OsmoBSC VTY Reference
# Collaborators

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<td></td>
<td>May 2, 2020</td>
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<td>Initial</td>
<td>hf</td>
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<tr>
<td>v2</td>
<td>5th March 2014</td>
<td>Update to match osmo-bsc version 0.13.0-305</td>
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<tr>
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<td>Update to match osmo-bsc version 1.4.0.84-3f1f</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 out of several words followed by a variable number of parameters. There are common patterns for the parameters, these include IPv4 addresses, number ranges, a word, a line of text and choice. The following will explain the commonly used patterns.

<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>
</thead>
<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 [PATH]

Command

```
write file [PATH]
```

Parameters

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

`file`
Write to configuration file

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

1.1.8  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 enable

Command

```
enable
```

Parameters

enable
Turn on privileged mode command

1.2.2 logging color (0|1)

Command

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

Parameters

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

Command

logging disable

Parameters

logging
  Configure logging
disable
  Disables logging to this vty

1.2.4 logging enable

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

Command

logging enable

Parameters

logging
  Configure logging
enable
  Enables logging to this vty

1.2.5 logging filter all (0|1)

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

Command

logging filter all (0|1)

Parameters

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

Command

```
logging filter imsi IMSI
```

Parameters

logging
Configure logging

filter
Filter log messages

imsi
Filter log messages by IMSI

IMSI
IMSI to be used as filter

1.2.7 logging level (rll|mm|rr|rsl|nm|pag|meas|msc|ho|hodec|ref|ctrl|filter|pcu|lcls|c...)

Command

```
logging level (rll|mm|rr|rsl|nm|pag|meas|msc|ho|hodec|ref|ctrl|filter|pcu|lcls|chan|ts|←
as|cbs|lglobal|llapd|llinp|lmux|lmi|lmb|lms|lctrl|lgtp|lstats|lgsup|loap|lss7| ←
lscp|lsa|lm3ua|lmgcp|ljibuf|lrspro) (debug|info|notice|error|fatal)
```

Parameters

logging
Configure logging

level
Set the log level for a specified category

rll
A-bis Radio Link Layer (RLL)

mm
Layer3 Mobility Management (MM)

rr
Layer3 Radio Resource (RR)

rsl
A-bis Radio Signalling Link (RSL)

nm
A-bis Network Management / O&M (NM/OML)

pag
Paging Subsystem
meas
   Radio Measurement Processing
msc
   Mobile Switching Center
ho
   Hand-Over Process
hodec
   Hand-Over Decision
ref
   Reference Counting
ctrl
   Control interface
filter
   BSC/NAT IMSI based filtering
pcu
   PCU Interface
lcls
   Local Call, Local Switch
chan
   lchan FSM
ts
   timeslot FSM
as
   assignment FSM
cbs
   Cell Broadcast System
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

gtp
   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
1.2.8 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

1.2.9 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

1.2.10  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

1.2.11  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>’

1.2.12 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

1.2.13 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.
1.2.14  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

1.2.15  logging set-log-mask MASK

Command

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

Parameters

logging
Configure logging

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

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

```
LOGL_DEBUG=1  LOGL_INFO=3  LOGL_NOTICE=5  LOGL_ERROR=7  LOGL_FATAL=8
```

1.2.16  logging timestamp (0|1)

Command

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

Parameters
logging
    Configure logging

timestamp
    Configure log message timestamping

0
    Don’t prefix each log message

1
    Prefix each log message with current timestamp

1.2.17  \texttt{logp \{rll|mm|rr|rsl|nm|pag|meas|msc|ho|hodec|ref|ctrl|filter|pcu|lcls|chan|ts|as...}

Command

\begin{verbatim}
logp (rll|mm|rr|rsl|nm|pag|meas|msc|ho|hodec|ref|ctrl|filter|pcu|lcls|chan|ts|as|cbs| →
iglobal|llapd|llnp|lmux|lmi|lms|lctrl|lgtp|lstats|lgsup|loap|lss7|lscrp|lsua| ←
lm3ua|lmgcp|ljibuf|lrspro) (debug|info|notice|error|fatal) .LOGMESSAGE
\end{verbatim}

Parameters

logp
    Print a message on all log outputs; useful for placing markers in test logs
rll
    A-bis Radio Link Layer (RLL)
mm
    Layer3 Mobility Management (MM)
rr
    Layer3 Radio Resource (RR)
rsl
    A-bis Radio Signalling Link (RSL)
nm
    A-bis Network Management / O&M (NM/OML)
pag
    Paging Subsystem
meas
    Radio Measurement Processing
msc
    Mobile Switching Center
ho
    Hand-Over Process
hodec
    Hand-Over Decision
ref
    Reference Counting
ctrl
    Control interface
filter
    BSC/NAT IMSI based filtering
pcu
    PCU Interface
lcls
    Local Call, Local Switch
chan
    lchan FSM
ts
    timeslot FSM
as
    assignment FSM
cbs
    Cell Broadcast System
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
loap
  Osmocom Authentication Protocol

ls7
  libosmo-sigtran Signalling System 7

lsccp
  libosmo-sigtran SCCP Implementation

lsua
  libosmo-sigtran SCCP User Adaptation

lm3ua
  libosmo-sigtran MTP3 User Adaptation

lmgccp
  libosmo-mgccp Media Gateway Control Protocol

ljibuf
  libosmo-netif Jitter Buffer

lrspro
  Remote SIM protocol

diagnose
  Log debug messages and higher levels

info
  Log informational messages and higher levels

notice
  Log noticeable messages and higher levels

error
  Log error messages and higher levels

fatal
  Log only fatal messages

LOGMESSAGE
  Arbitrary message to log on given category and log level

1.2.18  no logging level force-all

Command

  no logging level force-all

Parameters

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

1.2.19  show access-list NAME

Command

```
show access-list NAME
```

Parameters

show
Show running system information
access-list
IMSI access list
NAME
Name of the access list

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 bts <0-255> fail-rep [reset]**

**Command**
```
show bts <0-255> fail-rep [reset]
```

**Parameters**
- **show**
  - Show running system information
- **bts**
  - Display information about a BTS
- **<0-255>**
  - BTS number
- **fail-rep**
  - OML failure reports
- **[reset]**
  - Clear the list of failure reports after showing them

1.2.23  **show bts <0-255> neighbor arfcn <0-1023> bsic (<0-63>|any)**

**Command**
```
show bts <0-255> neighbor arfcn <0-1023> bsic (<0-63>|any)
```

**Parameters**
- **show**
  - Show running system information
- **bts**
  - Display information about a BTS
- **<0-255>**
  - BTS number
- **neighbor**
  - Query which cell would be the target for this neighbor ARFCN+BSIC
- **arfcn**
  - ARFCN of neighbor cell
- **<0-1023>**
  - ARFCN value
- **bsic**
  - BSIC of neighbor cell
- **<0-63>**
  - BSIC value
- **any**
  - for all BSICs / use any BSIC in this ARFCN
1.2.24 **show bts <0-255> smscb [basic|extended]**

**Command**

```
show bts <0-255> smscb [basic|extended]
```

**Parameters**

- **show**
  - Show running system information
- **bts**
  - Display information about a BTS
- **<0-255>**
  - BTS number
- **smscb**
  - SMS Cell Broadcast State
- **[basic]**
  - Show only information related to CBCH BASIC
- **[extended]**
  - Show only information related to CBCH EXTENDED

1.2.25 **show bts [<0-255>]**

**Command**

```
show bts [<0-255>]
```

**Parameters**

- **show**
  - Show running system information
- **bts**
  - Display information about a BTS
- **<0-255>**
  - BTS number

1.2.26 **show cbc**

**Command**

```
show cbc
```

**Parameters**

- **show**
  - Show running system information
- **cbc**
  - Display state of CBC / CBSP
1.2.27  show conns

Command

```
show conns
```

Parameters

- **show**
  - Show running system information
- **conns**
  - Display currently active subscriber connections

1.2.28  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

1.2.29  show cs7 config

Command

```
show cs7 config
```

Parameters

- **show**
  - Show running system information
- **cs7**
  - ITU-T Signaling System 7
- **config**
  - Currently running cs7 configuration
1.2.30  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

1.2.31  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)
1.2.32 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

1.2.33 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
1.2.34  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)

1.2.35  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
1.2.36 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

1.2.37 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
1.2.38  **show e1_driver**

Command

```
show e1_driver
```

Parameters

*show*
  - Show running system information

*e1_driver*
  - Display information about available E1 drivers

1.2.39  **show e1_line [line_nr] [stats]**

Command

```
show e1_line [line_nr] [stats]
```

Parameters

*show*
  - Show running system information

*e1_line*
  - Display information about a E1 line

[line_nr]
  - E1 Line Number

[stats]
  - Include statistics

1.2.40  **show e1_timeslot [line_nr] [ts_nr]**

Command

```
show e1_timeslot [line_nr] [ts_nr]
```

Parameters

*show*
  - Show running system information

*e1_timeslot*
  - Display information about a E1 timeslot

[line_nr]
  - E1 Line Number

[ts_nr]
  - E1 Timeslot Number
1.2.41 show fsm NAME

Command

```
show fsm NAME
```

Parameters

- **show**
  - Show running system information
- **fsm**
  - Show information about finite state machines
- **NAME**
  - Display information about a single named finite state machine

1.2.42 show fsm all

Command

```
show fsm all
```

Parameters

- **show**
  - Show running system information
- **fsm**
  - Show information about finite state machines
- **all**
  - Display a list of all registered finite state machines

1.2.43 show fsm-instances NAME

Command

```
show fsm-instances NAME
```

Parameters

- **show**
  - Show running system information
- **fsm-instances**
  - Show information about finite state machine instances
- **NAME**
  - Display a list of all FSM instances of the named finite state machine
1.2.44  show fsm-instances all

Command

```
show fsm-instances all
```

Parameters

- **show**
  - Show running system information
- **fsm-instances**
  - Show information about finite state machine instances
- **all**
  - Display a list of all FSM instances of all finite state machine

1.2.45  show history

Command

```
show history
```

Parameters

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

1.2.46  show lchan [<0-255>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan [<0-255>] [<0-255>] [<0-7>] [<0-7>]
```

Parameters

- **show**
  - Show running system information
- **lchan**
  - Display information about a logical channel
- **[<0-255>]**
  - BTS Number
- **[<0-255>]**
  - TRX Number
- **[<0-7>]**
  - Timeslot Number
- **[<0-7>]**
  - Logical Channel Number
### 1.2.47  show lchan summary [\(<0-255\>] [\(<0-255\>] [\(<0-7\>] [\(<0-7\>]

**Command**

```
show lchan summary [\(<0-255\>] [\(<0-255\>] [\(<0-7\>] [\(<0-7\>]
```

**Parameters**

- **show**
  - Show running system information
- **lchan**
  - Display information about a logical channel
- **summary**
  - Short summary (used lchans)
- \(<0-255>\>
  - BTS Number
- \(<0-255>\>
  - TRX Number
- \(<0-7>\>
  - Timeslot Number
- \(<0-7>\>
  - Logical Channel Number

### 1.2.48  show lchan summary-all [\(<0-255\>] [\(<0-255\>] [\(<0-7\>] [\(<0-7\>]

**Command**

```
show lchan summary-all [\(<0-255\>] [\(<0-255\>] [\(<0-7\>] [\(<0-7\>]
```

**Parameters**

- **show**
  - Show running system information
- **lchan**
  - Display information about a logical channel
- **summary-all**
  - Short summary (all lchans)
- \(<0-255>\>
  - BTS Number
- \(<0-255>\>
  - TRX Number
- \(<0-7>\>
  - Timeslot Number
- \(<0-7>\>
  - Logical Channel Number
1.2.49  show logging vty

Command

```
show logging vty
```

Parameters

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

1.2.50  show mscs

Command

```
show mscs
```

Parameters

- **show**
  - Show running system information
- **mscs**
  - MSC Connections and State

1.2.51  show network

Command

```
show network
```

Parameters

- **show**
  - Show running system information
- **network**
  - Display information about a GSM NETWORK
1.2.52 show online-help

Command

    show online-help

Parameters

    show
        Show running system information
    online-help
        Online help

1.2.53 show paging [0-255]

Command

    show paging [0-255]

Parameters

    show
        Show running system information
    paging
        Display information about paging requests of a BTS
    [0-255]
        BTS Number

1.2.54 show paging-group <0-255> IMSI

Command

    show paging-group <0-255> IMSI

Parameters

    show
        Show running system information
    paging-group
        Display the paging group
    <0-255>
        BTS Number
    IMSI
        IMSI
### 1.2.55 show position

**Command**

```
show position
```

**Parameters**

- `show`
  - Show running system information
- `position`
  - Position information of the BTS

### 1.2.56 show rate-counters

**Command**

```
show rate-counters
```

**Parameters**

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

### 1.2.57 show rejected-bts

**Command**

```
show rejected-bts
```

**Parameters**

- `show`
  - Show running system information
- `rejected-bts`
  - Display recently rejected BTS devices

### 1.2.58 show statistics

**Command**

```
show statistics
```

**Parameters**

- `show`
  - Show running system information
- `statistics`
  - Statistics about the BSC
1.2.59  show stats

Command

show stats

Parameters

show
   Show running system information
stats
   Show statistical values

1.2.60  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

1.2.61  show subscriber all

Command

show subscriber all

Parameters

show
   Show running system information
subscriber
   Display information about subscribers
all
   All Subscribers
1.2.62 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

1.2.63 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

1.2.64 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)

1.2.65 show timer [TNNNN]

Command
  show timer [TNNNN]

Parameters
show
  Show running system information
timer
  Show timers

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

1.2.66  show timeslot [<0-255>] [<0-255>] [<0-7>]

Command
  show timeslot [<0-255>] [<0-255>] [<0-7>]

Parameters
  show
    Show running system information
timeslot
    Display information about a TS
  [<0-255>]
    BTS Number
  [<0-255>]
    TRX Number
  [<0-7>]
    Timeslot Number

1.2.67  show trx (connected|disconnected)

Command
  show trx (connected|disconnected)

Parameters
  show
    Show running system information
  trx
    Display information about a TRX
  connected
    Show TRX with RSL connected
disconnected
    Show TRX with RSL disconnected
1.2.68  show trx [<0-255>] [<0-255>]

Command

```
show trx [<0-255>] [<0-255>]
```

Parameters

show
  Show running system information
trx
  Display information about a TRX
[<0-255>]
  BTS Number
[<0-255>]
  TRX Number

1.2.69  show version

Command

```
show version
```

Parameters

show
  Show running system information
version
  Displays program version

1.2.70  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)
1.2.71  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

1.2.72  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  assignment any

Command

```
assignment any
```

Parameters

- `assignment`
  - Manually trigger assignment (for debugging)
- `any`
  - Pick any actively used TCH/F or TCH/H lchan and re-assign within the same BTS. This will fail if no lchans of the same type are available besides the used one.
### 1.3.2 bts <0-255> om2000 class (trxc|ts|tf|is|con|dp|cf|tx|rx) <0-255> <0-255> <0-255>

**Command**

```
bts <0-255> om2000 class (trxc|ts|tf|is|con|dp|cf|tx|rx) <0-255> <0-255> <0-255>
```

**Parameters**

- **bts**
  - BTS related commands

- `<0-255>`
  - BTS Number

- **om2000**
  - Manipulate the OM2000 managed objects

- **class**
  - Object Class

- **trxc**
  - TRX Controller

- **ts**
  - Timeslot

- **tf**
  - Timing Function

- **is**
  - Interface Switch

- **con**
  - Abis Concentrator

- **dp**
  - Digital Path

- **cf**
  - Central Function

- **tx**
  - Transmitter

- **rx**
  - Receiver

- `<0-255>`
  - BTS Number

- `<0-255>`
  - Associated SO Instance

- `<0-255>`
  - Instance Number
1.3.3  bts <0-255> om2000 class <0-255> <0-255> <0-255> <0-255>

Command

\[
\text{bts} \ <0-255> \ \text{om2000} \ \text{class} \ <0-255> \ <0-255> \ <0-255> \ <0-255>
\]

Parameters

bts
  BTS related commands

<0-255>
  BTS Number

om2000
  Manipulate the OML managed objects

class
  Object Class

<0-255>
  Object Class

<0-255>
  BTS Number

<0-255>
  Associated SO Instance

<0-255>
  Instance Number

1.3.4  bts <0-255> oml class (site-manager|bts|radio-carrier|baseband-transceiver|channel|adjc...

Command

\[
\text{bts} \ <0-255> \ \text{oml} \ \text{class} \ (\text{site-manager}|\text{bts}|\text{radio-carrier}|\text{baseband-transceiver}|\text{channel}|\text{adjc} \ <-> \text{handover}|\text{power-contol}|\text{btse}|\text{rack}|\text{test}|\text{envabtse}|\text{bport}|\text{gprs-nse}|\text{gprs-cell}|\text{gprs-nsvc}| \ <-> \text{siemenshw}) \ \text{instance} \ <0-255> \ <0-255> \ <0-255>
\]

Parameters

bts
  BTS related commands

<0-255>
  BTS Number

oml
  Manipulate the OML managed objects

class
  Object Class
site-manager
    Site Manager Object

bts
    BTS Object

radio-carrier
    Radio Carrier Object

baseband-transceiver
    Baseband Transceiver Object

channel
    Channel (Timeslot) Object

adjc
    Adjacent Object (Siemens)

handover
    Handover Object (Siemens)

power-control
    Power Control Object (Siemens)

btse
    BTSE Object (Siemens)

rack
    Rack Object (Siemens)

test
    Test Object (Siemens)

e nvabtse
    ENV ABTSE Object (Siemens)

bport
    BPORT Object (Siemens)

gprs-nse
    GPRS NSE Object (ip.access/osmo-bts)

gprs-cell
    GPRS Cell Object (ip.access/osmo-bts)

gprs-nsvc
    GPRS NSVC Object (ip.access/osmo-bts)

siemenshw
    SIEMENSHW Object (Siemens)

instance
    Object Instance

<0-255>
    BTS Number
<0-255>
   TRX Number
<0-255>
   TS Number

1.3.5  bts <0-255> oml class <0-255> instance <0-255> <0-255> <0-255>

Command

  bts <0-255> oml class <0-255> instance <0-255> <0-255> <0-255>

Parameters

  bts
    BTS related commands
<0-255>
    BTS Number

  oml
    Manipulate the OML managed objects

  class
    Object Class
<0-255>
    Object Class

  instance
    Object Instance
<0-255>
    BTS Number
<0-255>
    TRX Number
<0-255>
    TS Number

1.3.6  bts <0-255> resend-system-information

Command

  bts <0-255> resend-system-information

Parameters

  bts
    BTS Specific Commands
<0-255>
    BTS Number

  resend-system-information
    Re-generate + re-send BCCH SYSTEM INFORMATION
1.3.7  bts <0-255> smscb-command (normal|schedule|default) <1-4> HEXSTRING

Command

bts <0-255> smscb-command (normal|schedule|default) <1-4> HEXSTRING

Parameters

bts
BTS related commands

<0-255>
BTS Number

smscb-command
SMS Cell Broadcast

normal
Normal (one-shot) SMSCB Message; sent once over Abis+Um

schedule
Schedule (one-shot) SMSCB Message; sent once over Abis+Um

default
Default (repeating) SMSCB Message; sent once over Abis, unlimited over Um

<1-4>
Last Valid Block

HEXSTRING
Hex Encoded SMSCB message (up to 88 octets)

1.3.8  bts <0-255> trx <0-255> timeslot <0-7> pdch (activate|deactivate)

Command

bts <0-255> trx <0-255> timeslot <0-7> pdch (activate|deactivate)

Parameters

bts
BTS for manual command

<0-255>
BTS Number

trx
TRX for manual command

<0-255>
TRX Number

timeslot
Timeslot for manual command
<0-7>
  Timeslot Number

pdch
  Packet Data Channel

activate
  Activate Dynamic PDCH/TCH (-> PDCH mode)

deactivate
  Deactivate Dynamic PDCH/TCH (-> TCH mode)

1.3.9  bts <0-255> trx <0-255> timeslot <0-7> sub-slot <0-7> (activate|deactivate) (hr|..."

Command

  bts <0-255> trx <0-255> timeslot <0-7> sub-slot <0-7> (activate|deactivate) (hr|fr|efr| ← amr) [<0-7>]

Parameters

bts
  BTS for manual command

<0-255>
  BTS Number

trx
  TRX for manual command

<0-255>
  TRX Number

timeslot
  Timeslot for manual command

<0-7>
  Timeslot Number

sub-slot
  Sub-slot for manual command

<0-7>
  Sub-slot Number

activate
  Manual Channel Activation (e.g. for BER test)

deactivate
  Manual Channel Deactivation (e.g. for BER test)

hr
  Half-Rate v1
fr
  Full-Rate
efr
  Enhanced Full Rate
amr
  Adaptive Multi-Rate

[<0-7>]
  AMR Mode

1.3.10  bts <0-255> trx <0-255> timeslot <0-7> sub-slot <0-7> assignment

Command

```
bts <0-255> trx <0-255> timeslot <0-7> sub-slot <0-7> assignment
```

Parameters

bts
  BTS for manual command

<0-255>
  BTS Number

trx
  TRX for manual command

<0-255>
  TRX Number

timeslot
  Timeslot for manual command

<0-7>
  Timeslot Number

sub-slot
  Sub-slot for manual command

<0-7>
  Sub-slot Number

assignment
  Manually trigger assignment (for debugging)
1.3.11  **bts <0-255> trx <0-255> timeslot <0-7> sub-slot <0-7> handover <0-255>**

Command

```
bts <0-255> trx <0-255> timeslot <0-7> sub-slot <0-7> handover <0-255>
```

Parameters

**bts**

BTS for manual command

```
<0-255>
```

BTS Number

**trx**

TRX for manual command

```
<0-255>
```

TRX Number

**timeslot**

Timeslot for manual command

```
<0-7>
```

Timeslot Number

**sub-slot**

Sub-slot for manual command

```
<0-7>
```

Sub-slot Number

**handover**

Manually trigger handover (for debugging)

```
<0-255>
```

New BTS Number

1.3.12  **bts <0-255> trx <0-255> timeslot <0-7> sub-slot <0-7> mdcx A.B.C.D <0-65535>**

Command

```
bts <0-255> trx <0-255> timeslot <0-7> sub-slot <0-7> mdcx A.B.C.D <0-65535>
```

Parameters

**bts**

BTS for manual command

```
<0-255>
```

BTS Number

**trx**

TRX for manual command
<0-255>
   TRX Number
			timeslot
			   Timeslot for manual command
<0-7>
   Timeslot Number
			sub-slot
			   Sub-slot for manual command
<0-7>
   Sub-slot Number
			mdcx
	   Modify RTP Connection
A.B.C.D
   MGW IP Address
<0-65535>
   MGW UDP Port

1.3.13 configure terminal

Command
   configure terminal

Parameters
configure
   Configuration from vty interface
terminal
   Configuration terminal

1.3.14 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)
1.3.15 ctrl-interface generate-trap TRAP VALUE

Command

```
ctrl-interface generate-trap TRAP VALUE
```

Parameters

- **ctrl-interface**
  Commands related to the CTRL Interface
- **generate-trap**
  Generate a TRAP for test purpose
- **TRAP**
  Identity/Name of the TRAP variable
- **VALUE**
  Value of the TRAP variable

1.3.16 disable

Command

```
disable
```

Parameters

- **disable**
  Turn off privileged mode command

1.3.17 drop bts connection <0-65535> (oml|rsl)

Command

```
drop bts connection <0-65535> (oml|rsl)
```

Parameters

- **drop**
  Debug/Simulation command to drop Abis/IP BTS
- **bts**
  Debug/Simulation command to drop Abis/IP BTS
- **connection**
  Debug/Simulation command to drop Abis/IP BTS
- **<0-65535>**
  BTS NR
- **oml**
  Drop OML Connection
- **rsl**
  Drop RSL Connection
1.3.18  **generate-location-state-trap <0-255>**

**Command**

```
generate-location-state-trap <0-255>
```

**Parameters**

- `generate-location-state-trap`
  - Generate location state report
- `<0-255>`
  - BTS to report

1.3.19  **handover any**

**Command**

```
handover any
```

**Parameters**

- `handover`
  - Manually trigger handover (for debugging)
- `any`
  - Pick any actively used TCH/F or TCH/H lchan and handover to any other BTS. This is likely to fail if not all BTS are guaranteed to be reachable by the MS.

1.3.20  **handover any to arfcn <0-1023> bsic (<0-63>|any)**

**Command**

```
handover any to arfcn <0-1023> bsic (<0-63>|any)
```

**Parameters**

- `handover`
  - Manually trigger handover (for debugging)
- `any`
  - Pick any actively used TCH/F or TCH/H lchan to handover to another cell. This is likely to fail outside of a lab setup where you are certain that all MS are able to see the target cell.
- `to`
- `arfcn`
  - ARFCN of neighbor cell
ARFCN value
bsic
   BSIC of neighbor cell
<0-63>
   BSIC value
any
   for all BSICs / use any BSIC in this ARFCN

### 1.3.21 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

### 1.3.22 logging disable

**Command**

```
logging disable
```

**Parameters**

logging
   Configure logging
disable
   Disables logging to this vty
1.3.23 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

1.3.24 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

1.3.25 logging filter imsi IMSI

Command

```
logging filter imsi IMSI
```

Parameters
logging
   Configure logging

filter
   Filter log messages

imsi
   Filter log messages by IMSI

IMSI
   IMSI to be used as filter

1.3.26 logging level (rll|mm|rr|rsl|nm|pag|meas|msc|ho|hodec|ref|ctrl|filter|pcu|lcls|c...

Command

logging level (rll|mm|rr|rsl|nm|pag|meas|msc|ho|hodec|ref|ctrl|filter|pcu|lcls|chan|ts|←
as|cbs|lglobal|llapd|lnlp|lmux|lmi|lmib|lsmi|lctrl|lgtp|lstats|lgsup|loap|lss7| ←
lsccep|lsua|lm3ua|lmgcp|ljibuf|lrspro) (debug|info|notice|error|fatal)

Parameters
logging
   Configure logging
level
   Set the log level for a specified category
rll
   A-bis Radio Link Layer (RLL)
mm
   Layer3 Mobility Management (MM)
rr
   Layer3 Radio Resource (RR)
rsl
   A-bis Radio Signalling Link (RSL)
nm
   A-bis Network Management / O&M (NM/OML)
pag
   Paging Subsystem
meas
   Radio Measurement Processing
msc
   Mobile Switching Center
ho
   Hand-Over Process
hodec
   Hand-Over Decision
ref
   Reference Counting
ctrl
   Control interface
filter
   BSC/NAT IMSI based filtering
pcu
   PCU Interface
lcls
   Local Call, Local Switch
chan
   lchan FSM
ts
   timeslot FSM
as
   assignment FSM
cbs
   Cell Broadcast System
iglobal
   Library-internal global log family
llapd
   LAPD in libosmogsm
linp
   A-bis Input Subsystem
lmux
   A-bis B-Subchannel TRAU Frame Multiplex
limi
   A-bis Input Driver for Signalling
lmib
   A-bis Input Driver for B-Channels (voice)
lsms
   Layer3 Short Message Service (SMS)
lctrl
   Control Interface
lgtp
   GPRS GTP library
lstats
  Statistics messages and logging
lgsup
  Generic Subscriber Update Protocol
loap
  Osmocom Authentication Protocol
lss7
  libosmo-sigtran Signalling System 7
lsccp
  libosmo-sigtran SCCP Implementation
lsua
  libosmo-sigtran SCCP User Adaptation
lm3ua
  libosmo-sigtran MTP3 User Adaptation
lmgcp
  libosmo-mgcp Media Gateway Control Protocol
ljibuf
  libosmo-netif Jitter Buffer
lrspro
  Remote SIM protocol
debug
  Log debug messages and higher levels
info
  Log informational messages and higher levels
notice
  Log noticeable messages and higher levels
error
  Log error messages and higher levels
fatal
  Log only fatal messages

1.3.27 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.

debuge
   Log debug messages and higher levels

infon
   Log informational messages and higher levels

noticen
   Log noticeable messages and higher levels

errone
   Log error messages and higher levels

fattaln
   Log only fatal messages

1.3.28 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.

debuge
   Log debug messages and higher levels

infon
   Log informational messages and higher levels

noticen
   Log noticeable messages and higher levels

errone
   Log error messages and higher levels

fattaln
   Log only fatal messages
### 1.3.29 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

### 1.3.30 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>`)
1.3.31 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

1.3.32 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.
1.3.33 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

1.3.34 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

1.3.35 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

1.3.36  \texttt{logp (rll|mm|rr|rsl|nm|pag|meas|msc|ho|hodec|ref|ctrl|filter|pcu|lcls|chan|ts|as...}}

Command

\begin{verbatim}
logp (rll|mm|rr|rsl|nm|pag|meas|msc|ho|hodec|ref|ctrl|filter|pcu|lcls|chan|ts|as|cbs| lglobal|llapd|lnp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss|lscp|lsua| lm3ua|lgmc|ljibuf|lrspro) (debug|info|notice|error|fatal) \LOGMESSAGE
\end{verbatim}

Parameters
logp
  Print a message on all log outputs; useful for placing markers in test logs
rll
  A-bis Radio Link Layer (RLL)
mm
  Layer3 Mobility Management (MM)
rr
  Layer3 Radio Resource (RR)
rsl
  A-bis Radio Signalling Link (RSL)
nm
  A-bis Network Management / O&M (NM/OML)
pag
  Paging Subsystem
meas
  Radio Measurement Processing
msc
  Mobile Switching Center
ho
  Hand-Over Process
hodec
  Hand-Over Decision
ref
  Reference Counting
ctrl
  Control interface
filter
  BSC/NAT IMSI based filtering
pcu
  PCU Interface
lcls
  Local Call, Local Switch
chan
  lchan FSM
ts
  timeslot FSM
as
  assignment FSM
cbs
  Cell Broadcast System
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
ls7
   libosmo-sigtran Signalling System 7
lsccp
   libosmo-sigtran SCCP Implementation
lsua
   libosmo-sigtran SCCP User Adaptation
lm3ua
   libosmo-sigtran MTP3 User Adaptation
lmgcp
   libosmo-mgcp Media Gateway Control Protocol
ljibuf
   libosmo-netif Jitter Buffer
lrspro
   Remote SIM protocol
debug
   Log debug messages and higher levels
info
   Log informational messages and higher levels
notice
   Log noticeable messages and higher levels
error
   Log error messages and higher levels
fatal
   Log only fatal messages
.LOGMESSAGE
   Arbitrary message to log on given category and log level

1.3.37  no logging level force-all

Command
   no logging level force-all

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

1.3.38 restart-bts <0-65535>

Command
   restart-bts <0-65535>

Parameters
restart-bts
   Restart ip.access nanoBTS through OML
<0-65535>
   BTS Number

1.3.39 show access-list NAME

Command
   show access-list NAME

Parameters
show
   Show running system information
access-list
   IMSI access list
NAME
   Name of the access list

1.3.40 show alarms

Command
   show alarms

Parameters
show
   Show running system information
alarms
   Show current logging configuration
1.3.41  show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

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

1.3.42  show bts <0-255> fail-rep [reset]

Command

```
show bts <0-255> fail-rep [reset]
```

Parameters

- **show**
  - Show running system information
- **bts**
  - Display information about a BTS
- **<0-255>**
  - BTS number
- **fail-rep**
  - OML failure reports
- **[reset]**
  - Clear the list of failure reports after showing them

1.3.43  show bts <0-255> neighbor arfcn <0-1023> bsic (<0-63>|any)

Command

```
show bts <0-255> neighbor arfcn <0-1023> bsic (<0-63>|any)
```

Parameters

- **show**
  - Show running system information
bts
  Display information about a BTS

<0-255>
  BTS number

neighbor
  Query which cell would be the target for this neighbor ARFCN+BSIC

arfcn
  ARFCN of neighbor cell

<0-1023>
  ARFCN value

bsic
  BSIC of neighbor cell

<0-63>
  BSIC value

any
  for all BSICs / use any BSIC in this ARFCN

1.3.44 show bts <0-255> smscb [(basic|extended)]

Command

```
show bts <0-255> smscb [(basic|extended)]
```

Parameters

show
  Show running system information

bts
  Display information about a BTS

<0-255>
  BTS number

smscb
  SMS Cell Broadcast State

[basic]
  Show only information related to CBCH BASIC

[extended]
  Show only information related to CBCH EXTENDED
1.3.45  **show bts [0-255]**

**Command**

```
show bts [0-255]
```

**Parameters**

- **show**
  - Show running system information
- **bts**
  - Display information about a BTS
- **[0-255]**
  - BTS number

1.3.46  **show conns**

**Command**

```
show conns
```

**Parameters**

- **show**
  - Show running system information
- **conns**
  - Display currently active subscriber connections

1.3.47  **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
### 1.3.48  show cs7 config

**Command**

```markdown
show cs7 config
```

**Parameters**

- **show**
  - Show running system information
- **cs7**
  - ITU-T Signaling System 7
- **config**
  - Currently running cs7 configuration

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

**Command**

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

**Command**

```plaintext
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)

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

**Command**

```plaintext
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
1.3.52  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

1.3.53  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)
1.3.54  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

1.3.55  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
1.3.56  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

1.3.57  show e1_driver

Command

```
show e1_driver
```

Parameters

- **show**
  - Show running system information
- **e1_driver**
  - Display information about available E1 drivers

1.3.58  show e1_line [line_nr] [stats]

Command

```
show e1_line [line_nr] [stats]
```

Parameters

- **show**
  - Show running system information
- **e1_line**
  - Display information about a E1 line
- **[line_nr]**
  - E1 Line Number
- **[stats]**
  - Include statistics
1.3.59  show e1_timeslot [line_nr] [ts_nr]

Command
```
show e1_timeslot [line_nr] [ts_nr]
```

Parameters
- **show**
  - Show running system information
- **e1_timeslot**
  - Display information about a E1 timeslot
- **[line_nr]**
  - E1 Line Number
- **[ts_nr]**
  - E1 Timeslot Number

1.3.60  show fsm NAME

Command
```
show fsm NAME
```

Parameters
- **show**
  - Show running system information
- **fsm**
  - Show information about finite state machines
- **NAME**
  - Display information about a single named finite state machine

1.3.61  show fsm all

Command
```
show fsm all
```

Parameters
- **show**
  - Show running system information
- **fsm**
  - Show information about finite state machines
- **all**
  - Display a list of all registered finite state machines
1.3.62  show fsm-instances NAME

Command

```
show fsm-instances NAME
```

Parameters

- **show**
  - Show running system information
- **fsm-instances**
  - Show information about finite state machine instances
- **NAME**
  - Display a list of all FSM instances of the named finite state machine

1.3.63  show fsm-instances all

Command

```
show fsm-instances all
```

Parameters

- **show**
  - Show running system information
- **fsm-instances**
  - Show information about finite state machine instances
- **all**
  - Display a list of all FSM instances of all finite state machine

1.3.64  show history

Command

```
show history
```

Parameters

- **show**
  - Show running system information
- **history**
  - Display the session command history
1.3.65  show lchan [<0-255>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan [<0-255>] [<0-255>] [<0-7>] [<0-7>]
```

Parameters

```
show
    Show running system information
lchan
    Display information about a logical channel
 [<0-255>]
    BTS Number
 [<0-255>]
    TRX Number
 [<0-7>]
    Timeslot Number
 [<0-7>]
    Logical Channel Number
```

1.3.66  show lchan summary [<0-255>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan summary [<0-255>] [<0-255>] [<0-7>] [<0-7>]
```

Parameters

```
show
    Show running system information
lchan
    Display information about a logical channel
summary
    Short summary (used lchans)
 [<0-255>]
    BTS Number
 [<0-255>]
    TRX Number
 [<0-7>]
    Timeslot Number
 [<0-7>]
    Logical Channel Number
```
1.3.67  **show lchan summary-all [<0-255>] [<0-255>] [<0-7>] [<0-7>]**

**Command**

```
show lchan summary-all [<0-255>] [<0-255>] [<0-7>] [<0-7>]
```

**Parameters**

- **show**
  - Show running system information
- **lchan**
  - Display information about a logical channel
- **summary-all**
  - Short summary (all lchans)
- **[<0-255>]**
  - BTS Number
- **[<0-255>]**
  - TRX Number
- **[<0-7>]**
  - Timeslot Number
- **[<0-7>]**
  - Logical Channel Number

1.3.68  **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
1.3.69  **show mscs**

**Command**

```
show mscs
```

**Parameters**

- **show**
  - Show running system information
- **mscs**
  - MSC Connections and State

1.3.70  **show network**

**Command**

```
show network
```

**Parameters**

- **show**
  - Show running system information
- **network**
  - Display information about a GSM NETWORK

1.3.71  **show online-help**

**Command**

```
show online-help
```

**Parameters**

- **show**
  - Show running system information
- **online-help**
  - Online help
1.3.72  show paging [<0-255>]

Command

```
show paging [<0-255>]
```

Parameters

- **show**
  - Show running system information
- **paging**
  - Display information about paging requests of a BTS

[<0-255>]
  - BTS Number

1.3.73  show paging-group <0-255> IMSI

Command

```
show paging-group <0-255> IMSI
```

Parameters

- **show**
  - Show running system information
- **paging-group**
  - Display the paging group
- [<0-255>]
  - BTS Number
- **IMSI**
  - IMSI

1.3.74  show position

Command

```
show position
```

Parameters

- **show**
  - Show running system information
- **position**
  - Position information of the BTS
1.3.75  show rate-counters

Command

```
show rate-counters
```

Parameters

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

1.3.76  show rejected-bts

Command

```
show rejected-bts
```

Parameters

show
  Show running system information
rejected-bts
  Display recently rejected BTS devices

1.3.77  show startup-config

Command

```
show startup-config
```

Parameters

show
  Show running system information
startup-config
  Contentes of startup configuration

1.3.78  show statistics

Command

```
show statistics
```

Parameters

show
  Show running system information
statistics
  Statistics about the BSC
1.3.79  **show stats**

**Command**

```
show stats
```

**Parameters**

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

1.3.80  **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

1.3.81  **show subscriber all**

**Command**

```
show subscriber all
```

**Parameters**

- `show`
  Show running system information
- `subscriber`
  Display information about subscribers
- `all`
  All Subscribers
### 1.3.82 show talloc-context (application|all) (full|brief|DEPTH)

**Command**

```bash
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

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

**Command**

```bash
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

1.3.84  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)

1.3.85  show timer [TNNNN]

Command

```
show timer [TNNNN]
```

Parameters
show
  Show running system information
timer
  Show timers

[TN]NNNN
  T- or X-timer-number -- 3GPP compliant timer number of the format ’1234’ or ’T1234’ or ’t1234’; Osmocom-specific timer number of the format: ’X1234’ or ’x1234’.

1.3.86  show timeslot [<0-255>] [<0-255>] [<0-7>]

Command
  show timeslot [<0-255>] [<0-255>] [<0-7>]

Parameters
  show
    Show running system information
timeslot
    Display information about a TS
  [<0-255>]
    BTS Number
  [<0-255>]
    TRX Number
  [<0-7>]
    Timeslot Number

1.3.87  show trx (connected|disconnected)

Command
  show trx (connected|disconnected)

Parameters
  show
    Show running system information
  trx
    Display information about a TRX
  connected
    Show TRX with RSL connected
disconnected
    Show TRX with RSL disconnected
1.3.88  show trx [<0-255>] [<0-255>]

Command

```
show trx [<0-255>] [<0-255>]
```

Parameters

show

Show running system information

trx

Display information about a TRX

[<0-255>]

BTS Number

[<0-255>]

TRX Number

1.3.89  show version

Command

```
show version
```

Parameters

show

Show running system information

version

Displays program version

1.3.90  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)
1.3.91  terminal monitor

Command

```
terminal monitor
```

Parameters

- `terminal`
  
  Set terminal line parameters

- `monitor`
  
  Copy debug output to the current terminal line

1.3.92  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

1.3.93  terminal no monitor

Command

```
terminal no monitor
```

Parameters

- `terminal`
  
  Set terminal line parameters

- `no`
  
  Negate a command or set its defaults

- `monitor`
  
  Copy debug output to the current terminal line
1.3.94  who

Command

who

Parameters

who

Display who is on vty

1.4  config

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

1.4.1  banner motd default

Command

banner motd default

Parameters

banner
  Set banner string
motd
  Strings for motd
default
  Default string

1.4.2  banner motd file [FILE]

Command

banner motd file [FILE]

Parameters

banner
  Set banner
motd
  Banner for motd
file
  Banner from a file
[FILE]
  Filename
1.4.3  **bsc**

Command
```
bsc
```

Parameters
```
bsc
```
Configure BSC

1.4.4  **cbc**

Command
```
cbc
```

Parameters
```
cbc
```
Configure CBSP Link to Cell Broadcast Centre

1.4.5  **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

1.4.6  **ctrl**

Command
```
ctrl
```

Parameters
```
ctrl
```
Configure the Control Interface
1.4.7  e1_input

Command

```
e1_input
```

Parameters

```
e1_input
```
Configure E1/T1/J1 TDM input

1.4.8  enable password (8|) WORD

Command

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

Parameters

```
eable
```
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

1.4.9  enable password LINE

Command

```
enable password LINE
```

Parameters

```
eable
```
Modify enable password parameters

```
password
```
Assign the privileged level password

```
LINE
```
The UNENCRYPTED (cleartext) 'enable' password
1.4.10  hostname WORD

Command

```
hostname WORD
```

Parameters

hostname
Set system’s network name

WORD
This system’s network name

1.4.11  line vty

Command

```
line vty
```

Parameters

line
Configure a terminal line

vty
Virtual terminal

1.4.12  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
1.4.13  log file .FILENAME

Command

```
log file .FILENAME
```

Parameters

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

1.4.14  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)

1.4.15  log stderr

Command

```
log stderr
```

Parameters

log
  Configure logging sub-system
stderr
  Logging via STDERR of the process
1.4.16  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

1.4.17  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

1.4.18  msc [<0-1000>]

Command

```
msc [<0-1000>]
```

Parameters

msc
  Configure MSC details

[<0-1000>]
  MSC connection to configure

1.4.19  network

Command

```
network
```

Parameters

network
  Configure the GSM network

1.4.20  no banner motd

Command

```
no banner motd
```

Parameters

no
  Negate a command or set its defaults

banner
  Set banner string

motd
  Strings for motd
1.4.21  **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

1.4.22  **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

1.4.23  **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
1.4.24  no log file .FILENAME

Command

\begin{verbatim}
no log file .FILENAME
\end{verbatim}

Parameters

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

1.4.25  no log stderr

Command

\begin{verbatim}
no log stderr
\end{verbatim}

Parameters

no
  Negate a command or set its defaults
log
  Configure logging sub-system
stderr
  Logging via STDERR of the process

1.4.26  no log syslog

Command

\begin{verbatim}
no log syslog
\end{verbatim}

Parameters

no
  Negate a command or set its defaults
log
  Configure logging sub-system
syslog
  Logging via syslog
1.4.27  no service advanced-vty

Command

```
no service advanced-vty
```

Parameters

no
  Negate a command or set its defaults
service
  Set up miscellaneous service
advanced-vty
  Enable advanced mode vty interface

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

Command

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

Parameters

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

1.4.29  no stats reporter log

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
1.4.30  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

1.4.31  password (8|) WORD

Command

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

Parameters

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

1.4.32  password LINE

Command

```
password LINE
```

Parameters

- `password`
  - Assign the terminal connection password
- `LINE`
  - The UNENCRIPTED (cleartext) line password
1.4.33  service advanced-vty

Command

```
service advanced-vty
```

Parameters

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

1.4.34  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)

1.4.35  show history

Command

```
show history
```

Parameters

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

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

Parameters
- **stats**
  Configure stats sub-system
- **interval**
  Set the reporting interval
- `<1-65535>`
  Interval in seconds

1.4.37  **stats reporter log**

Command
```
stats reporter log
```

Parameters
- **stats**
  Configure stats sub-system
- **reporter**
  Configure a stats reporter
- **log**
  Report to the logger

1.4.38  **stats reporter statsd**

Command
```
stats reporter statsd
```

Parameters
- **stats**
  Configure stats sub-system
- **reporter**
  Configure a stats reporter
- **statsd**
  Report to a STATSD server
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 imsi IMSI

Command

```
logging filter imsi IMSI
```

Parameters

logging
  Configure logging
filter
  Filter log messages
imsi
  Filter log messages by IMSI
IMSI
  IMSI to be used as filter

1.5.4 logging level (rll|mm|rr|rsl|nm|pag|meas|msc|ho|hodec|ref|ctrl|filter|pcu|lcls|c...

Command

```
logging level (rll|mm|rr|rsl|nm|pag|meas|msc|ho|hodec|ref|ctrl|filter|pcu|lcls|chan|ts|←
  as|cbs|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup|loap|lss7|←
  lscpp|lsua|lm3ua|lmgcp|ljibuf|lrspro) (debug|info|notice|error|fatal)
```

Parameters

logging
  Configure logging
level
  Set the log level for a specified category
rll
  A-bis Radio Link Layer (RLL)
mm
  Layer3 Mobility Management (MM)
rr
  Layer3 Radio Resource (RR)
rsl
  A-bis Radio Signalling Link (RSL)
nm
  A-bis Network Management / O&M (NM/OML)
pag
  Paging Subsystem
meas
  Radio Measurement Processing
msc
  Mobile Switching Center
ho
  Hand-Over Process
hodec
  Hand-Over Decision
ref
  Reference Counting
ctrl
  Control interface
filter
  BSC/NAT IMSI based filtering
pcu
  PCU Interface
lcls
  Local Call, Local Switch
chan
  lchan FSM
ts
  timeslot FSM
as
  assignment FSM
cbs
  Cell Broadcast System
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

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

Command

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

Parameters
- **logging**
  - Configure logging
- **level**
  - Set the log level for a specified category
- **force-all**
  - Globally force all logging categories to a specific level. This is released by the `no logging level force-all` command. Note: any `logging level <category> <level>` commands will have no visible effect after this, until the forced level is released.
  - **debug**
    - Log debug messages and higher levels
  - **info**
    - Log informational messages and higher levels
  - **notice**
    - Log noticeable messages and higher levels
  - **error**
    - Log error messages and higher levels
  - **fatal**
    - Log only fatal messages

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

Command

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

Parameters
- **logging**
  - Configure logging
- **level**
  - Set the log level for a specified category
- **set-all**
  - Once-off set all categories to the given log level. There is no single command to take back these changes -- each category is set to the given level, period.
  - **debug**
    - Log debug messages and higher levels
info
    Log informational messages and higher levels
notice
    Log noticeable messages and higher levels
error
    Log error messages and higher levels
fatal
    Log only fatal messages

1.5.7 logging print category (0|1)

Command

```text
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

1.5.8 logging print category-hex (0|1)

Command

```text
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>`)
1.5.9 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

1.5.10 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.
1.5.11 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

1.5.12 logging timestamp (0|1)

Command

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

Parameters

- **logging**
  Configure logging
- **timestamp**
  Configure log message timestamping

0
Don’t prefix each log message

1
Prefix each log message with current timestamp

1.5.13 no logging level force-all

Command

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

Parameters
no
    Negate a command or set its defaults

logging
    Configure logging

level
    Set the log level for a specified category

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

1.6   config-stats

1.6.1 disable

Command
    disable

Parameters
    disable
        Disable the reporter

1.6.2 enable

Command
    enable

Parameters
    enable
        Enable the reporter

1.6.3 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

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

Parameters

bind

Accept VTY telnet connections on local interface

A.B.C.D

Local interface IP address (default: 127.0.0.1)

[<0-65535>]

Local TCP port number

1.7.2  login

Command

```
login
```

Parameters

login

Enable password checking

1.7.3  no login

Command

```
no login
```

Parameters

no

Negate a command or set its defaults

login

Enable password checking
1.8 config-e1_input

1.8.1 e1_line <0-255> driver (misdn|misdn_lapd|dahdi|e1d|ipa|unixsocket)

Command
```
e1_line <0-255> driver (misdn|misdn_lapd|dahdi|e1d|ipa|unixsocket)
```

Parameters

**e1_line**
Configure E1/T1/J1 Line

**<0-255>**
Line Number

**driver**
Set driver for this line

**misdn**
mISDN supported E1 Card (kernel LAPD)

**misdn_lapd**
mISDN supported E1 Card (userspace LAPD)

**dahdi**
DAHDI supported E1/T1/J1 Card

**e1d**
IPA TCP/IP input

**ipa**
HSL TCP/IP input

**unixsocket**
Unix socket input

1.8.2 e1_line <0-255> ipa-keepalive <1-300> <1-300>

Command
```
e1_line <0-255> ipa-keepalive <1-300> <1-300>
```

Parameters

**e1_line**
Configure E1/T1/J1 Line

**<0-255>**
Line Number

**ipa-keepalive**
Enable IPA PING/PONG keep-alive

**<1-300>**
Idle interval in seconds before probes are sent

**<1-300>**
Time to wait for PONG response
1.8.3  e1_line <0-255> keepalive

**Command**
```
e1_line <0-255> keepalive
```

**Parameters**
- **e1_line**
  - Configure E1/T1/J1 Line
- **<0-255>**
  - Line Number
- **keepalive**
  - Enable keep-alive probing

1.8.4  e1_line <0-255> keepalive <1-300> <1-20> <1-300>

**Command**
```
e1_line <0-255> keepalive <1-300> <1-20> <1-300>
```

**Parameters**
- **e1_line**
  - Configure E1/T1/J1 Line
- **<0-255>**
  - Line Number
- **keepalive**
  - Enable keep-alive probing
- **<1-300>**
  - Idle interval in seconds before probes are sent
- **<1-20>**
  - Number of probes to sent
- **<1-300>**
  - Delay between probe packets in seconds

1.8.5  e1_line <0-255> name .LINE

**Command**
```
e1_line <0-255> name .LINE
```

**Parameters**
e1_line
Configure E1/T1/J1 Line

<0-255>
Line Number

name
Set name for this line

.LINE
Human readable name

1.8.6  e1_line <0-255> port <0-255>

Command

```
e1_line <0-255> port <0-255>
```

Parameters
e1_line
Configure E1/T1/J1 Line

<0-255>
Line Number

port
Set physical port/span/card number

<0-255>
E1/T1 Port/Span/Card number

1.8.7  e1_line <0-255> socket .SOCKET

Command

```
e1_line <0-255> socket .SOCKET
```

Parameters
e1_line
Configure E1/T1/J1 Line

<0-255>
Line Number

socket
Set socket path for unixsocket

.SOCKET
socket path
### 1.8.8 ipa bind A.B.C.D

**Command**

```text
ipa bind A.B.C.D
```

**Parameters**

- `ipa`
  - ipa driver config
- `bind`
  - Set ipa local bind address
- `A.B.C.D`
  - Listen on this IP address (default 0.0.0.0)

### 1.8.9 no e1_line <0-255> ipa-keepalive

**Command**

```text
no e1_line <0-255> ipa-keepalive
```

**Parameters**

- `no`
  - Negate a command or set its defaults
- `e1_line`
  - Configure E1/T1/J1 Line
  - `<0-255>`
    - Line Number
- `ipa-keepalive`
  - Enable IPA PING/PONG keep-alive

### 1.8.10 no e1_line <0-255> keepalive

**Command**

```text
no e1_line <0-255> keepalive
```

**Parameters**

- `no`
  - Negate a command or set its defaults
- `e1_line`
  - Configure E1/T1/J1 Line
  - `<0-255>`
    - Line Number
- `keepalive`
  - Enable keep-alive probing
1.9  config-ctrl

1.9.1  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)

1.10  config-cs7

1.10.1  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)

1.10.2  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)

### 1.10.3 description .TEXT

Command

```plaintext
description .TEXT
```

Parameters

description
  Save human-readable description of the object

.TEXT
  Text until the end of the line

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

Command

```plaintext
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
1.10.5  no as NAME

Command

```
no as NAME
```

Parameters

no

Negate a command or set its defaults

as

Disable Application Server

NAME

Name of AS

1.10.6  no asp NAME

Command

```
no asp NAME
```

Parameters

no

Negate a command or set its defaults

asp

Disable Application Server Process

NAME

Name of ASP

1.10.7  no sccp-address NAME

Command

```
no sccp-address NAME
```

Parameters

no

Negate a command or set its defaults

sccp-address

Delete an SCCP addressbook entry

NAME

Name of the SCCP Address
1.10.8 point-code POINT_CODE

Command

```
point-code POINT_CODE
```

Parameters
point-code
Configure the local Point Code

POINT_CODE
Point Code

1.10.9 point-code delimiter (default|dash)

Command

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

Parameters
point-code
Point Code
delimiter
Configure Point Code Delimiter
default
Use dot as delimiter
dash
User dash as delimiter

1.10.10 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
1.10.11 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)

1.10.12 sccp-address NAME

Command
```
sccp-address NAME
```

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

1.10.13 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) <1-999999>
```

Parameters
- sccp-timer
  - Configure SCCP timer values, see ITU-T Q.714
- conn_est
  - Waiting for connection confirm message, 1 to 2 minutes (default: 60)
- ias
  - Send keep-alive: on an idle connection, delay before sending an Idle Timer message, 5 to 10 minutes (default: 420)
- iar
  - Receive keep-alive: on an idle connection, delay until considering a connection as stale, 11 to 21 minutes (default: 900)
rel
Waiting for release complete message, 10 to 20 seconds (default: 10)

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

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

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

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

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

<1-999999>
Timer value, in seconds

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

Command

```bash
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
1.11 config-cs7-as

1.11.1 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

1.11.2 description .TEXT

Command

```
description .TEXT
```

Parameters

- **description**
  - Save human-readable description of the object

  - **.TEXT**
    - Text until the end of the line

1.11.3 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
1.11.4 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

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

Command

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

Parameters

- **point-code**
  - Point Code Specific Features
- **override**
  - Override (force) a point-code to hard-coded value
- **patch-sccp**
  - Patch point code values into SCCP called/calling address
- **disabled**
  - Don’t patch any point codes into SCCP called/calling address
- **both**
  - Patch both origin and destination point codes into SCCP called/calling address

1.11.6 qos-class <0-255>

Command

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

Parameters

- **qos-class**
  - Specity QoS Class of AS
- **<0-255>**
  - QoS Class of AS
1.11.7 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

1.11.8 routing-key RCONTEXT DPC

Command

```
routing-key RCONTEXT DPC
```

Parameters

routing-key
   Define a routing key

RCONTEXT
   Routing context number

DPC
   Destination Point Code

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

Command

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

Parameters

routing-key
   Define a routing key

RCONTEXT
   Routing context number

DPC
   Destination Point Code

si
   Match on Service Indicator
aal2
  ATM Adaption Layer 2
bicc
  Bearer Independent Call Control
b-isup
  Broadband ISDN User Part
h248
  H.248
isup
  ISDN User Part
sat-isup
  Satellite ISDN User Part
sccp
  Signalling Connection Control Part
tup
  Telephony User Part

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

Command

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

Parameters

**routing-key**
  Define a routing key
**RCONTEXT**
  Routing context number
**DPC**
  Destination Point Code
**si**
  Match on Service Indicator
**aal2**
  ATM Adaption Layer 2
**bicc**
  Bearer Independent Call Control
**b-isup**
  Broadband ISDN User Part
**h248**
  H.248
isup
   ISDN User Part
sat-isup
   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

1.11.11  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

1.11.12  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

1.12  config-cs7-asp

1.12.1  block

Command
   block

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

1.12.2  description .TEXT

Command
   description .TEXT

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

1.12.3  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
1.12.4  qos-class <0-255>

Command

qos-class <0-255>

Parameters

qos-class
  Specify QoS Class of ASP
<0-255>
  QoS Class of ASP

1.12.5  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

1.12.6  role (sg|asp|ipsp)

Command

role (sg|asp|ipsp)

Parameters

role
  Specify the xUA role for this ASP
sg
  SG (Signaling Gateway)
asp
  ASP (Application Server Process)
ipsp
  IPSP (IP Signalling Point)
1.12.7  sctp-role (client|server)

Command

```
sctp-role {client|server}
```

Parameters

sctp-role
Specify the SCTP role for this ASP

client
Operate as SCTP client; connect to a server

server
Operate as SCTP server; wait for client connections

1.12.8  shutdown

Command

```
shutdown
```

Parameters

shutdown
Terminates SCTP association; New associations will be rejected

1.13  config-cs7-sccpaddr

1.13.1  global-title

Command

```
global-title
```

Parameters

global-title
Add/Modify Global Title

1.13.2  no global-title

Command

```
no global-title
```

Parameters

no
Negate a command or set its defaults

global-title
Remove Global Title
1.13.3 no point-code

Command

```
no point-code
```

Parameters

no

Negate a command or set its defaults

point-code

Remove point-code Number

1.13.4 no subsystem-number

Command

```
no subsystem-number
```

Parameters

no

Negate a command or set its defaults

subsystem-number

Remove Subsystem Number

1.13.5 point-code POINT_CODE

Command

```
point-code POINT_CODE
```

Parameters

point-code

Add point-code Number

POINT_CODE

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

Command

\[
\text{routing-indicator (GT|PC|IP)}
\]

Parameters

- **routing-indicator**: Add Routing Indicator
  - **GT**: by global-title
  - **PC**: by point-code
  - **IP**: by ip-address

1.13.7 subsystem-number <0-4294967295>

Command

\[
\text{subsystem-number <0-4294967295>}
\]

Parameters

- **subsystem-number**: Add Subsystem Number
  - <0-4294967295>
  - **SSN**

1.14 config-cs7-sccpaddr-gt

1.14.1 digits DIGITS

Command

\[
\text{digits DIGITS}
\]

Parameters

- **digits**: Set Global Title Digits
  - **DIGITS**: Number digits
1.14.2  **global-title-indicator <0-15>**

**Command**

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

**Parameters**

global-title-indicator

Set Global Title Indicator

<0-15>

GTI

1.14.3  **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

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

**Command**

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

**Parameters**

numbering-plan-indicator

Set Global Title Numbering Plan Indicator

<0-15>

NPI

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

**Command**

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

**Parameters**

translation-type

Set Global Title Translation Type

<0-255>

TT
1.15 config-net

1.15.1 allow-unusable-timeslots

Command
allow-unusable-timeslots

Parameters
allow-unusable-timeslots
Don’t refuse to start with mutually exclusive codec settings

1.15.2 bts <0-255>

Command
bts <0-255>

Parameters
bts
Select a BTS to configure
<0-255>
BTS Number

1.15.3 encryption a5 <0-3> [<0-3>] [<0-3>] [<0-3>]

Command
encryption a5 <0-3> [<0-3>] [<0-3>] [<0-3>]

Parameters
encryption
Encryption options
a5
GSM A5 Air Interface Encryption
<0-3>
A5/n Algorithm Number
[<0-3>]
A5/n Algorithm Number
[<0-3>]
A5/n Algorithm Number
[<0-3>]
A5/n Algorithm Number
1.15.4 handover (0|1|default)

Command

```
handover (0|1|default)
```

Parameters

handover

Handover general config

0

Disable in-call handover

1

Enable in-call handover

default

Enable/disable handover: Use default (0), remove explicit setting on this node

1.15.5 handover algorithm (1|2|default)

Command

```
handover algorithm (1|2|default)
```

Parameters

handover

Handover general config

algorithm

Choose algorithm for handover decision

1

Algorithm 1: trigger handover based on comparing current cell and neighbor RxLev and RxQual, only.

2

Algorithm 2: trigger handover on RxLev/RxQual, and also to balance the load across several cells. Consider available codecs. Prevent repeated handover by penalty timers.

default

Use default (1), remove explicit setting on this node
### 1.15.6 handover1 maximum distance (<0-9999>|default)

**Command**

```
handover1 maximum distance (<0-9999>|default)
```

**Parameters**

- **handover1**: Handover options for handover decision algorithm 1
- **maximum**: Maximum Timing-Advance value (i.e. MS distance) before triggering HO
- **distance**: Maximum Timing-Advance value (i.e. MS distance) before triggering HO

- `<0-9999>`: Maximum Timing-Advance value (i.e. MS distance) before triggering HO
- **default**: Use default (9999), remove explicit setting on this node

### 1.15.7 handover1 power budget hysteresis (<0-999>|default)

**Command**

```
handover1 power budget hysteresis (<0-999>|default)
```

**Parameters**

- **handover1**: Handover options for handover decision algorithm 1
- **power**: Neighbor cell power triggering
- **budget**: Neighbor cell power triggering
- **hysteresis**: How many dB stronger must a neighbor be to become a HO candidate

- `<0-999>`: Neighbor’s strength difference in dB
- **default**: Use default (3), remove explicit setting on this node
1.15.8  handover1 power budget interval (<1-99>|default)

Command

```
handover1 power budget interval (<1-99>|default)
```

Parameters

- handover1
  - Handover options for handover decision algorithm 1
- power
  - Neighbor cell power triggering
- budget
  - Neighbor cell power triggering
- interval
  - How often to check for a better cell (SACCH frames)
  - `<1-99>`
    - Check for stronger neighbor every N number of SACCH frames
- default
  - Use default (6), remove explicit setting on this node

1.15.9  handover1 window rxlev averaging (<1-10>|default)

Command

```
handover1 window rxlev averaging (<1-10>|default)
```

Parameters

- handover1
  - Handover options for handover decision algorithm 1
- window
  - Measurement averaging settings
- rxlev
  - Received-Level averaging
- averaging
  - How many RxLev measurements to use for averaging
  - `<1-10>`
    - RxLev averaging: Number of values to average over
- default
  - Use default (10), remove explicit setting on this node
1.15.10  handover1 window rxlev neighbor averaging (<1-10>|default)

Command

```
handover1 window rxlev neighbor averaging (<1-10>|default)
```

Parameters

handover1

Handover options for handover decision algorithm 1

window

Measurement averaging settings

rxlev

Received-Level averaging

neighbor

How many Neighbor RxLev measurements to use for averaging

<1-10>

Neighbor RxLev averaging: Number of values to average over

default

Use default (10), remove explicit setting on this node

1.15.11  handover1 window rxqual averaging (<1-10>|default)

Command

```
handover1 window rxqual averaging (<1-10>|default)
```

Parameters

handover1

Handover options for handover decision algorithm 1

window

Measurement averaging settings

rxqual

Received-Quality averaging

averaging

How many RxQual measurements to use for averaging

<1-10>

RxQual averaging: Number of values to average over

default

Use default (1), remove explicit setting on this node
1.15.12 **handover2 afs-bias rxlev (<0-20>|default)**

**Command**

```
handover2 afs-bias rxlev (<0-20>|default)
```

**Parameters**

- **handover2**
  - Handover options for handover decision algorithm 2
- **afs-bias**
  - Configure bias to prefer AFS (AMR on TCH/F) over other codecs
- **rxlev**
  - RxLev improvement bias for AFS over other codecs
- `<0-20>`
  - Virtual RxLev improvement (dB)
- **default**
  - Use default (0), remove explicit setting on this node

1.15.13 **handover2 afs-bias rxqual (<0-7>|default)**

**Command**

```
handover2 afs-bias rxqual (<0-7>|default)
```

**Parameters**

- **handover2**
  - Handover options for handover decision algorithm 2
- **afs-bias**
  - Configure bias to prefer AFS (AMR on TCH/F) over other codecs
- **rxqual**
  - RxQual improvement bias for AFS over other codecs
- `<0-7>`
  - Virtual RxQual improvement
- **default**
  - Use default (0), remove explicit setting on this node
1.15.14  handover2 assignment (0|1|default)

Command

```bash
handover2 assignment {0|1|default}
```

Parameters

handover2

Handover options for handover decision algorithm 2

assignment

Enable or disable in-call channel re-assignment within the same cell

0

Disable in-call assignment

1

Enable in-call assignment

default

Use default (0), remove explicit setting on this node

1.15.15  handover2 congestion-check (disabled|<1-999>|now)

Command

```bash
handover2 congestion-check {disabled|<1-999>|now}
```

Parameters

handover2

Handover options for handover decision algorithm 2

congestion-check

Configure congestion check interval

disabled

Disable congestion checking, do not handover based on cell load. Note: there is one global congestion check interval, i.e. contrary to other handover2 settings, this is not configurable per individual cell.

<1-999>

Congestion check interval in seconds (default 10)

now

Manually trigger a congestion check to run right now
1.15.16  handover2 max-handovers (<1-9999>|default)

Command

```
handover2 max-handovers (<1-9999>|default)
```

Parameters

- **handover2**
  - Handover options for handover decision algorithm 2
- **max-handovers**
  - Maximum number of concurrent handovers allowed per cell
- **<1-9999>**
  - Number
- **default**
  - Use default (9999), remove explicit setting on this node

1.15.17  handover2 maximum distance (<0-9999>|default)

Command

```
handover2 maximum distance (<0-9999>|default)
```

Parameters

- **handover2**
  - Handover options for handover decision algorithm 2
- **maximum**
  - Maximum Timing-Advance value (i.e. MS distance) before triggering HO
- **distance**
  - Maximum Timing-Advance value (i.e. MS distance) before triggering HO
- **<0-9999>**
  - Maximum Timing-Advance value (i.e. MS distance) before triggering HO
- **default**
  - Use default (9999), remove explicit setting on this node

1.15.18  handover2 min rxlev (<-110--50>|default)

Command

```
handover2 min rxlev (<-110--50>|default)
```

Parameters
handover2
  Handover options for handover decision algorithm 2
min
  Minimum Level/Quality thresholds before triggering HO
rxlev
  How weak may RxLev of an MS become before triggering HO
<\-110\-50>
  minimum RxLev (dBm; note: negative values)
default
  Use default (-100), remove explicit setting on this node

1.15.19  handover2 min rxqual (<0-7>|default)

Command

```
handover2 min rxqual (<0-7>|default)
```

Parameters

handover2
  Handover options for handover decision algorithm 2
min
  Minimum Level/Quality thresholds before triggering HO
rxqual
  How bad may RxQual of an MS become before triggering HO
<0-7>
  minimum RxQual
default
  Use default (5), remove explicit setting on this node

1.15.20  handover2 min-free-slots tch/f (<0-9999>|default)

Command

```
handover2 min-free-slots tch/f (<0-9999>|default)
```

Parameters

handover2
  Handover options for handover decision algorithm 2
min-free-slots
  Minimum free TCH timeslots before cell is considered congested
tch/f

Minimum free TCH/F timeslots before cell is considered congested

<0-9999>

Number of TCH/F slots

default

Use default (0), remove explicit setting on this node

1.15.21  handover2 min-free-slots tch/h (<0-9999>|default)

Command

handover2 min-free-slots tch/h (<0-9999>|default)

Parameters

handover2

Handover options for handover decision algorithm 2

min-free-slots

Minimum free TCH timeslots before cell is considered congested

tch/h

Minimum free TCH/H timeslots before cell is considered congested

<0-9999>

Number of TCH/H slots

default

Use default (0), remove explicit setting on this node

1.15.22  handover2 penalty-time failed-assignment (<0-99999>|default)

Command

handover2 penalty-time failed-assignment (<0-99999>|default)

Parameters

handover2

Handover options for handover decision algorithm 2

penalty-time

Set penalty times to wait between repeated handovers

failed-assignment

Time to suspend handover for a subscriber after a failed re-assignment within this cell; see also 'handover2 retries'

<0-999999>

Seconds

default

Use default (60), remove explicit setting on this node
1.15.23  handover2 penalty-time failed-ho (<0-99999>|default)

Command

handover2 penalty-time failed-ho (<0-99999>|default)

Parameters

handover2
  Handover options for handover decision algorithm 2

penalty-time
  Set penalty times to wait between repeated handovers

failed-ho
  Time to suspend handover for a subscriber after a failed handover into this cell; see also 'handover2 retries'

<0-99999>
  Seconds

default
  Use default (60), remove explicit setting on this node

1.15.24  handover2 penalty-time max-distance (<0-99999>|default)

Command

handover2 penalty-time max-distance (<0-99999>|default)

Parameters

handover2
  Handover options for handover decision algorithm 2

penalty-time
  Set penalty times to wait between repeated handovers

max-distance
  Time to suspend handover for a subscriber after leaving this cell due to exceeding max distance; see also 'handover2 retries'

<0-99999>
  Seconds

default
  Use default (300), remove explicit setting on this node
1.15.25  handover2 power budget hysteresis (<0-999>|default)

Command

```
handover2 power budget hysteresis (<0-999>|default)
```

Parameters
handover2
  Handover options for handover decision algorithm 2
power
  Neighbor cell power triggering
budget
  Neighbor cell power triggering
hysteresis
  How many dB stronger must a neighbor be to become a HO candidate
<0-999>
  Neighbor’s strength difference in dB
default
  Use default (3), remove explicit setting on this node

1.15.26  handover2 power budget interval (<1-99>|default)

Command

```
handover2 power budget interval (<1-99>|default)
```

Parameters
handover2
  Handover options for handover decision algorithm 2
power
  Neighbor cell power triggering
budget
  Neighbor cell power triggering
interval
  How often to check for a better cell (SACCH frames)
<1-99>
  Check for stronger neighbor every N number of SACCH frames
default
  Use default (6), remove explicit setting on this node
1.15.27  handover2 retries (<0-9>|default)

Command

```
handover2 retries (<0-9>|default)
```

Parameters

handover2

Handover options for handover decision algorithm 2

retries

Number of times to immediately retry a failed handover/assignment, before a penalty time is applied

<0-9>

Number of retries
default

Use default (0), remove explicit setting on this node

1.15.28  handover2 tdma-measurement (full|subset|default)

Command

```
handover2 tdma-measurement (full|subset|default)
```

Parameters

handover2

Handover options for handover decision algorithm 2
tdma-measurement

Define measurement set of TDMA frames
full

Full set of 102/104 TDMA frames
subset

Sub set of 4 TDMA frames (SACCH)
default

Use default (subset), remove explicit setting on this node

1.15.29  handover2 window rxlev averaging (<1-10>|default)

Command

```
handover2 window rxlev averaging (<1-10>|default)
```

Parameters
handover2
  Handover options for handover decision algorithm 2
window
  Measurement averaging settings
rxlev
  Received-Level averaging
averaging
  How many RxLev measurements to use for averaging
<1-10>
  RxLev averaging: Number of values to average over
default
  Use default (10), remove explicit setting on this node

1.15.30  handover2 window rxlev neighbor averaging (<1-10>|default)

Command

```plaintext
handover2 window rxlev neighbor averaging (<1-10>|default)
```

Parameters

handover2
  Handover options for handover decision algorithm 2
window
  Measurement averaging settings
rxlev
  Received-Level averaging
neighbor
  How many Neighbor RxLev measurements to use for averaging
averaging
  How many Neighbor RxLev measurements to use for averaging
<1-10>
  Neighbor RxLev averaging: Number of values to average over
default
  Use default (10), remove explicit setting on this node
1.15.31  handover2 window rxqual averaging (<1-10>|default)

Command

```
handover2 window rxqual averaging (<1-10>|default)
```

Parameters

handover2
Handover options for handover decision algorithm 2

window
Measurement averaging settings

rxqual
Received-Quality averaging

averaging
How many RxQual measurements to use for averaging

<1-10>
RxQual averaging: Number of values to average over

default
Use default (1), remove explicit setting on this node

1.15.32  meas-feed destination ADDR <0-65535>

Command

```
meas-feed destination ADDR <0-65535>
```

Parameters

meas-feed
Measurement Report export

destination
Where to forward Measurement Report feeds

ADDR
address or hostname

<0-65535>
port number
1.15.33  **meas-feed scenario NAME**

**Command**

```
meas-feed scenario NAME
```

**Parameters**

`meas-feed`

Measurement Report export

`scenario`

Set a name to include in the Measurement Report feeds

`NAME`

Name string, up to 31 characters

1.15.34  **mobile network code <0-999>**

**Command**

```
mobile network code <0-999>
```

**Parameters**

`mobile`

Set the GSM mobile network code

`network`

Network Commands

`code`

Code commands

`<0-999>`

Mobile Network Code to use

1.15.35  **neci (0|1)**

**Command**

```
neci (0|1)
```

**Parameters**

`neci`

New Establish Cause Indication

`0`

Don’t set the NECI bit

`1`

Set the NECI bit
1.15.36  **network country code <1-999>**

Command

```
network country code <1-999>
```

Parameters

```
network  
   Set the GSM network country code
country  
   Country commands
code     
   Code commands<1-999>
   Network Country Code to use
```

1.15.37  **no periodic location update**

Command

```
no periodic location update
```

Parameters

```
no  
   Negate a command or set its defaults
periodic  
   Periodic Location Updating Interval
location  
   Periodic Location Updating Interval
update    
   Periodic Location Updating Interval
```

1.15.38  **no timezone**

Command

```
no timezone
```

Parameters

```
noc  
   Negate a command or set its defaults
timezone  
   Disable network timezone override, use system tz
```
1.15.39  **paging any use tch (0|1)**

**Command**

```plaintext
paging any use tch (0|1)
```

**Parameters**

- **paging**
  - Assign a TCH when receiving a Paging Any request
- **any**
  - Any Channel
- **use**
  - Use
- **tch**
  - TCH
- **0**
  - Do not use TCH for Paging Request Any
- **1**
  - Do use TCH for Paging Request Any

1.15.40  **periodic location update <6-1530>**

**Command**

```plaintext
periodic location update <6-1530>
```

**Parameters**

- **periodic**
  - Periodic Location Updating Interval
- **location**
  - Periodic Location Updating Interval
- **update**
  - Periodic Location Updating Interval
- `<6-1530>`
  - Periodic Location Updating Interval in Minutes
1.15.41  timer [TNNNN] [(<0-2147483647>|default)]

Command

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

Parameters

timer
  Configure or show timers

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

[<0-2147483647>]
  New timer value

[default]
  Set to default timer value

1.15.42  timezone <-19-19> (0|15|30|45)

Command

```
timezone <-19-19> (0|15|30|45)
```

Parameters

timezone
  Set the Timezone Offset of the network

<-19-19>
  Timezone offset (hours)

0
  Timezone offset (00 minutes)

15
  Timezone offset (15 minutes)

30
  Timezone offset (30 minutes)

45
  Timezone offset (45 minutes)
1.15.43 timezone <-19-19> (0|15|30|45) <0-2>

Command

```
timezone <-19-19> (0|15|30|45) <0-2>
```

Parameters

**timezone**

Set the Timezone Offset of the network

`<-19-19>`

Timezone offset (hours)

0

Timezone offset (00 minutes)

15

Timezone offset (15 minutes)

30

Timezone offset (30 minutes)

45

Timezone offset (45 minutes)

`<0-2>`

DST offset (hours)

1.16 config-net-bts

1.16.1 abis-lower-transport (single-timeslot|super-channel)

Command

```
abis-lower-transport (single-timeslot|super-channel)
```

Parameters

**abis-lower-transport**

Configure thee Abis Lower Transport

**single-timeslot**

Single Timeslot (classic Abis)

**super-channel**

SuperChannel (Packet Abis)
1.16.2 access-control-class-ramping

Command

```
access-control-class-ramping
```

Parameters

access-control-class-ramping

Enable Access Control Class ramping

1.16.3 access-control-class-ramping-step-interval (<30-600>|dynamic)

Command

```
access-control-class-ramping-step-interval (<30-600>|dynamic)
```

Parameters

access-control-class-ramping-step-interval

Configure Access Control Class ramping step interval

<30-600>

Set a fixed step interval (in seconds)

dynamic

Use dynamic step interval based on BTS channel load

1.16.4 access-control-class-ramping-step-size (<1-10>)

Command

```
access-control-class-ramping-step-size (<1-10>)
```

Parameters

access-control-class-ramping-step-size

Configure Access Control Class ramping step size

<1-10>

Set the number of Access Control Classes to enable per ramping step
1.16.5  amr tch-f hysteresis (ms|bts) <0-15>

Command

```
amr tch-f hysteresis (ms|bts) <0-15>
```

Parameters

- **amr**: Adaptive Multi Rate settings
- **tch-f**: Full Rate
- **hysteresis**: AMR hysteresis between codecs
- **ms**: MS side
- **bts**: BTS side
- **<0-15>**: Hysteresis between codec 1 and 2

1.16.6  amr tch-f hysteresis (ms|bts) <0-15> <0-15>

Command

```
amr tch-f hysteresis (ms|bts) <0-15> <0-15>
```

Parameters

- **amr**: Adaptive Multi Rate settings
- **tch-f**: Full Rate
- **hysteresis**: AMR hysteresis between codecs
- **ms**: MS side
- **bts**: BTS side
- **<0-15>**: Hysteresis between codec 1 and 2
- **<0-15>**: Hysteresis between codec 1 and 2
### 1.16.7 amr tch-f hysteresis (ms|bts) <0-15> <0-15> <0-15>

**Command**

```
amr tch-f hysteresis (ms|bts) <0-15> <0-15> <0-15>
```

**Parameters**

- **amr**: Adaptive Multi Rate settings
- **tch-f**: Full Rate
- **hysteresis**: AMR hysteresis between codecs
- **ms**: MS side
- **bts**: BTS side

- `<0-15>`: Hysteresis between codec 1 and 2

### 1.16.8 amr tch-f modes (0|1|2|3|4|5|6|7)

**Command**

```
amr tch-f modes (0|1|2|3|4|5|6|7)
```

**Parameters**

- **amr**: Adaptive Multi Rate settings
- **tch-f**: Full Rate
- **modes**: Codec modes to use with AMR codec

- **0**: 4.75k
- **1**: 5.15k
1.16.9  **amr tch-f modes (0|1|2|3|4|5|6|7) (0|1|2|3|4|5|6|7)**

**Command**

```
amr tch-f modes (0|1|2|3|4|5|6|7) (0|1|2|3|4|5|6|7)
```

**Parameters**

- **amr**
  - Adaptive Multi Rate settings
- **tch-f**
  - Full Rate
- **modes**
  - Codec modes to use with AMR codec

<table>
<thead>
<tr>
<th>Codec Mode</th>
<th>Bitrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>4,75k</td>
</tr>
<tr>
<td>1</td>
<td>5,15k</td>
</tr>
<tr>
<td>2</td>
<td>5,90k</td>
</tr>
<tr>
<td>3</td>
<td>6,70k</td>
</tr>
<tr>
<td>4</td>
<td>7,40k</td>
</tr>
<tr>
<td>5</td>
<td>7,95k</td>
</tr>
<tr>
<td>6</td>
<td>10,2k</td>
</tr>
</tbody>
</table>
```
7
  12.2k
0
  4.75k
1
  5.15k
2
  5.90k
3
  6.70k
4
  7.40k
5
  7.95k
6
  10.2k
7
  12.2k
```

### 1.16.10 amr tch-f modes (0|1|2|3|4|5|6|7) (0|1|2|3|4|5|6|7) (0|1|2|3|4|5|6|7)

**Command**

```
amr tch-f modes (0|1|2|3|4|5|6|7) (0|1|2|3|4|5|6|7) (0|1|2|3|4|5|6|7)
```

**Parameters**

- **amr**
  - Adaptive Multi Rate settings
- **tch-f**
  - Full Rate
- **modes**
  - Codec modes to use with AMR codec

```
0
  4.75k
1
  5.15k
2
  5.90k
3
  6.70k
```
4  
  7.40k
5  
  7.95k
6  
  10.2k
7  
  12.2k
0  
  4.75k
1  
  5.15k
2  
  5.90k
3  
  6.70k
4  
  7.40k
5  
  7.95k
6  
  10.2k
7  
  12.2k
0  
  4.75k
1  
  5.15k
2  
  5.90k
3  
  6.70k
4  
  7.40k
5  
  7.95k
6  
  10.2k
7  
  12.2k
1.16.11  **amr tch-f modes (0|1|2|3|4|5|6|7) (0|1|2|3|4|5|6|7) (0|1|2|3|4|5|6|7) (0|1|2|3|4|5|6|7) (0|1|2|3|4|5|6|7)**

**Command**

```
  amr tch-f modes (0|1|2|3|4|5|6|7) (0|1|2|3|4|5|6|7) (0|1|2|3|4|5|6|7) (0|1|2|3|4|5|6|7) (0|1|2|3|4|5|6|7)
```

**Parameters**

- **amr**: Adaptive Multi Rate settings
- **tch-f**: Full Rate
- **modes**: Codec modes to use with AMR codec

0  4,75k
1  5,15k
2  5,90k
3  6,70k
4  7,40k
5  7,95k
6  10,2k
7  12,2k
0  4,75k
1  5,15k
2  5,90k
3  6,70k
4  7,40k
|   | 7,95k | 10,2k | 12,2k | 4,75k | 5,15k | 5,90k | 6,70k | 7,40k | 7,95k | 10,2k | 12,2k | 4,75k | 5,15k | 5,90k | 6,70k | 7,40k | 7,95k | 10,2k | 12,2k |
1.16.12  amr tch-f start-mode (auto|1|2|3|4)

Command

```
amr tch-f start-mode (auto|1|2|3|4)
```

Parameters

amr
Adaptive Multi Rate settings
tch-f
Full Rate
start-mode
Initial codec to use with AMR
auto
Automatically
1
First codec
2
Second codec
3
Third codec
4
Fourth codec

1.16.13  amr tch-f threshold (ms|bts) <0-63>

Command

```
amr tch-f threshold (ms|bts) <0-63>
```

Parameters

amr
Adaptive Multi Rate settings
tch-f
Full Rate
threshold
AMR threshold between codecs
ms
MS side
bts
BTS side
<0-63>
Threshold between codec 1 and 2
1.16.14  amr tch-f threshold (ms|bts) <0-63> <0-63>

Command

```plaintext
amr tch-f threshold (ms|bts) <0-63> <0-63>
```

Parameters

- **amr**: Adaptive Multi Rate settings
- **tch-f**: Full Rate
- **threshold**: AMR threshold between codecs
- **ms**: MS side
- **bts**: BTS side
- `<0-63>`: Threshold between codec 1 and 2

1.16.15  amr tch-f threshold (ms|bts) <0-63> <0-63> <0-63>

Command

```plaintext
amr tch-f threshold (ms|bts) <0-63> <0-63> <0-63>
```

Parameters

- **amr**: Adaptive Multi Rate settings
- **tch-f**: Full Rate
- **threshold**: AMR threshold between codecs
- **ms**: MS side
- **bts**: BTS side
- `<0-63>`: Threshold between codec 1 and 2
<0-63>
Threshold between codec 1 and 2

1.16.16  amr tch-h hysteresis (ms|bts) <0-15>

Command

```
amr tch-h hysteresis (ms|bts) <0-15>
```

Parameters

* amr
  Adaptive Multi Rate settings
* tch-h
  Half Rate
* hysteresis
  AMR hysteresis between codecs
* ms
  MS side
* bts
  BTS side

<0-15>
Hysteresis between codec 1 and 2

1.16.17  amr tch-h hysteresis (ms|bts) <0-15> <0-15>

Command

```
amr tch-h hysteresis (ms|bts) <0-15> <0-15>
```

Parameters

* amr
  Adaptive Multi Rate settings
* tch-h
  Half Rate
* hysteresis
  AMR hysteresis between codecs
* ms
  MS side
bts

  BTS side

<0-15>

Hysteresis between codec 1 and 2

<0-15>

Hysteresis between codec 1 and 2

1.16.18  amr tch-h hysteresis (ms|bts) <0-15> <0-15> <0-15>

Command

  amr tch-h hysteresis (ms|bts) <0-15> <0-15> <0-15>

Parameters

amr

  Adaptive Multi Rate settings
tch-h

  Half Rate
hysteresis

  AMR hysteresis between codecs
ms

  MS side
bts

  BTS side

<0-15>

Hysteresis between codec 1 and 2

<0-15>

Hysteresis between codec 1 and 2

<0-15>

Hysteresis between codec 1 and 2

1.16.19  amr tch-h modes (0|1|2|3|4|5)

Command

  amr tch-h modes (0|1|2|3|4|5)

Parameters

amr

  Adaptive Multi Rate settings
tch-h
  Half Rate
modes
  Codec modes to use with AMR codec
  0
    4.75k
  1
    5.15k
  2
    5.90k
  3
    6.70k
  4
    7.40k
  5
    7.95k

1.16.20  amr tch-h modes (0|1|2|3|4|5) (0|1|2|3|4|5)

Command

  amr tch-h modes (0|1|2|3|4|5) (0|1|2|3|4|5)

Parameters

amr
  Adaptive Multi Rate settings
tch-h
  Half Rate
modes
  Codec modes to use with AMR codec
  0
    4.75k
  1
    5.15k
  2
    5.90k
  3
    6.70k
  4
    7.40k
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>7.95k</td>
</tr>
<tr>
<td>0</td>
<td>4.75k</td>
</tr>
<tr>
<td>1</td>
<td>5.15k</td>
</tr>
<tr>
<td>2</td>
<td>5.90k</td>
</tr>
<tr>
<td>3</td>
<td>6.70k</td>
</tr>
<tr>
<td>4</td>
<td>7.40k</td>
</tr>
<tr>
<td>5</td>
<td>7.95k</td>
</tr>
</tbody>
</table>

### 1.16.21 amr tch-h modes (0|1|2|3|4|5) (0|1|2|3|4|5) (0|1|2|3|4|5)

**Command**

```
amr tch-h modes (0|1|2|3|4|5) (0|1|2|3|4|5) (0|1|2|3|4|5)
```

**Parameters**

- **amr**
  - Adaptive Multi Rate settings
- **tch-h**
  - Half Rate
- **modes**
  - Codec modes to use with AMR codec

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>4.75k</td>
</tr>
<tr>
<td>1</td>
<td>5.15k</td>
</tr>
<tr>
<td>2</td>
<td>5.90k</td>
</tr>
<tr>
<td>3</td>
<td>6.70k</td>
</tr>
<tr>
<td>4</td>
<td>7.40k</td>
</tr>
<tr>
<td>5</td>
<td>7.95k</td>
</tr>
</tbody>
</table>
amr tch-h modes (0|1|2|3|4|5) (0|1|2|3|4|5) (0|1|2|3|4|5) (0|1|2|3|4|5) (0|1|2|3|4|5)

Command

amr tch-h modes (0|1|2|3|4|5) (0|1|2|3|4|5) (0|1|2|3|4|5) (0|1|2|3|4|5) (0|1|2|3|4|5)

Parameters

amr

Adaptive Multi Rate settings

tch-h

Half Rate

modes

Codec modes to use with AMR codec

0

4,75k
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.15k</td>
</tr>
<tr>
<td>2</td>
<td>5.90k</td>
</tr>
<tr>
<td>3</td>
<td>6.70k</td>
</tr>
<tr>
<td>4</td>
<td>7.40k</td>
</tr>
<tr>
<td>5</td>
<td>7.95k</td>
</tr>
<tr>
<td>0</td>
<td>4.75k</td>
</tr>
<tr>
<td>1</td>
<td>5.15k</td>
</tr>
<tr>
<td>2</td>
<td>5.90k</td>
</tr>
<tr>
<td>3</td>
<td>6.70k</td>
</tr>
<tr>
<td>4</td>
<td>7.40k</td>
</tr>
<tr>
<td>5</td>
<td>7.95k</td>
</tr>
<tr>
<td>0</td>
<td>4.75k</td>
</tr>
<tr>
<td>1</td>
<td>5.15k</td>
</tr>
<tr>
<td>2</td>
<td>5.90k</td>
</tr>
<tr>
<td>3</td>
<td>6.70k</td>
</tr>
<tr>
<td>4</td>
<td>7.40k</td>
</tr>
<tr>
<td>5</td>
<td>7.95k</td>
</tr>
<tr>
<td>0</td>
<td>4.75k</td>
</tr>
<tr>
<td>1</td>
<td>5.15k</td>
</tr>
</tbody>
</table>
1.16.23 amr tch-h start-mode (auto|1|2|3|4)

Command

```
amr tch-h start-mode (auto|1|2|3|4)
```

Parameters

amr

Adaptive Multi Rate settings

tch-h

Half Rate

start-mode

Initial codec to use with AMR

auto

Automatically

1

First codec

2

Second codec

3

Third codec

4

Fourth codec

1.16.24 amr tch-h threshold (ms|bts) <0-63>

Command

```
amr tch-h threshold (ms|bts) <0-63>
```

Parameters
amr

Adaptive Multi Rate settings
tch-h

Half Rate
threshold
AMR threshold between codecs
ms
MS side
bts
BTS side
<0-63>
Threshold between codec 1 and 2

1.16.25  amr tch-h threshold (ms|bts) <0-63> <0-63>

Command

```
amr tch-h threshold (ms|bts) <0-63> <0-63>
```

Parameters

amr

Adaptive Multi Rate settings
tch-h

Half Rate
threshold
AMR threshold between codecs
ms
MS side
bts
BTS side
<0-63>
Threshold between codec 1 and 2
<0-63>
Threshold between codec 1 and 2
1.16.26  amr tch-h threshold (ms|bts) <0-63> <0-63> <0-63>

Command

\begin{verbatim}
  amr tch-h threshold (ms|bts) <0-63> <0-63> <0-63>
\end{verbatim}

Parameters

\begin{itemize}
  \item \textbf{amr}  \hspace{1cm} Adaptive Multi Rate settings
  \item \textbf{tch-h} \hspace{1cm} Half Rate
  \item \textbf{threshold} \hspace{1cm} AMR threshold between codecs
  \item \textbf{ms} \hspace{1cm} MS side
  \item \textbf{bts} \hspace{1cm} BTS side
  \item \textbf{<0-63>} \hspace{1cm} Threshold between codec 1 and 2
\end{itemize}

1.16.27  band BAND

Command

\begin{verbatim}
  band BAND
\end{verbatim}

Parameters

\begin{itemize}
  \item \textbf{band} \hspace{1cm} Set the frequency band of this BTS
  \item \textbf{BAND} \hspace{1cm} Frequency band
\end{itemize}
1.16.28 base_station_id_code <0-63>

Command

```
base_station_id_code <0-63>
```

Parameters

base_station_id_code

Set the Base Station Identity Code (BSIC) of this BTS

<0-63>

BSIC of this BTS

1.16.29 ccch load-indication-threshold <0-100>

Command

```
ccch load-indication-threshold <0-100>
```

Parameters

ccch

Common Control Channel

load-indication-threshold

Percentage of CCCH load at which BTS sends RSL CCCH LOAD IND

<0-100>

CCCH Load Threshold in percent (Default: 10)

1.16.30 cell bar qualify (0|1)

Command

```
cell bar qualify (0|1)
```

Parameters

cell

Cell Parameters

bar

Cell Bar Qualify

qualify

Cell Bar Qualify

0

Set CBQ to 0

1

Set CBQ to 1
1.16.31  **cell barred (0|1)**

**Command**

```plaintext
cell barred (0|1)
```

**Parameters**

- **cell**
  - Should this cell be barred from access?

- **barred**
  - Should this cell be barred from access?

- **0**
  - Cell should NOT be barred

- **1**
  - Cell should be barred

1.16.32  **cell reselection hysteresis <0-14>**

**Command**

```plaintext
cell reselection hysteresis <0-14>
```

**Parameters**

- **cell**
  - Cell Parameters

- **reselection**
  - Cell re-selection parameters

- **hysteresis**
  - Cell Re-Selection Hysteresis in dB

- **<0-14>**
  - Cell Re-Selection Hysteresis in dB

1.16.33  **cell reselection offset <0-126>**

**Command**

```plaintext
cell reselection offset <0-126>
```

**Parameters**

- **cell**
  - Cell Parameters
reselection
Cell Re-Selection Parameters
offset
Cell Re-Selection Offset (CRO) in dB
<0-126>
Cell Re-Selection Offset (CRO) in dB

1.16.34 cell_identity <0-65535>

Command

cell_identity <0-65535>

Parameters
cell_identity
Set the Cell identity of this BTS
<0-65535>
Cell Identity

1.16.35 channel allocator (ascending|descending)

Command

channel allocator (ascending|descending)

Parameters
channel
Channel Allocator
allocator
Channel Allocator
ascending
Allocate Timeslots and Transceivers in ascending order
descending
Allocate Timeslots and Transceivers in descending order
1.16.36  channel-description attach (0|1)

Command

```
channel-description attach (0|1)
```

Parameters

channel-description
  Channel Description
attach
  Set if attachment is required
0
  Attachment is NOT required
1
  Attachment is required (standard)

1.16.37  channel-description bs-ag-blks-res <0-7>

Command

```
channel-description bs-ag-blks-res <0-7>
```

Parameters

channel-description
  Channel Description
bs-ag-blks-res
  Set number of blocks reserved for access grant
<0-7>
  Number of blocks reserved for access grant

1.16.38  channel-description bs-pa-mfrms <2-9>

Command

```
channel-description bs-pa-mfrms <2-9>
```

Parameters

channel-description
  Channel Description
bs-pa-mfrms
  Set number of multiframe periods for paging groups
<2-9>
  Number of multiframe periods for paging groups
1.16.39  codecsupport fr

Command

codec-support fr

Parameters

codec-support
  Codec Support settings

fr
  Fullrate

1.16.40  codecsupport fr (hr|efr|amr)

Command

codec-support fr (hr|efr|amr)

Parameters

codec-support
  Codec Support settings

fr
  Fullrate

hr
  Half Rate

efr
  Enhanced Full Rate

amr
  Adaptive Multirate

1.16.41  codecsupport fr (hr|efr|amr) (hr|efr|amr)

Command

codec-support fr (hr|efr|amr) (hr|efr|amr)

Parameters

codec-support
  Codec Support settings

fr
  Fullrate
hr
    Half Rate
efr
    Enhanced Full Rate
amr
    Adaptive Multirate

1.16.42  codec-support fr (hr|efr|amr) (hr|efr|amr) (hr|efr|amr)

Command

    codec-support fr (hr|efr|amr) (hr|efr|amr) (hr|efr|amr)

Parameters
 codec-support
    Codec Support settings
 fr
    Fullrate
 hr
    Half Rate
efr
    Enhanced Full Rate
 amr
    Adaptive Multirate
 hr
    Half Rate
efr
    Enhanced Full Rate
 amr
    Adaptive Multirate
 hr
    Half Rate
efr
    Enhanced Full Rate
 amr
    Adaptive Multirate
1.16.43 codec-support fr (hr|efr|amr) (hr|efr|amr) (hr|efr|amr) (hr|efr|amr)

Command

```
codec-support fr (hr|efr|amr) (hr|efr|amr) (hr|efr|amr) (hr|efr|amr)
```

Parameters
codec-support
  Codec Support settings
  fr
    Fullrate
  hr
    Half Rate
  efr
    Enhanced Full Rate
  amr
    Adaptive Multirate
  hr
    Half Rate
  efr
    Enhanced Full Rate
  amr
    Adaptive Multirate
  hr
    Half Rate
  efr
    Enhanced Full Rate
  amr
    Adaptive Multirate
  hr
    Half Rate
  efr
    Enhanced Full Rate
  amr
    Adaptive Multirate
1.16.44  con-connection-group <1-31>

Command

    con-connection-group <1-31>

Parameters

con-connection-group
    Configure a CON (Concentrator) Connection Group

    <1-31>
        CON Connection Group Number

1.16.45  del-connection-group <1-31>

Command

    del-connection-group <1-31>

Parameters

del-connection-group
    Delete a CON (Concentrator) Connection Group

    <1-31>
        CON Connection Group Number

1.16.46  depends-on-bts <0-255>

Command

    depends-on-bts <0-255>

Parameters

depends-on-bts
    This BTS can only be started if another one is up

    <0-255>
        BTS Number

1.16.47  description .TEXT

Command

    description .TEXT

Parameters

description
    Save human-readable description of the object

    .TEXT
        Text until the end of the line
1.16.48  **dtx downlink**

**Command**

```
dtx downlink
```

**Parameters**

dtx
  Configure discontinuous transmission
downlink
  Enable Downlink DTX for this BTS

1.16.49  **dtx uplink [force]**

**Command**

```
dtx uplink [force]
```

**Parameters**

dtx
  Configure discontinuous transmission
dtx
  Configure discontinuous transmission
uplink
  Enable Uplink DTX for this BTS
[force]
  MS ‘shall’ use DTXu instead of ‘may’ use (might not be supported by older phones).

1.16.50  **early-classmark-sending (allowed|forbidden)**

**Command**

```
early-classmark-sending (allowed|forbidden)
```

**Parameters**

early-classmark-sending
  Early Classmark Sending
  allowed
    Early Classmark Sending is allowed
  forbidden
    Early Classmark Sending is forbidden
1.16.51  early-classmark-sending-3g (allowed|forbidden)

Command

```
early-classmark-sending-3g (allowed|forbidden)
```

Parameters

- **early-classmark-sending-3g**
  - 3G Early Classmark Sending
  - **allowed**
    - 3G Early Classmark Sending is allowed
  - **forbidden**
    - 3G Early Classmark Sending is forbidden

1.16.52  force-combined-si

Command

```
force-combined-si
```

Parameters

- **force-combined-si**
  - Force the generation of a single SI (no ter/bis)

1.16.53  gprs cell bvci <2-65535>

Command

```
gprs cell bvci <2-65535>
```

Parameters

- **gprs**
  - GPRS Packet Network
- **cell**
  - GPRS Cell Settings
- **bvci**
  - GPRS BSSGP VC Identifier

<2-65535>

- GPRS BSSGP VC Identifier
1.16.54  **gprs cell timer (blocking-timer|blocking-retries|unblocking-retries|reset-timer|...)**

**Command**

```
```

**Parameters**

gprs
  GPRS Packet Network
cell
  Cell / BSSGP
timer
  Cell/BSSGP Timer
blocking-timer
  Tbvc-block timeout
blocking-retries
  Tbvc-block retries
unblocking-retries
  Tbvc-unblock retries
reset-timer
  Tbvc-reset timeout
reset-retries
  Tbvc-reset retries
suspend-timer
  Tbvc-suspend timeout
suspend-retries
  Tbvc-suspend retries
resume-timer
  Tbvc-resume timeout
resume-retries
  Tbvc-resume retries
capability-update-timer
  Tbvc-capa-update timeout
capability-update-retries
  Tbvc-capa-update retries

<0-255>
  Timer Value
1.16.55  **gprs control-ack-type-rach**

Command

```
gprs control-ack-type-rach
```

Parameters

gprs
   GPRS Packet Network

custom-ack-type-rach
   Set GPRS Control Ack Type for PACKET CONTROL ACKNOWLEDGMENT message to four access bursts format instead of default RLC/MAC control block

1.16.56  **gprs egprs-packet-channel-request**

Command

```
gprs egprs-packet-channel-request
```

Parameters

gprs
   GPRS Packet Network

egprs-packet-channel-request
   EGPRS Packet Channel Request support

1.16.57  **gprs mode (none|gprs|egprs)**

Command

```
gprs mode (none|gprs|egprs)
```

Parameters

gprs
   GPRS Packet Network

mode
   GPRS Mode for this BTS

none
   GPRS Disabled on this BTS

egprs
   GPRS Enabled on this BTS

egprs
   EGPRS (EDGE) Enabled on this BTS
1.16.58  gprs network-control-order (nc0|nc1|nc2)

Command

```
gprs network-control-order (nc0|nc1|nc2)
```

Parameters

- **gprs**
  - GPRS Packet Network

- **network-control-order**
  - GPRS Network Control Order

- **nc0**
  - MS controlled cell re-selection, no measurement reporting

- **nc1**
  - MS controlled cell re-selection, MS sends measurement reports

- **nc2**
  - Network controlled cell re-selection, MS sends measurement reports

1.16.59  gprs ns timer (tns-block|tns-block-retries|tns-reset|tns-reset-retries|tns-test|...)

Command

```
gprs ns timer (tns-block|tns-block-retries|tns-reset|tns-reset-retries|tns-test|tns- alive|tns-alive-retries|tns-prov) <0-255>
```

Parameters

- **gprs**
  - GPRS Packet Network

- **ns**
  - Network Service

- **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

\(<0\text{-}255>\)
    Timer Value

1.16.60  \textbf{gprs nsei <0\text{-}65535>}

Command

\begin{verbatim}
gprs nsei <0-65535>
\end{verbatim}

Parameters

gprs
    GPRS Packet Network

nsei
    GPRS NS Entity Identifier

\(<0\text{-}65535>\)
    GPRS NS Entity Identifier

1.16.61  \textbf{gprs nsvc <0\text{-}1> local udp port <0\text{-}65535>}

Command

\begin{verbatim}
gprs nsvc <0-1> local udp port <0-65535>
\end{verbatim}

Parameters

gprs
    GPRS Packet Network

nsvc
    Network Service Virtual Connection (NS-VC)

\(<0\text{-}1>\)
    NSVC Logical Number

local
    GPRS NS Local UDP Port
udp
    GPRS NS Local UDP Port

port
    GPRS NS Local UDP Port

<0-65535>
    GPRS NS Local UDP Port Number

1.16.62  gprs nsvc <0-1> nsvci <0-65535>

Command

    gprs nsvc <0-1> nsvci <0-65535>

Parameters

gprs
    GPRS Packet Network

nsvc
    Network Service Virtual Connection (NS-VC)

<0-1>
    NSVC Logical Number

nsvci
    NS Virtual Connection Identifier

<0-65535>
    GPRS NS VC Identifier

1.16.63  gprs nsvc <0-1> remote ip A.B.C.D

Command

    gprs nsvc <0-1> remote ip A.B.C.D

Parameters

gprs
    GPRS Packet Network

nsvc
    Network Service Virtual Connection (NS-VC)

<0-1>
    NSVC Logical Number

remote
    GPRS NS Remote IP Address

ip
    GPRS NS Remote IP Address

A.B.C.D
    GPRS NS Remote IP Address
1.16.64  gprs nsvc <0-1> remote udp port <0-65535>

Command

```
gprs nsvc <0-1> remote udp port <0-65535>
```

Parameters

gprs
  GPRS Packet Network
nsvc
  Network Service Virtual Connection (NS-VC)
  <0-1>
    NSVC Logical Number
remote
  GPRS NS Remote UDP Port
udp
  GPRS NS Remote UDP Port
port
  GPRS NS Remote UDP Port
  <0-65535>
    GPRS NS Remote UDP Port Number

1.16.65  gprs routing area <0-255>

Command

```
gprs routing area <0-255>
```

Parameters

gprs
  GPRS Packet Network
routing
  GPRS Routing Area Code
area
  GPRS Routing Area Code
  <0-255>
    GPRS Routing Area Code
1.16.66  handover (0|1|default)

Command

```
handover (0|1|default)
```

Parameters

handover

   Handover general config

0

   Disable in-call handover

1

   Enable in-call handover

default

   Enable/disable handover: Use default (0), remove explicit setting on this node

1.16.67  handover algorithm (1|2|default)

Command

```
handover algorithm (1|2|default)
```

Parameters

handover

   Handover general config

algorithm

   Choose algorithm for handover decision

1

   Algorithm 1: trigger handover based on comparing current cell and neighbor RxLev and RxQual, only.

2

   Algorithm 2: trigger handover on RxLev/RxQual, and also to balance the load across several cells. Consider available codecs. Prevent repeated handover by penalty timers.

default

   Use default (1), remove explicit setting on this node
1.16.68  **handover1 maximum distance (<0-999> | default)**

**Command**

```plaintext
handover1 maximum distance (<0-999> | default)
```

**Parameters**

- **handover1**
  - Handover options for handover decision algorithm 1
- **maximum**
  - Maximum Timing-Advance value (i.e. MS distance) before triggering HO
- **distance**
  - Maximum Timing-Advance value (i.e. MS distance) before triggering HO
- **<0-999>**
  - Maximum Timing-Advance value (i.e. MS distance) before triggering HO
- **default**
  - Use default (9999), remove explicit setting on this node

1.16.69  **handover1 power budget hysteresis (<0-999> | default)**

**Command**

```plaintext
handover1 power budget hysteresis (<0-999> | default)
```

**Parameters**

- **handover1**
  - Handover options for handover decision algorithm 1
- **power**
  - Neighbor cell power triggering
- **budget**
  - Neighbor cell power triggering
- **hysteresis**
  - How many dB stronger must a neighbor be to become a HO candidate
- **<0-999>**
  - Neighbor’s strength difference in dB
- **default**
  - Use default (3), remove explicit setting on this node
1.16.70  handover1 power budget interval (<1-99>|default)

Command

```
handover1 power budget interval (<1-99>|default)
```

Parameters

handover1
  Handover options for handover decision algorithm 1
power
  Neighbor cell power triggering
budget
  Neighbor cell power triggering
interval
  How often to check for a better cell (SACCH frames)
  <1-99>
  Check for stronger neighbor every N number of SACCH frames
default
  Use default (6), remove explicit setting on this node

1.16.71  handover1 window rxlev averaging (<1-10>|default)

Command

```
handover1 window rxlev averaging (<1-10>|default)
```

Parameters

handover1
  Handover options for handover decision algorithm 1
window
  Measurement averaging settings
rxlev
  Received-Level averaging
averaging
  How many RxLev measurements to use for averaging
  <1-10>
  RxLev averaging: Number of values to average over
default
  Use default (10), remove explicit setting on this node
1.16.72  **handover1 window rxlev neighbor averaging (<1-10>|default)**

Command

```
handover1 window rxlev neighbor averaging (<1-10>|default)
```

Parameters

- **handover1**: Handover options for handover decision algorithm 1
- **window**: Measurement averaging settings
- **rxlev**: Received-Level averaging
- **neighbor**: How many Neighbor RxLev measurements to use for averaging
  - **averaging**: How many Neighbor RxLev measurements to use for averaging
  - **<1-10>**: Neighbor RxLev averaging: Number of values to average over
- **default**: Use default (10), remove explicit setting on this node

1.16.73  **handover1 window rxqual averaging (<1-10>|default)**

Command

```
handover1 window rxqual averaging (<1-10>|default)
```

Parameters

- **handover1**: Handover options for handover decision algorithm 1
- **window**: Measurement averaging settings
- **rxqual**: Received-Quality averaging
- **averaging**: How many RxQual measurements to use for averaging
  - **<1-10>**: RxQual averaging: Number of values to average over
- **default**: Use default (1), remove explicit setting on this node
1.16.74  handover2 afs-bias rxlev (<0-20>|default)

Command

```
handover2 afs-bias rxlev (<0-20>|default)
```

Parameters

handover2
   Handover options for handover decision algorithm 2
afs-bias
   Configure bias to prefer AFS (AMR on TCH/F) over other codecs
rxlev
   RxLev improvement bias for AFS over other codecs
   `<0-20>`
   Virtual RxLev improvement (dB)
default
   Use default (0), remove explicit setting on this node

1.16.75  handover2 afs-bias rxqual (<0-7>|default)

Command

```
handover2 afs-bias rxqual (<0-7>|default)
```

Parameters

handover2
   Handover options for handover decision algorithm 2
afs-bias
   Configure bias to prefer AFS (AMR on TCH/F) over other codecs
rxqual
   RxQual improvement bias for AFS over other codecs
   `<0-7>`
   Virtual RxQual improvement
default
   Use default (0), remove explicit setting on this node
1.16.76  handover2 assignment (0|1|default)

Command

```
handover2 assignment (0|1|default)
```

Parameters

handover2
  Handover options for handover decision algorithm 2
assignment
  Enable or disable in-call channel re-assignment within the same cell
0
  Disable in-call assignment
1
  Enable in-call assignment
default
  Use default (0), remove explicit setting on this node

1.16.77  handover2 max-handovers (<1-9999>|default)

Command

```
handover2 max-handovers (<1-9999>|default)
```

Parameters

handover2
  Handover options for handover decision algorithm 2
max-handovers
  Maximum number of concurrent handovers allowed per cell
<1-9999>
  Number
default
  Use default (9999), remove explicit setting on this node

1.16.78  handover2 maximum distance (<0-9999>|default)

Command

```
handover2 maximum distance (<0-9999>|default)
```

Parameters
handover2
   Handover options for handover decision algorithm 2

maximum
   Maximum Timing-Advance value (i.e. MS distance) before triggering HO
distance
   Maximum Timing-Advance value (i.e. MS distance) before triggering HO

<0-9999>
   Maximum Timing-Advance value (i.e. MS distance) before triggering HO
default
   Use default (9999), remove explicit setting on this node

1.16.79  handover2 min rxlev (<-110--50>|default)

Command

```
handover2 min rxlev (<-110--50>|default)
```

Parameters

handover2
   Handover options for handover decision algorithm 2

min
   Minimum Level/Quality thresholds before triggering HO
rxlev
   How weak may RxLev of an MS become before triggering HO
<-110--50>
   minimum RxLev (dBm; note: negative values)
default
   Use default (-100), remove explicit setting on this node

1.16.80  handover2 min rxqual (<0-7>|default)

Command

```
handover2 min rxqual (<0-7>|default)
```

Parameters

handover2
   Handover options for handover decision algorithm 2

min
   Minimum Level/Quality thresholds before triggering HO
rxqual

  How bad may RxQual of an MS become before triggering HO

<0-7>

  minimum RxQual

default

  Use default (5), remove explicit setting on this node

1.16.81  handover2 min-free-slots tch/f (<0-9999>|default)

Command

  handover2 min-free-slots tch/f (<0-9999>|default)

Parameters

  handover2
    Handover options for handover decision algorithm 2

  min-free-slots
    Minimum free TCH timeslots before cell is considered congested

  tch/f
    Minimum free TCH/F timeslots before cell is considered congested

<0-9999>

  Number of TCH/F slots

default

  Use default (0), remove explicit setting on this node

1.16.82  handover2 min-free-slots tch/h (<0-9999>|default)

Command

  handover2 min-free-slots tch/h (<0-9999>|default)

Parameters

  handover2
    Handover options for handover decision algorithm 2

  min-free-slots
    Minimum free TCH timeslots before cell is considered congested

  tch/h
    Minimum free TCH/H timeslots before cell is considered congested

<0-9999>

  Number of TCH/H slots

default

  Use default (0), remove explicit setting on this node
1.16.83  **handover2 penalty-time failed-assignment (<0-99999>|default)**

**Command**  
```
handover2 penalty-time failed-assignment (<0-99999>|default)
```

**Parameters**  
handover2  
Handover options for handover decision algorithm 2
penalty-time  
Set penalty times to wait between repeated handovers
failed-assignment  
Time to suspend handover for a subscriber after a failed re-assignment within this cell; see also 'handover2 retries'

<0-99999>  
Seconds
default  
Use default (60), remove explicit setting on this node

1.16.84  **handover2 penalty-time failed-ho (<0-99999>|default)**

**Command**  
```
handover2 penalty-time failed-ho (<0-99999>|default)
```

**Parameters**  
handover2  
Handover options for handover decision algorithm 2
penalty-time  
Set penalty times to wait between repeated handovers
failed-ho  
Time to suspend handover for a subscriber after a failed handover into this cell; see also 'handover2 retries'

<0-99999>  
Seconds
default  
Use default (60), remove explicit setting on this node
1.16.85  handover2 penalty-time max-distance (<0-99999>|default)

Command

```
handover2 penalty-time max-distance (<0-99999>|default)
```

Parameters

handover2

Handover options for handover decision algorithm 2

penalty-time

Set penalty times to wait between repeated handovers

max-distance

Time to suspend handover for a subscriber after leaving this cell due to exceeding max distance; see also 'handover2 retries'

<0-99999>

Seconds

default

Use default (300), remove explicit setting on this node

1.16.86  handover2 power budget hysteresis (<0-999>|default)

Command

```
handover2 power budget hysteresis (<0-999>|default)
```

Parameters

handover2

Handover options for handover decision algorithm 2

power

Neighbor cell power triggering

budget

Neighbor cell power triggering

hysteresis

How many dB stronger must a neighbor be to become a HO candidate

<0-999>

Neighbor’s strength difference in dB

default

Use default (3), remove explicit setting on this node
1.16.87  handover2 power budget interval (<1-99>|default)

Command

```
handover2 power budget interval (<1-99>|default)
```

Parameters

handover2
    Handover options for handover decision algorithm 2

power
    Neighbor cell power triggering

budget
    Neighbor cell power triggering

interval
    How often to check for a better cell (SACCH frames)

<1-99>
    Check for stronger neighbor every N number of SACCH frames

default
    Use default (6), remove explicit setting on this node

1.16.88  handover2 retries (<0-9>|default)

Command

```
handover2 retries (<0-9>|default)
```

Parameters

handover2
    Handover options for handover decision algorithm 2

retries
    Number of times to immediately retry a failed handover/assignment, before a penalty time is applied

<0-9>
    Number of retries

default
    Use default (0), remove explicit setting on this node
1.16.89  handover2 tdma-measurement (full|subset|default)

**Command**

```
handover2 tdma-measurement (full|subset|default)
```

**Parameters**

**handover2**
- Handover options for handover decision algorithm 2

**tdma-measurement**
- Define measurement set of TDMA frames

**full**
- Full set of 102/104 TDMA frames

**subset**
- Sub set of 4 TDMA frames (SACCH)

**default**
- Use default (subset), remove explicit setting on this node

1.16.90  handover2 window rxlev averaging (<1-10>|default)

**Command**

```
handover2 window rxlev averaging (<1-10>|default)
```

**Parameters**

**handover2**
- Handover options for handover decision algorithm 2

**window**
- Measurement averaging settings

**rxlev**
- Received-Level averaging

**averaging**
- How many RxLev measurements to use for averaging

**<1-10>**
- RxLev averaging: Number of values to average over

**default**
- Use default (10), remove explicit setting on this node
1.16.91 handover2 window rxlev neighbor averaging (<1-10>|default)

Command

```
handover2 window rxlev neighbor averaging (<1-10>|default)
```

Parameters

- **handover2**
  - Handover options for handover decision algorithm 2
- **window**
  - Measurement averaging settings
- **rxlev**
  - Received-Level averaging
- **neighbor**
  - How many Neighbor RxLev measurements to use for averaging
- **averaging**
  - How many Neighbor RxLev measurements to use for averaging
- **<1-10>**
  - Neighbor RxLev averaging: Number of values to average over
- **default**
  - Use default (10), remove explicit setting on this node

1.16.92 handover2 window rxqual averaging (<1-10>|default)

Command

```
handover2 window rxqual averaging (<1-10>|default)
```

Parameters

- **handover2**
  - Handover options for handover decision algorithm 2
- **window**
  - Measurement averaging settings
- **rxqual**
  - Received-Quality averaging
- **averaging**
  - How many RxQual measurements to use for averaging
- **<1-10>**
  - RxQual averaging: Number of values to average over
- **default**
  - Use default (1), remove explicit setting on this node
1.16.93  ipa rsl-ip A.B.C.D

Command
ipa rsl-ip A.B.C.D

Parameters
ipa
    Abis/IP specific options
rsl-ip
    Set the IPA RSL IP Address of the BSC
A.B.C.D
    Destination IP address for RSL connection

1.16.94  ipa unit-id <0-65534> <0-255>

Command
ipa unit-id <0-65534> <0-255>

Parameters
ipa
    Abis/IP specific options
unit-id
    Set the IPA BTS Unit ID
<0-65534>
    Unit ID (Site)
<0-255>
    Unit ID (BTS)

1.16.95  is-connection-list (add|del) <0-2047> <0-2047> <0-255>

Command
is-connection-list (add|del) <0-2047> <0-2047> <0-255>

Parameters
is-connection-list
    Interface Switch Connection List
add
    Add to IS list
del
  Delete from IS list

<0-2047>
  ICP1
<0-2047>
  ICP2
<0-255>
  Contiguity Index

1.16.96  location_area_code <0-65535>

Command

```plaintext
location_area_code <0-65535>
```

Parameters

**location_area_code**
  Set the Location Area Code (LAC) of this BTS

<0-65535>
  LAC

1.16.97  ms max power <0-40>

Command

```plaintext
ms max power <0-40>
```

Parameters

**ms**
  MS Options

**max**
  Maximum transmit power of the MS

**power**
  Maximum transmit power of the MS

<0-40>
  Maximum transmit power of the MS in dBm
1.16.98  **neighbor bts <0-255>**

**Command**

```
neighbor bts <0-255>
```

**Parameters**

- **neighbor**
  - Manage local and remote-BSS neighbor cells
- **bts**
  - Add Neighbor cell by local BTS number
- **<0-255>**
  - BTS number

1.16.99  **neighbor cgi <0-999> <0-999> <0-65535> <0-65535>**

**Command**

```
neighbor cgi <0-999> <0-999> <0-65535> <0-65535>
```

**Parameters**

- **neighbor**
  - Manage local and remote-BSS neighbor cells
- **cgi**
  - Add Neighbor cell by cgi
- **<0-999>**
  - MCC
- **<0-999>**
  - MNC
- **<0-65535>**
  - LAC
- **<0-65535>**
  - CI

1.16.100  **neighbor cgi <0-999> <0-999> <0-65535> <0-65535> arfcn <0-1023> bsic (<0-63>|any...**

**Command**

```
neighbor cgi <0-999> <0-999> <0-65535> <0-65535> arfcn <0-1023> bsic (<0-63>|any)
```

**Parameters**
neighbor
   Manage local and remote-BSS neighbor cells
cgi
   Add Neighbor cell by cgi
   \(<0-999>\)
      MCC
   \(<0-999>\)
      MNC
   \(<0-65535>\)
      LAC
   \(<0-65535>\)
      CI
arfcn
   ARFCN of neighbor cell
   \(<0-1023>\)
      ARFCN value
bsic
   BSIC of neighbor cell
   \(<0-63>\)
      BSIC value
any
   for all BSICs / use any BSIC in this ARFCN

1.16.101  neighbor lac \(<0-65535>\)

Command

```bash
neighbor lac \(<0-65535>\)
```

Parameters

neighbor
   Manage local and remote-BSS neighbor cells
lac
   Add Neighbor cell by LAC
   \(<0-65535>\)
      LAC

```
1.16.102 **neighbor lac <0-65535> arfcn <0-1023> bsic (<0-63>|any)**

**Command**

```
neighbor lac <0-65535> arfcn <0-1023> bsic (<0-63>|any)
```

**Parameters**

- **neighbor**
  Manage local and remote-BSS neighbor cells
- **lac**
  Add Neighbor cell by LAC
  `<0-65535>`
  LAC
- **arfcn**
  ARFCN of neighbor cell
  `<0-1023>`
  ARFCN value
- **bsic**
  BSIC of neighbor cell
  `<0-63>`
  BSIC value
- **any**
  for all BSICs / use any BSIC in this ARFCN

1.16.103 **neighbor lac-ci <0-65535> <0-65535>**

**Command**

```
neighbor lac-ci <0-65535> <0-65535>
```

**Parameters**

- **neighbor**
  Manage local and remote-BSS neighbor cells
- **lac-ci**
  Add Neighbor cell by LAC and CI
  `<0-65535>`
  LAC
  `<0-65535>`
  CI
1.16.104 neighbor lac-ci <0-65535> <0-65535> arfcn <0-1023> bsic (<0-63>|any)

Command
```
neighbor lac-ci <0-65535> <0-65535> arfcn <0-1023> bsic (<0-63>|any)
```

Parameters
neighbor
   Manage local and remote-BSS neighbor cells
lac-ci
   Add Neighbor cell by LAC and CI
<0-65535>
   LAC
<0-65535>
   CI
arfcn
   ARFCN of neighbor cell
<0-1023>
   ARFCN value
bsic
   BSIC of neighbor cell
<0-63>
   BSIC value
any
   for all BSICs / use any BSIC in this ARFCN

1.16.105 neighbor-list (add|del) arfcn <0-1023>

Command
```
neighbor-list (add|del) arfcn <0-1023>
```

Parameters
neighbor-list
   Neighbor List
add
   Add to manual neighbor list
del
   Delete from manual neighbor list
arfcn
   ARFCN of neighbor
<0-1023>
   ARFCN of neighbor
1.16.106  neighbor-list mode (automatic|manual|manual-si5)

Command

```
neighbor-list mode (automatic|manual|manual-si5)
```

Parameters

neighbor-list

   Neighbor List

mode

   Mode of Neighbor List generation

   automatic

      Automatically from all BTS in this BSC

   manual

      Manual

   manual-si5

      Manual with different lists for SI2 and SI5

1.16.107  no access-control-class-ramping

Command

```
no access-control-class-ramping
```

Parameters

no

   Negate a command or set its defaults

access-control-class-ramping

   Disable Access Control Class ramping

1.16.108  no depends-on-bts <0-255>

Command

```
no depends-on-bts <0-255>
```

Parameters

no

   Negate a command or set its defaults

depends-on-bts

   This BTS can only be started if another one is up

   <0-255>

      BTS Number
1.16.109  no description

Command

```
no description
```

Parameters

no

Negate a command or set its defaults
description

Remove description of the object

1.16.110  no dtx downlink

Command

```
no dtx downlink
```

Parameters

no

Negate a command or set its defaults
dtx

Configure discontinuous transmission
downlink

Disable Downlink DTX for this BTS

1.16.111  no dtx uplink

Command

```
no dtx uplink
```

Parameters

no

Negate a command or set its defaults
dtx

Configure discontinuous transmission
uplink

Disable Uplink DTX for this BTS
1.16.112  no force-combined-si

Command

    no force-combined-si

Parameters

no

    Negate a command or set its defaults

force-combined-si

    Force the generation of a single SI (no ter/bis)

1.16.113  no gprs control-ack-type-rach

Command

    no gprs control-ack-type-rach

Parameters

no

    Negate a command or set its defaults

gprs

    GPRS Packet Network

control-ack-type-rach

    Set GPRS Control Ack Type for PACKET CONTROL ACKNOWLEDGMENT message to four access bursts format instead of default RLC/MAC control block

1.16.114  no gprs egprs-packet-channel-request

Command

    no gprs egprs-packet-channel-request

Parameters

no

    Negate a command or set its defaults

gprs

    GPRS Packet Network

egprs-packet-channel-request

    EGPRS Packet Channel Request support
1.16.115  **no neighbor arfcn <0-1023> bsic (<0-63>|any)**

**Command**

```
no neighbor arfcn <0-1023> bsic (<0-63>|any)
```

**Parameters**

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

- **neighbor**
  
  Remove local or remote-BSS neighbor cell

- **arfcn**
  
  ARFCN of neighbor cell

  `<0-1023>`
  
  ARFCN value

- **bsic**
  
  BSIC of neighbor cell

  `<0-63>`
  
  BSIC value

- **any**
  
  for all BSICs / use any BSIC in this ARFCN

1.16.116  **no neighbor bts <0-255>**

**Command**

```
no neighbor bts <0-255>
```

**Parameters**

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

- **neighbor**
  
  Remove local or remote-BSS neighbor cell

- **bts**
  
  Neighbor cell by local BTS number

  `<0-255>`
  
  BTS number
1.16.117  **no neighbors**

Command

```
no neighbors
```

Parameters

no

Negate a command or set its defaults

neighbors

Remove all local and remote-BSS neighbor config for this cell. Note that this falls back to the legacy behavior of regarding all local cells as neighbors.

1.16.118  **no rf-lock-exclude**

Command

```
no rf-lock-exclude
```

Parameters

no

Negate a command or set its defaults

rf-lock-exclude

Exclude this BTS from the global RF Lock

1.16.119  **no system-information unused-send-empty**

Command

```
no system-information unused-send-empty
```

Parameters

no

Negate a command or set its defaults

system-information

System Information Messages

unused-send-empty

Avoid sending BCCH Info with empty 'Full BCCH Info' TLV to notify disabled SI. Some nanoBTS fw versions are known to fail upon receival of these messages.
1.16.120  no timer-dynamic TNNNN

Command

    no timer-dynamic TNNNN

Parameters

no
    Negate a command or set its defaults

timer-dynamic
    Set given timer to non-dynamic and use the default or user provided fixed value

TNNNN
    T-number, optionally preceded by 't' or 'T'

1.16.121  nokia_site bts-reset-timer <15-100>

Command

    nokia_site bts-reset-timer <15-100>

Parameters

nokia_site
    Nokia *Site related commands

bts-reset-timer
    The amount of time (in sec.) between BTS_RESET is sent, <15-100>
    and the BTS is being bootstrapped.

1.16.122  nokia_site no-local-rel-conf (0|1)

Command

    nokia_site no-local-rel-conf (0|1)

Parameters

nokia_site
    Nokia *Site related commands

no-local-rel-conf
    Do not wait for RELEASE CONFirm message when releasing channel locally

0
    Wait for RELEASE CONFirm

1
    Do not wait for RELEASE CONFirm
1.16.123  **nokia_site skip-reset (0|1)**

Command

```
nokia_site skip-reset (0|1)
```

Parameters

**nokia_site**  
Nokia *Site related commands*

**skip-reset**  
Skip the reset step during bootstrap process of this BTS

0  
Do NOT skip the reset

1  
Skip the reset

1.16.124  **oml e1 line E1_LINE timeslot <1-31> sub-slot (0|1|2|3|full)**

Command

```
oml e1 line E1_LINE timeslot <1-31> sub-slot (0|1|2|3|full)
```

Parameters

**oml**  
Organization & Maintenance Link

**e1**  
OML E1/T1 Configuration

**line**  
E1/T1 line number to be used for OML

**E1_LINE**  
E1/T1 line number to be used for OML

**timeslot**  
E1/T1 timeslot to be used for OML

**<1-31>**  
E1/T1 timeslot to be used for OML

**sub-slot**  
E1/T1 sub-slot to be used for OML

0  
Use E1/T1 sub-slot 0

1  
Use E1/T1 sub-slot 1
2
   Use E1/T1 sub-slot 2

3
   Use E1/T1 sub-slot 3

full
   Use full E1 slot 3

1.16.125  oml e1 tei <0-63>

Command

   oml e1 tei <0-63>

Parameters

oml
   Organization & Maintenance Link
e1
   OML E1/T1 Configuration
tei
   Set the TEI to be used for OML
   <0-63>
      TEI Number

1.16.126  oml ipa stream-id <0-255> line E1_LINE

Command

   oml ipa stream-id <0-255> line E1_LINE

Parameters

oml
   Organization & Maintenance Link
ipa
   A-bis/IP Specific Options
stream-id
   Set the ipa Stream ID of the OML link of this BTS
   <0-255>
      Stream Identifier
line
   Virtual E1 Line Number
E1_LINE
   Virtual E1 Line Number
1.16.127  paging free <-1-1024>

Command

  paging free <-1-1024>

Parameters

  paging
    Paging options

  free
    Only page when having a certain amount of free slots

      <-1-1024>
      amount of required free paging slots. -1 to disable

1.16.128  pcu-socket PATH

Command

  pcu-socket PATH

Parameters

  pcu-socket
    PCU Socket Path for using OsmoPCU co-located with BSC (legacy BTS)

  PATH
    Path in the file system for the unix-domain PCU socket

1.16.129  penalty time <20-620>

Command

  penalty time <20-620>

Parameters

  penalty
    Cell selection penalty time

  time
    Cell selection penalty time

      <20-620>
      Cell selection penalty time in seconds (by 20s increments)
1.16.130 penalty time reserved

Command

```
penalty time reserved
```

Parameters

penalty
  Cell selection penalty time
time
  Cell selection penalty time
reserved
  Set cell selection penalty time to reserved value 31, (indicate that CELL_RESELECT_OFFSET is subtracted from C2 and TEMPORARY_OFFSET is ignored)

1.16.131 rach access-control-class (0|1|2|3|4|5|6|7|8|9|11|12|13|14|15) (barred|allowed)

Command

```
rach access-control-class (0|1|2|3|4|5|6|7|8|9|11|12|13|14|15) (barred|allowed)
```

Parameters

rach
  Random Access Control Channel
access-control-class
  Set access control class
  0
    Access control class 0
  1
    Access control class 1
  2
    Access control class 2
  3
    Access control class 3
  4
    Access control class 4
  5
    Access control class 5
  6
    Access control class 6
Access control class 7
Access control class 8
Access control class 9
Access control class 11 for PLMN use
Access control class 12 for security services
Access control class 13 for public utilities (e.g. water/gas suppliers)
Access control class 14 for emergency services
Access control class 15 for PLMN staff

barred
  barred to use access control class
allowed
  allowed to use access control class

1.16.132  **rach emergency call allowed (0|1)**

Command

```
rach emergency call allowed (0|1)
```

Parameters

**rach**
  Random Access Control Channel

**emergency**
  Should this cell allow emergency calls?

**call**
  Should this cell allow emergency calls?

**allowed**
  Should this cell allow emergency calls?

**0**
  Do NOT allow emergency calls

**1**
  Allow emergency calls
1.16.133  rach max transmission (1|2|4|7)

Command

```
rach max transmission (1|2|4|7)
```

Parameters

rach
Random Access Control Channel

max
Set the maximum number of RACH burst transmissions

transmission
Set the maximum number of RACH burst transmissions

1
Maximum number of 1 RACH burst transmissions

2
Maximum number of 2 RACH burst transmissions

4
Maximum number of 4 RACH burst transmissions

7
Maximum number of 7 RACH burst transmissions

1.16.134  rach nm busy threshold <0-255>

Command

```
rach nm busy threshold <0-255>
```

Parameters

rach
Random Access Control Channel

nm
Network Management

busy
Set the NM Busy Threshold

threshold
Set the NM Busy Threshold

<0-255>
NM Busy Threshold in dB
1.16.135  rach nm load average <0-65535>

Command

```
rach nm load average <0-65535>
```

Parameters

- **rach**: Random Access Control Channel
- **nm**: Network Management
- **load**: Set the NM Loadaverage Slots value
- **average**: Set the NM Loadaverage Slots value
- **<0-65535>**: NM Loadaverage Slots value

1.16.136  rach tx integer <0-15>

Command

```
rach tx integer <0-15>
```

Parameters

- **rach**: Random Access Control Channel
- **tx**: Set the raw tx integer value in RACH Control parameters IE
- **integer**: Set the raw tx integer value in RACH Control parameters IE
- **<0-15>**: Raw tx integer value in RACH Control parameters IE

1.16.137  radio-link-timeout <4-64>

Command

```
radio-link-timeout <4-64>
```

Parameters

- **radio-link-timeout**: Radio link timeout criterion (BTS side)
- **<4-64>**: Radio link timeout value (lost SACCH block)
1.16.138  radio-link-timeout infinite

Command

```
radio-link-timeout infinite
```

Parameters

radio-link-timeout
   Radio link timeout criterion (BTS side)

infinite
   Infinite Radio link timeout value (use only for BTS RF testing)

1.16.139  rf-lock-exclude

Command

```
rf-lock-exclude
```

Parameters

rf-lock-exclude
   Exclude this BTS from the global RF Lock

1.16.140  rxlev access min <0-63>

Command

```
rxlev access min <0-63>
```

Parameters

rxlev
   Minimum RxLev needed for cell access

access
   Minimum RxLev needed for cell access

min
   Minimum RxLev needed for cell access

<0-63>
   Minimum RxLev needed for cell access (better than -110dBm)
1.16.141  si2quater neighbor-list add earfcn <0-65535> thresh-hi <0-31> thresh-lo <0-32> p...

Command

```
si2quater neighbor-list add earfcn <0-65535> thresh-hi <0-31> thresh-lo <0-32> prio ← <0-8> qrxlv <0-32> meas <0-8>
```

Parameters

si2quater

SI2quater Neighbor List

neighbor-list

SI2quater Neighbor List

add

Add to manual SI2quater neighbor list

earfcn

EARFCN of neighbor

<0-65535>

EARFCN of neighbor

thresh-hi

threshold high bits

<0-31>

threshold high bits

thresh-lo

threshold low bits

<0-32>

threshold low bits (32 means NA)

prio

priority

<0-8>

priority (8 means NA)

qrxlv

QRXLEVMIN

<0-32>

QRXLEVMIN (32 means NA)

meas

measurement bandwidth

<0-8>

measurement bandwidth (8 means NA)
1.16.142  
**si2quater neighbor-list add uarfcn <0-16383> <0-511> <0-1>**

Command

```
si2quater neighbor-list add uarfcn <0-16383> <0-511> <0-1>
```

Parameters

- **si2quater**
  
  SI2quater Neighbor List

- **neighbor-list**

  SI2quater Neighbor List

- **add**

  Add to manual SI2quater neighbor list

- **uarfcn**

  UARFCN of neighbor

  `<0-16383>`

  UARFCN of neighbor

  `<0-511>`

  scrambling code

  `<0-1>`

  diversity bit

1.16.143  
**si2quater neighbor-list del earfcn <0-65535>**

Command

```
si2quater neighbor-list del earfcn <0-65535>
```

Parameters

- **si2quater**

  SI2quater Neighbor List

- **neighbor-list**

  SI2quater Neighbor List

- **del**

  Delete from SI2quater manual neighbor list

- **earfcn**

  EARFCN of neighbor

  `<0-65535>`

  EARFCN
1.16.144  **si2quater neighbor-list del uarfcn <0-16383> <0-511>**

**Command**

```
si2quater neighbor-list del uarfcn <0-16383> <0-511>
```

**Parameters**

- **si2quater**
  - SI2quater Neighbor List
- **neighbor-list**
  - SI2quater Neighbor List
- **del**
  - Delete from SI2quater manual neighbor list
- **uarfcn**
  - UARFCN of neighbor
  - <0-16383>
  - UARFCN
  - <0-511>
  - scrambling code

1.16.145  **si5 neighbor-list (add|del) arfcn <0-1023>**

**Command**

```
si5 neighbor-list (add|del) arfcn <0-1023>
```

**Parameters**

- **si5**
  - SI5 Neighbor List
- **neighbor-list**
  - SI5 Neighbor List
- **add**
  - Add to manual SI5 neighbor list
- **del**
  - Delete from SI5 manual neighbor list
- **arfcn**
  - ARFCN of neighbor
  - <0-1023>
  - ARFCN of neighbor
1.16.146  system-information (1|2|3|4|5|6|7|8|9|10|13|16|17|18|19|20|2bis|2ter|2quater|5bi...

Command

```
system-information (1|2|3|4|5|6|7|8|9|10|13|16|17|18|19|20|2bis|2ter|2quater|5bis|5ter) ←
mode (static|computed)
```

Parameters

system-information

System Information Messages

1
System Information Type 1

2
System Information Type 2

3
System Information Type 3

4
System Information Type 4

5
System Information Type 5

6
System Information Type 6

7
System Information Type 7

8
System Information Type 8

9
System Information Type 9

10
System Information Type 10

13
System Information Type 13

16
System Information Type 16

17
System Information Type 17

18
System Information Type 18

19
System Information Type 19
20
  System Information Type 20
2bis
  System Information Type 2bis
2ter
  System Information Type 2ter
2quater
  System Information Type 2quater
5bis
  System Information Type 5bis
5ter
  System Information Type 5ter
mode
  System Information Mode
static
  Static user-specified
computed
  Dynamic, BSC-computed

1.16.147  system-information {1|2|3|4|5|6|7|8|9|10|13|16|17|18|19|20|2bis|2ter|2quater|5bis|5ter}

Command

```
system-information {1|2|3|4|5|6|7|8|9|10|13|16|17|18|19|20|2bis|2ter|2quater|5bis|5ter}
```

Parameters

system-information
  System Information Messages
  1
    System Information Type 1
  2
    System Information Type 2
  3
    System Information Type 3
  4
    System Information Type 4
  5
    System Information Type 5
System Information Type 6
System Information Type 7
System Information Type 8
System Information Type 9
System Information Type 10
System Information Type 13
System Information Type 16
System Information Type 17
System Information Type 18
System Information Type 19
System Information Type 20
System Information Type 2bis
System Information Type 2ter
System Information Type 2quater
System Information Type 5bis
System Information Type 5ter
Static
Static System Information filling
HEXSTRING
Static user-specified SI content in HEX notation
1.16.148  **system-information unused-send-empty**

**Command**

```
system-information unused-send-empty
```

**Parameters**

- **system-information**
  - System Information Messages
- **unused-send-empty**
  - Send BCCH Info with empty `Full BCCH Info` TLV to notify disabled SI. Some nanoBTS fw versions are known to fail upon receipt of these messages.

1.16.149  **temporary offset <0-60>**

**Command**

```
temporary offset <0-60>
```

**Parameters**

- **temporary**
  - Cell selection temporary negative offset
- **offset**
  - Cell selection temporary negative offset
- **<0-60>**
  - Cell selection temporary negative offset in dB

1.16.150  **temporary offset infinite**

**Command**

```
temporary offset infinite
```

**Parameters**

- **temporary**
  - Cell selection temporary negative offset
- **offset**
  - Cell selection temporary negative offset
- **infinite**
  - Sets cell selection temporary negative offset to infinity
1.16.151 timer-dynamic TNNNN

Command

\[
\text{timer-dynamic TNNNN}
\]

Parameters

- \text{timer-dynamic}
  
  Calculate T3113 dynamically based on channel config and load

- \text{TNNNN}
  
  T-number, optionally preceded by 't' or 'T'

1.16.152 trx <0-255>

Command

\[
\text{trx <0-255>}
\]

Parameters

- \text{trx}
  
  Radio Transceiver

- \text{<0-255>}
  
  Select a TRX to configure

1.16.153 type (unknown|bs11|nanobts|rbs2000|nokia_site|sysmobts)

Command

\[
\text{type (unknown|bs11|nanobts|rbs2000|nokia_site|sysmobts)}
\]

Parameters

- \text{type}
  
  BTS Vendor/Type

- \text{unknown}
  
  Unknown BTS Type

- \text{bs11}
  
  Siemens BTS (BS-11 or compatible)

- \text{nanobts}
  
  ip.access nanoBTS or compatible

- \text{rbs2000}
  
  Ericsson RBS2000 Series

- \text{nokia_site}
  
  Nokia {Metro,Ultra,In}Site

- \text{sysmobts}
  
  sysmocom sysmoBTS
1.17  config-net-bts-trx

1.17.1  arfcn <0-1023>

Command

    arfcn <0-1023>

Parameters

arfcn
- Set the ARFCN for this TRX
- <0-1023>
  - Absolute Radio Frequency Channel Number

1.17.2  description .TEXT

Command

    description .TEXT

Parameters

description
- Save human-readable description of the object
- .TEXT
  - Text until the end of the line

1.17.3  max_power_red <0-100>

Command

    max_power_red <0-100>

Parameters

max_power_red
- Reduction of maximum BS RF Power (relative to nominal power)
- <0-100>
  - Reduction of maximum BS RF Power in dB
1.17.4  no description

Command

| no description |

Parameters

- no
  - Negate a command or set its defaults

- description
  - Remove description of the object

1.17.5  nominal power <0-100>

Command

| nominal power <0-100> |

Parameters

- nominal
  - Nominal TRX RF Power in dBm

- power
  - Nominal TRX RF Power in dBm

- <0-100>
  - Nominal TRX RF Power in dBm

1.17.6  rf_locked (0|1)

Command

| rf_locked (0|1) |

Parameters

- rf_locked
  - Set or unset the RF Locking (Turn off RF of the TRX)

- 0
  - TRX is NOT RF locked (active)

- 1
  - TRX is RF locked (turned off)
1.17.7  rsl e1 line E1_LINE timeslot <1-31> sub-slot (0|1|2|3|full)

Command
```
  rsl e1 line E1_LINE timeslot <1-31> sub-slot (0|1|2|3|full)
```

Parameters
- **rsl**: RSL Parameters
- **e1**: E1/T1 interface to be used for RSL
- **line**: E1/T1 interface to be used for RSL
- **E1_LINE**: E1/T1 Line Number to be used for RSL
- **timeslot**: E1/T1 Timeslot to be used for RSL
- **<1-31>**: E1/T1 Timeslot to be used for RSL
- **sub-slot**: E1/T1 Sub-slot to be used for RSL
  - **0**: E1/T1 Sub-slot 0 is to be used for RSL
  - **1**: E1/T1 Sub-slot 1 is to be used for RSL
  - **2**: E1/T1 Sub-slot 2 is to be used for RSL
  - **3**: E1/T1 Sub-slot 3 is to be used for RSL
  - **full**: E1/T1 full timeslot is to be used for RSL

1.17.8  rsl e1 tei <0-63>

Command
```
  rsl e1 tei <0-63>
```

Parameters
- **rsl**: RSL Parameters
e1
Set the TEI to be used for RSL
tei
Set the TEI to be used for RSL
<0-63>
   TEI to be used for RSL

1.17.9 timeslot <0-7>

Command
timeslot <0-7>

Parameters
timeslot
   Select a Timeslot to configure
<0-7>
   Timeslot number

1.18 config-net-bts-trx-ts

1.18.1 e1 line E1_LINE timeslot <1-31> sub-slot (0|1|2|3|full)

Command
e1 line E1_LINE timeslot <1-31> sub-slot (0|1|2|3|full)

Parameters
e1
   E1/T1 channel connected to this on-air timeslot
line
   E1/T1 channel connected to this on-air timeslot
E1_LINE
   E1/T1 line connected to this on-air timeslot
timeslot
   E1/T1 timeslot connected to this on-air timeslot
<1-31>
   E1/T1 timeslot connected to this on-air timeslot
sub-slot
   E1/T1 sub-slot connected to this on-air timeslot
0  E1/T1 sub-slot 0 connected to this on-air timeslot
1  E1/T1 sub-slot 1 connected to this on-air timeslot
2  E1/T1 sub-slot 2 connected to this on-air timeslot
3  E1/T1 sub-slot 3 connected to this on-air timeslot
full  Full E1/T1 timeslot connected to this on-air timeslot

1.18.2  hopping arfcn add <0-1023>

Command

```
hopping arfcn add <0-1023>
```

Parameters

hopping
  Configure frequency hopping
arfcn
  Configure hopping ARFCN list
add
  Add an entry to the hopping ARFCN list
<0-1023>
  ARFCN

1.18.3  hopping arfcn del <0-1023>

Command

```
hopping arfcn del <0-1023>
```

Parameters

hopping
  Configure frequency hopping
arfcn
  Configure hopping ARFCN list
del
  Delete an entry to the hopping ARFCN list
<0-1023>
  ARFCN
1.18.4 hopping enabled (0|1)

Command

hopping enabled (0|1)

Parameters

hopping
  Configure frequency hopping
enabled
  Enable or disable frequency hopping
0
  Disable frequency hopping
1
  Enable frequency hopping

1.18.5 hopping maio <0-63>

Command

hopping maio <0-63>

Parameters

hopping
  Configure frequency hopping
maio
  Which hopping MAIO to use for this channel
<0-63>
  Mobile Allocation Index Offset (MAIO)

1.18.6 hopping sequence-number <0-63>

Command

hopping sequence-number <0-63>

Parameters

hopping
  Configure frequency hopping
sequence-number
  Which hopping sequence to use for this channel
<0-63>
  Hopping Sequence Number (HSN)
1.18.7  **phys_chan_config** (none|ccch|ccch+sdcch4|tch/f|tch/h|sdcch8|pdch|tch/f_pdch|unknown)

**Command**

```
phys_chan_config {none|ccch|ccch+sdcch4|tch/f|tch/h|sdcch8|pdch|tch/f_pdch|unknown|ccch ↩
+sdch4+cbch|sdch8+cbch|tch/f_tch/h_pdch}
```

**Parameters**

- **phys-chan_config**
  - Physical Channel Combination

- **none**
  - Physical Channel not configured

- **ccch**
  - FCCH + SCH + BCCH + CCCH (Comb. IV)

- **ccch+sdcch4**
  - FCCH + SCH + BCCH + CCCH + 4 SDCCH + 2 SACCH (Comb. V)

- **tch/f**
  - TCH/F + FACCH/F + SACCH (Comb. I)

- **tch/h**
  - 2 TCH/H + 2 FACCH/H + 2 SACCH (Comb. II)

- **sdcch8**
  - 8 SDCCH + 4 SACCH (Comb. VII)

- **pdch**
  - Packet Data Channel for GPRS/EDGE

- **tch/f_pdch**
  - Dynamic TCH/F or GPRS PDCH

- **unknown**
  - Unknown / Unsupported channel combination

- **ccch+sdcch4+cbch**
  - FCCH + SCH + BCCH + CCCH + CBCH + 3 SDCCH + 2 SACCH (Comb. V)

- **sdcch8+cbch**
  - 7 SDCCH + 4 SACCH + CBCH (Comb. VII)

- **tch/f_tch/h_pdch**
  - Dynamic TCH/F or TCH/H or GPRS PDCH
1.18.8  \texttt{training_sequence_code <0-7>}

Command

\texttt{training_sequence_code <0-7>}

Parameters

\texttt{training_sequence_code}

Training Sequence Code of the Timeslot

\texttt{<0-7>}

TSC

1.19  \texttt{oml}

1.19.1  \texttt{change-adm-state (locked|unlocked|shutdown|null)}

Command

\texttt{change-adm-state (locked|unlocked|shutdown|null)}

Parameters

\texttt{change-adm-state}

Change the Administrative State

\texttt{locked}

Locked

\texttt{unlocked}

Unlocked

\texttt{shutdown}

Shutdown

\texttt{null}

NULL

1.19.2  \texttt{opstart}

Command

\texttt{opstart}

Parameters

\texttt{opstart}

Send an OPSTART message to the object
1.20  config-msc

This node allows to configure the MSC connection related settings.

1.20.1  access-list-name NAME

Command

```
anaccess-list-name NAME
```

Parameters

access-list-name

Set the name of the access list to use.

NAME

The name of the to be used access list.

1.20.2  allow-emergency (allow|deny)

Command

```
allow-emergency (allow|deny)
```

Parameters

allow-emergency

Allow CM ServiceRequests with type emergency

allow

Allow

deny

Deny

1.20.3  amr-config 10_2k (allowed|forbidden)

Command

```
amr-config 10_2k (allowed|forbidden)
```

Parameters

amr-config

AMR Multirate Configuration

10_2k

Bitrate

allowed

Allowed

forbidden

Forbidden
1.20.4  amr-config 12_2k (allowed|forbidden)

Command
```
amr-config 12_2k {allowed|forbidden}
```

Parameters
```
amr-config
   AMR Multirate Configuration
12_2k
   Bitrate
allowed
   Allowed
forbidden
   Forbidden
```

1.20.5  amr-config 4_75k (allowed|forbidden)

Command
```
amr-config 4_75k {allowed|forbidden}
```

Parameters
```
amr-config
   AMR Multirate Configuration
4_75k
   Bitrate
allowed
   Allowed
forbidden
   Forbidden
```

1.20.6  amr-config 5_15k (allowed|forbidden)

Command
```
amr-config 5_15k {allowed|forbidden}
```

Parameters
```
amr-config
   AMR Multirate Configuration
```
5_15k
   Bitrate
allowed
   Allowed
forbidden
   Forbidden

1.20.7  amr-config 5_90k (allowed|forbidden)

Command
   amr-config 5_90k (allowed|forbidden)

Parameters
amr-config
   AMR Multirate Configuration
5_90k
   Bitrate
allowed
   Allowed
forbidden
   Forbidden

1.20.8  amr-config 6_70k (allowed|forbidden)

Command
   amr-config 6_70k (allowed|forbidden)

Parameters
amr-config
   AMR Multirate Configuration
6_70k
   Bitrate
allowed
   Allowed
forbidden
   Forbidden
1.20.9  amr-config 7_40k (allowed|forbidden)

Command
```
amr-config 7_40k (allowed|forbidden)
```

Parameters
amr-config
AMR Multirate Configuration
7_40k
Bitrate
allowed
Allowed
forbidden
Forbidden

1.20.10  amr-config 7_95k (allowed|forbidden)

Command
```
amr-config 7_95k (allowed|forbidden)
```

Parameters
amr-config
AMR Multirate Configuration
7_95k
Bitrate
allowed
Allowed
forbidden
Forbidden

1.20.11  amr-payload (octet-aligned|bandwith-efficient)

Command
```
amr-payload (octet-aligned|bandwith-efficient)
```

Parameters
amr-payload
Set AMR payload framing mode
octet-aligned
payload fields aligned on octet boundaries
bandwith-efficient
payload fields packed (AoIP)
**1.20.12 asp-protocol (m3ua|sua|ipa)**

**Command**

```
asp-protocol (m3ua|sua|ipa)
```

**Parameters**

- `asp-protocol`
  A interface protocol to use for this MSC
- `m3ua`
  MTP3 User Adaptation
- `sua`
  SCCP User Adaptation
- `ipa`
  IPA Multiplex (SCCP Lite)

**1.20.13 bsc-addr NAME**

**Command**

```
bsc-addr NAME
```

**Parameters**

- `bsc-addr`
  Calling Address (local address of this BSC)
- `NAME`
  SCCP address name

**1.20.14 bsc-grace-text .TEXT**

**Command**

```
bsc-grace-text .TEXT
```

**Parameters**

- `bsc-grace-text`
  Set the USSD notification to be sent when the MSC has entered the grace period
- `TEXT`
  Text to be sent
1.20.15  `bsc-msc-lost-text .TEXT`

Command

```
bsc-msc-lost-text .TEXT
```

Parameters

`bsc-msc-lost-text`

Set the USSD notification to be sent on MSC connection loss

`.TEXT`

Text to be sent

1.20.16  `bsc-welcome-text .TEXT`

Command

```
bsc-welcome-text .TEXT
```

Parameters

`bsc-welcome-text`

Set the USSD notification to be sent

`.TEXT`

Text to be sent

1.20.17  `codec-list .LIST`

Command

```
codec-list .LIST
```

Parameters

`codec-list`

Set the allowed audio codecs

`.LIST`

List of audio codecs, e.g. fr3 fr1 hr3

1.20.18  `core-cell-identity <0-65535>`

Command

```
core-cell-identity <0-65535>
```

Parameters

`core-cell-identity`

Use this cell identity for the core network

`<0-65535>`

CI value
1.20.19  core-location-area-code <0-65535>

Command

```
core-location-area-code <0-65535>
```

Parameters

core-location-area-code

Use this location area code for the core network

<0-65535>

LAC value

1.20.20  core-mobile-country-code <1-999>

Command

```
core-mobile-country-code <1-999>
```

Parameters

core-mobile-country-code

Use this country code for the core network

<1-999>

MCC value

1.20.21  core-mobile-network-code <1-999>

Command

```
core-mobile-network-code <1-999>
```

Parameters

core-mobile-network-code

Use this network code for the core network

<1-999>

MNC value
1.20.22  ip.access rtp-base <1-65000>

Command

```
   ip.access rtp-base <1-65000>
```

Parameters

- **ip.access**
  - IP.ACCESS specific
- **rtp-base**
  - Set the rtp-base port for the RTP stream
- **<1-65000>**
  - Port number

1.20.23  lcls-codec-mismatch (allowed|forbidden)

Command

```
   lcls-codec-mismatch (allowed|forbidden)
```

Parameters

- **lcls-codec-mismatch**
  - Allow 3GPP LCLS (Local Call, Local Switch) when call legs use different codec/rate
- **allowed**
  - Allow LCLS only only for calls that use the same codec/rate on both legs
- **forbidden**
  - Do not Allow LCLS for calls that use a different codec/rate on both legs

1.20.24  lcls-mode (disabled|mgw-loop|bts-loop)

Command

```
   lcls-mode (disabled|mgw-loop|bts-loop)
```

Parameters

- **lcls-mode**
  - Configure 3GPP LCLS (Local Call, Local Switch)
- **disabled**
  - Disable LCLS for all calls of this MSC
- **mgw-loop**
  - Enable LCLS with looping traffic in MGW
- **bts-loop**
  - Enable LCLS with looping traffic between BTS
1.20.25  **local-prefix REGEXP**

**Command**

```
local-prefix REGEXP
```

**Parameters**

- **local-prefix**
  - Prefix for local numbers
- **REGEXP**
  - REGEXP used

1.20.26  **mgw endpoint-domain NAME**

**Command**

```
mgw endpoint-domain NAME
```

**Parameters**

- **mgw**
  - Configure MGCP connection to Media Gateway
- **endpoint-domain**
  - Set the domain name to send in MGCP messages, e.g. the part ‘foo’ in ‘rtpbridge/*@foo’.
- **NAME**
  - Domain name, should be alphanumeric.

1.20.27  **mgw local-ip A.B.C.D**

**Command**

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

**Parameters**

- **mgw**
  - Configure MGCP connection to Media Gateway
- **local-ip**
  - local bind to connect to MGW from
- **A.B.C.D**
  - local bind IP address
1.20.28  mgw local-port <0-65535>

Command

```
mgw local-port <0-65535>
```

Parameters

- **mgw**: Configure MGCP connection to Media Gateway
- **local-port**: local port to connect to MGW from
- **<0-65535>**: local bind port

1.20.29  mgw remote-ip A.B.C.D

Command

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

Parameters

- **mgw**: Configure MGCP connection to Media Gateway
- **remote-ip**: remote IP address to reach the MGW at
- **A.B.C.D**: remote IP address

1.20.30  mgw remote-port <0-65535>

Command

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

Parameters

- **mgw**: Configure MGCP connection to Media Gateway
- **remote-port**: remote port to reach the MGW at
- **<0-65535>**: remote port
1.20.31  mgw x-osmo-ign call-id

Command

```
mgw x-osmo-ign call-id
```

Parameters

mgw
Configure MGCP connection to Media Gateway

x-osmo-ign
Set a (non-standard) X-Osmo-IGN header in all CRCX messages for RTP streams associated with this MSC, useful for A/SCCPlite MSCs, since osmo-bsc cannot know the MSC’s chosen CallID. This is enabled by default for A/SCCPlite connections, disabled by default for all others.

call-id
Send ’X-Osmo-IGN: C’ to ignore CallID mismatches. See OsmoMGW.

1.20.32  msc-addr NAME

Command

```
msc-addr NAME
```

Parameters

msc-addr
Called Address (remote address of the MSC)

NAME
SCCP address name

1.20.33  no access-list-name

Command

```
no access-list-name
```

Parameters

no
Negate a command or set its defaults

access-list-name
Remove the access list from the NAT.
1.20.34  no bsc-grace-text

Command

no bsc-grace-text

Parameters

no

Negate a command or set its defaults

bsc-grace-text

Clear the USSD notification to be sent when the MSC has entered the grace period

1.20.35  no bsc-msc-lost-text

Command

no bsc-msc-lost-text

Parameters

no

Negate a command or set its defaults

bsc-msc-lost-text

Clear the USSD notification to be sent on MSC connection loss

1.20.36  no bsc-welcome-text

Command

no bsc-welcome-text

Parameters

no

Negate a command or set its defaults

bsc-welcome-text

Clear the USSD notification to be sent
1.20.37  no mgw x-osmo-ign

Command

```
no mgw x-osmo-ign
```

Parameters

no

Negate a command or set its defaults

mgw

Configure MGCP connection to Media Gateway

x-osmo-ign

Do not send X-Osmo-IGN MGCP header to this MSC

1.20.38  osmux (on|off|only)

Command

```
osmux {on|off|only}
```

Parameters

osmux

RTP multiplexing

on

Enable OSMUX

off

Disable OSMUX

only

Only use OSMUX

1.20.39  type (normal|local)

Command

```
type (normal|local)
```

Parameters

type

Select the MSC type

normal

Plain GSM MSC

local

Special MSC for local call routing
1.21  om2k

1.21.1  capabilities-request

Command

capabilities-request

Parameters

capabilities-request

Request MO capabilities

1.21.2  configuration-request

Command

configuration-request

Parameters

configuration-request

Send the configuration request for current MO

1.21.3  connect-command

Command

connect-command

Parameters

connect-command

Connect the MO

1.21.4  disable-request

Command

disable-request

Parameters

disable-request

Disable the MO
1.21.5 disconnect-command

Command

disconnect-command

Parameters

disconnect-command

Disconnect the MO

1.21.6 enable-request

Command

enable-request

Parameters

enable-request

Enable the MO

1.21.7 operational-info <0-1>

Command

operational-info <0-1>

Parameters

operational-info

Set operational information

<0-1>

Set operational info to 0 or 1

1.21.8 reset-command

Command

reset-command

Parameters

reset-command

Reset the MO
1.21.9  start-request

Command

```
start-request
```

Parameters

start-request
Start the MO

1.21.10  status-request

Command

```
status-request
```

Parameters

status-request
Get the MO Status

1.21.11  test-request

Command

```
test-request
```

Parameters

test-request
Test the MO

1.22  om2k-con-group

1.22.1  con-path (add|del) <0-2047> <0-255> concentrated <1-16>

Command

```
con-path (add|del) <0-2047> <0-255> concentrated <1-16>
```

Parameters

con-path
CON Path (In/Out)
add
  Add CON Path to Concentration Group

del
  Delete CON Path from Concentration Group

<0-2047>
  CON Connection Point

<0-255>
  Contiguity Index

concentrated
  Concentrated in/outlet

<1-16>
  Tag Number

1.22.2  con-path (add|del) <0-2047> <0-255> deconcentrated <0-63>

Command

con-path (add|del) <0-2047> <0-255> deconcentrated <0-63>

Parameters

con-path
  CON Path (In/Out)

add
  Add CON Path to Concentration Group

del
  Delete CON Path from Concentration Group

<0-2047>
  CON Connection Point

<0-255>
  Contiguity Index

deconcentrated
  De-concentrated in/outlet

<0-63>
  TEI Value

1.23  config-bsc

This node allows to configure the BSC connection related settings.
1.23.1 access-list NAME imsi-allow [REGEXP]

Command

```
access-list NAME imsi-allow [REGEXP]
```

Parameters
access-list
  Access list commands
NAME
  Name of the access list
imsi-allow
  Add allowed IMSI to the list
[REGEXP]
  Regexp for IMSIs

1.23.2 access-list NAME imsi-deny [REGEXP] (<0-256>) (<0-256>)

Command

```
access-list NAME imsi-deny [REGEXP] (<0-256>) (<0-256>)
```

Parameters
access-list
  Access list commands
NAME
  Name of the access list
imsi-deny
  Add denied IMSI to the list
[REGEXP]
  Regexp for IMSIs
<0-256>
  CM Service Reject reason
<0-256>
  LU Reject reason
1.23.3 access-list-name NAME

Command

```
access-list-name NAME
```

Parameters

access-list-name

Set the name of the access list to use.

NAME

The name of the to be used access list.

1.23.4 bsc-auto-rf-off <1-65000>

Command

```
bsc-auto-rf-off <1-65000>
```

Parameters

bsc-auto-rf-off

Disable RF on MSC Connection

<1-65000>

Timeout

1.23.5 bsc-rf-socket PATH

Command

```
bsc-rf-socket PATH
```

Parameters

bsc-rf-socket

Set the filename for the RF control interface.

PATH

RF Control path

1.23.6 mid-call-text .TEXT

Command

```
mid-call-text .TEXT
```

Parameters

mid-call-text

Set the USSD notification sent to running calls when switching from Grace to Off.

.TEXT

Text to be sent
1.23.7  mid-call-timeout NR

Command

```
mid-call-timeout NR
```

Parameters

mid-call-timeout

Switch from Grace to Off in NR seconds.

NR

Timeout in seconds

1.23.8  missing-msc-text .TEXT

Command

```
missing-msc-text .TEXT
```

Parameters

missing-msc-text

Set the USSD notification to be send when a MSC has not been found.

.TEXT

Text to be sent

1.23.9  no access-list NAME

Command

```
no access-list NAME
```

Parameters

no

Negate a command or set its defaults

access-list

Remove an access-list by name

NAME

The access-list to remove
1.23.10  no access-list-name

Command

```
no access-list-name
```

Parameters

no

Negate a command or set its defaults

access-list-name

Remove the access list from the BSC

1.23.11  no bsc-auto-rf-off

Command

```
no bsc-auto-rf-off
```

Parameters

no

Negate a command or set its defaults

bsc-auto-rf-off

Disable RF on MSC Connection

1.23.12  no missing-msc-text

Command

```
no missing-msc-text
```

Parameters

no

Negate a command or set its defaults

missing-msc-text

Clear the USSD notification to be send when a MSC has not been found.
1.24 config-cbc

1.24.1 listen-ip A.B.C.D

Command

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

Parameters

- **listen-ip**
  - Local IP Address where BSC listens for incoming CBC connections (Default: 0.0.0.0)
  - **A.B.C.D**
  - Local IP Address where BSC listens for incoming CBC connections

1.24.2 listen-port <1-65535>

Command

```
listen-port <1-65535>
```

Parameters

- **listen-port**
  - Local TCP port at which BSC listens for incoming CBSP connections from CBC
  - **<1-65535>**
  - Local TCP port at which BSC listens for incoming CBSP connections from CBC

1.24.3 no listen-port

Command

```
no listen-port
```

Parameters

- **no**
  - Negate a command or set its defaults
  - **listen-port**
  - Remove CBSP Listen Port; disables inbound CBSP connections
1.24.4 no remote-ip

Command

```
no remote-ip
```

Parameters

`no`

Negate a command or set its defaults

`remote-ip`

Remove IP address of CBC; disables outbound CBSP connections

1.24.5 remote-ip A.B.C.D

Command

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

Parameters

`remote-ip`

IP Address of the Cell Broadcast Centre

A.B.C.D

IP Address of the Cell Broadcast Centre

1.24.6 remote-port <1-65535>

Command

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

Parameters

`remote-port`

TCP Port number of the Cell Broadcast Centre (Default: 48049)

<1-65535>

TCP Port number of the Cell Broadcast Centre (Default: 48049)