

OsmoSGSN VTY Reference

Copyright © 2013-2014

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

COLLABORATORS

	<i>TITLE :</i> OsmoSGSN VTY Reference		
<i>ACTION</i>	<i>NAME</i>	<i>DATE</i>	<i>SIGNATURE</i>
WRITTEN BY		May 26, 2020	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME
v1	13th January 2013	Initial	hw
v2	5th March 2014	Update to match osmo-bsc version 0.13.0-305	hf

Contents

1	VTY reference	1
1.1	Common Commands	1
1.1.1	end	2
1.1.2	exit	2
1.1.3	help	2
1.1.4	list	2
1.1.5	show running-config	3
1.1.6	write	3
1.1.7	write file	3
1.1.8	write memory	3
1.1.9	write terminal	4
1.2	view	4
1.2.1	bssgp bvc nsei <0-65535> bvci <0-65535> reset	4
1.2.2	enable	5
1.2.3	logging color (0 1)	5
1.2.4	logging disable	5
1.2.5	logging enable	6
1.2.6	logging filter all (0 1)	6
1.2.7	logging filter bvc nsei <0-65535> bvci <0-65535>	6
1.2.8	logging filter nsvc (nsei nsvci) <0-65535>	7
1.2.9	logging level (lmm paglmeas refl grs nslbssgpl lcls ndcpl lhclranaplsualv42bis lg...	8
1.2.10	logging level force-all (debug info notice error fatal)	10
1.2.11	logging level set-all (debug info notice error fatal)	11
1.2.12	logging print category (0 1)	11
1.2.13	logging print category-hex (0 1)	12
1.2.14	logging print extended-timestamp (0 1)	12
1.2.15	logging print file (0 1 basename) [last]	13
1.2.16	logging print level (0 1)	13
1.2.17	logging set-log-mask MASK	14
1.2.18	logging timestamp (0 1)	14

1.2.19	no logging level force-all	14
1.2.20	show alarms	15
1.2.21	show asciidoc counters	15
1.2.22	show bssgp	15
1.2.23	show bssgp nsei <0-65535> [stats]	16
1.2.24	show bssgp stats	16
1.2.25	show cs7 (sualm3ualipa) [<0-65534>]	16
1.2.26	show cs7 instance <0-15> as (active all m3ualsua)	17
1.2.27	show cs7 instance <0-15> asp	18
1.2.28	show cs7 instance <0-15> sccp addressbook	18
1.2.29	show cs7 instance <0-15> sccp connections	19
1.2.30	show cs7 instance <0-15> sccp ssn <0-65535>	19
1.2.31	show cs7 instance <0-15> sccp timers	20
1.2.32	show cs7 instance <0-15> sccp users	20
1.2.33	show cs7 instance <0-15> users	21
1.2.34	show history	21
1.2.35	show llc	21
1.2.36	show logging vty	22
1.2.37	show mm-context all [pdp]	22
1.2.38	show mm-context imsi IMSI [pdp]	22
1.2.39	show ns	23
1.2.40	show ns (nsei nsvc) <0-65535> [stats]	23
1.2.41	show ns persistent	24
1.2.42	show ns stats	24
1.2.43	show online-help	24
1.2.44	show pdp-context all	25
1.2.45	show rate-counters	25
1.2.46	show sgsn	25
1.2.47	show sndcp	26
1.2.48	show stats	26
1.2.49	show stats level (global peer subscriber)	26
1.2.50	show subscriber cache	27
1.2.51	show talloc-context (application all) (full brief DEPTH)	27
1.2.52	show talloc-context (application all) (full brief DEPTH) filter REGEXP	28
1.2.53	show talloc-context (application all) (full brief DEPTH) tree ADDRESS	28
1.2.54	show version	29
1.2.55	terminal length <0-512>	29
1.2.56	terminal no length	30
1.2.57	who	30

1.3	enable	30
1.3.1	bssgp bvc nsei <0-65535> bvci <0-65535> reset	30
1.3.2	configure terminal	31
1.3.3	copy running-config startup-config	31
1.3.4	disable	31
1.3.5	logging color (0 1)	32
1.3.6	logging disable	32
1.3.7	logging enable	32
1.3.8	logging filter all (0 1)	33
1.3.9	logging filter bvc nsei <0-65535> bvci <0-65535>	33
1.3.10	logging filter nsvc (nseilnsvci) <0-65535>	34
1.3.11	logging level (lmm paglmeaslreflgrprslnslbssgplllclslndcplslhclranaplsualv42bisllg...	34
1.3.12	logging level force-all (debug info notice error fatal)	36
1.3.13	logging level set-all (debug info notice error fatal)	37
1.3.14	logging print category (0 1)	38
1.3.15	logging print category-hex (0 1)	38
1.3.16	logging print extended-timestamp (0 1)	39
1.3.17	logging print file (0 1 basename) [last]	39
1.3.18	logging print level (0 1)	40
1.3.19	logging set-log-mask MASK	40
1.3.20	logging timestamp (0 1)	40
1.3.21	no logging level force-all	41
1.3.22	nsvc (nseilnsvci) <0-65535> (block unblock reset)	41
1.3.23	show alarms	42
1.3.24	show asciidoc counters	42
1.3.25	show bssgp	42
1.3.26	show bssgp nsei <0-65535> [stats]	43
1.3.27	show bssgp stats	43
1.3.28	show cs7 (sualm3ualipa) [<0-65534>]	43
1.3.29	show cs7 instance <0-15> as (active all m3ualsua)	44
1.3.30	show cs7 instance <0-15> asp	45
1.3.31	show cs7 instance <0-15> sccp addressbook	45
1.3.32	show cs7 instance <0-15> sccp connections	46
1.3.33	show cs7 instance <0-15> sccp ssn <0-65535>	46
1.3.34	show cs7 instance <0-15> sccp timers	47
1.3.35	show cs7 instance <0-15> sccp users	47
1.3.36	show cs7 instance <0-15> users	48
1.3.37	show history	48
1.3.38	show llc	48

1.3.39	show logging vty	49
1.3.40	show mm-context all [pdp]	49
1.3.41	show mm-context imsi IMSI [pdp]	49
1.3.42	show ns	50
1.3.43	show ns (nseilnsvc) <0-65535> [stats]	50
1.3.44	show ns persistent	51
1.3.45	show ns stats	51
1.3.46	show online-help	51
1.3.47	show pdp-context all	52
1.3.48	show rate-counters	52
1.3.49	show sgsn	52
1.3.50	show sndcp	53
1.3.51	show startup-config	53
1.3.52	show stats	53
1.3.53	show stats level (global peer subscriber)	54
1.3.54	show subscriber cache	54
1.3.55	show talloc-context (application all) (full brief DEPTH)	54
1.3.56	show talloc-context (application all) (full brief DEPTH) filter REGEXP	55
1.3.57	show talloc-context (application all) (full brief DEPTH) tree ADDRESS	56
1.3.58	show version	56
1.3.59	terminal length <0-512>	57
1.3.60	terminal monitor	57
1.3.61	terminal no length	57
1.3.62	terminal no monitor	58
1.3.63	update-subscriber imsi IMSI cancel (update-procedure subscription-withdraw)	58
1.3.64	update-subscriber imsi IMSI create	58
1.3.65	update-subscriber imsi IMSI destroy	59
1.3.66	update-subscriber imsi IMSI insert auth-triplet <1-5> sres SRES rand RAND kc KC	59
1.3.67	update-subscriber imsi IMSI update-auth-info	60
1.3.68	update-subscriber imsi IMSI update-location-result (ok system-failure data-missi...	60
1.3.69	who	61
1.4	config	61
1.4.1	banner motd default	62
1.4.2	banner motd file [FILE]	62
1.4.3	bssgp	62
1.4.4	cs7 instance <0-15>	63
1.4.5	ctrl	63
1.4.6	enable password (8l) WORD	63
1.4.7	enable password LINE	64

1.4.8	hostname WORD	64
1.4.9	line vty	64
1.4.10	log alarms <2-32700>	65
1.4.11	log file .FILENAME	65
1.4.12	log gsmtap [HOSTNAME]	65
1.4.13	log stderr	66
1.4.14	log syslog (authpriv cron daemon ftp lpr mail news user uucp)	66
1.4.15	log syslog local <0-7>	67
1.4.16	no banner motd	67
1.4.17	no enable password	67
1.4.18	no hostname [HOSTNAME]	68
1.4.19	no log alarms	68
1.4.20	no log file .FILENAME	68
1.4.21	no log stderr	69
1.4.22	no log syslog	69
1.4.23	no service advanced-vty	69
1.4.24	no service terminal-length [<0-512>]	70
1.4.25	no stats reporter log	70
1.4.26	no stats reporter statsd	70
1.4.27	ns	71
1.4.28	password (8l) WORD	71
1.4.29	password LINE	71
1.4.30	service advanced-vty	72
1.4.31	service terminal-length <0-512>	72
1.4.32	sgsn	72
1.4.33	show history	72
1.4.34	stats interval <1-65535>	73
1.4.35	stats reporter log	73
1.4.36	stats reporter statsd	73
1.5	config-log	74
1.5.1	logging color (0l1)	74
1.5.2	logging filter all (0l1)	74
1.5.3	logging filter bvc nsei <0-65535> bvci <0-65535>	75
1.5.4	logging filter nsvc (nsei nsvci) <0-65535>	75
1.5.5	logging level (lmm pag meas ref gprs ns bssg p llc s ndc p sl hcl ran ap sua v42bis lg...	76
1.5.6	logging level force-all (debug info notice error fatal)	78
1.5.7	logging level set-all (debug info notice error fatal)	79
1.5.8	logging print category (0l1)	79
1.5.9	logging print category-hex (0l1)	80

1.5.10	logging print extended-timestamp (0 1)	80
1.5.11	logging print file (0 1 basename) [last]	81
1.5.12	logging print level (0 1)	81
1.5.13	logging timestamp (0 1)	82
1.5.14	no logging level force-all	82
1.6	config-stats	82
1.6.1	disable	82
1.6.2	enable	83
1.6.3	level (global peer subscriber)	83
1.6.4	local-ip ADDR	83
1.6.5	mtu <100-65535>	84
1.6.6	no local-ip	84
1.6.7	no mtu	84
1.6.8	no prefix	84
1.6.9	prefix PREFIX	85
1.6.10	remote-ip ADDR	85
1.6.11	remote-port <1-65535>	85
1.7	config-line	86
1.7.1	bind A.B.C.D [<0-65535>]	86
1.7.2	login	86
1.7.3	no login	86
1.8	config-ns	87
1.8.1	encapsulation framerelay-gre enabled (1 0)	87
1.8.2	encapsulation framerelay-gre local-ip A.B.C.D	87
1.8.3	encapsulation udp dscp <0-255>	88
1.8.4	encapsulation udp local-ip A.B.C.D	88
1.8.5	encapsulation udp local-port <0-65535>	88
1.8.6	no nse <0-65535>	89
1.8.7	nse <0-65535> encapsulation (udp framerelay-gre)	89
1.8.8	nse <0-65535> fr-dlci <16-1007>	90
1.8.9	nse <0-65535> nsvci <0-65534>	90
1.8.10	nse <0-65535> remote-ip A.B.C.D	90
1.8.11	nse <0-65535> remote-port <0-65535>	91
1.8.12	nse <0-65535> remote-role (sgsn bss)	91
1.8.13	timer (tns-block tns-block-retries tns-reset tns-reset-retries tns-test tns-aliv...	92
1.9	config-bssgp	92
1.10	config-ctrl	92
1.10.1	bind A.B.C.D	92
1.11	config-cs7	93

1.11.1	as NAME (sualm3ualipa)	93
1.11.2	asp NAME <0-65535> <0-65535> (sualm3ualipa)	93
1.11.3	description .TEXT	94
1.11.4	network-indicator (international national reserved spare)	94
1.11.5	no as NAME	94
1.11.6	no asp NAME	95
1.11.7	no sccp-address NAME	95
1.11.8	point-code POINT_CODE	95
1.11.9	point-code delimiter (defaultldash)	96
1.11.10	point-code format <1-24> [<1-23>] [<1-22>]	96
1.11.11	point-code format default	96
1.11.12	sccp-address NAME	97
1.11.13	sccp-timer (conn_estliarlirellrepeat_rellintlguardlresetlreassembly) <1-99999...	97
1.11.14	xua rkm routing-key-allocation (static-only dynamic-permitted)	98
1.12	config-cs7-as	98
1.12.1	asp NAME	98
1.12.2	description .TEXT	99
1.12.3	no asp NAME	99
1.12.4	point-code override dpc PC	99
1.12.5	qos-class <0-255>	100
1.12.6	recovery-timeout <1-2000>	100
1.12.7	routing-key RCONTEXT DPC	100
1.12.8	routing-key RCONTEXT DPC si (aal2 bicclb-isuplh248lisuplsat-isuplsccpltup)	101
1.12.9	routing-key RCONTEXT DPC si (aal2 bicclb-isuplh248lisuplsat-isuplsccpltup) ssn S...	101
1.12.10	routing-key RCONTEXT DPC ssn SSN	102
1.12.11	traffic-mode (broadcast loadshare roundrobin override)	103
1.13	config-cs7-asp	103
1.13.1	block	103
1.13.2	description .TEXT	103
1.13.3	local-ip A.B.C.D	104
1.13.4	qos-class <0-255>	104
1.13.5	remote-ip A.B.C.D	104
1.13.6	shutdown	104
1.14	config-cs7-sccpaddr	105
1.14.1	global-title	105
1.14.2	no global-title	105
1.14.3	no point-code	105
1.14.4	no subsystem-number	105
1.14.5	point-code POINT_CODE	106

1.14.6	routing-indicator (GT PC IP)	106
1.14.7	subsystem-number <0-4294967295>	106
1.15	config-cs7-sccpaddr-gt	107
1.15.1	digits DIGITS	107
1.15.2	global-title-indicator <0-15>	107
1.15.3	nature-of-address-indicator <0-127>	107
1.15.4	numbering-plan-indicator <0-15>	108
1.15.5	translation-type <0-255>	108
1.16	config-sgsn	108
1.16.1	access-point-name NAME	108
1.16.2	apn APNAME ggsn <0-255>	109
1.16.3	apn APNAME imsi-prefix IMSIPRE ggsn <0-255>	109
1.16.4	asn1 debug (1 0)	110
1.16.5	asn1 xer-print (1 0)	110
1.16.6	auth-policy (accept-all closed acl-only remote)	110
1.16.7	authentication (optional required)	111
1.16.8	cdr filename NAME	111
1.16.9	cdr interval <1-2147483647>	112
1.16.10	cdr trap	112
1.16.11	compression rfc1144 active slots <1-256>	112
1.16.12	compression rfc1144 passive	113
1.16.13	compression v42bis active direction (mslsgsn both) codewords <512-65535> strlen ...	113
1.16.14	compression v42bis passive	114
1.16.15	cs7-instance-iu <0-15>	114
1.16.16	encryption (GEA0 GEA1 GEA2 GEA3 GEA4)	114
1.16.17	ggsn <0-255> echo-interval <1-36000>	115
1.16.18	ggsn <0-255> gtp-version (0 1)	115
1.16.19	ggsn <0-255> no echo-interval	115
1.16.20	ggsn <0-255> remote-ip A.B.C.D	116
1.16.21	ggsn dynamic	116
1.16.22	grx-dns-add A.B.C.D	117
1.16.23	gsup ipa-name NAME	117
1.16.24	gsup oap-id <0-65535>	117
1.16.25	gsup oap-k K	118
1.16.26	gsup oap-opc OPC	118
1.16.27	gsup remote-ip A.B.C.D	118
1.16.28	gsup remote-port <0-65535>	119
1.16.29	gtp local-ip A.B.C.D	119
1.16.30	imsi-acl (add del) IMSI	119

1.16.31 iu rab-assign-addr-enc (x213 v4raw)	120
1.16.32 no access-point-name NAME	120
1.16.33 no cdr filename	120
1.16.34 no cdr trap	121
1.16.35 no compression rfc1144	121
1.16.36 no compression v42bis	121
1.16.37 timer t3312 <0-65535>	122
1.16.38 timer t3313 <0-65535>	122
1.16.39 timer t3314 <0-65535>	122
1.16.40 timer t3316 <0-65535>	123
1.16.41 timer t3322 <0-65535>	123
1.16.42 timer t3350 <0-65535>	123
1.16.43 timer t3360 <0-65535>	124
1.16.44 timer t3370 <0-65535>	124
1.16.45 timer t3385 <0-65535>	124
1.16.46 timer t3386 <0-65535>	125
1.16.47 timer t3395 <0-65535>	125
1.16.48 timer t3397 <0-65535>	125

List of Tables

1.1	VTY Parameter Patterns	1
1.2	VTY port numbers	1

Chapter 1

VTY reference

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

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

Table 1.1: VTY Parameter Patterns

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

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

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

Table 1.2: VTY port numbers

Common Commands

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

end

Command

```
end
```

Parameters

end

End current mode and change to enable mode.

exit

Command

```
exit
```

Parameters

exit

Exit current mode and down to previous mode

help

Command

```
help
```

Parameters

help

Description of the interactive help system

list

Command

```
list
```

Parameters

list

Print command list

show running-config

Command

```
show running-config
```

Parameters

show

Show running system information

running-config

running configuration

write

Command

```
write
```

Parameters

write

Write running configuration to memory, network, or terminal

write file

Command

```
write file
```

Parameters

write

Write running configuration to memory, network, or terminal

file

Write to configuration file

write memory

Command

```
write memory
```

Parameters

write

Write running configuration to memory, network, or terminal

memory

Write configuration to the file (same as write file)

write terminal

Command

```
write terminal
```

Parameters

write

Write running configuration to memory, network, or terminal

terminal

Write to terminal

view

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

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

Command

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

Parameters

bssgp

Initiate BVC RESET procedure for a given NSEI and BVCI

bvc

Filter based on BSSGP Virtual Connection

nsei

NSEI of the BVC to be filtered

<0-65535>

Network Service Entity Identifier (NSEI)

bvci

BVCI of the BVC to be filtered

<0-65535>

BSSGP Virtual Connection Identifier (BVCI)

reset

Perform reset procedure

enable

Command

```
enable
```

Parameters

enable

Turn on privileged mode command

logging color (0|1)

Command

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

Parameters

logging

Configure logging

color

Configure color-printing for log messages

0

Don't use color for printing messages

1

Use color for printing messages

logging disable

Command

```
logging disable
```

Parameters

logging

Configure logging

disable

Disables logging to this vty

logging enable

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

Command

```
logging enable
```

Parameters

logging

Configure logging

enable

Enables logging to this vty

logging filter all (0|1)

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

Command

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

Parameters

logging

Configure logging

filter

Filter log messages

all

Do you want to log all messages?

0

Only print messages matched by other filters

1

Bypass filter and print all messages

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

Command

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

Parameters

logging

Configure logging

filter

Filter log messages

bvc

Filter based on BSSGP Virtual Connection

nsei

NSEI of the BVC to be filtered

<0-65535>

Network Service Entity Identifier (NSEI)

bvci

BVCI of the BVC to be filtered

<0-65535>

BSSGP Virtual Connection Identifier (BVCI)

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

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

Parameters**logging**

Configure logging

filter

Filter log messages

nsvc

Filter based on NS Virtual Connection

nsei

Identify NS-VC by NSEI

nsvci

Identify NS-VC by NSVCI

<0-65535>

Numeric identifier

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

mm

Layer3 Mobility Management (MM)

pag

Paging Subsystem

meas

Radio Measurement Processing

ref

Reference Counting

gprs

GPRS Packet Service

ns

GPRS Network Service (NS)

bssgp

GPRS BSS Gateway Protocol (BSSGP)

llc

GPRS Logical Link Control Protocol (LLC)

sndcp

GPRS Sub-Network Dependent Control Protocol (SND CP)

slhc

RFC1144 TCP/IP Header compression (SLHC)

ranap

RAN Application Part (RANAP)

sua

SCCP User Adaptation (SUA)

v42bis

V.42bis data compression (SND CP)

lglobal

Library-internal global log family

llapd

LAPD in libosmogsm

linp

A-bis Input Subsystem

lmux

A-bis B-Subchannel TRAU Frame Multiplex

lmi

A-bis Input Driver for Signalling

lmib

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

lsms

Layer3 Short Message Service (SMS)

lctrl

Control Interface

lgtp

GPRS GTP library

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

libosmo-sigtran MTP3 User Adaptation

lmgcp

libosmo-mgcp Media Gateway Control Protocol

ljibuf

libosmo-netif Jitter Buffer

lrspro

Remote SIM protocol

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

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

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

Parameters**logging**

Configure logging

level

Set the log level for a specified category

force-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

set-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

logging print category (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

category

Configure log message

0

Don't prefix each log message

1

Prefix each log message with category/subsystem name

logging print category-hex (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

category-hex

Configure log message

0

Don't prefix each log message

1

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

logging print extended-timestamp (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

extended-timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

Command

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

Parameters

logging

Configure logging

print

Log output settings

file

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the source file and line

basename

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

[last]

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

logging print level (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

level

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the log level name

logging set-log-mask MASK

Command

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

Parameters

logging

Configure logging

set-log-mask

Set the logmask of this logging target

MASK

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

logging timestamp (0|1)

Command

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

Parameters

logging

Configure logging

timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

no logging level force-all

Command

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

Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

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

show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

show bssgp

Command

```
show bssgp
```

Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

show bssgp nsei <0-65535> [stats]

Command

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

Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

nsei

Show all BVCs on one NSE

<0-65535>

The NSEI

[stats]

Include Statistics

show bssgp stats

Command

```
show bssgp stats
```

Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

stats

Include statistics

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

[<0-65534>]

Port Number

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

as

Application Server (AS)

active

Display all active ASs

all

Display all ASs (default)

m3ua

Display all m3ua ASs

sua

Display all SUA ASs

show cs7 instance <0-15> asp

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp

Application Server Process (ASP)

show cs7 instance <0-15> sccp addressbook

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

addressbook

List all SCCP addressbook entries

show cs7 instance <0-15> sccp connections

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

connections

Show List of active SCCP connections

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

ssn

Find an SCCP User registered for the given SSN

<0-65535>

Subsystem Number (SSN)

show cs7 instance <0-15> sccp timers

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signaling Connection Control Part

timers

Show List of SCCP timers

show cs7 instance <0-15> sccp users

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

users

Show List of SCCP Users registered

show cs7 instance <0-15> users

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

users

User Table

show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

show llc

Command

```
show llc
```

Parameters

show

Show running system information

llc

Display information about the LLC protocol

show logging vty

Command

```
show logging vty
```

Parameters

show

Show running system information

logging

Show current logging configuration

vtty

Show current logging configuration for this vty

show mm-context all [pdp]

Command

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

Parameters

show

Show running system information

mm-context

MM Context

all

All MM Contexts

[pdp]

Include PDP Context Information

show mm-context imsi IMSI [pdp]

Command

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

Parameters

show

Show running system information

mm-context

MM Context

imsi

Identify by IMSI

IMSI

IMSI of the MM Context

[pdp]

Include PDP Context Information

show ns

Command

```
show ns
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

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

Command

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

Parameters

show

Show running system information

ns

Display information about the NS protocol

nsei

Select one NSE by its NSE Identifier

nsvc

Select one NSE by its NS-VC Identifier

<0-65535>

The Identifier of selected type

[stats]

Include Statistics

show ns persistent

Command

```
show ns persistent
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

persistent

Show only persistent NS

show ns stats

Command

```
show ns stats
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

stats

Include statistics

show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

show pdp-context all

Command

```
show pdp-context all
```

Parameters

show

Show running system information

pdp-context

Display information on PDP Context

all

Show everything

show rate-counters

Command

```
show rate-counters
```

Parameters

show

Show running system information

rate-counters

Show all rate counters

show sgsn

Command

```
show sgsn
```

Parameters

show

Show running system information

sgsn

Display information about the SGSN

show sndcp

Command

```
show sndcp
```

Parameters

show

Show running system information

sndcp

Display information about the SNDCP protocol

show stats

Command

```
show stats
```

Parameters

show

Show running system information

stats

Show statistical values

show stats level (global|peer|subscriber)

Command

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

Parameters

show

Show running system information

stats

Show statistical values

level

Set the maximum group level

global

Show global groups only

peer

Show global and network peer related groups

subscriber

Show global, peer, and subscriber groups

show subscriber cache

Command

```
show subscriber cache
```

Parameters

show

Show running system information

subscriber

Show information about subscribers

cache

Display contents of subscriber cache

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

filter

Filter chunks using regular expression

REGEXP

Regular expression

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

tree

Display only a specific memory chunk

ADDRESS

Chunk address (e.g. 0xdeadbeef)

show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

terminal length <0-512>

Command

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

Parameters

terminal

Set terminal line parameters

length

Set number of lines on a screen

<0-512>

Number of lines on screen (0 for no pausing)

terminal no length

Command

```
terminal no length
```

Parameters

terminal

Set terminal line parameters

no

Negate a command or set its defaults

length

Set number of lines on a screen

who

Command

```
who
```

Parameters

who

Display who is on vty

enable

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

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

Command

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

Parameters

bssgp

Initiate BVC RESET procedure for a given NSEI and BVCI

bvc

Filter based on BSSGP Virtual Connection

nsei

NSEI of the BVC to be filtered

<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

configure terminal

Command

```
configure terminal
```

Parameters

configure

Configuration from vty interface

terminal

Configuration terminal

copy running-config startup-config

Command

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

Parameters

copy

Copy configuration

running-config

Copy running config to...

startup-config

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

disable

Command

```
disable
```

Parameters

disable

Turn off privileged mode command

logging color (0|1)

Command

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

Parameters

logging

Configure logging

color

Configure color-printing for log messages

0

Don't use color for printing messages

1

Use color for printing messages

logging disable

Command

```
logging disable
```

Parameters

logging

Configure logging

disable

Disables logging to this vty

logging enable

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

Command

```
logging enable
```

Parameters

logging

Configure logging

enable

Enables logging to this vty

logging filter all (0|1)

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

Command

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

Parameters

logging

Configure logging

filter

Filter log messages

all

Do you want to log all messages?

0

Only print messages matched by other filters

1

Bypass filter and print all messages

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

Command

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

Parameters

logging

Configure logging

filter

Filter log messages

bvc

Filter based on BSSGP Virtual Connection

nsei

NSEI of the BVC to be filtered

<0-65535>

Network Service Entity Identifier (NSEI)

bvci

BVCI of the BVC to be filtered

<0-65535>

BSSGP Virtual Connection Identifier (BVCI)

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

Command

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

Parameters

logging

Configure logging

filter

Filter log messages

nsvc

Filter based on NS Virtual Connection

nsei

Identify NS-VC by NSEI

nsvci

Identify NS-VC by NSVCI

<0-65535>

Numeric identifier

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

mm

Layer3 Mobility Management (MM)

pag

Paging Subsystem

meas

Radio Measurement Processing

ref

Reference Counting

gprs
GPRS Packet Service

ns
GPRS Network Service (NS)

bssgp
GPRS BSS Gateway Protocol (BSSGP)

llc
GPRS Logical Link Control Protocol (LLC)

sndcp
GPRS Sub-Network Dependent Control Protocol (SNDCP)

slhc
RFC1144 TCP/IP Header compression (SLHC)

ranap
RAN Application Part (RANAP)

sua
SCCP User Adaptation (SUA)

v42bis
V.42bis data compression (SNDCP)

lglobal
Library-internal global log family

llapd
LAPD in libosmogsm

linp
A-bis Input Subsystem

lmux
A-bis B-Subchannel TRAU Frame Multiplex

lmi
A-bis Input Driver for Signalling

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

lsms
Layer3 Short Message Service (SMS)

lctrl
Control Interface

lgtp
GPRS GTP library

lstats
Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

libosmo-sigtran MTP3 User Adaptation

lmgcp

libosmo-mgcp Media Gateway Control Protocol

ljibuf

libosmo-netif Jitter Buffer

lrspro

Remote SIM protocol

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

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

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

Parameters**logging**

Configure logging

level

Set the log level for a specified category

force-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

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

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

Parameters**logging**

Configure logging

level

Set the log level for a specified category

set-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

logging print category (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

category

Configure log message

0

Don't prefix each log message

1

Prefix each log message with category/subsystem name

logging print category-hex (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

category-hex

Configure log message

0

Don't prefix each log message

1

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

logging print extended-timestamp (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

extended-timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

Command

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

Parameters

logging

Configure logging

print

Log output settings

file

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the source file and line

basename

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

[last]

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

logging print level (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

level

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the log level name

logging set-log-mask MASK

Command

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

Parameters

logging

Configure logging

set-log-mask

Set the logmask of this logging target

MASK

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

logging timestamp (0|1)

Command

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

Parameters

logging

Configure logging

timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

no logging level force-all

Command

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

Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

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

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

Command

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

Parameters

nsvc

Perform an operation on a NSVC

nsei

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

nsvci

NS-VC Identifier (NS-VCI)

<0-65535>

The NSEI

block

Initiate BLOCK procedure

unblock

Initiate UNBLOCK procedure

reset

Initiate RESET procedure

show alarms

Command

```
show alarms
```

Parameters

show

Show running system information

alarms

Show current logging configuration

show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

show bssgp

Command

```
show bssgp
```

Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

show bssgp nsei <0-65535> [stats]

Command

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

Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

nsei

Show all BVCs on one NSE

<0-65535>

The NSEI

[stats]

Include Statistics

show bssgp stats

Command

```
show bssgp stats
```

Parameters

show

Show running system information

bssgp

Show information about the BSSGP protocol

stats

Include statistics

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

[<0-65534>]

Port Number

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

as

Application Server (AS)

active

Display all active ASs

all

Display all ASs (default)

m3ua

Display all m3ua ASs

sua

Display all SUA ASs

show cs7 instance <0-15> asp

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp

Application Server Process (ASP)

show cs7 instance <0-15> sccp addressbook

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

addressbook

List all SCCP addressbook entries

show cs7 instance <0-15> sccp connections

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

connections

Show List of active SCCP connections

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

ssn

Find an SCCP User registered for the given SSN

<0-65535>

Subsystem Number (SSN)

show cs7 instance <0-15> sccp timers

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signaling Connection Control Part

timers

Show List of SCCP timers

show cs7 instance <0-15> sccp users

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

sccp

Signalling Connection Control Part

users

Show List of SCCP Users registered

show cs7 instance <0-15> users

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

users

User Table

show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

show llc

Command

```
show llc
```

Parameters

show

Show running system information

llc

Display information about the LLC protocol

show logging vty

Command

```
show logging vty
```

Parameters

show

Show running system information

logging

Show current logging configuration

vty

Show current logging configuration for this vty

show mm-context all [pdp]

Command

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

Parameters

show

Show running system information

mm-context

MM Context

all

All MM Contexts

[pdp]

Include PDP Context Information

show mm-context imsi IMSI [pdp]

Command

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

Parameters

show

Show running system information

mm-context

MM Context

imsi

Identify by IMSI

IMSI

IMSI of the MM Context

[pdp]

Include PDP Context Information

show ns

Command

```
show ns
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

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

Command

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

Parameters

show

Show running system information

ns

Display information about the NS protocol

nsei

Select one NSE by its NSE Identifier

nsvc

Select one NSE by its NS-VC Identifier

<0-65535>

The Identifier of selected type

[stats]

Include Statistics

show ns persistent

Command

```
show ns persistent
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

persistent

Show only persistent NS

show ns stats

Command

```
show ns stats
```

Parameters

show

Show running system information

ns

Display information about the NS protocol

stats

Include statistics

show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

show pdp-context all

Command

```
show pdp-context all
```

Parameters

show

Show running system information

pdp-context

Display information on PDP Context

all

Show everything

show rate-counters

Command

```
show rate-counters
```

Parameters

show

Show running system information

rate-counters

Show all rate counters

show sgsn

Command

```
show sgsn
```

Parameters

show

Show running system information

sgsn

Display information about the SGSN

show sndcp

Command

```
show sndcp
```

Parameters

show

Show running system information

sndcp

Display information about the SNDTCP protocol

show startup-config

Command

```
show startup-config
```

Parameters

show

Show running system information

startup-config

Contentes of startup configuration

show stats

Command

```
show stats
```

Parameters

show

Show running system information

stats

Show statistical values

show stats level (global|peer|subscriber)

Command

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

Parameters

show

Show running system information

stats

Show statistical values

level

Set the maximum group level

global

Show global groups only

peer

Show global and network peer related groups

subscriber

Show global, peer, and subscriber groups

show subscriber cache

Command

```
show subscriber cache
```

Parameters

show

Show running system information

subscriber

Show information about subscribers

cache

Display contents of subscriber cache

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

filter

Filter chunks using regular expression

REGEXP

Regular expression

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

Command

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

Parameters

show

Show running system information

talloc-context

Show talloc memory hierarchy

application

Application's context

all

All contexts, if NULL-context tracking is enabled

full

Display a full talloc memory hierarchy

brief

Display a brief talloc memory hierarchy

DEPTH

Specify required maximal depth value

tree

Display only a specific memory chunk

ADDRESS

Chunk address (e.g. 0xdeadbeef)

show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

terminal length <0-512>

Command

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

Parameters

terminal

Set terminal line parameters

length

Set number of lines on a screen

<0-512>

Number of lines on screen (0 for no pausing)

terminal monitor

Command

```
terminal monitor
```

Parameters

terminal

Set terminal line parameters

monitor

Copy debug output to the current terminal line

terminal no length

Command

```
terminal no length
```

Parameters

terminal

Set terminal line parameters

no

Negate a command or set its defaults

length

Set number of lines on a screen

terminal no monitor

Command

```
terminal no monitor
```

Parameters

terminal

Set terminal line parameters

no

Negate a command or set its defaults

monitor

Copy debug output to the current terminal line

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

Command

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

Parameters

update-subscriber

Update subscriber list

imsi

Use the IMSI to select the subscriber

IMSI

The IMSI

cancel

Cancel (remove) subscriber record

update-procedure

The MS moved to another SGSN

subscription-withdraw

The subscription is no longer valid

update-subscriber imsi IMSI create

Command

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

Parameters

update-subscriber

Update subscriber list

imsi

Use the IMSI to select the subscriber

IMSI

The IMSI

create

Create a subscriber entry

update-subscriber imsi IMSI destroy**Command**

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

Parameters**update-subscriber**

Update subscriber list

imsi

Use the IMSI to select the subscriber

IMSI

The IMSI

destroy

Destroy a subscriber entry

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

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

Parameters**update-subscriber**

Update subscriber list

imsi

Use the IMSI to select the subscriber

IMSI

The IMSI

insert

Insert data into the subscriber record

auth-triplet

Update authentication triplet

<1-5>

Triplet index

sres

Set SRES value

SRES

SRES value (4 byte) in hex

rand

Set RAND value

RAND

RAND value (16 byte) in hex

kc

Set Kc value

KC

Kc value (8 byte) in hex

update-subscriber imsi IMSI update-auth-info

Command

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

Parameters

update-subscriber

Update subscriber list

imsi

Use the IMSI to select the subscriber

IMSI

The IMSI

update-auth-info

Complete the send authentication info procedure

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

Command

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

Parameters

update-subscriber

Update subscriber list

imsi

Use the IMSI to select the subscriber

IMSI

The IMSI

update-location-result

Complete the update location procedure

ok

The update location request succeeded

system-failure

Force error code SystemFailure

data-missing

Force error code DataMissing

unexpected-data-value

Force error code UnexpectedDataValue

unknown-subscriber

Force error code UnknownSubscriber

roaming-not-allowed

Force error code RoamingNotAllowed

who

Command

```
who
```

Parameters

who

Display who is on vty

config

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

banner motd default

Command

```
banner motd default
```

Parameters

banner

Set banner string

motd

Strings for motd

default

Default string

banner motd file [FILE]

Command

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

Parameters

banner

Set banner

motd

Banner for motd

file

Banner from a file

[FILE]

Filename

bssgp

Command

```
bssgp
```

Parameters

bssgp

Configure the GPRS BSS Gateway Protocol

cs7 instance <0-15>

Command

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

Parameters

cs7

ITU-T Signaling System 7

instance

Configure a SS7 Instance

<0-15>

An instance of the SS7 stack

ctrl

Command

```
ctrl
```

Parameters

ctrl

Configure the Control Interface

enable password (8|) WORD

Command

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

Parameters

enable

Modify enable password parameters

password

Assign the privileged level password

8

Specifies a HIDDEN password will follow

dummy string

WORD

The HIDDEN 'enable' password string

enable password LINE

Command

```
enable password LINE
```

Parameters

enable

Modify enable password parameters

password

Assign the privileged level password

LINE

The UNENCRYPTED (cleartext) 'enable' password

hostname WORD

Command

```
hostname WORD
```

Parameters

hostname

Set system's network name

WORD

This system's network name

line vty

Command

```
line vty
```

Parameters

line

Configure a terminal line

vtty

Virtual terminal

log alarms <2-32700>

Command

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

Parameters

log

Configure logging sub-system

alarms

Logging alarms to osmo_strrb

<2-32700>

Maximum number of messages to log

log file .FILENAME

Command

```
log file .FILENAME
```

Parameters

log

Configure logging sub-system

file

Logging to text file

.FILENAME

Filename

log gsmtap [HOSTNAME]

Command

```
log gsmtap [HOSTNAME]
```

Parameters

log

Configure logging sub-system

gsmtap

Logging via GSMTAP

[HOSTNAME]

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

log stderr

Command

```
log stderr
```

Parameters

log

Configure logging sub-system

stderr

Logging via STDERR of the process

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

Command

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

Parameters

log

Configure logging sub-system

syslog

Logging via syslog

authpriv

Security/authorization messages facility

cron

Clock daemon (cron/at) facility

daemon

General system daemon facility

ftp

Ftp daemon facility

lpr

Line printer facility

mail

Mail facility

news

News facility

user

Generic facility

uucp

UUCP facility

log syslog local <0-7>

Command

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

Parameters

log

Configure logging sub-system

syslog

Logging via syslog

local

Syslog LOCAL facility

<0-7>

Local facility number

no banner motd

Command

```
no banner motd
```

Parameters

no

Negate a command or set its defaults

banner

Set banner string

motd

Strings for motd

no enable password

Command

```
no enable password
```

Parameters

no

Negate a command or set its defaults

enable

Modify enable password parameters

password

Assign the privileged level password

no hostname [HOSTNAME]

Command

```
no hostname [HOSTNAME]
```

Parameters

no

Negate a command or set its defaults

hostname

Reset system's network name

[HOSTNAME]

Host name of this router

no log alarms

Command

```
no log alarms
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

alarms

Logging alarms to osmo_strrb

no log file .FILENAME

Command

```
no log file .FILENAME
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

file

Logging to text file

.FILENAME

Filename

no log stderr

Command

```
no log stderr
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

stderr

Logging via STDERR of the process

no log syslog

Command

```
no log syslog
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

syslog

Logging via syslog

no service advanced-vty

Command

```
no service advanced-vty
```

Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

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

Command

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

Parameters

no

Negate a command or set its defaults

service

Set up miscellaneous service

terminal-length

System wide terminal length configuration

[<0-512>]

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

no stats reporter log

Command

```
no stats reporter log
```

Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

no stats reporter statsd

Command

```
no stats reporter statsd
```

Parameters

no

Negate a command or set its defaults

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

ns

Command

```
ns
```

Parameters

ns

Configure the GPRS Network Service

password (8|) WORD

Command

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

Parameters

password

Assign the terminal connection password

8

Specifies a HIDDEN password will follow

dummy string

WORD

The HIDDEN line password string

password LINE

Command

```
password LINE
```

Parameters

password

Assign the terminal connection password

LINE

The UNENCRYPTED (cleartext) line password

service advanced-vty

Command

```
service advanced-vty
```

Parameters

service

Set up miscellaneous service

advanced-vty

Enable advanced mode vty interface

service terminal-length <0-512>

Command

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

Parameters

service

Set up miscellaneous service

terminal-length

System wide terminal length configuration

<0-512>

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

sgsn

Command

```
sgsn
```

Parameters

sgsn

Configure the SGSN

show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

stats interval <1-65535>

Command

```
stats interval <1-65535>
```

Parameters

stats

Configure stats sub-system

interval

Set the reporting interval

<1-65535>

Interval in seconds

stats reporter log

Command

```
stats reporter log
```

Parameters

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

stats reporter statsd

Command

```
stats reporter statsd
```

Parameters

stats

Configure stats sub-system

reporter

Configure a stats reporter

statsd

Report to a STATSD server

config-log

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

logging color (0|1)

Command

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

Parameters

logging

Configure logging

color

Configure color-printing for log messages

0

Don't use color for printing messages

1

Use color for printing messages

logging filter all (0|1)

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

Command

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

Parameters

logging

Configure logging

filter

Filter log messages

all

Do you want to log all messages?

0

Only print messages matched by other filters

1

Bypass filter and print all messages

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

Command

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

Parameters

logging

Configure logging

filter

Filter log messages

bvc

Filter based on BSSGP Virtual Connection

nsei

NSEI of the BVC to be filtered

<0-65535>

Network Service Entity Identifier (NSEI)

bvci

BVCI of the BVC to be filtered

<0-65535>

BSSGP Virtual Connection Identifier (BVCI)

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

Command

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

Parameters

logging

Configure logging

filter

Filter log messages

nsvc

Filter based on NS Virtual Connection

nsei

Identify NS-VC by NSEI

nsvci

Identify NS-VC by NSVCI

<0-65535>

Numeric identifier

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

mm

Layer3 Mobility Management (MM)

pag

Paging Subsystem

meas

Radio Measurement Processing

ref

Reference Counting

gprs

GPRS Packet Service

ns

GPRS Network Service (NS)

bssgp

GPRS BSS Gateway Protocol (BSSGP)

llc

GPRS Logical Link Control Protocol (LLC)

sndcp

GPRS Sub-Network Dependent Control Protocol (SND CP)

slhc

RFC1144 TCP/IP Header compression (SLHC)

ranap

RAN Application Part (RANAP)

sua

SCCP User Adaptation (SUA)

v42bis

V.42bis data compression (SND CP)

lglobal

Library-internal global log family

llapd

LAPD in libosmogsm

linp

A-bis Input Subsystem

lmux

A-bis B-Subchannel TRAU Frame Multiplex

lmi

A-bis Input Driver for Signalling

lmib

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

lsms

Layer3 Short Message Service (SMS)

lctrl

Control Interface

lgtp

GPRS GTP library

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

libosmo-sigtran MTP3 User Adaptation

lmgcp

libosmo-mgcp Media Gateway Control Protocol

ljibuf

libosmo-netif Jitter Buffer

lrspro

Remote SIM protocol

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

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

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

Parameters**logging**

Configure logging

level

Set the log level for a specified category

force-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

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

Command

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

Parameters

logging

Configure logging

level

Set the log level for a specified category

set-all

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

debug

Log debug messages and higher levels

info

Log informational messages and higher levels

notice

Log noticeable messages and higher levels

error

Log error messages and higher levels

fatal

Log only fatal messages

logging print category (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

category

Configure log message

0

Don't prefix each log message

1

Prefix each log message with category/subsystem name

logging print category-hex (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

category-hex

Configure log message

0

Don't prefix each log message

1

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

logging print extended-timestamp (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

extended-timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

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

Command

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

Parameters

logging

Configure logging

print

Log output settings

file

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the source file and line

basename

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

[last]

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

logging print level (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

level

Configure log message

0

Don't prefix each log message

1

Prefix each log message with the log level name

logging timestamp (0|1)

Command

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

Parameters

logging

Configure logging

timestamp

Configure log message timestamping

0

Don't prefix each log message

1

Prefix each log message with current timestamp

no logging level force-all

Command

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

Parameters

no

Negate a command or set its defaults

logging

Configure logging

level

Set the log level for a specified category

force-all

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

config-stats

disable

Command

```
disable
```

Parameters

disable

Disable the reporter

enable

Command

```
enable
```

Parameters

enable

Enable the reporter

level (global|peer|subscriber)

Command

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

Parameters

level

Set the maximum group level

global

Report global groups only

peer

Report global and network peer related groups

subscriber

Report global, peer, and subscriber groups

local-ip ADDR

Command

```
local-ip ADDR
```

Parameters

local-ip

Set the IP address to which we bind locally

ADDR

IP Address

mtu <100-65535>

Command

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

Parameters

mtu

Set the maximum packet size

<100-65535>

Size in byte

no local-ip

Command

```
no local-ip
```

Parameters

no

Negate a command or set its defaults

local-ip

Set the IP address to which we bind locally

no mtu

Command

```
no mtu
```

Parameters

no

Negate a command or set its defaults

mtu

Set the maximum packet size

no prefix

Command

```
no prefix
```

Parameters

no

Negate a command or set its defaults

prefix

Set the item name prefix

prefix PREFIX

Command

```
prefix PREFIX
```

Parameters

prefix

Set the item name prefix

PREFIX

The prefix string

remote-ip ADDR

Command

```
remote-ip ADDR
```

Parameters

remote-ip

Set the remote IP address to which we connect

ADDR

IP Address

remote-port <1-65535>

Command

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

Parameters

remote-port

Set the remote port to which we connect

<1-65535>

Remote port number

config-line

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

Command

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

Parameters

bind

Accept VTY telnet connections on local interface

A.B.C.D

Local interface IP address (default: 127.0.0.1)

[<0-65535>]

Local TCP port number

login

Command

```
login
```

Parameters

login

Enable password checking

no login

Command

```
no login
```

Parameters

no

Negate a command or set its defaults

login

Enable password checking

config-ns

encapsulation framerelay-gre enabled (1|0)

Command

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

Parameters

encapsulation

NS encapsulation options

framerelay-gre

NS over Frame Relay over GRE Encapsulation

enabled

Enable or disable Frame Relay over GRE

1

Enable

0

Disable

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

Command

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

Parameters

encapsulation

NS encapsulation options

framerelay-gre

NS over Frame Relay over GRE Encapsulation

local-ip

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

A.B.C.D

IP Address

encapsulation udp dscp <0-255>

Command

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

Parameters

encapsulation

NS encapsulation options

udp

NS over UDP Encapsulation

dscp

Set DSCP/TOS on the UDP socket

<0-255>

DSCP Value

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

Command

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

Parameters

encapsulation

NS encapsulation options

udp

NS over UDP Encapsulation

local-ip

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

A.B.C.D

IP Address

encapsulation udp local-port <0-65535>

Command

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

Parameters

encapsulation

NS encapsulation options

udp

NS over UDP Encapsulation

local-port

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

<0-65535>

UDP port number

no nse <0-65535>

Command

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

Parameters

no

Delete Persistent NS Entity

nse

Delete Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

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

Command

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

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

encapsulation

Encapsulation for NS

udp

UDP/IP Encapsulation

framerelay-gre

Frame-Relay/GRE/IP Encapsulation

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

Command

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

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

fr-dlci

Frame Relay DLCI

<16-1007>

Frame Relay DLCI Number

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

Command

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

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

nsvci

NS Virtual Connection

<0-65534>

NS Virtual Connection ID (NSVCI)

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

Command

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

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

remote-ip

Remote IP Address

A.B.C.D

Remote IP Address

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

Command

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

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

remote-port

Remote UDP Port

<0-65535>

Remote UDP Port Number

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

Command

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

Parameters

nse

Persistent NS Entity

<0-65535>

NS Entity ID (NSEI)

remote-role

Remote NSE Role

sgsn

Remote Peer is SGSN

bss

Remote Peer is BSS

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

Command

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

Parameters

timer

Network Service Timer

tns-block

(un)blocking Timer (Tns-block) timeout

tns-block-retries

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

tns-reset

Reset Timer (Tns-reset) timeout

tns-reset-retries

Reset Timer (Tns-reset) number of retries

tns-test

Test Timer (Tns-test) timeout

tns-alive

Alive Timer (Tns-alive) timeout

tns-alive-retries

Alive Timer (Tns-alive) number of retries

tsns-prov

SNS Provision Timer (Tsns-prov) timeout

<0-65535>

Timer Value

config-bssgp**config-ctrl****bind A.B.C.D**

Command

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

Parameters

bind

Set bind address to listen for Control connections

A.B.C.D

Local IP address (default 127.0.0.1)

config-cs7

as NAME (sua|m3ua|ipa)

Command

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

Parameters

as

Configure an Application Server

NAME

Name of the Application Server

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

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

Command

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

Parameters

asp

Configure Application Server Process

NAME

Name of ASP

<0-65535>

Remote SCTP port number

<0-65535>

Local SCTP port number

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

description .TEXT

Command

```
description .TEXT
```

Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line

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

Command

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

Parameters

network-indicator

Configure the Network Indicator

international

International Network

national

National Network

reserved

Reserved Network

spare

Spare Network

no as NAME

Command

```
no as NAME
```

Parameters

no

Negate a command or set its defaults

as

Disable Application Server

NAME

Name of AS

no asp NAME

Command

```
no asp NAME
```

Parameters

no

Negate a command or set its defaults

asp

Disable Application Server Process

NAME

Name of ASP

no sccp-address NAME

Command

```
no sccp-address NAME
```

Parameters

no

Negate a command or set its defaults

sccp-address

Delete an SCCP addressbook entry

NAME

Name of the SCCP Address

point-code POINT_CODE

Command

```
point-code POINT_CODE
```

Parameters

point-code

Configure the local Point Code

POINT_CODE

Point Code

point-code delimiter (default|dash)

Command

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

Parameters

point-code

Point Code

delimiter

Configure Point Code Delimiter

default

Use dot as delimiter

dash

User dash as delimiter

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

Command

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

Parameters

point-code

Point Code

format

Configure Point Code Format

<1-24>

Length of first PC component

[<1-23>]

Length of second PC component

[<1-22>]

Length of third PC component

point-code format default

Command

```
point-code format default
```

Parameters

point-code

Point Code

format

Configure Point Code Format

default

Default Point Code Format (3.8.3)

sccp-address NAME

Command

```
sccp-address NAME
```

Parameters

sccp-address

Create/Modify an SCCP addressbook entry

NAME

Name of the SCCP Address

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

Command

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

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

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

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

Parameters**xua**

SIGTRAN xxxUA related

rkm

Routing Key Management

routing-key-allocation

Routing Key Management Allocation Policy

static-only

Only static (pre-configured) Routing Keys permitted

dynamic-permitted

Dynamically allocate Routing Keys for what ASPs request

config-cs7-as**asp NAME****Command**

```
asp NAME
```

Parameters**asp**

Specify that a given ASP is part of this AS

NAME

Name of ASP to be added to AS

description .TEXT

Command

```
description .TEXT
```

Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line

no asp NAME

Command

```
no asp NAME
```

Parameters

no

Negate a command or set its defaults

asp

Specify ASP to be removed from this AS

NAME

Name of ASP to be removed

point-code override dpc PC

Command

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

Parameters

point-code

Point Code Specific Features

override

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

dpc

Override Source Point Code

PC

Override Destination Point Code

qos-class <0-255>

Command

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

Parameters

qos-class

Specify QoS Class of AS

<0-255>

QoS Class of AS

recovery-timeout <1-2000>

Command

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

Parameters

recovery-timeout

Specifies the recovery timeout value in milliseconds

<1-2000>

Recovery Timeout in Milliseconds

routing-key RCONTEXT DPC

Command

```
routing-key RCONTEXT DPC
```

Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

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

Command

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

Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

si

Match on Service Indicator

aal2

ATM Adaption Layer 2

bicc

Bearer Independent Call Control

b-isup

Broadband ISDN User Part

h248

H.248

isup

ISDN User Part

sat-isup

Sattelite ISDN User Part

sccp

Signalling Connection Control Part

tup

Telephony User Part

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

Command

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

Parameters

routing-key

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

si

Match on Service Indicator

aal2

ATM Adaption Layer 2

bicc

Bearer Independent Call Control

b-isup

Broadband ISDN User Part

h248

H.248

isup

ISDN User Part

sat-isup

Sattelite ISDN User Part

sccp

Signalling Connection Control Part

tup

Telephony User Part

ssn

Match on Sub-System Number

SSN

Sub-System Number to match on

routing-key RCONTEXT DPC ssn SSN**Command**

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

Parameters**routing-key**

Define a routing key

RCONTEXT

Routing context number

DPC

Destination Point Code

ssn

Match on Sub-System Number

SSN

Sub-System Number to match on

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

Command

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

Parameters

traffic-mode

Specifies traffic mode of operation of the ASP within the AS

broadcast

Broadcast to all ASP within AS

loadshare

Share Load among all ASP within AS

roundrobin

Round-Robin between all ASP within AS

override

Override

config-cs7-asp

block

Command

```
block
```

Parameters

block

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

description .TEXT

Command

```
description .TEXT
```

Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line

local-ip A.B.C.D

Command

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

Parameters

local-ip

Specify Local IP Address from which to contact ASP

A.B.C.D

Local IP Address from which to contact of ASP

qos-class <0-255>

Command

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

Parameters

qos-class

Specify QoS Class of ASP

<0-255>

QoS Class of ASP

remote-ip A.B.C.D

Command

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

Parameters

remote-ip

Specify Remote IP Address of ASP

A.B.C.D

Remote IP Address of ASP

shutdown

Command

```
shutdown
```

Parameters

shutdown

Terminates SCTP association; New associations will be rejected

config-cs7-sccpaddr

global-title

Command

```
global-title
```

Parameters

global-title

Add/Modify Global Title

no global-title

Command

```
no global-title
```

Parameters

no

Negate a command or set its defaults

global-title

Remove Global Title

no point-code

Command

```
no point-code
```

Parameters

no

Negate a command or set its defaults

point-code

Remove point-code Number

no subsystem-number

Command

```
no subsystem-number
```

Parameters

no

Negate a command or set its defaults

subsystem-number

Remove Subsystem Number

point-code POINT_CODE

Command

```
point-code POINT_CODE
```

Parameters

point-code

Add point-code Number

POINT_CODE

PC

routing-indicator (GT|PC|IP)

Command

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

Parameters

routing-indicator

Add Routing Indicator

GT

by global-title

PC

by point-code

IP

by ip-address

subsystem-number <0-4294967295>

Command

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

Parameters

subsystem-number

Add Subsystem Number

<0-4294967295>

SSN

config-cs7-sccpaddr-gt

digits DIGITS

Command

```
digits DIGITS
```

Parameters

digits

Set Global Title Digits

DIGITS

Number digits

global-title-indicator <0-15>

Command

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

Parameters

global-title-indicator

Set Global Title Indicator

<0-15>

GTI

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

Command

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

Parameters

nature-of-address-indicator

Set Global Title Nature of Address Indicator

<0-127>

NAI

numbering-plan-indicator <0-15>

Command

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

Parameters

numbering-plan-indicator

Set Global Title Numbering Plan Indicator

<0-15>

NPI

translation-type <0-255>

Command

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

Parameters

translation-type

Set Global Title Translation Type

<0-255>

TT

config-sgsn

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

access-point-name NAME

Command

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

Parameters

access-point-name

Globally allow the given APN name for all subscribers.

NAME

Add this NAME to the list

apn APNAME ggsn <0-255>

Command

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

Parameters

apn

Configure the information per APN

APNAME

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

ggsn

Select the GGSN to use for the given APN gateway prefix

<0-255>

The GGSN id

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

Command

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

Parameters

apn

Configure the information per APN

APNAME

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

imsi-prefix

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

IMSIPRE

An IMSI prefix

ggsn

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

<0-255>

The GGSN id

asn1 debug (1|0)

Command

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

Parameters

asn1

ASN.1 settings

debug

Enable ASN.1 debug messages

1

Log ASN.1 debug messages to stderr

0

Do not log ASN.1 debug messages to stderr

asn1 xer-print (1|0)

Command

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

Parameters

asn1

ASN.1 settings

xer-print

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

1

Log XML representation of all ASN.1 messages to stderr

0

Do not log decoded ASN.1 messages to stderr

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

Command

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

Parameters

auth-policy

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

accept-all

Accept all IMSIs (DANGEROUS)

closed

Accept only home network subscribers or those in the ACL

acl-only

Accept only subscribers in the ACL

remote

Use remote subscription data only (HLR)

authentication (optional|required)

Command

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

Parameters

authentication

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

optional

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

required

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

cdr filename NAME

Command

```
cdr filename NAME
```

Parameters

cdr

CDR

filename

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

NAME

filename

cdr interval <1-2147483647>

Command

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

Parameters

cdr

CDR

interval

Set the interval for the call-data-record file

<1-2147483647>

interval in seconds

cdr trap

Command

```
cdr trap
```

Parameters

cdr

CDR

trap

Enable sending CDR via TRAP CTRL messages

compression rfc1144 active slots <1-256>

Command

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

Parameters

compression

Configure compression

rfc1144

RFC1144 Header compression scheme

active

Compression is actively proposed

slots

Number of compression state slots

<1-256>

Number of compression state slots

compression rfc1144 passive

Command

```
compression rfc1144 passive
```

Parameters

compression

Configure compression

rfc1144

RFC1144 Header compression scheme

passive

Compression is available on request

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

Command

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

Parameters

compression

Configure compression

v42bis

V.42bis data compression scheme

active

Compression is actively proposed

direction

Direction in which the compression shall be active (p0)

ms

Compress ms->sgsn direction only

sgsn

Compress sgsn->ms direction only

both

Both directions

codewords

Number of codewords (p1)

<512-65535>

Number of codewords

strlen

Maximum string length (p2)

<6-250>

Maximum string length

compression v42bis passive

Command

```
compression v42bis passive
```

Parameters

compression

Configure compression

v42bis

V.42bis data compression scheme

passive

Compression is available on request

cs7-instance-iu <0-15>

Command

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

Parameters

cs7-instance-iu

Set SS7 to be used by the Iu-Interface.

<0-15>

SS7 instance reference number (default: 0)

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

Command

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

Parameters

encryption

Set encryption algorithm for SGSN

GEA0

Use GEA0 (no encryption)

GEA1

Use GEA1

GEA2

Use GEA2

GEA3

Use GEA3

GEA4

Use GEA4

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

Command

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

Parameters

ggsn

Configure the GGSN information

<0-255>

GGSN Number

echo-interval

Send an echo request to this static GGSN every interval.

<1-36000>

Interval between echo requests in seconds.

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

Command

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

Parameters

ggsn

Configure the GGSN information

<0-255>

GGSN Number

gtp-version

GTP Version

0

Version 0

1

Version 1

ggsn <0-255> no echo-interval

Command

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

Parameters

ggsn

Configure the GGSN information

<0-255>

GGSN Number

no

Negate a command or set its defaults

echo-interval

Send an echo request to this static GGSN every interval.

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

Command

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

Parameters

ggsn

Configure the GGSN information

<0-255>

GGSN Number

remote-ip

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

A.B.C.D

IPv4 Address

ggsn dynamic

Command

```
ggsn dynamic
```

Parameters

ggsn

Configure the GGSN information

dynamic

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

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

Command

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

Parameters

grx-dns-add

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

A.B.C.D

IPv4 address

gsup ipa-name NAME

Command

```
gsup ipa-name NAME
```

Parameters

gsup

GSUP Parameters

ipa-name

Set the IPA name of this SGSN

NAME

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

gsup oap-id <0-65535>

Command

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

Parameters

gsup

GSUP Parameters

oap-id

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

<0-65535>

OAP client ID (0 == disabled)

gsup oap-k K

Command

```
gsup oap-k K
```

Parameters

gsup

GSUP Parameters

oap-k

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

K

K value (16 byte) hex

gsup oap-opc OPC

Command

```
gsup oap-opc OPC
```

Parameters

gsup

GSUP Parameters

oap-opc

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

OPC

OPC value (16 byte) hex

gsup remote-ip A.B.C.D

Command

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

Parameters

gsup

GSUP Parameters

remote-ip

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

A.B.C.D

IPv4 Address

gsup remote-port <0-65535>

Command

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

Parameters

gsup

GSUP Parameters

remote-port

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

<0-65535>

Remote TCP port

gtp local-ip A.B.C.D

Command

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

Parameters

gtp

GTP Parameters

local-ip

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

A.B.C.D

IPv4 Address

imsi-acl (add|del) IMSI

Command

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

Parameters

imsi-acl

Access Control List of foreign IMSIs

add

Add IMSI to ACL

del

Remove IMSI from ACL

IMSI

IMSI of subscriber

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

Command

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

Parameters

iu

Iu interface protocol options

rab-assign-addr-enc

Choose RAB Assignment's Transport Layer Address encoding

x213

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

v4raw

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

no access-point-name NAME

Command

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

Parameters

no

Negate a command or set its defaults

access-point-name

Configure a global list of allowed APNs

NAME

Remove entry with NAME

no cdr filename

Command

```
no cdr filename
```

Parameters

no

Negate a command or set its defaults

cdr

CDR

filename

Disable saving CDR to file

no cdr trap

Command

```
no cdr trap
```

Parameters

no

Negate a command or set its defaults

cdr

CDR

trap

Disable sending CDR via TRAP CTRL messages

no compression rfc1144

Command

```
no compression rfc1144
```

Parameters

no

Negate a command or set its defaults

compression

Configure compression

rfc1144

disable rfc1144 TCP/IP header compression

no compression v42bis

Command

```
no compression v42bis
```

Parameters

no

Negate a command or set its defaults

compression

Configure compression

v42bis

disable V.42bis data compression

timer t3312 <0-65535>

Command

```
timer t3312 <0-65535>
```

Parameters

timer

Configure GPRS Timers

t3312

Periodic RA Update timer (s)

<0-65535>

Timer Value in seconds

timer t3313 <0-65535>

Command

```
timer t3313 <0-65535>
```

Parameters

timer

Configure GPRS Timers

t3313

Waiting for paging response timer (s)

<0-65535>

Timer Value in seconds

timer t3314 <0-65535>

Command

```
timer t3314 <0-65535>
```

Parameters

timer

Configure GPRS Timers

t3314

Force to STANDBY on expiry timer (s)

<0-65535>

Timer Value in seconds

timer t3316 <0-65535>

Command

```
timer t3316 <0-65535>
```

Parameters

timer

Configure GPRS Timers

t3316

AA-Ready timer (s)

<0-65535>

Timer Value in seconds

timer t3322 <0-65535>

Command

```
timer t3322 <0-65535>
```

Parameters

timer

Configure GPRS Timers

t3322

Detach request -> accept timer (s)

<0-65535>

Timer Value in seconds

timer t3350 <0-65535>

Command

```
timer t3350 <0-65535>
```

Parameters

timer

Configure GPRS Timers

t3350

Waiting for ATT/RAU/TMSI_COMPL timer (s)

<0-65535>

Timer Value in seconds

timer t3360 <0-65535>

Command

```
timer t3360 <0-65535>
```

Parameters

timer

Configure GPRS Timers

t3360

Waiting for AUTH/CIPH response timer (s)

<0-65535>

Timer Value in seconds

timer t3370 <0-65535>

Command

```
timer t3370 <0-65535>
```

Parameters

timer

Configure GPRS Timers

t3370

Waiting for IDENTITY response timer (s)

<0-65535>

Timer Value in seconds

timer t3385 <0-65535>

Command

```
timer t3385 <0-65535>
```

Parameters

timer

Configure GPRS Timers

t3385

Wait for ACT PDP CTX REQ timer (s)

<0-65535>

Timer Value in seconds

timer t3386 <0-65535>

Command

```
timer t3386 <0-65535>
```

Parameters

timer

Configure GPRS Timers

t3386

Wait for MODIFY PDP CTX ACK timer (s)

<0-65535>

Timer Value in seconds

timer t3395 <0-65535>

Command

```
timer t3395 <0-65535>
```

Parameters

timer

Configure GPRS Timers

t3395

Wait for DEACT PDP CTX ACK timer (s)

<0-65535>

Timer Value in seconds

timer t3397 <0-65535>

Command

```
timer t3397 <0-65535>
```

Parameters

timer

Configure GPRS Timers

t3397

Wait for DEACT AA PDP CTX ACK timer (s)

<0-65535>

Timer Value in seconds