**[opc-sls]**

Generate extended SLS with OPC information

**[opc-shift]**

Shift OPC bits used during routing decision

**[<0-2>]**

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

## 1.13 config-cs7-asp

### 1.13.1 block

**Command**

```
block
```

**Global attributes****Flag: @**

This command applies on VTY node exit

**Parameters****block**

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

### 1.13.2 description .TEXT

**Command**

```
description .TEXT
```

**Parameters****description**

Save human-readable description of the object

**.TEXT**

Text until the end of the line



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

#### Command

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

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

##### local-ip

Specify Local IP Address from which to contact ASP

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

Local IPv4 Address from which to contact of ASP

##### X:X::X:X

Local IPv6 Address from which to contact of ASP

##### [primary]

Signal the SCTP peer to use this address as Primary Address

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

#### Command

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

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

##### no

Negate a command or set its defaults

##### local-ip

Specify Local IP Address from which to contact ASP

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

Local IPv4 Address from which to contact of ASP

##### X:X::X:X

Local IPv6 Address from which to contact of ASP

---

### 1.13.5 no quirk (no\_notify|daud\_in\_asp|snm\_inactive)

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

no

Negate a command or set its defaults

quirk

Disable quirk to work around interop issues

no\_notify

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

daud\_in\_asp

Allow Rx of DAUD in ASP role

snm\_inactive

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

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

#### Command

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

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

no

Negate a command or set its defaults

remote-ip

Specify Remote IP Address of ASP

A.B.C.D

Remote IPv4 Address of ASP

X:X::X:X

Remote IPv6 Address of ASP

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

#### Command

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

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

no

Negate a command or set its defaults

sctp-param

Configure SCTP parameters

init

Configure INIT related parameters

num-ostreams

Configure INIT Number of Outbound Streams

max-instreams

Configure INIT Maximum Inboud Streams

max-attempts

Configure INIT Maximum Attempts

timeout

Configure INIT Timeout (milliseconds)

### 1.13.8 no shutdown

#### Command

```
no shutdown
```

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

no

Negate a command or set its defaults

shutdown

Terminates SCTP association; New associations will be rejected

### 1.13.9 no tcp-param keepalive

#### Command

```
no tcp-param keepalive
```

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

no

Negate a command or set its defaults

tcp-param

Configure TCP parameters

keepalive

Configure TCP keep-alive related parameters

### 1.13.10 no tcp-param keepalive (time|intvl|probes)

#### Command

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

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

no

Negate a command or set its defaults

tcp-param

Configure TCP parameters

keepalive

Configure TCP keep-alive related parameters

time

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

intvl

Configure number of seconds between probes

probes

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

---

### 1.13.11 no tcp-param user-timeout

#### Command

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

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

no

Negate a command or set its defaults

tcp-param

Configure TCP parameters

user-timeout

Configure TCP User Timeout socket option (TCP\_USER\_TIMEOUT)

### 1.13.12 qos-class <0-7>

#### Command

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

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

qos-class

Specify QoS Class of ASP

<0-7>

QoS Class

### 1.13.13 quirk (no\_notify|daud\_in\_asp|snm\_inactive)

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

##### quirk

Enable quirk to work around interop issues

##### no\_notify

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

##### daud\_in\_asp

Allow Rx of DAUD in ASP role

##### snm\_inactive

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

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

#### Command

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

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

##### remote-ip

Specify Remote IP Address of ASP

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

Remote IPv4 Address of ASP

##### X:X::X:X

Remote IPv6 Address of ASP

##### [primary]

Set remote address as SCTP Primary Address

---

### 1.13.15 role (sg|asp|ipsp)

#### Command

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

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

role

Specify the xUA role for this ASP

sg

SG (Signaling Gateway)

asp

ASP (Application Server Process)

ipsp

IPSP (IP Signalling Point)

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

#### Command

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

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

sctp-param

Configure SCTP parameters

init

Configure INIT related parameters

num-ostreams

Configure INIT Number of Outbound Streams

max-instreams

Configure INIT Maximum Inboud Streams

---

max-attempts

Configure INIT Maximum Attempts

timeout

Configure INIT Timeout (milliseconds)

<0-65535>

Value of the parameter

### 1.13.17 shutdown

Command

```
shutdown
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

shutdown

Terminates SCTP association; New associations will be rejected

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

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

tcp-param

Configure TCP parameters

keepalive

Configure TCP keep-alive related parameters

time

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

intvl

Configure number of seconds between probes

probes

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

<0-65535>

Value of the parameter



### 1.13.19 tcp-param keepalive enabled

#### Command

```
tcp-param keepalive enabled
```

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

tcp-param

Configure TCP parameters

keepalive

Configure TCP keep-alive related parameters

enabled

Enable TCP keep-alive

### 1.13.20 tcp-param user-timeout <0-65535>

#### Command

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

#### Global attributes

Flag: @

This command applies on VTY node exit

#### Parameters

tcp-param

Configure TCP parameters

user-timeout

Configure TCP User Timeout socket option (TCP\_USER\_TIMEOUT)

<0-65535>

Value of the parameter

### 1.13.21 timer lm (wait\_asp\_up|wait\_notify|wait\_notify\_rkm|wait\_rk\_reg\_resp) <1-999999>

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

timer

Configure ASP default timer values

lm

Configure ASP default lm timer values

wait\_asp\_up

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

wait\_notify

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

wait\_notify\_rkm

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

wait\_rk\_reg\_resp

Restart ASP after timeout waiting for RK\_REG\_RESP (s) (default: 10)

<1-999999>

Timer value, in seconds

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

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

timer

Configure ASP default timer values

---

**xua**

Configure ASP default xua timer values

**ack**

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

**beat**

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

<1-999999>

Timer value, in seconds

### 1.13.23 transport-role (client|server)

**Command**

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

**Global attributes**

Flag: @

This command applies on VTY node exit

**Parameters****transport-role**

Specify the transport layer role for this ASP

**client**

Operate as a client; connect to a server

**server**

Operate as a server; wait for client connections

## 1.14 config-cs7-sccpaddr

### 1.14.1 global-title

**Command**

```
global-title
```

**Global attributes**

Flag: !

This command applies immediately

**Parameters****global-title**

Add/Modify Global Title

### 1.14.2 no global-title

#### Command

```
no global-title
```

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

no

Negate a command or set its defaults

global-title

Remove Global Title

### 1.14.3 no point-code

#### Command

```
no point-code
```

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

no

Negate a command or set its defaults

point-code

Remove point-code Number

### 1.14.4 no subsystem-number

#### Command

```
no subsystem-number
```

#### Global attributes

---

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

subsystem-number

Remove Subsystem Number

### 1.14.5 point-code POINT\_CODE

Command

```
point-code POINT_CODE
```

Global attributes

Flag: !

This command applies immediately

Parameters

point-code

Add point-code Number

POINT\_CODE

PC

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

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

routing-indicator

Add Routing Indicator

GT

by global-title

PC

by point-code

IP

by ip-address

### 1.14.7 subsystem-number <0-4294967295>

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

subsystem-number

Add Subsystem Number

<0-4294967295>

SSN

## 1.15 config-cs7-sccpaddr-gt

### 1.15.1 digits DIGITS

#### Command

```
digits DIGITS
```

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

digits

Set Global Title Digits

DIGITS

Number digits

### 1.15.2 global-title-indicator <0-15>

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

global-title-indicator

Set Global Title Indicator

<0-15>

GTI

### 1.15.3 nature-of-address-indicator <0-127>

#### Command

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

#### Global attributes

Flag: !

This command applies immediately

#### Parameters

nature-of-address-indicator

Set Global Title Nature of Address Indicator

<0-127>

NAI

### 1.15.4 numbering-plan-indicator <0-15>

#### Command

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

#### Global attributes

---

Flag: !

This command applies immediately

Parameters

numbering-plan-indicator

Set Global Title Numbering Plan Indicator

<0-15>

NPI

### 1.15.5 translation-type <0-255>

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

translation-type

Set Global Title Translation Type

<0-255>

TT

## 1.16 config-cpu-sched

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

## 1.16.2 policy rr <1-32>

**Command**

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

**Global attributes****Flag: !**

This command applies immediately

**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

## 1.17 config-ns-bind

### 1.17.1 accept-dynamic-ip-sns

**Command**

```
accept-dynamic-ip-sns
```

**Parameters****accept-dynamic-ip-sns**

Allow to create dynamic NS Entities by IP-SNS PDUs

---

### 1.17.2 accept-ipaccess

#### Command

```
accept-ipaccess
```

#### Parameters

accept-ipaccess

Allow to create dynamic NS Entity by NS Reset PDU on UDP (ip.access style)

### 1.17.3 dscp <0-63>

#### Command

```
dscp <0-63>
```

#### Parameters

dscp

Set DSCP/TOS on the UDP socket

<0-63>

DSCP Value

### 1.17.4 fr NETIF (fr|frnet)

#### Command

```
fr NETIF (fr|frnet)
```

#### Parameters

fr

frame relay

NETIF

Interface name(e.g. ep0)

fr

fr (user) is used by BSS or SGSN attached to UNI of a FR network

frnet

frnet (network) is used by SGSN if BSS is directly attached

---

### 1.17.5 ip-sns signalling-weight <0-254> data-weight <0-254>

#### Command

```
ip-sns signalling-weight <0-254> data-weight <0-254>
```

#### Parameters

ip-sns

IP SNS

signalling-weight

signalling weight used by IP-SNS dynamic configuration

<0-254>

signalling weight used by IP-SNS dynamic configuration

data-weight

data weight used by IP-SNS dynamic configuration

<0-254>

data weight used by IP-SNS dynamic configuration

### 1.17.6 listen (A.B.C.D|X:X::X:X) <1-65535>

#### Command

```
listen (A.B.C.D|X:X::X:X) <1-65535>
```

#### Parameters

listen

Configure local IP + Port of this bind

A.B.C.D

Local IPv4 Address

X:X::X:X

Local IPv6 Address

<1-65535>

Local UDP Port

### 1.17.7 no accept-dynamic-ip-sns

#### Command

```
no accept-dynamic-ip-sns
```

#### Parameters

no

Negate a command or set its defaults

accept-dynamic-ip-sns

Disable dynamic creation of NS Entities by IP-SNS PDUs

### 1.17.8 no accept-ipaccess

#### Command

```
no accept-ipaccess
```

#### Parameters

no

Negate a command or set its defaults

accept-ipaccess

Reject NS Reset PDU on UDP (ip.access style)

### 1.17.9 no dscp

#### Command

```
no dscp
```

#### Parameters

no

Set DSCP/TOS on the UDP socket

dscp

DSCP Value

### 1.17.10 no fr NETIF

#### Command

```
no fr NETIF
```

#### Parameters

no

Negate a command or set its defaults

fr

Delete a frame relay link

NETIF

Delete a frame relay link

---

### 1.17.11 no listen

#### Command

```
no listen
```

#### Parameters

no

Negate a command or set its defaults

listen

Delete a IP/Port assignment

### 1.17.12 socket-priority <0-255>

#### Command

```
socket-priority <0-255>
```

#### Parameters

socket-priority

Set socket priority on the UDP socket

<0-255>

Priority Value (>6 requires CAP\_NET\_ADMIN)

## 1.18 config-ns-nse

### 1.18.1 ip-sns-bind BINDID

#### Command

```
ip-sns-bind BINDID
```

#### Parameters

ip-sns-bind

IP SNS binds

BINDID

Name of NS udp bind whose IP endpoint will be used as IP-SNS local endpoint. Can be given multiple times.

### 1.18.2 ip-sns-remote (A.B.C.D|X:X::X:X) <1-65535>

#### Command

```
ip-sns-remote (A.B.C.D|X:X::X:X) <1-65535>
```

#### Parameters

ip-sns-remote

SNS Initial Endpoint

A.B.C.D

SGSN IPv4 Address

X:X::X:X

SGSN IPv6 Address

<1-65535>

SGSN UDP Port

### 1.18.3 no ip-sns-bind BINDID

#### Command

```
no ip-sns-bind BINDID
```

#### Parameters

no

Negate a command or set its defaults

ip-sns-bind

IP SNS binds

BINDID

Name of NS udp bind whose IP endpoint will not be used as IP-SNS local endpoint

### 1.18.4 no ip-sns-remote (A.B.C.D|X:X::X:X) <1-65535>

#### Command

```
no ip-sns-remote (A.B.C.D|X:X::X:X) <1-65535>
```

#### Parameters

no

Negate a command or set its defaults

ip-sns-remote

Delete a SNS Initial Endpoint

A.B.C.D

SGSN IPv4 Address

X:X::X:X

SGSN IPv6 Address

<1-65535>

SGSN UDP Port

### 1.18.5 no nsvc fr NETIF dlci <16-1007>

Command

```
no nsvc fr NETIF dlci <16-1007>
```

Parameters

no

Negate a command or set its defaults

nsvc

Delete frame relay NS-VC

fr

frame relay

NETIF

frame relay interface. Must be registered via fr vty

dlci

Data Link connection identifier

<16-1007>

Data Link connection identifier

### 1.18.6 no nsvc ipa BIND (A.B.C.D|X:X::X:X) <1-65535> nsvci <0-65535>

Command

```
no nsvc ipa BIND (A.B.C.D|X:X::X:X) <1-65535> nsvci <0-65535>
```

Parameters

no

Negate a command or set its defaults

nsvc

Delete a NS Virtual Connection

ipa

NS over UDP

BIND

A unique bind identifier created by ns bind

A.B.C.D

Remote IPv4 Address

X:X::X:X

Remote IPv6 Address

<1-65535>

Remote UDP Port

nsvci

NS Virtual Connection ID (NS-VCI)

<0-65535>

NS Virtual Connection ID (NS-VCI)

### 1.18.7 no nsvc nsvci <0-65535>

Command

```
no nsvc nsvci <0-65535>
```

Parameters

no

Negate a command or set its defaults

nsvc

Delete NSVC

nsvci

NS Virtual Connection ID (NS-VCI)

<0-65535>

NS Virtual Connection ID (NS-VCI)



### 1.18.8 no nsvc udp BIND (A.B.C.D|X:X::X:X) <1-65535>

#### Command

```
no nsvc udp BIND (A.B.C.D|X:X::X:X) <1-65535>
```

#### Parameters

no

Negate a command or set its defaults

nsvc

Delete a NS Virtual Connection

udp

NS over UDP

BIND

A unique bind identifier created by ns bind

A.B.C.D

Remote IPv4 Address

X:X::X:X

Remote IPv6 Address

<1-65535>

Remote UDP Port

### 1.18.9 nsvc fr NETIF dlci <16-1007> nsvci <0-65535>

#### Command

```
nsvc fr NETIF dlci <16-1007> nsvci <0-65535>
```

#### Parameters

nsvc

NS Virtual Connection

fr

frame relay

NETIF

frame relay interface. Must be registered via fr vty

dlci

NS Virtual Connection ID (NS-VCI)

<16-1007>

NS Virtual Connection ID (NS-VCI)

nsvci

Data Link connection identifier

<0-65535>

Data Link connection identifier

### 1.18.10 nsvc ipa BIND (A.B.C.D|X:X::X:X) <1-65535> nsvci <0-65535>

#### Command

```
nsvc ipa BIND (A.B.C.D|X:X::X:X) <1-65535> nsvci <0-65535>
```

#### Parameters

nsvc

NS Virtual Connection

ipa

NS over UDP ip.access style (uses RESET/BLOCK)

BIND

A unique bind identifier created by ns bind

A.B.C.D

Remote IPv4 Address

X:X::X:X

Remote IPv6 Address

<1-65535>

Remote UDP Port

nsvci

NS Virtual Connection ID (NS-VCI)

<0-65535>

NS Virtual Connection ID (NS-VCI)

### 1.18.11 nsvc udp BIND (A.B.C.D|X:X::X:X) <1-65535>

#### Command

```
nsvc udp BIND (A.B.C.D|X:X::X:X) <1-65535>
```

#### Parameters

nsvc

NS Virtual Connection

udp

NS over UDP

BIND

A unique bind identifier created by ns bind

A.B.C.D

Remote IPv4 Address

X:X::X:X

Remote IPv6 Address

<1-65535>

Remote UDP Port

### 1.18.12 nsvc udp BIND (A.B.C.D|X:X::X:X) <1-65535> signalling-weight <0-254> data-weight...

#### Command

```
nsvc udp BIND (A.B.C.D|X:X::X:X) <1-65535> signalling-weight <0-254> data-weight <0-254>
```

#### Parameters

nsvc

NS Virtual Connection

udp

NS over UDP

BIND

A unique bind identifier created by ns bind

A.B.C.D

Remote IPv4 Address

X:X::X:X

Remote IPv6 Address

<1-65535>

Remote UDP Port

signalling-weight

Signalling weight of the NSVC (default = 1)

<0-254>

Signalling weight of the NSVC (default = 1)

data-weight

Data weight of the NSVC (default = 1)

<0-254>

Data weight of the NSVC (default = 1)

## 1.19 config-sgsn

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

### 1.19.1 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

### 1.19.2 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

### 1.19.3 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

### 1.19.4 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

### 1.19.5 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

### 1.19.6 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)

### 1.19.7 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)

### 1.19.8 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

---

### 1.19.9 cdr interval <1-2147483647>

#### Command

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

#### Parameters

cdr

CDR

interval

Set the interval for the call-data-record file

<1-2147483647>

interval in seconds

### 1.19.10 cdr trap

#### Command

```
cdr trap
```

#### Parameters

cdr

CDR

trap

Enable sending CDR via TRAP CTRL messages

### 1.19.11 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

<1-256>

Number of compression state slots

---

### 1.19.12 compression rfc1144 passive

#### Command

```
compression rfc1144 passive
```

#### Parameters

##### compression

Configure compression

##### rfc1144

RFC1144 Header compression scheme

##### passive

Compression is available on request

### 1.19.13 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



### 1.19.14 compression v42bis passive

#### Command

```
compression v42bis passive
```

#### Parameters

##### compression

Configure compression

##### v42bis

V.42bis data compression scheme

##### passive

Compression is available on request

### 1.19.15 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)

### 1.19.16 encryption cipher-plugin-path PATH

#### Command

```
encryption cipher-plugin-path PATH
```

#### Parameters

##### encryption

Set encryption algorithms for SGSN

##### cipher-plugin-path

Path to gprs encryption cipher plugin directory

##### PATH

Plugin path

---

### 1.19.17 encryption gea <0-4> [<0-4>] [<0-4>] [<0-4>] [<0-4>]

#### Command

```
encryption gea <0-4> [<0-4>] [<0-4>] [<0-4>] [<0-4>]
```

#### Parameters

##### encryption

Set encryption algorithms for SGSN

##### gea

GPRS Encryption Algorithm

<0-4>

GEAn Algorithm Number

[<0-4>]

GEAn Algorithm Number

[<0-4>]

GEAn Algorithm Number

[<0-4>]

GEAn Algorithm Number

[<0-4>]

GEAn Algorithm Number

### 1.19.18 encryption uea <0-2> [<0-2>] [<0-2>]

#### Command

```
encryption uea <0-2> [<0-2>] [<0-2>]
```

#### Parameters

##### encryption

Set encryption algorithms for SGSN

##### uea

UTRAN (3G) encryption algorithms to allow: 0 = UEA0 (no encryption), 1 = UEA1, 2 = UEA2.

<0-2>

UEAn Algorithm Number

[<0-2>]

UEAn Algorithm Number

[<0-2>]

UEAn Algorithm Number

### 1.19.19 ggsn <0-255> echo-interval <1-36000>

#### Command

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

#### Parameters

##### ggsn

Configure the GGSN information

##### <0-255>

GGSN Number

##### echo-interval

Send an echo request to this static GGSN every interval.

##### <1-36000>

Interval between echo requests in seconds.

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

#### Command

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

#### Parameters

##### ggsn

Configure the GGSN information

##### <0-255>

GGSN Number

##### gtp-version

GTP Version

##### 0

Version 0

##### 1

Version 1

### 1.19.21 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.

### 1.19.22 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

### 1.19.23 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.

---

### 1.19.24 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

### 1.19.25 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'.

### 1.19.26 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)

---

### 1.19.27 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

### 1.19.28 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

### 1.19.29 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

---

### 1.19.30 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

### 1.19.31 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

### 1.19.32 gtp state-dir PATH

#### Command

```
gtp state-dir PATH
```

#### Parameters

gtp

GTP Parameters

state-dir

Set the directory for the GTP State file

PATH

Local Directory

### 1.19.33 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

### 1.19.34 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)

### 1.19.35 mme NAME

#### Command

```
mme NAME
```

#### Parameters

##### mme

Configure an MME peer

##### NAME

Name identifying the MME peer

---



### 1.19.36 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

### 1.19.37 no cdr filename

#### Command

```
no cdr filename
```

#### Parameters

no

Negate a command or set its defaults

cdr

CDR

filename

Disable saving CDR to file

### 1.19.38 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

---

### 1.19.39 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

### 1.19.40 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

### 1.19.41 no encryption cipher-plugin-path PATH

#### Command

```
no encryption cipher-plugin-path PATH
```

#### Parameters

no

Negate a command or set its defaults

encryption

Set encryption algorithms for SGSN

cipher-plugin-path

Path to gprs encryption cipher plugin directory

PATH

Plugin path

---

### 1.19.42 no mme NAME

#### Command

```
no mme NAME
```

#### Parameters

no

Negate a command or set its defaults

mme

Delete an MME peer configuration

NAME

Name identifying the MME peer

### 1.19.43 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'.

[<0-2147483647>]

New timer value

[default]

Set to default timer value

### 1.19.44 timer gtp [TNNNN] [<0-2147483647>|default]

#### Command

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

#### Parameters

timer

Configure or show timers

gtp

GTP (libgtp) timers

[TNNNN]

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

[<0-2147483647>]

New timer value

[default]

Set to default timer value

## 1.20 config-sgsn-mme

### 1.20.1 gtp ran-info-relay <0-999> <0-999> <0-65535>

Command

```
gtp ran-info-relay <0-999> <0-999> <0-65535>
```

Parameters

gtp

Configure GTP connection

ran-info-relay

Configure RAN Information Relay routing

<0-999>

MCC

<0-999>

MNC

<0-65535>

TAC

### 1.20.2 gtp ran-info-relay default

Command

```
gtp ran-info-relay default
```

Parameters

gtp

Configure GTP connection

ran-info-relay

Configure RAN Information Relay routing

default

Set as default route

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

#### Command

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

#### Parameters

gtp

Configure GTP connection

remote-ip

Set Remote GTP IP address

A.B.C.D

IP information

### 1.20.4 gummei <0-999> <0-999> <0-65535> <0-254>

#### Command

```
gummei <0-999> <0-999> <0-65535> <0-254>
```

#### Parameters

gummei

Configure the mme

<0-999>

MCC

<0-999>

MNC

<0-65535>

MME GroupId

<0-254>

MME Code

### 1.20.5 no gtp ran-info-relay <0-999> <0-999> <0-65535>

#### Command

```
no gtp ran-info-relay <0-999> <0-999> <0-65535>
```

#### Parameters

---

no

Negate a command or set its defaults

gtp

Configure GTP connection

ran-info-relay

Configure RAN Information Relay routing

<0-999>

MCC

<0-999>

MNC

<0-65535>

TAC

### 1.20.6 no gtp ran-info-relay default

Command

```
no gtp ran-info-relay default
```

Parameters

no

Negate a command or set its defaults

gtp

Configure GTP connection

ran-info-relay

Configure RAN Information Relay routing

default

Set as default route

### 1.20.7 no gummei

Command

```
no gummei
```

Parameters

no

Negate a command or set its defaults

gummei

Remove gummei