OsmoSGSN VTY Reference
## Collaborators

<table>
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<tr>
<th>ACTION</th>
<th>NAME</th>
<th>DATE</th>
<th>SIGNATURE</th>
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<tbody>
<tr>
<td>Written by</td>
<td></td>
<td>May 15, 2020</td>
<td></td>
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## Revision History

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<td>v1</td>
<td>13th January 2013</td>
<td>Initial</td>
<td>hw</td>
</tr>
<tr>
<td>v2</td>
<td>5th March 2014</td>
<td>Update to match osmo-bsc version 0.13.0-305</td>
<td>hf</td>
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Chapter 1

VTY reference

The Virtual Tele Type (VTY) has the concept of nodes and commands. This chapter lists all nodes and the commands that are available within the node. Each command can consist 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.

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Example</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.B.C.D</td>
<td>127.0.0.1</td>
<td>A IPv4 address</td>
</tr>
<tr>
<td>TEXT</td>
<td>example01</td>
<td>A single string without any spaces, tabs</td>
</tr>
<tr>
<td>.TEXT</td>
<td>Some information</td>
<td>A line of text</td>
</tr>
<tr>
<td>(OptionA</td>
<td>OptionB</td>
<td>OptionC)</td>
</tr>
<tr>
<td>&lt;0-10&gt;</td>
<td>5</td>
<td>A number from a range</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Port Number</th>
<th>Software</th>
</tr>
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<tbody>
<tr>
<td>4240</td>
<td>osmo-pcu</td>
</tr>
<tr>
<td>4241</td>
<td>osmo-bts</td>
</tr>
<tr>
<td>4242</td>
<td>osmo-nitb, osmo-bsc</td>
</tr>
<tr>
<td>4243</td>
<td>osmo-bsc_mgcp</td>
</tr>
<tr>
<td>4244</td>
<td>osmo-bsc_nat</td>
</tr>
<tr>
<td>4245</td>
<td>osmo-sgsn</td>
</tr>
<tr>
<td>4246</td>
<td>osmo-gbproxy</td>
</tr>
</tbody>
</table>

Table 1.2: VTY port numbers

1.1 Common Commands

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

Command

end

Parameters

end

End current mode and change to enable mode.

1.1.2 exit

Command

exit

Parameters

exit

Exit current mode and down to previous mode.

1.1.3 help

Command

help

Parameters

help

Description of the interactive help system

1.1.4 list

Command

list

Parameters

list

Print command list
1.1.5  **show running-config**

Command
```
show running-config
```

Parameters

**show**
- Show running system information

**running-config**
- running configuration

1.1.6  **write**

Command
```
write
```

Parameters

**write**
- Write running configuration to memory, network, or terminal

1.1.7  **write file**

Command
```
write file
```

Parameters

**write**
- Write running configuration to memory, network, or terminal

**file**
- Write to configuration file

1.1.8  **write memory**

Command
```
write memory
```

Parameters

**write**
- Write running configuration to memory, network, or terminal

**memory**
- Write configuration to the file (same as write file)
1.1.9 write terminal

Command

```
write terminal
```

Parameters

- `write`
  - Write running configuration to memory, network, or terminal
- `terminal`
  - Write to terminal

1.2 view

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

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

Command

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

Parameters

- `bssgp`
  - Initiate BVC RESET procedure for a given NSEI and BVCI
- `bvc`
  - Filter based on BSSGP Virtual Connection
- `nsei`
  - NSEI of the BVC to be filtered
- `<0-65535>`
  - Network Service Entity Identifier (NSEI)
- `bvci`
  - BVCI of the BVC to be filtered
- `<0-65535>`
  - BSSGP Virtual Connection Identifier (BVCI)
- `reset`
  - Perform reset procedure
1.2.2 enable

Command

```
enable
```

Parameters

```
enable
```

Turn on privileged mode command

1.2.3 logging color (0|1)

Command

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

Parameters

```
logging
color
```

Configure logging

Configure color-printing for log messages

```
0
```

Don’t use color for printing messages

```
1
```

Use color for printing messages

1.2.4 logging disable

Command

```
logging disable
```

Parameters

```
logging
disable
```

Configure logging

Disables logging to this vty
1.2.5 logging enable

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

Command

logging enable

Parameters

logging
  Configure logging

enable
  Enables logging to this vty

1.2.6 logging filter all (0|1)

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

Command

logging filter all (0|1)

Parameters

logging
  Configure logging

filter
  Filter log messages

all
  Do you want to log all messages?

0
  Only print messages matched by other filters

1
  Bypass filter and print all messages

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

Command

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

Parameters
Configure logging

Filter log messages

Filter based on BSSGP Virtual Connection

NSEI of the BVC to be filtered

Network Service Entity Identifier (NSEI)

BVCI of the BVC to be filtered

BSSGP Virtual Connection Identifier (BVCI)

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

Command

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

Parameters

Configure logging

Filter log messages

Filter based on NS Virtual Connection

Identify NS-VC by NSEI

Identify NS-VC by NSVCI

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

Command

```sh
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|lsccp|lsua|lm3ua| lmgcp|ljibuf|lrspro) (debug|info|notice|error|fatal)
```

Parameters

logging
Configure logging

level
Set the log level for a specified category

mm
Layer3 Mobility Management (MM)

pag
Paging Subsystem

meas
Radio Measurement Processing

ref
Reference Counting

gprs
GPRS Packet Service

ns
GPRS Network Service (NS)

bssgp
GPRS BSS Gateway Protocol (BSSGP)

llc
GPRS Logical Link Control Protocol (LLC)

sndcp
GPRS Sub-Network Dependent Control Protocol (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 libosmo-gsm
linp
   A-bis Input Subsystem
lmux
   A-bis B-Subchannel TRAU Frame Multiplex
lmi
   A-bis Input Driver for Signalling
lmiib
   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

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

**Command**

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

**Parameters**

- **logging**
  - Configure logging

- **level**
  - Set the log level for a specified category

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

- **debug**
  - Log debug messages and higher levels

- **info**
  - Log informational messages and higher levels

- **notice**
  - Log noticeable messages and higher levels

- **error**
  - Log error messages and higher levels

- **fatal**
  - Log only fatal messages
1.2.11  logging level set-all (debug|info|notice|error|fatal)

Command

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

Parameters

- `logging`
  - Configure logging
- `level`
  - Set the log level for a specified category
- `set-all`
  - Once-off set all categories to the given log level. There is no single command to take back these changes -- each category is set to the given level, period.

- `debug`
  - Log debug messages and higher levels
- `info`
  - Log informational messages and higher levels
- `notice`
  - Log noticeable messages and higher levels
- `error`
  - Log error messages and higher levels
- `fatal`
  - Log only fatal messages

1.2.12  logging print category (0|1)

Command

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

Parameters

- `logging`
  - Configure logging
- `print`
  - Log output settings
- `category`
  - Configure log message
- `0`
  - Don’t prefix each log message
- `1`
  - Prefix each log message with category/subsystem name
### 1.2.13 logging print category-hex (0|1)

**Command**

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

**Parameters**

- **logging**
  - Configure logging
- **print**
  - Log output settings
- **category-hex**
  - Configure log message
- **0**
  - Don’t prefix each log message
- **1**
  - Prefix each log message with category/subsystem nr in hex (`<000b>`)

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

Command

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

Parameters

- **logging**
  Configure logging
- **print**
  Log output settings
- **file**
  Configure log message

0
- Don’t prefix each log message

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

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

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

1.2.16  logging print level (0|1)

Command

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

Parameters

- **logging**
  Configure logging
- **print**
  Log output settings
- **level**
  Configure log message

0
- Don’t prefix each log message

1
- Prefix each log message with the log level name
1.2.17 logging set-log-mask MASK

Command

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

Parameters

**logging**
Configure logging

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

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

1.2.18 logging timestamp (0|1)

Command

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

Parameters

**logging**
Configure logging

**timestamp**
Configure log message timestamping

**0**
Don’t prefix each log message

**1**
Prefix each log message with current timestamp

1.2.19 no logging level force-all

Command

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

Parameters

**no**
Negate a command or set its defaults

**logging**
Configure logging

**level**
Set the log level for a specified category

**force-all**
Release any globally forced log level set with 'logging level force-all <level>'
1.2.20  show alarms

Command

```
show alarms
```

Parameters

- `show`
  - Show running system information
- `alarms`
  - Show current logging configuration

1.2.21  show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

- `show`
  - Show running system information
- `asciidoc`
  - Asciidoc generation
- `counters`
  - Generate table of all registered counters

1.2.22  show bssgp

Command

```
show bssgp
```

Parameters

- `show`
  - Show running system information
- `bssgp`
  - Show information about the BSSGP protocol
1.2.23  show bssgp nsei <0-65535> [stats]

Command

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

Parameters

- `show`  
  Show running system information
- `bssgp`  
  Show information about the BSSGP protocol
- `nsei`  
  Show all BVCs on one NSE
- `<0-65535>`  
  The NSEI
- `[stats]`  
  Include Statistics

1.2.24  show bssgp stats

Command

```
show bssgp stats
```

Parameters

- `show`  
  Show running system information
- `bssgp`  
  Show information about the BSSGP protocol
- `stats`  
  Include statistics

1.2.25  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)

Port Number

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

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

Parameters
  show
    Show running system information
cs7
    ITU-T Signaling System 7
instance
    An instance of the SS7 stack
<0-15>
    An instance of the SS7 stack
as
    Application Server (AS)
active
    Display all active ASs
all
    Display all ASs (default)m3ua
    Display all m3ua ASs
sua
    Display all SUA ASs
1.2.27  show cs7 instance <0-15> asp

Command
show cs7 instance <0-15> asp

Parameters
show
  Show running system information
cs7
  ITU-T Signaling System 7
instance
  An instance of the SS7 stack
<0-15>
  An instance of the SS7 stack
asp
  Application Server Process (ASP)

1.2.28  show cs7 instance <0-15> sccp addressbook

Command
show cs7 instance <0-15> sccp addressbook

Parameters
show
  Show running system information
cs7
  ITU-T Signaling System 7
instance
  An instance of the SS7 stack
<0-15>
  An instance of the SS7 stack
sccp
  Signalling Connection Control Part
addressbook
  List all SCCP addressbook entries
1.2.29  show cs7 instance <0-15> sccp connections

Command

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

Parameters

- **show**: Show running system information
- **cs7**: ITU-T Signaling System 7
- **instance**: An instance of the SS7 stack
- **<0-15>**: An instance of the SS7 stack
- **sccp**: Signalling Connection Control Part
- **connections**: Show List of active SCCP connections

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

Command

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

Parameters

- **show**: Show running system information
- **cs7**: ITU-T Signaling System 7
- **instance**: An instance of the SS7 stack
- **<0-15>**: An instance of the SS7 stack
- **sccp**: Signalling Connection Control Part
- **ssn**: Find an SCCP User registered for the given SSN
- **<0-65535>**: Subsystem Number (SSN)
1.2.31  **show cs7 instance <0-15> sccp timers**

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

Parameters
- **show**
  - Show running system information
- **cs7**
  - ITU-T Signaling System 7
- **instance**
  - An instance of the SS7 stack
- **<0-15>**
  - An instance of the SS7 stack
- **sccp**
  - Signaling Connection Control Part
- **timers**
  - Show List of SCCP timers

1.2.32  **show cs7 instance <0-15> sccp users**

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

Parameters
- **show**
  - Show running system information
- **cs7**
  - ITU-T Signaling System 7
- **instance**
  - An instance of the SS7 stack
- **<0-15>**
  - An instance of the SS7 stack
- **sccp**
  - Signalling Connection Control Part
- **users**
  - Show List of SCCP Users registered
1.2.33  show cs7 instance <0-15> users

Command

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

Parameters

show
  Show running system information

cs7
  ITU-T Signaling System 7

instance
  An instance of the SS7 stack

<0-15>
  An instance of the SS7 stack

users
  User Table

1.2.34  show history

Command

```
show history
```

Parameters

show
  Show running system information

history
  Display the session command history

1.2.35  show llc

Command

```
show llc
```

Parameters

show
  Show running system information

llc
  Display information about the LLC protocol
1.2.36  **show logging vty**

**Command**

```
show logging vty
```

**Parameters**

- **show**
  Show running system information
- **logging**
  Show current logging configuration
- **vty**
  Show current logging configuration for this vty

1.2.37  **show mm-context all [pdp]**

**Command**

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

**Parameters**

- **show**
  Show running system information
- **mm-context**
  MM Context
- **all**
  All MM Contexts
- **[pdp]**
  Include PDP Context Information

1.2.38  **show mm-context imsi IMSI [pdp]**

**Command**

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

**Parameters**

- **show**
  Show running system information
- **mm-context**
  MM Context
imsi
   Identify by IMSI

IMSI
   IMSI of the MM Context

[pdp]
   Include PDP Context Information

1.2.39  show ns

Command

   show ns

Parameters

show
   Show running system information

ns
   Display information about the NS protocol

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

Command

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

Parameters

show
   Show running system information

ns
   Display information about the NS protocol

nsei
   Select one NSE by its NSE Identifier

nsvc
   Select one NSE by its NS-VC Identifier

<0-65535>
   The Identifier of selected type

[stats]
   Include Statistics
1.2.41  show ns persistent

Command

```
show ns persistent
```

Parameters

- `show`
  - Show running system information
- `ns`
  - Display information about the NS protocol
- `persistent`
  - Show only persistent NS

1.2.42  show ns stats

Command

```
show ns stats
```

Parameters

- `show`
  - Show running system information
- `ns`
  - Display information about the NS protocol
- `stats`
  - Include statistics

1.2.43  show online-help

Command

```
show online-help
```

Parameters

- `show`
  - Show running system information
- `online-help`
  - Online help
1.2.44  show pdp-context all

Command

```bash
show pdp-context all
```

Parameters

show
  Show running system information

pdp-context
  Display information on PDP Context

all
  Show everything

1.2.45  show rate-counters

Command

```bash
show rate-counters
```

Parameters

show
  Show running system information

rate-counters
  Show all rate counters

1.2.46  show sgsn

Command

```bash
show sgsn
```

Parameters

show
  Show running system information

sgsn
  Display information about the SGSN
1.2.47  show sndcp

Command

```
show sndcp
```

Parameters

```
show
  Show running system information
sndcp
  Display information about the SNDCP protocol
```

1.2.48  show stats

Command

```
show stats
```

Parameters

```
show
  Show running system information
stats
  Show statistical values
```

1.2.49  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
```
1.2.50  show subscriber cache

Command

```
show subscriber cache
```

Parameters

**show**
- Show running system information

**subscriber**
- Show information about subscribers

**cache**
- Display contents of subscriber cache

1.2.51  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
1.2.52 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

1.2.53 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)

1.2.54  show version

Command
   show version

Parameters
   show
      Show running system information
   version
      Displays program version

1.2.55  terminal length <0-512>

Command
   terminal length <0-512>

Parameters
   terminal
      Set terminal line parameters
   length
      Set number of lines on a screen
   <0-512>
      Number of lines on screen (0 for no pausing)
1.2.56  terminal no length

Command

```
terminal no length
```

Parameters

- `terminal`
  - Set terminal line parameters
- `no`
  - Negate a command or set its defaults
- `length`
  - Set number of lines on a screen

1.2.57  who

Command

```
who
```

Parameters

- `who`
  - Display who is on vty

1.3  enable

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

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

Command

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

Parameters

- `bssgp`
  - Initiate BVC RESET procedure for a given NSEI and BVCI
- `bvc`
  - Filter based on BSSGP Virtual Connection
- `nsei`
  - NSEI of the BVC to be filtered
Network Service Entity Identifier (NSEI)

BVCI

BVCI of the BVC to be filtered

BSSGP Virtual Connection Identifier (BVCI)

perform reset procedure

1.3.2 configure terminal

Command

```
configure terminal
```

Parameters

```
configure

Configuration from vty interface

terminal

Configuration terminal
```

1.3.3 copy running-config startup-config

Command

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

Parameters

```
copy

Copy configuration

running-config

Copy running config to...

startup-config

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

1.3.4 disable

Command

```
disable
```

Parameters

```
disable

Turn off privileged mode command
```
1.3.5 logging color (0|1)

Command

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

Parameters

- **logging**
  - Configure logging
- **color**
  - Configure color-printing for log messages
- 0
  - Don’t use color for printing messages
- 1
  - Use color for printing messages

1.3.6 logging disable

Command

```
logging disable
```

Parameters

- **logging**
  - Configure logging
- **disable**
  - Disables logging to this vty

1.3.7 logging enable

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

Command

```
logging enable
```

Parameters

- **logging**
  - Configure logging
- **enable**
  - Enables logging to this vty
1.3.8 logging filter all (0|1)

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

Command

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

Parameters

logging
  Configure logging
filter
  Filter log messages
all
  Do you want to log all messages?
0
  Only print messages matched by other filters
1
  Bypass filter and print all messages

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

Command

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

Parameters

logging
  Configure logging
filter
  Filter log messages
bvc
  Filter based on BSSGP Virtual Connection
nsei
  NSEI of the BVC to be filtered
  <0-65535>
  Network Service Entity Identifier (NSEI)
bvci
  BVCI of the BVC to be filtered
  <0-65535>
  BSSGP Virtual Connection Identifier (BVCI)
1.3.10 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

1.3.11 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|lg...) (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
Iq37
   libosmo-sigtran Signalling System 7
Isccp
   libosmo-sigtran SCCP Implementation
Isua
   libosmo-sigtran SCCP User Adaptation
Im3ua
   libosmo-sigtran MTP3 User Adaptation
Imgc
   libosmo-mgcp Media Gateway Control Protocol
Jlibuf
   libosmo-netif Jitter Buffer
Irsp
   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

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

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

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

debug
Log debug messages and higher levels

info
Log informational messages and higher levels

notice
Log noticeable messages and higher levels

error
Log error messages and higher levels

fatal
Log only fatal messages

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

Command

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

Parameters

logging
Configure logging

level
Set the log level for a specified category

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

debug
Log debug messages and higher levels

info
Log informational messages and higher levels

notice
Log noticeable messages and higher levels

error
Log error messages and higher levels

fatal
Log only fatal messages
1.3.14 logging print category (0|1)

Command

logging print category (0|1)

Parameters

logging
Configure logging
print
Log output settings
category
Configure log message
0
Don’t prefix each log message
1
Prefix each log message with category/subsystem name

1.3.15 logging print category-hex (0|1)

Command

logging print category-hex (0|1)

Parameters

logging
Configure logging
print
Log output settings
category-hex
Configure log message
0
Don’t prefix each log message
1
Prefix each log message with category/subsystem nr in hex (’<000b>’)
### 1.3.16 logging print extended-timestamp (0|1)

**Command**

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

**Parameters**

- **logging**
  - Configure logging
- **print**
  - Log output settings
- **extended-timestamp**
  - Configure log message timestamping

- **0**
  - Don’t prefix each log message
- **1**
  - Prefix each log message with current timestamp with YYYYMMDDhhmssnnn

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

**Command**

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

**Parameters**

- **logging**
  - Configure logging
- **print**
  - Log output settings
- **file**
  - Configure log message

- **0**
  - Don’t prefix each log message
- **1**
  - Prefix each log message with the source file and line
- **basename**
  - Prefix each log message with the source file’s basename (strip leading paths) and line

- **[last]**
  - Log source file info at the end of a log line. If omitted, log source file info just before the log text.
1.3.18 logging print level (0|1)

Command

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

Parameters

logging
 Configure logging

print
 Log output settings

level
 Configure log message

0
 Don’t prefix each log message

1
 Prefix each log message with the log level name

1.3.19 logging set-log-mask MASK

Command

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

Parameters

logging
 Configure logging

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

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

1.3.20 logging timestamp (0|1)

Command

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

Parameters


logging
  Configure logging

timestamp
  Configure log message timestamping

0
  Don’t prefix each log message

1
  Prefix each log message with current timestamp

1.3.21 no logging level force-all

Command

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

Parameters

no
  Negate a command or set its defaults

logging
  Configure logging

level
  Set the log level for a specified category

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

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

Command

```plaintext
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

1.3.23  **show alarms**

Command

```
show alarms
```

Parameters

- **show**
  - Show running system information
- **alarms**
  - Show current logging configuration

1.3.24  **show asciidoc counters**

Command

```
show asciidoc counters
```

Parameters

- **show**
  - Show running system information
- **asciidoc**
  - Asciidoc generation
- **counters**
  - Generate table of all registered counters

1.3.25  **show bssgp**

Command

```
show bssgp
```

Parameters

- **show**
  - Show running system information
- **bssgp**
  - Show information about the BSSGP protocol
1.3.26  show bssgp nsei <0-65535> [stats]

Command

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

Parameters

show
  Show running system information
bssgp
  Show information about the BSSGP protocol
nsei
  Show all BVCs on one NSE
<0-65535>
  The NSEI
[stats]
  Include Statistics

1.3.27  show bssgp stats

Command

```
show bssgp stats
```

Parameters

show
  Show running system information
bssgp
  Show information about the BSSGP protocol
stats
  Include statistics

1.3.28  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

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

Command

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

Parameters
show
   Show running system information
cs7
   ITU-T Signaling System 7
instance
   An instance of the SS7 stack
<0-15>
   An instance of the SS7 stack
as
   Application Server (AS)
active
   Display all active ASs
all
   Display all ASs (default)
m3ua
   Display all m3ua ASs
sua
   Display all SUA ASs
1.3.30  show cs7 instance <0-15> asp

Command

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

Parameters

- **show**
  - Show running system information
- **cs7**
  - ITU-T Signaling System 7
- **instance**
  - An instance of the SS7 stack
- **<0-15>**
  - An instance of the SS7 stack
- **asp**
  - Application Server Process (ASP)

1.3.31  show cs7 instance <0-15> sccp addressbook

Command

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

Parameters

- **show**
  - Show running system information
- **cs7**
  - ITU-T Signaling System 7
- **instance**
  - An instance of the SS7 stack
- **<0-15>**
  - An instance of the SS7 stack
- **sccp**
  - Signalling Connection Control Part
- **addressbook**
  - List all SCCP addressbook entries
1.3.32  show cs7 instance <0-15> sccp connections

Command

show cs7 instance <0-15> sccp connections

Parameters

show
Show running system information

cs7
ITU-T Signaling System 7

instance
An instance of the SS7 stack

<0-15>
An instance of the SS7 stack

sccp
Signalling Connection Control Part

connections
Show List of active SCCP connections

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

Command

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

Parameters

show
Show running system information

cs7
ITU-T Signaling System 7

instance
An instance of the SS7 stack

<0-15>
An instance of the SS7 stack

sccp
Signalling Connection Control Part

ssn
Find an SCCP User registered for the given SSN

<0-65535>
Subsystem Number (SSN)
1.3.34  **show cs7 instance <0-15> sccp timers**

Command

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

Parameters

show
  Show running system information
cs7
  ITU-T Signaling System 7
instance
  An instance of the SS7 stack
<0-15>
  An instance of the SS7 stack
sccp
  Signaling Connection Control Part	
timers
  Show List of SCCP timers

1.3.35  **show cs7 instance <0-15> sccp users**

Command

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

Parameters

show
  Show running system information
cs7
  ITU-T Signaling System 7
instance
  An instance of the SS7 stack
<0-15>
  An instance of the SS7 stack
sccp
  Signalling Connection Control Part
users
  Show List of SCCP Users registered
1.3.36  **show cs7 instance <0-15> users**

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

**Parameters**
- `show`
  Show running system information
- `cs7`
  ITU-T Signaling System 7
- `instance`
  An instance of the SS7 stack
- `<0-15>`
  An instance of the SS7 stack
- `users`
  User Table

1.3.37  **show history**

**Command**
```
show history
```

**Parameters**
- `show`
  Show running system information
- `history`
  Display the session command history

1.3.38  **show llc**

**Command**
```
show llc
```

**Parameters**
- `show`
  Show running system information
- `llc`
  Display information about the LLC protocol
1.3.39  **show logging vty**

Command

```
show logging vty
```

Parameters

- **show**
  - Show running system information
- **logging**
  - Show current logging configuration
- **vty**
  - Show current logging configuration for this vty

1.3.40  **show mm-context all [pdp]**

Command

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

Parameters

- **show**
  - Show running system information
- **mm-context**
  - MM Context
- **all**
  - All MM Contexts
- **[pdp]**
  - Include PDP Context Information

1.3.41  **show mm-context imsi IMSI [pdp]**

Command

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

Parameters

- **show**
  - Show running system information
- **mm-context**
  - MM Context
imsi
   Identify by IMSI

IMSI
   IMSI of the MM Context

[pdp]
   Include PDP Context Information

**1.3.42 show ns**

**Command**

```
show ns
```

**Parameters**

**show**
   Show running system information

**ns**
   Display information about the NS protocol

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

**Command**

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

**Parameters**

**show**
   Show running system information

**ns**
   Display information about the NS protocol

**nsei**
   Select one NSE by its NSE Identifier

**nsvc**
   Select one NSE by its NS-VC Identifier

**<0-65535>**
   The Identifier of selected type

**[stats]**
   Include Statistics
1.3.44  show ns persistent

Command

```
show ns persistent
```

Parameters

- **show**
  - Show running system information
- **ns**
  - Display information about the NS protocol
- **persistent**
  - Show only persistent NS

1.3.45  show ns stats

Command

```
show ns stats
```

Parameters

- **show**
  - Show running system information
- **ns**
  - Display information about the NS protocol
- **stats**
  - Include statistics

1.3.46  show online-help

Command

```
show online-help
```

Parameters

- **show**
  - Show running system information
- **online-help**
  - Online help
1.3.47  show pdp-context all

Command

```
show pdp-context all
```

Parameters

```
show
  Show running system information
pdp-context
  Display information on PDP Context
all
  Show everything
```

1.3.48  show rate-counters

Command

```
show rate-counters
```

Parameters

```
show
  Show running system information
rate-counters
  Show all rate counters
```

1.3.49  show sgsn

Command

```
show sgsn
```

Parameters

```
show
  Show running system information
sgsn
  Display information about the SGSN
```
1.3.50  show sndcp

Command

```
show sndcp
```

Parameters

- **show**: Show running system information
- **sndcp**: Display information about the SNDCP protocol

1.3.51  show startup-config

Command

```
show startup-config
```

Parameters

- **show**: Show running system information
- **startup-config**: Contents of startup configuration

1.3.52  show stats

Command

```
show stats
```

Parameters

- **show**: Show running system information
- **stats**: Show statistical values
1.3.53  **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

1.3.54  **show subscriber cache**

**Command**

```
show subscriber cache
```

**Parameters**

- **show**
  - Show running system information
- **subscriber**
  - Show information about subscribers
- **cache**
  - Display contents of subscriber cache

1.3.55  **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

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

Command
  
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
1.3.57  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)

1.3.58  show version

Command

```
show version
```

Parameters

- **show**  
  Show running system information

- **version**  
  Displays program version
### 1.3.59  terminal length <0-512>

**Command**

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

**Parameters**

- **terminal**
  - Set terminal line parameters
- **length**
  - Set number of lines on a screen
  - `<0-512>`
    - Number of lines on screen (0 for no pausing)

### 1.3.60  terminal monitor

**Command**

```
terminal monitor
```

**Parameters**

- **terminal**
  - Set terminal line parameters
- **monitor**
  - Copy debug output to the current terminal line

### 1.3.61  terminal no length

**Command**

```
terminal no length
```

**Parameters**

- **terminal**
  - Set terminal line parameters
- **no**
  - Negate a command or set its defaults
- **length**
  - Set number of lines on a screen
1.3.62  terminal no monitor

Command

\texttt{terminal no monitor}

Parameters

terminal
  Set terminal line parameters

no
  Negate a command or set its defaults

monitor
  Copy debug output to the current terminal line

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

Command

\texttt{update-subscriber imsi IMSI cancel (update-procedure|subscription-withdraw)}

Parameters

update-subscriber
  Update subscriber list

imsi
  Use the IMSI to select the subscriber

IMSI
  The IMSI

cancel
  Cancel (remove) subscriber record

update-procedure
  The MS moved to another SGSN

subscription-withdraw
  The subscription is no longer valid

1.3.64  update-subscriber imsi IMSI create

Command

\texttt{update-subscriber imsi IMSI create}

Parameters
update-subscriber
  Update subscriber list

imsi
  Use the IMSI to select the subscriber

IMSI
  The IMSI

create
  Create a subscriber entry

1.3.65  update-subscriber imsi IMSI destroy

Command
  update-subscriber imsi IMSI destroy

Parameters
update-subscriber
  Update subscriber list

imsi
  Use the IMSI to select the subscriber

IMSI
  The IMSI

destroy
  Destroy a subscriber entry

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

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

Parameters
update-subscriber
  Update subscriber list

imsi
  Use the IMSI to select the subscriber

IMSI
  The IMSI

insert
  Insert data into the subscriber record
auth-triplet
  Update authentication triplet

<1-5>
  Triplet index

sres
  Set SRES value

SRES
  SRES value (4 byte) in hex

rand
  Set RAND value

RAND
  RAND value (16 byte) in hex

kc
  Set Kc value

KC
  Kc value (8 byte) in hex

1.3.67  update-subscriber imsi IMSI update-auth-info

Command
update-subscriber imsi IMSI update-auth-info

Parameters
update-subscriber
  Update subscriber list

imsi
  Use the IMSI to select the subscriber

IMSI
  The IMSI

update-auth-info
  Complete the send authentication info procedure

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

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

Parameters
**update-subscriber**
  Update subscriber list

**imsi**
  Use the IMSI to select the subscriber

**IMSI**
  The IMSI

**update-location-result**
  Complete the update location procedure

**ok**
  The update location request succeeded

**system-failure**
  Force error code SystemFailure

**data-missing**
  Force error code DataMissing

**unexpected-data-value**
  Force error code UnexpectedDataValue

**unknown-subscriber**
  Force error code UnknownSubscriber

**roaming-not-allowed**
  Force error code RoamingNotAllowed

### 1.3.69 who

**Command**

```
who
```

**Parameters**

**who**
  Display who is on vty

### 1.4 config

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

Command

```
banner motd default
```

Parameters

- **banner**
  - Set banner string
- **motd**
  - Strings for motd
- **default**
  - Default string

1.4.2  banner motd file [FILE]

Command

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

Parameters

- **banner**
  - Set banner
- **motd**
  - Banner for motd
- **file**
  - Banner from a file

[FILE]
- Filename

1.4.3  bssgp

Command

```
bssgp
```

Parameters

- **bssgp**
  - Configure the GPRS BSS Gateway Protocol
1.4.4 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

1.4.5 ctrl

Command

```
 ctrl
```

Parameters

- **ctrl**
  - Configure the Control Interface

1.4.6 enable password (8|) WORD

Command

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

Parameters

- **enable**
  - Modify enable password parameters
- **password**
  - Assign the privileged level password
- **8**
  - Specifies a HIDDEN password will follow
- **dummy string**
- **WORD**
  - The HIDDEN 'enable' password string
1.4.7 enable password LINE

Command

```
enable password LINE
```

Parameters

- enable
  - Modify enable password parameters
- password
  - Assign the privileged level password
- LINE
  - The UNENCRYPTED (cleartext) 'enable' password

1.4.8 hostname WORD

Command

```
hostname WORD
```

Parameters

- hostname
  - Set system’s network name
- WORD
  - This system’s network name

1.4.9 line vty

Command

```
line vty
```

Parameters

- line
  - Configure a terminal line
- vty
  - Virtual terminal
1.4.10 log alarms <2-32700>

Command

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

Parameters

log
Configure logging sub-system
alarms
Logging alarms to osmo_strrb
<2-32700>
Maximum number of messages to log

1.4.11 log file .FILENAME

Command

```
log file .FILENAME
```

Parameters

log
Configure logging sub-system
file
Logging to text file
FILENAME
Filename

1.4.12 log gsmtap [HOSTNAME]

Command

```
log gsmtap [HOSTNAME]
```

Parameters

log
Configure logging sub-system
gsmtap
Logging via GSMTAP
HOSTNAME
Host name to send the GSMTAP logging to (UDP port 4729)
1.4.13 **log stderr**

**Command**

```
log stderr
```

**Parameters**

- **log**
  Configure logging sub-system
- **stderr**
  Logging via STDERR of the process

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

**Command**

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

**Parameters**

- **log**
  Configure logging sub-system
- **syslog**
  Logging via syslog
- **authpriv**
  Security/authorization messages facility
- **cron**
  Clock daemon (cron/at) facility
- **daemon**
  General system daemon facility
- **ftp**
  Ftp daemon facility
- **lpr**
  Line printer facility
- **mail**
  Mail facility
- **news**
  News facility
- **user**
  Generic facility
- **uucp**
  UUCP facility
1.4.15  **log syslog local <0-7>**

**Command**

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

**Parameters**

- `log`
  - Configure logging sub-system
- `syslog`
  - Logging via syslog
- `local`
  - Syslog LOCAL facility
- `<0-7>`
  - Local facility number

1.4.16  **no banner motd**

**Command**

```
no banner motd
```

**Parameters**

- `no`
  - Negate a command or set its defaults
- `banner`
  - Set banner string
- `motd`
  - Strings for motd

1.4.17  **no enable password**

**Command**

```
no enable password
```

**Parameters**

- `no`
  - Negate a command or set its defaults
- `enable`
  - Modify enable password parameters
- `password`
  - Assign the privileged level password
1.4.18  no hostname [HOSTNAME]

Command
no hostname [HOSTNAME]

Parameters
no
    Negate a command or set its defaults
hostname
    Reset system’s network name

[HOSTNAME]
    Host name of this router

1.4.19  no log alarms

Command
no log alarms

Parameters
no
    Negate a command or set its defaults
log
    Configure logging sub-system
alarms
    Logging alarms to osmo_strrb

1.4.20  no log file .FILENAME

Command
no log file .FILENAME

Parameters
no
    Negate a command or set its defaults
log
    Configure logging sub-system
file
    Logging to text file

FILENAME
    Filename
1.4.21 no log stderr

Command

no log stderr

Parameters

no
Negate a command or set its defaults

log
Configure logging sub-system

stderr
Logging via STDERR of the process

1.4.22 no log syslog

Command

no log syslog

Parameters

no
Negate a command or set its defaults

log
Configure logging sub-system

syslog
Logging via syslog

1.4.23 no service advanced-vty

Command

no service advanced-vty

Parameters

no
Negate a command or set its defaults

service
Set up miscellaneous service

advanced-vty
Enable advanced mode vty interface
1.4.24  no service terminal-length [<0-512>]

Command

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

Parameters

no
  Negate a command or set its defaults
service
  Set up miscellaneous service
terminal-length
  System wide terminal length configuration
 [<0-512>]
  Number of lines of VTY (0 means no line control)

1.4.25  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

1.4.26  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

1.4.27 ns

Command
    ns

Parameters
ns
    Configure the GPRS Network Service

1.4.28 password (8|) WORD

Command
    password (8|) WORD

Parameters
password
    Assign the terminal connection password
8
    Specifies a HIDDEN password will follow
dummy string
WORD
    The HIDDEN line password string

1.4.29 password LINE

Command
    password LINE

Parameters
password
    Assign the terminal connection password
LINE
    The UNENCRYPTED (cleartext) line password
1.4.30 service advanced-vty

Command

```
service advanced-vty
```

Parameters

service
Set up miscellaneous service
advanced-vty
Enable advanced mode vty interface

1.4.31 service terminal-length <0-512>

Command

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

Parameters

service
Set up miscellaneous service
terminal-length
System wide terminal length configuration
<0-512>
Number of lines of VTY (0 means no line control)

1.4.32 sgsn

Command

```
sgsn
```

Parameters

sgsn
Configure the SGSN

1.4.33 show history

Command

```
show history
```

Parameters

show
Show running system information
history
Display the session command history
1.4.34  stats interval <1-65535>

Command

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

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>stats</td>
<td>Configure stats sub-system</td>
</tr>
<tr>
<td>interval</td>
<td>Set the reporting interval</td>
</tr>
<tr>
<td>&lt;1-65535&gt;</td>
<td>Interval in seconds</td>
</tr>
</tbody>
</table>

1.4.35  stats reporter log

Command

```
stats reporter log
```

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>stats</td>
<td>Configure stats sub-system</td>
</tr>
<tr>
<td>reporter</td>
<td>Configure a stats reporter</td>
</tr>
<tr>
<td>log</td>
<td>Report to the logger</td>
</tr>
</tbody>
</table>

1.4.36  stats reporter statsd

Command

```
stats reporter statsd
```

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>stats</td>
<td>Configure stats sub-system</td>
</tr>
<tr>
<td>reporter</td>
<td>Configure a stats reporter</td>
</tr>
<tr>
<td>statsd</td>
<td>Report to a STATSD server</td>
</tr>
</tbody>
</table>
1.5 config-log

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

1.5.1 logging color (0|1)

Command

logging color (0|1)

Parameters

logging
  Configure logging
color
  Configure color-printing for log messages
0
  Don’t use color for printing messages
1
  Use color for printing messages

1.5.2 logging filter all (0|1)

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

Command

logging filter all (0|1)

Parameters

logging
  Configure logging
filter
  Filter log messages
all
  Do you want to log all messages?
0
  Only print messages matched by other filters
1
  Bypass filter and print all messages
1.5.3 logging filter bvc nsei <0-65535> bvci <0-65535>

Command

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

Parameters

- **logging**: Configure logging
- **filter**: Filter log messages
- **bvc**: Filter based on BSSGP Virtual Connection
- **nsei**: NSEI of the BVC to be filtered
  - `<0-65535>`: Network Service Entity Identifier (NSEI)
- **bvci**: BVCI of the BVC to be filtered
  - `<0-65535>`: BSSGP Virtual Connection Identifier (BVCI)

1.5.4 logging filter 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
  - `<0-65535>`: Numeric identifier
- **nsvci**: Identify NS-VC by NSVCI
  - `<0-65535>`: Numeric identifier
1.5.5 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|lms|lctrl|lgtp|lstats|lggas|loap|ls7|lsccp|lsua|lm3ua| ← lmgcp|ljibuf|lrspro) (debug|info|notice|error|fatal)

Parameters
logging
    Configure logging
level
    Set the log level for a specified category
mm
    Layer3 Mobility Management (MM)
pag
    Paging Subsystem
meas
    Radio Measurement Processing
ref
    Reference Counting
gprs
    GPRS Packet Service
ns
    GPRS Network Service (NS)
bssgp
    GPRS BSS Gateway Protocol (BSSGP)
llc
    GPRS Logical Link Control Protocol (LLC)
sndcp
    GPRS Sub-Network Dependent Control Protocol (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

**lrspo**
- 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

1.5.6 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.

ddebug
  Log debug messages and higher levels

info
  Log informational messages and higher levels

notice
  Log noticeable messages and higher levels

error
  Log error messages and higher levels

fatal
  Log only fatal messages
1.5.7 logging level 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

derror
Log error messages and higher levels

defatal
Log only fatal messages

1.5.8 logging print category (0|1)

Command

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

Parameters

logging
Configure logging

print
Log output settings

category
Configure log message

0
Don’t prefix each log message

1
Prefix each log message with category/subsystem name
1.5.9 logging print category-hex (0|1)

Command

logging print category-hex (0|1)

Parameters

logging
  Configure logging
print
  Log output settings
category-hex
  Configure log message
  0
  Don’t prefix each log message
  1
  Prefix each log message with category/subsystem nr in hex (`<000b>`)  

1.5.10 logging print extended-timestamp (0|1)

Command

logging print extended-timestamp (0|1)

Parameters

logging
  Configure logging
print
  Log output settings
extended-timestamp
  Configure log message timestamping
  0
  Don’t prefix each log message
  1
  Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn
1.5.11 logging print file (0|1|basename) [last]

Command

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

Parameters

logging
  Configure logging
print
  Log output settings
file
  Configure log message

0
  Don’t prefix each log message
1
  Prefix each log message with the source file and line
basename
  Prefix each log message with the source file’s basename (strip leading paths) and line
[last]
  Log source file info at the end of a log line. If omitted, log source file info just before the log text.

1.5.12 logging print level (0|1)

Command

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

Parameters

logging
  Configure logging
print
  Log output settings
level
  Configure log message

0
  Don’t prefix each log message
1
  Prefix each log message with the log level name
1.5.13 logging timestamp (0|1)

Command

| Command | logging timestamp (0|1) |

Parameters

logging
Configure logging
timestamp
Configure log message timestamping
0
Don’t prefix each log message
1
Prefix each log message with current timestamp

1.5.14 no logging level force-all

Command

| Command | no logging level force-all |

Parameters

no
Negate a command or set its defaults
logging
Configure logging
level
Set the log level for a specified category
force-all
Release any globally forced log level set with 'logging level force-all <level>'

1.6 config-stats

1.6.1 disable

Command

| Command | disable |

Parameters

disable
Disable the reporter
1.6.2 enable

Command

```
enable
```

Parameters

- enable
  - Enable the reporter

1.6.3 level (global|peer|subscriber)

Command

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

Parameters

- level
  - Set the maximum group level
  - global
    - Report global groups only
  - peer
    - Report global and network peer related groups
  - subscriber
    - Report global, peer, and subscriber groups

1.6.4 local-ip ADDR

Command

```
local-ip ADDR
```

Parameters

- local-ip
  - Set the IP address to which we bind locally
- ADDR
  - IP Address
1.6.5  mtu <100-65535>

Command

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

Parameters

mtu
  Set the maximum packet size

<100-65535>
  Size in byte

1.6.6  no local-ip

Command

```
no local-ip
```

Parameters

no
  Negate a command or set its defaults

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

1.6.7  no mtu

Command

```
no mtu
```

Parameters

no
  Negate a command or set its defaults

mtu
  Set the maximum packet size

1.6.8  no prefix

Command

```
no prefix
```

Parameters

no
  Negate a command or set its defaults

prefix
  Set the item name prefix
1.6.9  prefix PREFIX

Command

prefix PREFIX

Parameters
prefix
Set the item name prefix
PREFIX
The prefix string

1.6.10  remote-ip ADDR

Command

remote-ip ADDR

Parameters
remote-ip
Set the remote IP address to which we connect
ADDR
IP Address

1.6.11  remote-port <1-65535>

Command

remote-port <1-65535>

Parameters
remote-port
Set the remote port to which we connect
<1-65535>
Remote port number
1.7 config-line

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

Command

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

Parameters

bind
Accept VTY telnet connections on local interface

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

[<0-65535>]
Local TCP port number

1.7.2 login

Command

```bash
login
```

Parameters

login
Enable password checking

1.7.3 no login

Command

```bash
no login
```

Parameters

no
Negate a command or set its defaults

login
Enable password checking
1.8 config-ns

1.8.1 encapsulation framerelay-gre enabled (1|0)

Command

```bash
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

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

Command

```bash
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
1.8.3 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

1.8.4 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

1.8.5 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

1.8.6  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)

1.8.7  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
1.8.8  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

1.8.9  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)

1.8.10  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

1.8.11  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

1.8.12  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
1.8.13 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

1.9 config-bssgp

1.10 config-ctrl

1.10.1 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)
1.11 config-cs7

1.11.1 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)

1.11.2 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)
1.11.3  **description .TEXT**

**Command**
```
description .TEXT
```

**Parameters**
- **description**
  - Save human-readable description of the object
  - Text until the end of the line

1.11.4  **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

1.11.5  **no as NAME**

**Command**
```
no as NAME
```

**Parameters**
- **no**
  - Negate a command or set its defaults
- **as**
  - Disable Application Server
- **NAME**
  - Name of AS
1.11.6  no asp NAME

Command

```plaintext
no asp NAME
```

Parameters

go
  Negate a command or set its defaults
as
  Disable Application Server Process
NAME
  Name of ASP

1.11.7  no sccp-address NAME

Command

```plaintext
no sccp-address NAME
```

Parameters

go
  Negate a command or set its defaults
sccp-address
  Delete an SCCP addressbook entry
NAME
  Name of the SCCP Address

1.11.8  point-code POINT_CODE

Command

```plaintext
point-code POINT_CODE
```

Parameters

point-code
  Configure the local Point Code

POINT_CODE
  Point Code
1.11.9 point-code delimiter (default|dash)

Command

point-code delimiter (default|dash)

Parameters

point-code
  Point Code
delimiter
  Configure Point CodeDelimiter
default
  Use dot as delimiter
dash
  Use dash as delimiter

1.11.10 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

1.11.11 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)

1.11.12  sccp-address NAME

Command
  sccp-address NAME

Parameters
  sccp-address
    Create/Modify an SCCP addressbook entry
  NAME
    Name of the SCCP Address

1.11.13  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)

<Timer value, in seconds>

1.11.14  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

1.12  config-cs7-as

1.12.1  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
1.12.2  **description** .TEXT

**Command**

```
description .TEXT
```

**Parameters**

description
   Save human-readable description of the object

 тек
   Text until the end of the line

1.12.3  **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

1.12.4  **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
1.12.5  qos-class <0-255>

Command

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

Parameters

- `qos-class`
  - Specify QoS Class of AS
  - `<0-255>`
    - QoS Class of AS

1.12.6  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

1.12.7  routing-key RCONTEXT DPC

Command

```
routing-key RCONTEXT DPC
```

Parameters

- `routing-key`
  - Define a routing key
- `RCONTEXT`
  - Routing context number
- `DPC`
  - Destination Point Code
1.12.8  routing-key RCONTEXT DPC si (aal2|bicc|b-isup|h248|isup|sat-isup|sccp|tup)

Command

```plaintext
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**: Satellite ISDN User Part
- **sccp**: Signalling Connection Control Part
- **tup**: Telephony User Part

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

Command

```plaintext
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
   Satellite ISDN User Part
sccp
   Signalling Connection Control Part
tup
   Telephony User Part
ssn
   Match on Sub-System Number
SSN
   Sub-System Number to match on

1.12.10  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

1.12.11  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

1.13  config-cs7-asp

1.13.1  block

Command
   block

Parameters
block
   Allows a SCTP Association with ASP, but doesn’t let it become active

1.13.2  description .TEXT

Command
   description .TEXT

Parameters
description
   Save human-readable description of the object

.Text
   Text until the end of the line
1.13.3  local-ip A.B.C.D

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

1.13.4  qos-class <0-255>

Command

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

Parameters

qos-class

Specify QoS Class of ASP

<0-255>

QoS Class of ASP

1.13.5  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

1.13.6  shutdown

Command

```
shutdown
```

Parameters

shutdown

Terminates SCTP association; New associations will be rejected
1.14  config-cs7-sccpaddr

1.14.1  global-title

Command

```
global-title
```

Parameters

global-title
Add/Modify Global Title

1.14.2  no global-title

Command

```
no global-title
```

Parameters

no
Negate a command or set its defaults

global-title
Remove Global Title

1.14.3  no point-code

Command

```
no point-code
```

Parameters

no
Negate a command or set its defaults

point-code
Remove point-code Number

1.14.4  no subsystem-number

Command

```
no subsystem-number
```

Parameters

no
Negate a command or set its defaults

subsystem-number
Remove Subsystem Number
1.14.5  point-code POINT_CODE

Command

```plaintext
point-code POINT_CODE
```

Parameters

point-code
    Add point-code Number

POINT_CODE
    PC

1.14.6  routing-indicator (GT|PC|IP)

Command

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

Parameters

routing-indicator
    Add Routing Indicator

GT
    by global-title

PC
    by point-code

IP
    by ip-address

1.14.7  subsystem-number <0-4294967295>

Command

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

Parameters

subsystem-number
    Add Subsystem Number

<0-4294967295>
    SSN
1.15  config-cs7-sccpaddr-gt

1.15.1  digits DIGITS

Command

```
digits DIGITS
```

Parameters

digits

Set Global Title Digits

DIGITS

Number digits

1.15.2  global-title-indicator <0-15>

Command

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

Parameters

global-title-indicator

Set Global Title Indicator

<0-15>

GTI

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

Command

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

Parameters

nature-of-address-indicator

Set Global Title Nature of Address Indicator

<0-127>

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

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

Parameters

*numbering-plan-indicator*

  Set Global Title Numbering Plan Indicator

<0-15>

NPI

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

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

Parameters

*translation-type*

  Set Global Title Translation Type

<0-255>

TT

1.16  **config-sgsn**

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

1.16.1  **access-point-name NAME**

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

Parameters

*access-point-name*

  Globally allow the given APN name for all subscribers.

NAME

  Add this NAME to the list
1.16.2  apn APNAME ggsn <0-255>

Command

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

Parameters

apn
Configure the information per APN

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

ggsn
Select the GGSN to use for the given APN gateway prefix

<0-255>
The GGSN id

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

Command

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

Parameters

apn
Configure the information per APN

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

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

IMSI PRE
An IMSI prefix

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

<0-255>
The GGSN id
### 1.16.4 `asn1 debug (1|0)`

**Command**

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

**Parameters**

- `asn1`
  - ASN.1 settings
- `debug`
  - Enable ASN.1 debug messages
  - 1: Log ASN.1 debug messages to stderr
  - 0: Do not log ASN.1 debug messages to stderr

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

**Command**

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

**Parameters**

- `asn1`
  - ASN.1 settings
- `xer-print`
  - Log human readable representations of all ASN.1 messages to stderr
  - 1: Log XML representation of all ASN.1 messages to stderr
  - 0: Do not log decoded ASN.1 messages to stderr

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

**Command**

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

**Parameters**

- `auth-policy`
  - Configure the Authorization policy of the SGSN. This setting determines which subscribers are permitted to register to the network.
accept-all
   Accept all IMSIs (DANGEROUS)
closed
   Accept only home network subscribers or those in the ACL
acl-only
   Accept only subscribers in the ACL
remote
   Use remote subscription data only (HLR)

1.16.7 authentication (optional|required)

Command

```plaintext
authentication {optional|required}
```

Parameters

authentication
   Whether to enforce MS authentication in GERAN (only with auth-policy remote)
optional
   Allow MS to attach via GERAN without authentication (default and only possible value for non-remote auth-policy)
required
   Always require authentication (only available for auth-policy remote, default with that auth-policy)

1.16.8 cdr filename NAME

Command

```plaintext
cdr filename NAME
```

Parameters

cdr
   CDR
filename
   Set the file name for the call-data-record file, logging the data usage of each subscriber.
NAME
   filename
1.16.9  cdr interval <1-2147483647>

Command

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

Parameters

cdr
  CDR

interval
  Set the interval for the call-data-record file

  "<1-2147483647>"
  interval in seconds

1.16.10  cdr trap

Command

```
cdr trap
```

Parameters

cdr
  CDR

trap
  Enable sending CDR via TRAP CTRL messages

1.16.11  compression rfc1144 active slots <1-256>

Command

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

Parameters

compression
  Configure compression

rfc1144
  RFC1144 Header compression scheme

active
  Compression is actively proposed

slots
  Number of compression state slots

  "<1-256>"
  Number of compression state slots
1.16.12  **compression rfc1144 passive**

**Command**

```
compression rfc1144 passive
```

**Parameters**
- **compression**
  - Configure compression
- **rfc1144**
  - RFC1144 Header compression scheme
- **passive**
  - Compression is available on request

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

**Command**

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

**Parameters**
- **compression**
  - Configure compression
- **v42bis**
  - V.42bis data compression scheme
- **active**
  - Compression is actively proposed
- **direction**
  - Direction in which the compression shall be active (p0)
  - **ms**
    - Compress ms->sgsn direction only
  - **sgsn**
    - Compress sgsn->ms direction only
  - **both**
    - Both directions
- **codewords**
  - Number of codewords (p1)
  - **<512-65535>**
    - Number of codewords
- **strlen**
  - Maximum string length (p2)
  - **<6-250>**
    - Maximum string length
1.16.14  **compression v42bis passive**

Command
```
compression v42bis passive
```

Parameters
compression
  Configure compression
v42bis
  V.42bis data compression scheme
passive
  Compression is available on request

1.16.15  **cs7-instance-iu <0-15>**

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

Parameters
cs7-instance-iu
  Set SS7 to be used by the Iu-Interface.
<0-15>
  SS7 instance reference number (default: 0)

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

Command
```
enryption (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
1.16.17  **ggsn <0-255> echo-interval <1-36000>**

Command

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

Parameters

**ggsn**
Configure the GGSN information

<0-255>
GGSN Number

echo-interval
Send an echo request to this static GGSN every interval.

<1-36000>
Interval between echo requests in seconds.

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

Command

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

Parameters

**ggsn**
Configure the GGSN information

<0-255>
GGSN Number

gtp-version
GTP Version

0
Version 0

1
Version 1

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

Command

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

Parameters
ggsn
  Configure the GGSN information

<0-255>
  GGSN Number

no
  Negate a command or set its defaults

echo-interval
  Send an echo request to this static GGSN every interval.

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

Command

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

Parameters

ggsn
  Configure the GGSN information

<0-255>
  GGSN Number

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

A.B.C.D
  IPv4 Address

1.16.21  ggsn dynamic

Command

  ggsn dynamic

Parameters

ggsn
  Configure the GGSN information

dynamic
  Enable dynamic resolving of GGSNs based on DNS resolving the APN name like in a GRX-style setup. Changing this setting requires a restart.
1.16.22 grx-dns-add A.B.C.D

Command

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

Parameters

grx-dns-add

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

A.B.C.D

IPv4 address

1.16.23 gsup ipa-name NAME

Command

```
gsup ipa-name NAME
```

Parameters

gsup

GSUP Parameters

ipa-name

Set the IPA name of this SGSN

NAME

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

1.16.24 gsup oap-id <0-65535>

Command

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

Parameters

gsup

GSUP Parameters

oap-id

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

<0-65535>

OAP client ID (0 == disabled)
1.16.25  gsup oap-k K

Command

```
gsup oap-k K
```

Parameters

gsup
  GSUP Parameters

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

  K
    K value (16 byte) hex

1.16.26  gsup oap-opc OPC

Command

```
gsup oap-opc OPC
```

Parameters

gsup
  GSUP Parameters

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

  OPC
    OPC value (16 byte) hex

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

Command

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

Parameters

gsup
  GSUP Parameters

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

  A.B.C.D
    IPv4 Address
1.16.28  gsup remote-port <0-65535>

Command

<table>
<thead>
<tr>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>gsup remote-port &lt;0-65535&gt;</td>
</tr>
</tbody>
</table>

Parameters

gsup

GSUP Parameters

remote-port

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

<0-65535>

Remote TCP port

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

Command

<table>
<thead>
<tr>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>gtp local-ip A.B.C.D</td>
</tr>
</tbody>
</table>

Parameters

gtp

GTP Parameters

local-ip

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

A.B.C.D

IPv4 Address

1.16.30  imsi-acl (add|del) IMSI

Command

<table>
<thead>
<tr>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>imsi-acl (add</td>
</tr>
</tbody>
</table>

Parameters

imsi-acl

Access Control List of foreign IMSIs

add

Add IMSI to ACL

del

Remove IMSI from ACL

IMSI

IMSI of subscriber
1.16.31   iu rab-assign-addr-enc (x213|v4raw)

Command

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

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>iu</td>
<td>Iu interface protocol options</td>
</tr>
<tr>
<td>rab-assign-addr-enc</td>
<td>Choose RAB Assignment’s Transport Layer Address encoding</td>
</tr>
<tr>
<td>x213</td>
<td>ITU-T X.213 compliant address encoding (default)</td>
</tr>
<tr>
<td>v4raw</td>
<td>32bit length raw IPv4 address (for ip.access nano3G)</td>
</tr>
</tbody>
</table>

1.16.32   no access-point-name NAME

Command

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

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>no</td>
<td>Negate a command or set its defaults</td>
</tr>
<tr>
<td>access-point-name</td>
<td>Configure a global list of allowed APNs</td>
</tr>
<tr>
<td>NAME</td>
<td>Remove entry with NAME</td>
</tr>
</tbody>
</table>

1.16.33   no cdr filename

Command

```plaintext
no cdr filename
```

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>no</td>
<td>Negate a command or set its defaults</td>
</tr>
<tr>
<td>cdr</td>
<td>CDR</td>
</tr>
<tr>
<td>filename</td>
<td>Disable saving CDR to file</td>
</tr>
</tbody>
</table>
1.16.34  no cdr trap

Command

\n
no cdr trap

Parameters

no

Negate a command or set its defaults
cdr

CDR
trap

Disable sending CDR via TRAP CTRL messages

1.16.35  no compression rfc1144

Command

\n
no compression rfc1144

Parameters

no

Negate a command or set its defaults
compression

Configure compression
rfc1144
disable rfc1144 TCP/IP header compression

1.16.36  no compression v42bis

Command

\n
no compression v42bis

Parameters

no

Negate a command or set its defaults
compression

Configure compression
v42bis
disable V.42bis data compression
1.16.37  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

1.16.38  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

1.16.39  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
1.16.40 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

1.16.41 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

1.16.42 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
1.16.43 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

1.16.44 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

1.16.45 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
1.16.46 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

1.16.47 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

1.16.48 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