OsmoBSC VTY Reference

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COLLABORATORS

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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.

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

Table 1.1: VTY Parameter Patterns

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

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

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

Table 1.2: VTY port numbers

1.1   Common Commands

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

1.1.1 **end**

Command

```
end
```

Parameters

end

    End current mode and change to enable mode.

1.1.2 **exit**

Command

```
exit
```

Parameters

exit

    Exit current mode and down to previous mode

1.1.3 **help**

Command

```
help
```

Parameters

help

    Description of the interactive help system

1.1.4 **list [with-flags]**

Command

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

Parameters

list

    Print command list

[with-flags]

    Also print the VTY attribute flags

1.1.5 show running-config

Command

```
show running-config
```

Parameters

show
    Show running system information

running-config
    running configuration

1.1.6 show vty-attributes

Command

```
show vty-attributes
```

Parameters

show
    Show running system information

vty-attributes
    List of VTY attributes

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

Command

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

Parameters

show
    Show running system information

vty-attributes
    List of VTY attributes

application
    Application specific attributes only

library
    Library specific attributes only

global
    Global attributes only

1.1.8 write

Command

```
write
```

Parameters

write

    Write running configuration to memory, network, or terminal

1.1.9 write file [PATH]

Command

```
write file [PATH]
```

Parameters

write

    Write running configuration to memory, network, or terminal

file

    Write to configuration file

[PATH]

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

1.1.10 write memory

Command

```
write memory
```

Parameters

write

    Write running configuration to memory, network, or terminal

memory

    Write configuration to the file (same as write file)

1.1.11 write terminal

Command

```
write terminal
```

Parameters

write

>   Write running configuration to memory, network, or terminal

terminal

>   Write to terminal

1.2 view

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

1.2.1 enable [expert-mode]

Command

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

Parameters

enable

>   Turn on privileged mode command

[expert-mode]

>   Enable the expert mode (show hidden commands)

1.2.2 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|lcs|asci|reset|loop|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats| ←╴
    lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal| ←╴
    liuup|lpfcp|lcsn1|lio) (debug|info|notice|error|fatal)
```

Parameters

logging

    Configure logging

level

    Set the log level for a specified category

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

lcs

    Location Services

asci

    Advanced Speech Call Items (VGCS/VBS)

reset

> RESET/ACK on A and Lb interfaces

loop

> Control loops

lglobal

> Library-internal global log family

llapd

> LAPD in libosmogsm

linp

> A-bis Intput Subsystem

lmux

> A-bis B-Subchannel TRAU Frame Multiplex

lmi

> A-bis Input Driver for Signalling

lmib

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

lsms

> Layer3 Short Message Service (SMS)

lctrl

> Control Interface

lgtp

> GPRS GTP library

lstats

> Statistics messages and logging

lgsup

> Generic Subscriber Update Protocol

loap

> Osmocom Authentication Protocol

lss7

> libosmo-sigtran Signalling System 7

lsccp

> libosmo-sigtran SCCP Implementation

lsua

> libosmo-sigtran SCCP User Adaptation

lm3ua

> libosmo-sigtran MTP3 User Adaptation

lmgcp

> libosmo-mgcp Media Gateway Control Protocol

ljibuf

  libosmo-netif Jitter Buffer

lrspro

  Remote SIM protocol

lns

  GPRS NS layer

lbssgp

  GPRS BSSGP layer

lnsdata

  GPRS NS layer data PDU

lnssignal

  GPRS NS layer signal PDU

liuup

  Iu UP layer

lpfcp

  libosmo-pfcp Packet Forwarding Control Protocol

lcsn1

  libosmo-csn1 Concrete Syntax Notation 1 codec

lio

  libosmocore IO Subsystem

debug

  Log debug messages and higher levels

info

  Log informational messages and higher levels

notice

  Log noticeable messages and higher levels

error

  Log error messages and higher levels

fatal

  Log only fatal messages

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 YYYYMMDDhhmmssnnn

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 print thread-id (0|1)

Command

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

Parameters

logging
    Configure logging

print
    Log output settings

thread-id
    Configure log message logging Thread ID

0
    Don't prefix each log message

1
    Prefix each log message with current Thread ID

1.2.16   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

1.2.17   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

1.2.18   logp (rll|mm|rr|rsl|nm|pag|meas|msc|ho|hodec|ref|ctrl|filter|pcu|lcls|chan|ts|as...

Command

```
logp (rll|mm|rr|rsl|nm|pag|meas|msc|ho|hodec|ref|ctrl|filter|pcu|lcls|chan|ts|as|cbs| ←
    lcs|asci|reset|loop|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup| ←
    loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal|liuup| ←
    lpfcp|lcsn1|lio) (debug|info|notice|error|fatal) .LOGMESSAGE
```

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

lcs

Location Services

asci

Advanced Speech Call Items (VGCS/VBS)

reset

RESET/ACK on A and Lb interfaces

loop

Control loops

lglobal

Library-internal global log family

llapd

LAPD in libosmogsm

linp

A-bis Intput Subsystem

lmux

A-bis B-Subchannel TRAU Frame Multiplex

lmi

A-bis Input Driver for Signalling

lmib

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

lsms

Layer3 Short Message Service (SMS)

lctrl

Control Interface

lgtp

GPRS GTP library

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

    libosmo-sigtran SCCP User Adaptation

lm3ua

    libosmo-sigtran MTP3 User Adaptation

lmgcp

    libosmo-mgcp Media Gateway Control Protocol

ljibuf

    libosmo-netif Jitter Buffer

lrspro

    Remote SIM protocol

lns

    GPRS NS layer

lbssgp

    GPRS BSSGP layer

lnsdata

    GPRS NS layer data PDU

lnssignal

    GPRS NS layer signal PDU

liuup

    Iu UP layer

lpfcp

    libosmo-pfcp Packet Forwarding Control Protocol

lcsn1

    libosmo-csn1 Concrete Syntax Notation 1 codec

lio

    libosmocore IO Subsystem

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

.LOGMESSAGE

    Arbitrary message to log on given category and log level

1.2.19   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>'

1.2.20   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 <0-65535> fail-rep [reset]

Command

```
show bts <0-65535> fail-rep [reset]
```

Parameters

show

Show running system information

bts

Display information about a BTS

<0-65535>

BTS number

fail-rep

OML failure reports

[reset]

Clear the list of failure reports after showing them

1.2.23 show bts <0-65535> neighbor arfcn <0-1023> bsic (<0-63>|any)

Command

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

Parameters

show

Show running system information

bts

Display information about a BTS

<0-65535>

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 <0-65535> om2k-mo

Command

```
show bts <0-65535> om2k-mo
```

Parameters

show

   Show running system information

bts

   Display information about a BTS

<0-65535>

   BTS number

om2k-mo

   OM2000 Managed Object information

1.2.25   show bts <0-65535> smscb [(basic|extended)]

Command

```
show bts <0-65535> smscb [(basic|extended)]
```

Parameters

show

   Show running system information

bts

   Display information about a BTS

<0-65535>

   BTS number

smscb

   SMS Cell Broadcast State

[basic]

   Show only information related to CBCH BASIC

[extended]

   Show only information related to CBCH EXTENDED

1.2.26   show bts [<0-65535>]

Command

```
show bts [<0-65535>]
```

Parameters

show

    Show running system information

bts

    Display information about a BTS

[<0-65535>]

    BTS number

1.2.27   show bts brief

Command

```
show bts brief
```

Parameters

show

    Show running system information

bts

    Display information about a BTS

brief

    Display availability status of all BTS

1.2.28   show cbc

Command

```
show cbc
```

Parameters

show

    Show running system information

cbc

    Display state of CBC / CBSP

1.2.29 show conns

Command

```
show conns
```

Parameters

show

Show running system information

conns

Display currently active subscriber connections

1.2.30 show cpu-sched threads

Command

```
show cpu-sched threads
```

Parameters

show

Show running system information

cpu-sched

Show Sched section information

threads

Show information about running threads)

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

sua

SCCP User Adaptation

m3ua

    MTP3 User Adaptation

ipa

    IPA Multiplex (SCCP Lite)

sctp

    SCTP (Stream Control Transmission Protocol)

tcp

    TCP (Transmission Control Protocol)

[<0-65534>]

    Local Port Number

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

Command

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

Parameters

show

    Show running system information

cs7

    ITU-T Signaling System 7

sua

    SCCP User Adaptation

m3ua

    MTP3 User Adaptation

ipa

    IPA Multiplex (SCCP Lite)

[<0-65534>]

    Local Port Number

1.2.33   show cs7 config

Command

```
show cs7 config
```

Parameters

show

    Show running system information

cs7

    ITU-T Signaling System 7

config

    Currently running cs7 configuration

1.2.34 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

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

  An instance of the SS7 stack

as

  Application Server (AS)

binding-table

  Display binding table

name

  Look up AS with a given name

AS_NAME

  Name of the Application Server (AS)

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

Command

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

Parameters

show

  Show running system information

cs7

  ITU-T Signaling System 7

instance

  An instance of the SS7 stack

<0-15>

  An instance of the SS7 stack

as

  Application Server (AS)

name

  Look up AS with a given name

AS_NAME

  Name of the Application Server (AS)

1.2.37 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)

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp

Application Server Process (ASP)

name

Lookup ASP with a given name

ASP_NAME

Name of the Application Server Process (ASP)

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp-assoc-status

Application Server Process (ASP) SCTP association status

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp-assoc-status

Application Server Process (ASP) SCTP association information

name

Lookup ASP with a given name

ASP_NAME

Name of the Application Server Process (ASP)

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp-remaddr

Application Server Process (ASP) remote addresses information

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp-remaddr

Application Server Process (ASP) remote addresses information

name

Lookup ASP with a given name

ASP_NAME

Name of the Application Server Process (ASP)

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

Command

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

Parameters

show

    Show running system information

cs7

    ITU-T Signaling System 7

instance

    An instance of the SS7 stack

<0-15>

    An instance of the SS7 stack

route

    Routing Table

[POINT_CODE]

    Destination Point Code

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

Command

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

Parameters

show

    Show running system information

cs7

    ITU-T Signaling System 7

instance

    An instance of the SS7 stack

<0-15>

    An instance of the SS7 stack

route

    Routing Table

binding-table

    Display binding table

[POINT_CODE]

    Destination Point Code

[all-matches]

    Display all matching Combination Links

1.2.45 show cs7 instance <0-15> route-lookup POINT_CODE from POINT_CODE sls <0-15> [lis...

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

route-lookup

Look up route

POINT_CODE

Destination PC

from

From

POINT_CODE

Origin PC

sls

SLS

<0-15>

SLS value

[list-asps]

List ASPs of the AS if route points to an AS

1.2.46 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

1.2.47 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

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

Command

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

Parameters

<0-15>

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)

1.2.49   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

1.2.50   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

1.2.51   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

1.2.52   show e1_driver

Command

```
show e1_driver
```

Parameters

show

Show running system information

e1_driver

Display information about available E1 drivers

1.2.53   show e1_line [<0-255>] [stats]

Command

```
show e1_line [<0-255>] [stats]
```

Parameters

show

Show running system information

e1_line

Display information about a E1 line

[<0-255>]

E1 Line Number

[stats]

Include statistics

1.2.54   show e1_timeslot [<0-255>] [<0-31>]

Command

```
show e1_timeslot [<0-255>] [<0-31>]
```

Parameters

show

Show running system information

e1_timeslot

Display information about a E1 timeslot

[<0-255>]

E1 Line Number

[<0-31>]

E1 Timeslot Number

1.2.55 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

1.2.56 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

1.2.57 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

1.2.58   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

1.2.59   show fsm-state-graph NAME

Command

```
show fsm-state-graph NAME
```

Parameters

show

Show running system information

fsm-state-graph

Generate a state transition graph (using DOT language)

NAME

FSM name

1.2.60   show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

1.2.61   show lchan [<0-65535>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan [<0-65535>] [<0-255>] [<0-7>] [<0-7>]
```

Parameters

show

    Show running system information

lchan

    Display information about a logical channel

[<0-65535>]

    BTS Number

[<0-255>]

    TRX Number

[<0-7>]

    Timeslot Number

[<0-7>]

    Logical Channel Number

1.2.62   show lchan summary [<0-65535>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan summary [<0-65535>] [<0-255>] [<0-7>] [<0-7>]
```

Parameters

show

    Show running system information

lchan

    Display information about a logical channel

summary

    Short summary (used lchans)

[<0-65535>]

    BTS Number

[<0-255>]

    TRX Number

[<0-7>]

    Timeslot Number

[<0-7>]

    Logical Channel Number

1.2.63   show lchan summary-all [<0-65535>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan summary-all [<0-65535>] [<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)

[<0-65535>]

BTS Number

[<0-255>]

TRX Number

[<0-7>]

Timeslot Number

[<0-7>]

Logical Channel Number

1.2.64   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

1.2.65   show mgw-pool

Command

```
show mgw-pool
```

Parameters

show

  Show running system information

mgw-pool

  Display information about the MGW-Pool

1.2.66   show mscs

Command

```
show mscs
```

Parameters

show

  Show running system information

mscs

  MSC Connections and State

1.2.67   show network

Command

```
show network
```

Parameters

show

  Show running system information

network

  Display information about a GSM NETWORK

1.2.68   show nri [<0-1000>]

Command

```
show nri [<0-1000>]
```

Parameters

show

>   Show running system information

nri

>   Mapping of Network Resource Indicators, for MSC pooling

[<0-1000>]

>   Optional MSC number to limit to

1.2.69   show online-help

Command

```
show online-help
```

Parameters

show

>   Show running system information

online-help

>   Online help

1.2.70   show paging [<0-65535>]

Command

```
show paging [<0-65535>]
```

Parameters

show

>   Show running system information

paging

>   Display information about paging requests of a BTS

[<0-65535>]

>   BTS Number

1.2.71 show paging-group <0-65535> IMSI

Command

```
show paging-group <0-65535> IMSI
```

Parameters

show

Show running system information

paging-group

Display the paging group

<0-65535>

BTS Number

IMSI

IMSI

1.2.72 show pid

Command

```
show pid
```

Parameters

show

Show running system information

pid

Displays the process ID

1.2.73 show position

Command

```
show position
```

Parameters

show

Show running system information

position

Position information of the BTS

1.2.74 show rate-counters [skip-zero]

Command

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

Parameters

show
    Show running system information

rate-counters
    Show all rate counters

[skip-zero]
    Skip items with total count zero

1.2.75 show rejected-bts

Command

```
show rejected-bts
```

Parameters

show
    Show running system information

rejected-bts
    Display recently rejected BTS devices

1.2.76 show runtime

Command

```
show runtime
```

Parameters

show
    Show running system information

runtime
    Display runtime information

1.2.77   show statistics

Command

```
show statistics
```

Parameters

show

Show running system information

statistics

Statistics about the BSC

1.2.78   show stats [skip-zero]

Command

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

Parameters

show

Show running system information

stats

Show statistical values

[skip-zero]

Skip items with total count zero

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

Command

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

Parameters

show

Show running system information

stats

Show statistical values

level

Set the maximum group level

global

    Show global groups only

peer

    Show global and network peer related groups

subscriber

    Show global, peer, and subscriber groups

[skip-zero]

    Skip items with total count zero

1.2.80 show subscriber all

Command

```
show subscriber all
```

Parameters

show

    Show running system information

subscriber

    Display information about subscribers

all

    All Subscribers

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

Command

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

Parameters

show

    Show running system information

talloc-context

    Show talloc memory hierarchy

application

    Application's context

global

    Global context (OTC_GLOBAL)

all

    All contexts, if NULL-context tracking is enabled

full

    Display a full talloc memory hierarchy

brief

    Display a brief talloc memory hierarchy

DEPTH

    Specify required maximal depth value

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

Command

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

Parameters

show

    Show running system information

talloc-context

    Show talloc memory hierarchy

application

    Application's context

global

    Global context (OTC_GLOBAL)

all

    All contexts, if NULL-context tracking is enabled

full

    Display a full talloc memory hierarchy

brief

    Display a brief talloc memory hierarchy

DEPTH

    Specify required maximal depth value

filter

    Filter chunks using regular expression

REGEXP

    Regular expression

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

Command

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

Parameters

show

> Show running system information

talloc-context

> Show talloc memory hierarchy

application

> Application's context

global

> Global context (OTC_GLOBAL)

all

> All contexts, if NULL-context tracking is enabled

full

> Display a full talloc memory hierarchy

brief

> Display a brief talloc memory hierarchy

DEPTH

> Specify required maximal depth value

tree

> Display only a specific memory chunk

ADDRESS

> Chunk address (e.g. 0xdeadbeef)

1.2.84 show timer [(net|mgw)] [TNNNN]

Command

```
show timer [(net|mgw)] [TNNNN]
```

Parameters

show

> Show running system information

timer

> Show timers

[net]

GSM network

[mgw]

MGW (Media Gateway) interface

[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'.

1.2.85 show timeslot [<0-65535>] [<0-255>] [<0-7>]

Command

```
show timeslot [<0-65535>] [<0-255>] [<0-7>]
```

Parameters

show

Show running system information

timeslot

Display information about a TS

[<0-65535>]

BTS Number

[<0-255>]

TRX Number

[<0-7>]

Timeslot Number

1.2.86 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

1.2.87 show trx [<0-65535>] [<0-255>]

Command

```
show trx [<0-65535>] [<0-255>]
```

Parameters

show
    Show running system information

trx
    Display information about a TRX

[<0-65535>]
    BTS Number

[<0-255>]
    TRX Number

1.2.88 show uptime

Command

```
show uptime
```

Parameters

show
    Show running system information

uptime
    Displays how long the program has been running

1.2.89 show version

Command

```
show version
```

Parameters

show
    Show running system information

version
    Displays program version

1.2.90   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)

1.2.91   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

1.2.92   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 <0-65535> c0-power-reduction <0-6>

Command

```
bts <0-65535> c0-power-reduction <0-6>
```

Parameters

bts

 BTS Specific Commands

<0-65535>

 BTS Number

c0-power-reduction

 BCCH carrier power reduction operation

<0-6>

 Power reduction value (in dB, even numbers only)

1.3.3   bts <0-65535> om2000 class (trxc|tg|ts|tf|is|con|dp|mctr|cf|tx|rx) <0-255> <0-25...

Command

```
bts <0-65535> om2000 class (trxc|tg|ts|tf|is|con|dp|mctr|cf|tx|rx) <0-255> <0-255>  ←
    <0-255>
```

Parameters

bts

    BTS related commands

<0-65535>

    BTS Number

om2000

    Manipulate the OM2000 managed objects

class

    Object Class

trxc

    TRX Controller

tg

    Trunk Group

ts

    Timeslot

tf

    Timing Function

is

    Interface Switch

con

    Abis Concentrator

dp

    Digital Path

mctr

    Multi Carrier Transceiver

cf

    Central Function

tx

    Transmitter

rx

    Receiver

<0-255>

    BTS Number

<0-255>

    Associated SO Instance

<0-255>

    Instance Number

1.3.4   bts <0-65535> om2000 class <0-255> <0-255> <0-255> <0-255>

Command

```
bts <0-65535> om2000 class <0-255> <0-255> <0-255> <0-255>
```

Parameters

bts

   BTS related commands

<0-65535>

   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

1.3.5   bts <0-65535> oml class (site-manager|bts|radio-carrier|baseband-transceiver|cha...

Command

```
bts <0-65535> oml class (site-manager|bts|radio-carrier|baseband-transceiver|channel| ←
    adjc|handover|power-contorl|btse|rack|test|envabtse|bport|gprs-nse|gprs-cell|gprs- ←
    nsvc|siemenshw) instance <0-255> <0-255> <0-255>
```

Parameters

bts

   BTS related commands

<0-65535>

   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-contorl

   Power Control Object (Siemens)

btse

   BTSE Object (Siemens)

rack

   Rack Object (Siemens)

test

   Test Object (Siemens)

envabtse

   ENVABTSE Object (Siemens)

bport

   BPORT Object (Siemens)

gprs-nse

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

gprs-cell

   GPRS Cell Object (ip.acecss/osmo-bts)

gprs-nsvc

   GPRS NSVC Object (ip.acecss/osmo-bts)

siemenshw

   SIEMENSHW Object (Siemens)

instance

   Object Instance

<0-255>

    BTS Number

<0-255>

    TRX Number

<0-255>

    TS Number

1.3.6 bts <0-65535> oml class <0-255> instance <0-255> <0-255> <0-255>

Command

```
bts <0-65535> oml class <0-255> instance <0-255> <0-255> <0-255>
```

Parameters

bts

    BTS related commands

<0-65535>

    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

1.3.7   bts <0-65535> resend-power-control-defaults

Command

```
bts <0-65535> resend-power-control-defaults
```

Parameters

bts

BTS Specific Commands

<0-65535>

BTS Number

resend-power-control-defaults

Re-generate + re-send default MS/BS Power control parameters

1.3.8   bts <0-65535> resend-system-information

Command

```
bts <0-65535> resend-system-information
```

Parameters

bts

BTS Specific Commands

<0-65535>

BTS Number

resend-system-information

Re-generate + re-send BCCH SYSTEM INFORMATION

1.3.9   bts <0-65535> trx <0-255> timeslot <0-7> (sub-slot|vamos-sub-slot) <0-7> (activa...

Command

```
bts <0-65535> trx <0-255> timeslot <0-7> (sub-slot|vamos-sub-slot) <0-7> (activate| ↵
    activate-vamos) (hr|fr|efr|amr|sig) [<0-7>]
```

Parameters

bts

BTS for manual command

<0-65535>

BTS Number

trx

TRX for manual command

<0-255>

TRX Number

timeslot

Timeslot for manual command

<0-7>

Timeslot Number

sub-slot

Primary sub-slot

vamos-sub-slot

VAMOS secondary shadow subslot, range <0-1>, only valid for TCH type timeslots

<0-7>

Sub-slot Number

activate

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

activate-vamos

Manual Channel Activation, in VAMOS mode

hr

Half-Rate v1

fr

Full-Rate

efr

Enhanced Full Rate

amr

Adaptive Multi-Rate

sig

Signalling

[<0-7>]

AMR Mode

1.3.10   bts <0-65535> trx <0-255> timeslot <0-7> (sub-slot|vamos-sub-slot) <0-7> deactiv...

Command

```
bts <0-65535> trx <0-255> timeslot <0-7> (sub-slot|vamos-sub-slot) <0-7> deactivate
```

Parameters

bts

 BTS for manual command

<0-65535>

 BTS Number

trx

 TRX for manual command

<0-255>

 TRX Number

timeslot

 Timeslot for manual command

<0-7>

 Timeslot Number

sub-slot

 Primary sub-slot

vamos-sub-slot

 VAMOS secondary shadow subslot, range <0-1>, only valid for TCH type timeslots

<0-7>

 Sub-slot Number

deactivate

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

1.3.11   bts <0-65535> trx <0-255> timeslot <0-7> (sub-slot|vamos-sub-slot) <0-7> reassig...

Command

```
bts <0-65535> trx <0-255> timeslot <0-7> (sub-slot|vamos-sub-slot) <0-7> reassign-to  ↩
    trx <0-255> timeslot <0-7> (sub-slot|vamos-sub-slot) <0-7> [tsc] [<1-4>] [<0-7>]
```

Parameters

bts

 BTS for manual command

<0-65535>

 BTS Number

trx

 TRX for manual command

<0-255>

 TRX Number

timeslot

 Timeslot for manual command

<0-7>

    Timeslot Number

sub-slot

    Primary sub-slot

vamos-sub-slot

    VAMOS secondary shadow subslot, range <0-1>, only valid for TCH type timeslots

<0-7>

    Sub-slot Number

reassign-to

    Trigger Assignment to an unused lchan on the same cell

trx

    Target TRX

<0-255>

    TRX nr

timeslot

    Target timeslot

<0-7>

    timeslot nr

sub-slot

    Primary sub-slot

vamos-sub-slot

    VAMOS secondary shadow subslot, range <0-1>, only valid for TCH type timeslots

<0-7>

    Sub-slot Number

[tsc]

    Provide specific TSC Set and Training Sequence Code

[<1-4>]

    TSC Set

[<0-7>]

    Training Sequence Code

1.3.12   bts <0-65535> trx <0-255> timeslot <0-7> pdch (activate|deactivate)

Command

```
bts <0-65535> trx <0-255> timeslot <0-7> pdch (activate|deactivate)
```

Parameters

bts

BTS for manual command

<0-65535>

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)

1.3.13 bts <0-65535> trx <0-255> timeslot <0-7> sub-slot <0-7> assignment

Command

```
bts <0-65535> trx <0-255> timeslot <0-7> sub-slot <0-7> assignment
```

Parameters

bts

BTS for manual command

<0-65535>

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)

1.3.14   bts <0-65535> trx <0-255> timeslot <0-7> sub-slot <0-7> handover <0-65535>

Command

```
bts <0-65535> trx <0-255> timeslot <0-7> sub-slot <0-7> handover <0-65535>
```

Parameters

bts

   BTS for manual command

<0-65535>

   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)

<0-65535>

   New BTS Number

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

Command

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

Parameters

bts

   BTS for manual command

<0-65535>

   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

1.3.16 bts <0-65535> trx <0-255> timeslot <0-7> sub-slot <0-7> modify (vamos|non-vamos)...

Command

```
bts <0-65535> trx <0-255> timeslot <0-7> sub-slot <0-7> modify (vamos|non-vamos) [tsc]  ↩
    [<1-4>] [<0-7>]
```

Parameters

bts

   BTS for manual command

<0-65535>

   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

modify

   Manually send Channel Mode Modify (for debugging)

vamos

   Enable VAMOS channel mode

non-vamos

   Disable VAMOS channel mode

[tsc]

   Provide specific TSC Set and Training Sequence Code

[<1-4>]

   TSC Set

[<0-7>]

   Training Sequence Code

1.3.17   bts <0-65535> trx <0-255> timeslot <0-7> sub-slot <0-7> ms-power <0-40> [verify]...

Command

```
bts <0-65535> trx <0-255> timeslot <0-7> sub-slot <0-7> ms-power <0-40> [verify]
```

Parameters

bts

   BTS for manual command

<0-65535>

   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

ms-power

> Manually force MS Uplink Power Level in dBm on the lchan (for testing)

<0-40>

> Set transmit power of the MS in dBm

[verify]

> Check requested level against BAND and UE Power Class.

1.3.18   bts <0-65535> unblock-setup-ramping

Command

```
bts <0-65535> unblock-setup-ramping
```

Parameters

bts

> BTS Specific Commands

<0-65535>

> BTS Number

unblock-setup-ramping

> Unblock and allow to configure a BTS if kept back by BTS ramping

1.3.19   configure [terminal]

Command

```
configure [terminal]
```

Parameters

configure

> Configuration from vty interface

[terminal]

> Configuration terminal

1.3.20 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)

1.3.21 cs7 instance <0-15> asp NAME disconnect

Command

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

Parameters

cs7

ITU-T Signaling System 7

instance

Instance related commands

<0-15>

SS7 Instance Number

asp

ASP related commands

NAME

Name of ASP

disconnect

Disconnect the ASP (client will reconnect)

1.3.22   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

1.3.23   disable

Command

```
disable
```

Parameters

disable
>   Turn off privileged mode command

1.3.24   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

1.3.25   generate-location-state-trap <0-65535>

Command

```
generate-location-state-trap <0-65535>
```

Parameters

generate-location-state-trap

> Generate location state report

<0-65535>

> BTS to report

1.3.26   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.

1.3.27   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

> 'to'

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

1.3.28 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

1.3.29 logging disable

Command

```
logging disable
```

Parameters

logging

    Configure logging

disable

    Disables logging to this vty

1.3.30 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

1.3.31 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

1.3.32   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

1.3.33   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|lcs|asci|reset|loop|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats| ←
    lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal| ←
    liuup|lpfcp|lcsn1|lio) (debug|info|notice|error|fatal)
```

Parameters

logging

    Configure logging

level

    Set the log level for a specified category

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

lcs

    Location Services

asci

    Advanced Speech Call Items (VGCS/VBS)

reset

    RESET/ACK on A and Lb interfaces

loop

    Control loops

lglobal

    Library-internal global log family

llapd

LAPD in libosmogsm

linp

A-bis Intput Subsystem

lmux

A-bis B-Subchannel TRAU Frame Multiplex

lmi

A-bis Input Driver for Signalling

lmib

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

lsms

Layer3 Short Message Service (SMS)

lctrl

Control Interface

lgtp

GPRS GTP library

lstats

Statistics messages and logging

lgsup

Generic Subscriber Update Protocol

loap

Osmocom Authentication Protocol

lss7

libosmo-sigtran Signalling System 7

lsccp

libosmo-sigtran SCCP Implementation

lsua

libosmo-sigtran SCCP User Adaptation

lm3ua

libosmo-sigtran MTP3 User Adaptation

lmgcp

libosmo-mgcp Media Gateway Control Protocol

ljibuf

libosmo-netif Jitter Buffer

lrspro

Remote SIM protocol

lns

GPRS NS layer

lbssgp

    GPRS BSSGP layer

lnsdata

    GPRS NS layer data PDU

lnssignal

    GPRS NS layer signal PDU

liuup

    Iu UP layer

lpfcp

    libosmo-pfcp Packet Forwarding Control Protocol

lcsn1

    libosmo-csn1 Concrete Syntax Notation 1 codec

lio

    libosmocore IO Subsystem

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

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

Command

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

Parameters

logging

    Configure logging

level

    Set the log level for a specified category

force-all

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

debug

>	Log debug messages and higher levels

info

>	Log informational messages and higher levels

notice

>	Log noticeable messages and higher levels

error

>	Log error messages and higher levels

fatal

>	Log only fatal messages

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

Command

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

Parameters

logging

>	Configure logging

level

>	Set the log level for a specified category

set-all

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

debug

>	Log debug messages and higher levels

info

>	Log informational messages and higher levels

notice

>	Log noticeable messages and higher levels

error

>	Log error messages and higher levels

fatal

>	Log only fatal messages

1.3.36   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

1.3.37   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>')

1.3.38   logging print extended-timestamp (0|1)

Command

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

Parameters

logging

   Configure logging

print

   Log output settings

extended-timestamp

   Configure log message timestamping

0

   Don't prefix each log message

1

   Prefix each log message with current timestamp with YYYYMMDDhhmmssnnn

1.3.39   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.

1.3.40   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

1.3.41   logging print thread-id (0|1)

Command

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

Parameters

logging

Configure logging

print

Log output settings

thread-id

Configure log message logging Thread ID

0

Don't prefix each log message

1

Prefix each log message with current Thread ID

1.3.42 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

1.3.43 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

1.3.44 logp (rll|mm|rr|rsl|nm|pag|meas|msc|ho|hodec|ref|ctrl|filter|pcu|lcls|chan|ts|as...

Command

```
logp (rll|mm|rr|rsl|nm|pag|meas|msc|ho|hodec|ref|ctrl|filter|pcu|lcls|chan|ts|as|cbs| ←
    lcs|asci|reset|loop|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats|lgsup| ←
    loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal|liuup| ←
    lpfcp|lcsn1|lio) (debug|info|notice|error|fatal) .LOGMESSAGE
```

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

lcs

    Location Services

asci

    Advanced Speech Call Items (VGCS/VBS)

reset

    RESET/ACK on A and Lb interfaces

loop

    Control loops

lglobal

    Library-internal global log family

llapd

    LAPD in libosmogsm

linp

    A-bis Intput Subsystem

lmux

    A-bis B-Subchannel TRAU Frame Multiplex

lmi

    A-bis Input Driver for Signalling

lmib

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

lsms

    Layer3 Short Message Service (SMS)

lctrl

    Control Interface

lgtp

    GPRS GTP library

lstats

    Statistics messages and logging

lgsup

    Generic Subscriber Update Protocol

loap

    Osmocom Authentication Protocol

lss7

    libosmo-sigtran Signalling System 7

lsccp

    libosmo-sigtran SCCP Implementation

lsua

    libosmo-sigtran SCCP User Adaptation

lm3ua

    libosmo-sigtran MTP3 User Adaptation

lmgcp

    libosmo-mgcp Media Gateway Control Protocol

ljibuf

    libosmo-netif Jitter Buffer

lrspro

    Remote SIM protocol

lns

    GPRS NS layer

lbssgp

    GPRS BSSGP layer

lnsdata

    GPRS NS layer data PDU

lnssignal

    GPRS NS layer signal PDU

liuup

    Iu UP layer

lpfcp

    libosmo-pfcp Packet Forwarding Control Protocol

lcsn1

    libosmo-csn1 Concrete Syntax Notation 1 codec

lio

    libosmocore IO Subsystem

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

.LOGMESSAGE

    Arbitrary message to log on given category and log level

1.3.45   mgw <0-255> block

Command

```
mgw <0-255> block
```

Global attributes

Flag: !

This command applies immediately

Parameters

mgw

Configure MGCP connection to Media Gateway

<0-255>

reference number

block

block MGCP client so that it won't be used for new calls

1.3.46   mgw <0-255> reconnect

Command

```
mgw <0-255> reconnect
```

Global attributes

Flag: !

This command applies immediately

Parameters

mgw

Configure MGCP connection to Media Gateway

<0-255>

reference number

reconnect

reconfigure and reconnect MGCP client

1.3.47   mgw <0-255> unblock

Command

```
mgw <0-255> unblock
```

Global attributes

Flag: !

This command applies immediately

Parameters

mgw

Configure MGCP connection to Media Gateway

<0-255>

reference number

unblock

unblock MGCP client so that it will be available for new calls

1.3.48   msc <0-1000> bssmap reset

Command

```
msc <0-1000> bssmap reset
```

Parameters

msc

Query or manipulate a specific A-interface link

<0-1000>

MSC nr

bssmap

Query or manipulate BSSMAP layer of A-interface

reset

Flip this MSC to disconnected state and re-send BSSMAP RESET

1.3.49 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>'

1.3.50 restart-bts <0-65535>

Command

```
restart-bts <0-65535>
```

Parameters

restart-bts
> Restart ip.access nanoBTS through OML

<0-65535>
> BTS Number

1.3.51 show alarms

Command

```
show alarms
```

Parameters

show
> Show running system information

alarms
> Show current logging configuration

1.3.52   show asciidoc counters

Command

```
show asciidoc counters
```

Parameters

show

Show running system information

asciidoc

Asciidoc generation

counters

Generate table of all registered counters

1.3.53   show bts <0-65535> fail-rep [reset]

Command

```
show bts <0-65535> fail-rep [reset]
```

Parameters

show

Show running system information

bts

Display information about a BTS

<0-65535>

BTS number

fail-rep

OML failure reports

[reset]

Clear the list of failure reports after showing them

1.3.54   show bts <0-65535> neighbor arfcn <0-1023> bsic (<0-63>|any)

Command

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

Parameters

show

Show running system information

bts

Display information about a BTS

<0-65535>

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

1.3.55   show bts <0-65535> om2k-mo

Command

```
show bts <0-65535> om2k-mo
```

Parameters

show

Show running system information

bts

Display information about a BTS

<0-65535>

BTS number

om2k-mo

OM2000 Managed Object information

1.3.56   show bts <0-65535> smscb [(basic|extended)]

Command

```
show bts <0-65535> smscb [(basic|extended)]
```

Parameters

show

   Show running system information

bts

   Display information about a BTS

<0-65535>

   BTS number

smscb

   SMS Cell Broadcast State

[basic]

   Show only information related to CBCH BASIC

[extended]

   Show only information related to CBCH EXTENDED

1.3.57   show bts [<0-65535>]

Command

```
show bts [<0-65535>]
```

Parameters

show

   Show running system information

bts

   Display information about a BTS

[<0-65535>]

   BTS number

1.3.58 show bts brief

Command

```
show bts brief
```

Parameters

show
    Show running system information

bts
    Display information about a BTS

brief
    Display availability status of all BTS

1.3.59 show cbc

Command

```
show cbc
```

Parameters

show
    Show running system information

cbc
    Display state of CBC / CBSP

1.3.60 show conns

Command

```
show conns
```

Parameters

show
    Show running system information

conns
    Display currently active subscriber connections

1.3.61   show cpu-sched threads

Command

```
show cpu-sched threads
```

Parameters

show

   Show running system information

cpu-sched

   Show Sched section information

threads

   Show information about running threads)

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

Command

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

Parameters

show

   Show running system information

cs7

   ITU-T Signaling System 7

sua

   SCCP User Adaptation

m3ua

   MTP3 User Adaptation

ipa

   IPA Multiplex (SCCP Lite)

sctp

   SCTP (Stream Control Transmission Protocol)

tcp

   TCP (Transmission Control Protocol)

[<0-65534>]

   Local Port Number

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

sua

SCCP User Adaptation

m3ua

MTP3 User Adaptation

ipa

IPA Multiplex (SCCP Lite)

[<0-65534>]

Local Port Number

1.3.64 show cs7 config

Command

```
show cs7 config
```

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

config

Currently running cs7 configuration

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

as

Application Server (AS)

active

Display all active ASs

all

Display all ASs (default)

m3ua

Display all m3ua ASs

sua

Display all SUA ASs

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

    An instance of the SS7 stack

as

    Application Server (AS)

binding-table

    Display binding table

name

    Look up AS with a given name

AS_NAME

    Name of the Application Server (AS)

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

Command

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

Parameters

show

    Show running system information

cs7

    ITU-T Signaling System 7

instance

    An instance of the SS7 stack

<0-15>

    An instance of the SS7 stack

as

    Application Server (AS)

name

    Look up AS with a given name

AS_NAME

    Name of the Application Server (AS)

1.3.68   show cs7 instance <0-15> asp

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp

Application Server Process (ASP)

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp

Application Server Process (ASP)

name

Lookup ASP with a given name

ASP_NAME

Name of the Application Server Process (ASP)

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp-assoc-status

Application Server Process (ASP) SCTP association status

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

asp-assoc-status

Application Server Process (ASP) SCTP association information

name

Lookup ASP with a given name

ASP_NAME

Name of the Application Server Process (ASP)

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

Command

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

Parameters

show

    Show running system information

cs7

    ITU-T Signaling System 7

instance

    An instance of the SS7 stack

<0-15>

    An instance of the SS7 stack

asp-remaddr

    Application Server Process (ASP) remote addresses information

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

Command

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

Parameters

show

    Show running system information

cs7

    ITU-T Signaling System 7

instance

    An instance of the SS7 stack

<0-15>

    An instance of the SS7 stack

asp-remaddr

    Application Server Process (ASP) remote addresses information

name

    Lookup ASP with a given name

ASP_NAME

    Name of the Application Server Process (ASP)

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

route

Routing Table

[POINT_CODE]

Destination Point Code

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

Command

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

Parameters

show

Show running system information

cs7

ITU-T Signaling System 7

instance

An instance of the SS7 stack

<0-15>

An instance of the SS7 stack

route

Routing Table

binding-table

Display binding table

[POINT_CODE]

Destination Point Code

[all-matches]

Display all matching Combination Links

1.3.76 show cs7 instance <0-15> route-lookup POINT_CODE from POINT_CODE sls <0-15> [lis...

Command

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

Parameters

show

  Show running system information

cs7

  ITU-T Signaling System 7

instance

  An instance of the SS7 stack

<0-15>

  An instance of the SS7 stack

route-lookup

  Look up route

POINT_CODE

  Destination PC

from

  From

POINT_CODE

  Origin PC

sls

  SLS

<0-15>

  SLS value

[list-asps]

  List ASPs of the AS if route points to an AS

1.3.77 show cs7 instance <0-15> sccp addressbook

Command

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

Parameters

show

  Show running system information

cs7

    ITU-T Signaling System 7

instance

    An instance of the SS7 stack

<0-15>

    An instance of the SS7 stack

sccp

    Signalling Connection Control Part

addressbook

    List all SCCP addressbook entries

1.3.78 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

1.3.79 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)

1.3.80 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

1.3.81   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

1.3.82   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

1.3.83   show e1_driver

Command

```
show e1_driver
```

Parameters

show

   Show running system information

e1_driver

   Display information about available E1 drivers

1.3.84   show e1_line [<0-255>] [stats]

Command

```
show e1_line [<0-255>] [stats]
```

Parameters

show

   Show running system information

e1_line

   Display information about a E1 line

[<0-255>]

   E1 Line Number

[stats]

   Include statistics

1.3.85   show e1_timeslot [<0-255>] [<0-31>]

Command

```
show e1_timeslot [<0-255>] [<0-31>]
```

Parameters

show

   Show running system information

e1_timeslot

   Display information about a E1 timeslot

[<0-255>]

   E1 Line Number

[<0-31>]

   E1 Timeslot Number

1.3.86   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

1.3.87   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

1.3.88   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

1.3.89   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

1.3.90   show fsm-state-graph NAME

Command

```
show fsm-state-graph NAME
```

Parameters

show

Show running system information

fsm-state-graph

Generate a state transition graph (using DOT language)

NAME

FSM name

1.3.91   show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

1.3.92   show lchan [<0-65535>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan [<0-65535>] [<0-255>] [<0-7>] [<0-7>]
```

Parameters

show

Show running system information

lchan

Display information about a logical channel

[<0-65535>]

BTS Number

[<0-255>]

TRX Number

[<0-7>]

Timeslot Number

[<0-7>]

Logical Channel Number

1.3.93   show lchan summary [<0-65535>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan summary [<0-65535>] [<0-255>] [<0-7>] [<0-7>]
```

Parameters

show

Show running system information

lchan

Display information about a logical channel

summary

Short summary (used lchans)

[<0-65535>]

BTS Number

[<0-255>]

TRX Number

[<0-7>]

Timeslot Number

[<0-7>]

Logical Channel Number

1.3.94   show lchan summary-all [<0-65535>] [<0-255>] [<0-7>] [<0-7>]

Command

```
show lchan summary-all [<0-65535>] [<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)

[<0-65535>]
    BTS Number

[<0-255>]
    TRX Number

[<0-7>]
    Timeslot Number

[<0-7>]
    Logical Channel Number

1.3.95   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

1.3.96 show mgw-pool

Command

```
show mgw-pool
```

Parameters

show
    Show running system information

mgw-pool
    Display information about the MGW-Pool

1.3.97 show mscs

Command

```
show mscs
```

Parameters

show
    Show running system information

mscs
    MSC Connections and State

1.3.98 show network

Command

```
show network
```

Parameters

show
    Show running system information

network
    Display information about a GSM NETWORK

1.3.99 show nri [<0-1000>]

Command

```
show nri [<0-1000>]
```

Parameters

show

Show running system information

nri

Mapping of Network Resource Indicators, for MSC pooling

[<0-1000>]

Optional MSC number to limit to

1.3.100 show online-help

Command

```
show online-help
```

Parameters

show

Show running system information

online-help

Online help

1.3.101 show paging [<0-65535>]

Command

```
show paging [<0-65535>]
```

Parameters

show

Show running system information

paging

Display information about paging requests of a BTS

[<0-65535>]

BTS Number

1.3.102   show paging-group <0-65535> IMSI

Command

```
show paging-group <0-65535> IMSI
```

Parameters

show
    Show running system information

paging-group
    Display the paging group

<0-65535>
    BTS Number

IMSI
    IMSI

1.3.103   show position

Command

```
show position
```

Parameters

show
    Show running system information

position
    Position information of the BTS

1.3.104   show rate-counters [skip-zero]

Command

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

Parameters

show
    Show running system information

rate-counters
    Show all rate counters

[skip-zero]
    Skip items with total count zero

1.3.105   show rejected-bts

Command

```
show rejected-bts
```

Parameters

show
    Show running system information

rejected-bts
    Display recently rejected BTS devices

1.3.106   show runtime

Command

```
show runtime
```

Parameters

show
    Show running system information

runtime
    Display runtime information

1.3.107   show startup-config

Command

```
show startup-config
```

Parameters

show
    Show running system information

startup-config
    Contentes of startup configuration

1.3.108 show statistics

Command

```
show statistics
```

Parameters

show

Show running system information

statistics

Statistics about the BSC

1.3.109 show stats [skip-zero]

Command

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

Parameters

show

Show running system information

stats

Show statistical values

[skip-zero]

Skip items with total count zero

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

Command

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

Parameters

show

Show running system information

stats

Show statistical values

level

Set the maximum group level

global

   Show global groups only

peer

   Show global and network peer related groups

subscriber

   Show global, peer, and subscriber groups

[skip-zero]

   Skip items with total count zero

1.3.111   show subscriber all

Command

```
show subscriber all
```

Parameters

show

   Show running system information

subscriber

   Display information about subscribers

all

   All Subscribers

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

Command

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

Parameters

show

   Show running system information

talloc-context

   Show talloc memory hierarchy

application

   Application's context

global

   Global context (OTC_GLOBAL)

all

    All contexts, if NULL-context tracking is enabled

full

    Display a full talloc memory hierarchy

brief

    Display a brief talloc memory hierarchy

DEPTH

    Specify required maximal depth value

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

Command

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

Parameters

show

    Show running system information

talloc-context

    Show talloc memory hierarchy

application

    Application's context

global

    Global context (OTC_GLOBAL)

all

    All contexts, if NULL-context tracking is enabled

full

    Display a full talloc memory hierarchy

brief

    Display a brief talloc memory hierarchy

DEPTH

    Specify required maximal depth value

filter

    Filter chunks using regular expression

REGEXP

    Regular expression

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

Command

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

Parameters

show

> Show running system information

talloc-context

> Show talloc memory hierarchy

application

> Application's context

global

> Global context (OTC_GLOBAL)

all

> All contexts, if NULL-context tracking is enabled

full

> Display a full talloc memory hierarchy

brief

> Display a brief talloc memory hierarchy

DEPTH

> Specify required maximal depth value

tree

> Display only a specific memory chunk

ADDRESS

> Chunk address (e.g. 0xdeadbeef)

1.3.115 show timer [(net|mgw)] [TNNNN]

Command

```
show timer [(net|mgw)] [TNNNN]
```

Parameters

show

> Show running system information

timer

> Show timers

[net]

GSM network

[mgw]

MGW (Media Gateway) interface

[TNNNN]

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

1.3.116 show timeslot [<0-65535>] [<0-255>] [<0-7>]

Command

```
show timeslot [<0-65535>] [<0-255>] [<0-7>]
```

Parameters

show

Show running system information

timeslot

Display information about a TS

[<0-65535>]

BTS Number

[<0-255>]

TRX Number

[<0-7>]

Timeslot Number

1.3.117 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

1.3.118   show trx [<0-65535>] [<0-255>]

Command

```
show trx [<0-65535>] [<0-255>]
```

Parameters

show

   Show running system information

trx

   Display information about a TRX

[<0-65535>]

   BTS Number

[<0-255>]

   TRX Number

1.3.119   show version

Command

```
show version
```

Parameters

show

   Show running system information

version

   Displays program version

1.3.120   shutdown

Command

```
shutdown
```

Parameters

shutdown

   Request a shutdown of the program

1.3.121 stats report

Command

```
stats report
```

Parameters

stats

Stats related commands

report

Manurally trigger reporting of stats

1.3.122 stats reset

Command

```
stats reset
```

Parameters

stats

Stats related commands

reset

Reset all rate counter stats

1.3.123 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)

1.3.124   terminal monitor

Command

```
terminal monitor
```

Parameters

terminal
>   Set terminal line parameters

monitor
>   Copy debug output to the current terminal line

1.3.125   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

1.3.126   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

1.3.127 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
```

Global attributes

Flag: !

>   This command applies immediately

Parameters

bsc

>   Configure BSC

1.4.4 cbc

Command

```
cbc
```

Parameters

cbc

>   Configure CBSP Link to Cell Broadcast Centre

1.4.5 cpu-sched

Command

```
cpu-sched
```

Parameters

cpu-sched

>   Configure CPU Scheduler related settings

1.4.6 cs7 instance <0-15>

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

cs7

ITU-T Signaling System 7

instance

Configure a SS7 Instance

<0-15>

An instance of the SS7 stack

1.4.7 ctrl

Command

```
ctrl
```

Parameters

ctrl

Configure the Control Interface

1.4.8 e1_input

Command

```
e1_input
```

Global attributes

Flag: !

This command applies immediately

Parameters

e1_input

Configure E1/T1/J1 TDM input

1.4.9   enable password (8|) WORD

Command

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

Parameters

enable
    Modify enable password parameters

password
    Assign the privileged level password

8
    Specifies a HIDDEN password will follow

dummy string

WORD
    The HIDDEN 'enable' password string

1.4.10   enable password LINE

Command

```
enable password LINE
```

Parameters

enable
    Modify enable password parameters

password
    Assign the privileged level password

LINE
    The UNENCRYPTED (cleartext) 'enable' password

1.4.11   hostname WORD

Command

```
hostname WORD
```

Parameters

hostname
    Set system's network name

WORD
    This system's network name

1.4.12 line vty

Command

```
line vty
```

Parameters

line

Configure a terminal line

vty

Virtual terminal

1.4.13 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

1.4.14 log file FILENAME [blocking-io]

Command

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

Parameters

log

Configure logging sub-system

file

Logging to text file

FILENAME

Filename

[blocking-io]

Use blocking, synchronous I/O

1.4.15   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)

1.4.16   log stderr [blocking-io]

Command

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

Parameters

log

Configure logging sub-system

stderr

Logging via STDERR of the process

[blocking-io]

Use blocking, synchronous I/O

1.4.17   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

1.4.18 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

1.4.19   log systemd-journal [raw]

Command

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

Parameters

log

Configure logging sub-system

systemd-journal

Logging to systemd-journal

[raw]

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

1.4.20   msc [<0-1000>]

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

msc

Configure MSC details

[<0-1000>]

MSC connection to configure

1.4.21   network

Command

```
network
```

Global attributes

Flag: !

This command applies immediately

Parameters

network

Configure the GSM network

1.4.22   no banner motd

Command

```
no banner motd
```

Parameters

no

Negate a command or set its defaults

banner

Set banner string

motd

Strings for motd

1.4.23   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

1.4.24   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

1.4.25 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

1.4.26 no log file FILENAME

Command
```
no log file FILENAME
```

Parameters

no
 Negate a command or set its defaults

log
 Configure logging sub-system

file
 Logging to text file

FILENAME
 Filename

1.4.27 no log gsmtap [HOSTNAME]

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

Parameters

no
 Negate a command or set its defaults

log
 Configure logging sub-system

gsmtap
 Logging via GSMTAP

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

1.4.28 no log stderr

Command

```
no log stderr
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

stderr

Logging via STDERR of the process

1.4.29 no log syslog

Command

```
no log syslog
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

syslog

Logging via syslog

1.4.30 no log systemd-journal

Command

```
no log systemd-journal
```

Parameters

no

Negate a command or set its defaults

log

Configure logging sub-system

systemd-journal

Logging to systemd-journal

1.4.31 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

1.4.32 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)

1.4.33 no stats reporter log [NAME]

Command

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

Parameters

no

Negate a command or set its defaults

stats

    Configure stats sub-system

reporter

    Configure a stats reporter

log

    Report to the logger

[NAME]

    Name of the reporter

1.4.34   no stats reporter statsd [NAME]

Command

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

Parameters

no

    Negate a command or set its defaults

stats

    Configure stats sub-system

reporter

    Configure a stats reporter

statsd

    Report to a STATSD server

[NAME]

    Name of the reporter

1.4.35   password (8|) WORD

Command

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

Parameters

password

    Assign the terminal connection password

8

    Specifies a HIDDEN password will follow

dummy string

WORD

    The HIDDEN line password string

1.4.36 password LINE

Command

```
password LINE
```

Parameters

password

  Assign the terminal connection password

LINE

  The UNENCRYPTED (cleartext) line password

1.4.37 service advanced-vty

Command

```
service advanced-vty
```

Parameters

service

  Set up miscellaneous service

advanced-vty

  Enable advanced mode vty interface

1.4.38 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)

1.4.39 show history

Command

```
show history
```

Parameters

show

Show running system information

history

Display the session command history

1.4.40 stats interval <0-65535>

Command

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

Parameters

stats

Configure stats sub-system

interval

Set the reporting interval

<0-65535>

Interval in seconds (0 disables the reporting interval)

1.4.41 stats reporter log [NAME]

Command

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

Parameters

stats

Configure stats sub-system

reporter

Configure a stats reporter

log

Report to the logger

[NAME]

Name of the reporter

1.4.42   stats reporter statsd [NAME]

Command

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

Parameters

stats

  Configure stats sub-system

reporter

  Configure a stats reporter

statsd

  Report to a STATSD server

[NAME]

  Name of the reporter

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

Command

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

Parameters

stats-tcp

  Configure stats sub-system

batch-size

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

<1-65535>

  Number of sockets per interval

1.4.44   stats-tcp interval <0-65535>

Command

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

Parameters

stats-tcp

  Configure stats sub-system

interval

  Set the tcp socket stats polling interval

<0-65535>

  Interval in seconds (0 disables the polling interval)

1.5   config-log

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

1.5.1   logging color (0|1)

Command

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

Parameters

logging

> Configure logging

color

> Configure color-printing for log messages

0

> Don't use color for printing messages

1

> Use color for printing messages

1.5.2   logging filter all (0|1)

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

Command

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

Parameters

logging

> Configure logging

filter

> Filter log messages

all

> Do you want to log all messages?

0

> Only print messages matched by other filters

1

> Bypass filter and print all messages

1.5.3 logging filter 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|lcs|asci|reset|loop|lglobal|llapd|linp|lmux|lmi|lmib|lsms|lctrl|lgtp|lstats| ←
    lgsup|loap|lss7|lsccp|lsua|lm3ua|lmgcp|ljibuf|lrspro|lns|lbssgp|lnsdata|lnssignal| ←
    liuup|lpfcp|lcsn1|lio) (debug|info|notice|error|fatal)
```

Parameters

logging
>   Configure logging

level
>   Set the log level for a specified category

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

lcs

    Location Services

asci

    Advanced Speech Call Items (VGCS/VBS)

reset

    RESET/ACK on A and Lb interfaces

loop

    Control loops

lglobal

    Library-internal global log family

llapd

   LAPD in libosmogsm

linp

   A-bis Intput Subsystem

lmux

   A-bis B-Subchannel TRAU Frame Multiplex

lmi

   A-bis Input Driver for Signalling

lmib

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

lsms

   Layer3 Short Message Service (SMS)

lctrl

   Control Interface

lgtp

   GPRS GTP library

lstats

   Statistics messages and logging

lgsup

   Generic Subscriber Update Protocol

loap

   Osmocom Authentication Protocol

lss7

   libosmo-sigtran Signalling System 7

lsccp

   libosmo-sigtran SCCP Implementation

lsua

   libosmo-sigtran SCCP User Adaptation

lm3ua

   libosmo-sigtran MTP3 User Adaptation

lmgcp

   libosmo-mgcp Media Gateway Control Protocol

ljibuf

   libosmo-netif Jitter Buffer

lrspro

   Remote SIM protocol

lns

   GPRS NS layer

lbssgp

    GPRS BSSGP layer

lnsdata

    GPRS NS layer data PDU

lnssignal

    GPRS NS layer signal PDU

liuup

    Iu UP layer

lpfcp

    libosmo-pfcp Packet Forwarding Control Protocol

lcsn1

    libosmo-csn1 Concrete Syntax Notation 1 codec

lio

    libosmocore IO Subsystem

debug

    Log debug messages and higher levels

info

    Log informational messages and higher levels

notice

    Log noticeable messages and higher levels

error

    Log error messages and higher levels

fatal

    Log only fatal messages

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

```
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

```
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 YYYYMMDDhhmmssnnn

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 print thread-id (0|1)

Command

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

Parameters

logging

>   Configure logging

print

>   Log output settings

thread-id

>   Configure log message logging Thread ID

0

>   Don't prefix each log message

1

>   Prefix each log message with current Thread ID

1.5.13 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

1.5.14 no logging level force-all

Command

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

Parameters

no

> Negate a command or set its defaults

logging

> Configure logging

level

> Set the log level for a specified category

force-all

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

1.6 config-stats

1.6.1 disable

Command

```
disable
```

Parameters

disable

> Disable the reporter

1.6.2 enable

Command

```
enable
```

Parameters

enable

Enable the reporter

1.6.3 flush-period <0-65535>

Command

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

Parameters

flush-period

Configure stats sub-system

<0-65535>

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

1.6.4 level (global|peer|subscriber)

Command

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

Parameters

level

Set the maximum group level

global

Report global groups only

peer

Report global and network peer related groups

subscriber

Report global, peer, and subscriber groups

1.6.5 local-ip ADDR

Command

```
local-ip ADDR
```

Parameters

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

ADDR
    IP Address

1.6.6 mtu <100-65535>

Command

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

Parameters

mtu
    Set the maximum packet size

<100-65535>
    Size in byte

1.6.7 no local-ip

Command

```
no local-ip
```

Parameters

no
    Negate a command or set its defaults

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

1.6.8 no mtu

Command

```
no mtu
```

Parameters

no
    Negate a command or set its defaults

mtu
    Set the maximum packet size

1.6.9 no prefix

Command

```
no prefix
```

Parameters

no
    Negate a command or set its defaults

prefix
    Set the item name prefix

1.6.10 prefix PREFIX

Command

```
prefix PREFIX
```

Parameters

prefix
    Set the item name prefix

PREFIX
    The prefix string

1.6.11   remote-ip ADDR

Command

```
remote-ip ADDR
```

Parameters

remote-ip
    Set the remote IP address to which we connect

ADDR
    IP Address

1.6.12   remote-port <1-65535>

Command

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

Parameters

remote-port
    Set the remote port to which we connect

<1-65535>
    Remote port number

1.7   config-line

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

Command

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

Parameters

bind
    Accept VTY telnet connections on local interface

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

[<0-65535>]
    Local TCP port number

1.7.2 **login**

Command

```
login
```

Parameters

login

    Enable password checking

1.7.3 **no login**

Command

```
no login
```

Parameters

no

    Negate a command or set its defaults

login

    Enable password checking

1.8 **config-e1_input**

1.8.1 **e1_line <0-255> connect-timeout <0-60>**

Command

```
e1_line <0-255> connect-timeout <0-60>
```

Global attributes

Flag: !

    This command applies immediately

Parameters

e1_line

    Configure E1/T1/J1 Line

<0-255>

    Line Number

connect-timeout

    Set connect timeout

<0-60>

    Connect timeout in seconds (0 to disable)

1.8.2   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

osmo-e1d supported E1 interface

ipa

IPA TCP/IP input

unixsocket

Unix socket input

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

1.8.4   e1_line <0-255> keepalive

Command

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

Library specific attributes

Flag: I

    This command applies on IPA link establishment

Parameters

e1_line

    Configure E1/T1/J1 Line

<0-255>

    Line Number

keepalive

    Enable keep-alive probing

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

Command

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

Library specific attributes

Flag: I

    This command applies on IPA link establishment

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

1.8.6   e1_line <0-255> name .LINE

Command

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

Global attributes

Flag: !

    This command applies immediately

Parameters

e1_line

    Configure E1/T1/J1 Line

<0-255>

    Line Number

name

    Set name for this line

.LINE

    Human readable name

1.8.7   e1_line <0-255> pcap .FILE

Command

```
e1_line <0-255> pcap .FILE
```

Global attributes

Flag: !

   This command applies immediately

Parameters

e1_line

   Configure E1/T1/J1 Line

<0-255>

   Line Number

pcap

   Setup a pcap recording of E1 traffic for line

.FILE

   Filename to save the packets to

1.8.8   e1_line <0-255> port <0-255>

Command

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

Library specific attributes

Flag: L

   This command applies on E1 line update

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

1.8.9   e1_line <0-255> socket .SOCKET

Command

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

Library specific attributes

Flag: L

This command applies on E1 line update

Parameters

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

socket

Set socket path for unixsocket

.SOCKET

socket path

1.8.10   ipa bind A.B.C.D

Command

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

Library specific attributes

Flag: L

This command applies on E1 line update

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)

1.8.11   ipa ip-dscp (oml|rsl) <0-63>

Command
```
ipa ip-dscp (oml|rsl) <0-63>
```

Library specific attributes

Flag: I

> This command applies on IPA link establishment

Parameters

ipa

> ipa driver config

ip-dscp

> Set IP DSCP value for outbound packets

oml

> Set IP DSCP for OML link

rsl

> Set IP DSCP for RSL link

<0-63>

> IP DSCP Value to use

1.8.12   ipa socket-priority (oml|rsl) <0-255>

Command
```
ipa socket-priority (oml|rsl) <0-255>
```

Library specific attributes

Flag: I

> This command applies on IPA link establishment

Parameters

ipa

> ipa driver config

socket-priority

> Set socket priority value for outbound packets

oml

> Set socket priority for OML link

rsl

> Set socket priority for RSL link

<0-255>

> socket priority value to use (>6 requires CAP_NET_ADMIN)

1.8.13   no e1_line <0-255> ipa-keepalive

Command

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

Global attributes

Flag: !

This command applies immediately

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

1.8.14   no e1_line <0-255> keepalive

Command

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

Library specific attributes

Flag: I

This command applies on IPA link establishment

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

1.8.15 no e1_line <0-255> pcap

Command

```
no e1_line <0-255> pcap
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

e1_line

Configure E1/T1/J1 Line

<0-255>

Line Number

pcap

Disable pcap recording of E1 traffic for line

1.9 config-ctrl

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

Command

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

Parameters

bind

Set bind address to listen for Control connections

A.B.C.D

Local IP address (default 127.0.0.1)

[<0-65535>]

Local TCP port number

1.10   config-cs7

1.10.1   as NAME (sua|m3ua|ipa)

Command

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

Global attributes

Flag: !

   This command applies immediately

Parameters

as

   Configure an Application Server

NAME

   Name of the Application Server

sua

   SCCP User Adaptation

m3ua

   MTP3 User Adaptation

ipa

   IPA Multiplex (SCCP Lite)

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

Command

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

Global attributes

Flag: @

   This command applies on VTY node exit

Parameters

asp

   Configure Application Server Process

NAME

   Name of ASP

<0-65535>

    Remote port number

<0-65535>

    Local port number

sua

    SCCP User Adaptation

m3ua

    MTP3 User Adaptation

ipa

    IPA Multiplex (SCCP Lite)

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

Command

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

Global attributes

Flag: @

    This command applies on VTY node exit

Parameters

asp

    Configure Application Server Process

NAME

    Name of ASP

<0-65535>

    Remote port number

<0-65535>

    Local port number

sua

    SCCP User Adaptation

m3ua

    MTP3 User Adaptation

ipa

    IPA Multiplex (SCCP Lite)

sctp

    SCTP (Stream Control Transmission Protocol)

tcp

    TCP (Transmission Control Protocol)

1.10.4 description .TEXT

Command

```
description .TEXT
```

Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line

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

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

network-indicator

Configure the Network Indicator

international

International Network

national

National Network

reserved

Reserved Network

spare

Spare Network

1.10.6   no as NAME

Command

```
no as NAME
```

Global attributes

Flag: !

   This command applies immediately

Parameters

no

   Negate a command or set its defaults

as

   Disable Application Server

NAME

   Name of AS

1.10.7   no asp NAME

Command

```
no asp NAME
```

Global attributes

Flag: !

   This command applies immediately

Parameters

no

   Negate a command or set its defaults

asp

   Disable Application Server Process

NAME

   Name of ASP

1.10.8   no sccp-address NAME

Command

```
no sccp-address NAME
```

Global attributes

Flag: !

   This command applies immediately

Parameters

no

   Negate a command or set its defaults

sccp-address

   Delete an SCCP addressbook entry

NAME

   Name of the SCCP Address

1.10.9   point-code POINT_CODE

Command

```
point-code POINT_CODE
```

Global attributes

Flag: !

   This command applies immediately

Parameters

point-code

   Configure the local Point Code

POINT_CODE

   Point Code

1.10.10   point-code delimiter (default|dash)

Command

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

Global attributes

Flag: !

   This command applies immediately

Parameters

point-code

   Point Code

delimiter

   Configure Point Code Delimiter

default

   Use dot as delimiter

dash

   User dash as delimiter

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

Command

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

Global attributes

Flag: !

   This command applies immediately

Parameters

point-code

   Point Code

format

   Configure Point Code Format

<1-24>

   Length of first PC component

[<1-23>]

   Length of second PC component

[<1-22>]

   Length of third PC component

1.10.12   point-code format default

Command

```
point-code format default
```

Global attributes

Flag: !

    This command applies immediately

Parameters

point-code

    Point Code

format

    Configure Point Code Format

default

    Default Point Code Format (3.8.3)

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

Command

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

Global attributes

Flag: !

    This command applies immediately

Parameters

sccp

    Configure SCCP behavior

max-optional-data

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

<0-999999>

    Set a non-standard maximum allowed number of bytes

standard

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

1.10.14   sccp-address NAME

Command

```
sccp-address NAME
```

Global attributes

Flag: !

This command applies immediately

Parameters

sccp-address

Create/Modify an SCCP addressbook entry

NAME

Name of the SCCP Address

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

Command

```
sccp-timer (conn_est|ias|iar|rel|repeat_rel|int|guard|reset|reassembly) <1-999999>
```

Global attributes

Flag: !

This command applies immediately

Parameters

sccp-timer

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

conn_est

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

ias

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

iar

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

rel

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

repeat_rel

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

int

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

guard

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

reset

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

reassembly

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

<1-999999>

    Timer value, in seconds

1.10.16 secondary-pc POINT_CODE

Command

```
secondary-pc POINT_CODE
```

Global attributes

Flag: !

    This command applies immediately

Parameters

secondary-pc

    Configure the local Secondary Point Code

POINT_CODE

    Point Code

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

Command

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

Global attributes

Flag: !

    This command applies immediately

Parameters

sls-opc-dpc

Shift OPC and DPC bits used during routing decision

[opc-shift]

Shift OPC bits used during routing decision

[<0-8>]

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

[dpc-shift]

Shift DPC bits used during routing decision

[<0-8>]

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

1.10.18 sls-shift <0-6>

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

sls-shift

Shift SLS bits used during routing decision

<0-6>

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

xua

SIGTRAN xxxUA related

rkm

Routing Key Management

routing-key-allocation

Routing Key Management Allocation Policy

static-only

Only static (pre-configured) Routing Keys permitted

dynamic-permitted

Dynamically allocate Routing Keys for what ASPs request

1.11 config-cs7-as

1.11.1 asp NAME

Command

```
asp NAME
```

Global attributes

Flag: !

This command applies immediately

Parameters

asp

Specify that a given ASP is part of this AS

NAME

Name of ASP to be added to AS

1.11.2 binding-table reset

Command

```
binding-table reset
```

Global attributes

Flag: !

This command applies immediately

Parameters

binding-table

AS Loadshare binding table operations

reset

Reset loadshare binding table

1.11.3 description .TEXT

Command

```
description .TEXT
```

Parameters

description
> Save human-readable description of the object

.TEXT
> Text until the end of the line

1.11.4 no asp NAME

Command

```
no asp NAME
```

Global attributes

Flag: !
> This command applies immediately

Parameters

no
> Negate a command or set its defaults

asp
> Specify ASP to be removed from this AS

NAME
> Name of ASP to be removed

1.11.5 no traffic-mode

Command

```
no traffic-mode
```

Parameters

no
> Negate a command or set its defaults

traffic-mode
> Remove explicit traffic mode of operation of this AS

1.11.6 point-code override dpc PC

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

point-code

Point Code Specific Features

override

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

dpc

Override Source Point Code

PC

Override Destination Point Code

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

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

point-code

Point Code Specific Features

override

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

patch-sccp

Patch point code values into SCCP called/calling address

disabled

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

both

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

1.11.8 qos-class <0-7>

Command

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

Global attributes

Flag: !
    This command applies immediately

Parameters

qos-class
    Specity QoS Class of AS

<0-7>
    QoS Class

1.11.9 recovery-timeout <1-2000>

Command

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

Global attributes

Flag: !
    This command applies immediately

Parameters

recovery-timeout
    Specifies the recovery timeout value in milliseconds

<1-2000>
    Recovery Timeout in Milliseconds

1.11.10 routing-key RCONTEXT DPC

Command

```
routing-key RCONTEXT DPC
```

Global attributes

Flag: !

> This command applies immediately

Parameters

routing-key

> Define a routing key

RCONTEXT

> Routing context number

DPC

> Destination Point Code

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

Command

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

Global attributes

Flag: !

> This command applies immediately

Parameters

routing-key

> Define a routing key

RCONTEXT

> Routing context number

DPC

> Destination Point Code

si

> Match on Service Indicator

aal2

> ATM Adaption Layer 2

bicc

> Bearer Independent Call Control

b-isup

> Broadband ISDN User Part

h248

> H.248

isup

> ISDN User Part

sat-isup

> Sattelite ISDN User Part

sccp

> Signalling Connection Control Part

tup

> Telephony User Part

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

Command

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

Global attributes

Flag: !

> This command applies immediately

Parameters

routing-key

> Define a routing key

RCONTEXT

> Routing context number

DPC

> Destination Point Code

si

> Match on Service Indicator

aal2

> ATM Adaption Layer 2

bicc

> Bearer Independent Call Control

b-isup

> Broadband ISDN User Part

h248

> H.248

isup

> ISDN User Part

sat-isup

　　Sattelite ISDN User Part

sccp

　　Signalling Connection Control Part

tup

　　Telephony User Part

ssn

　　Match on Sub-System Number

SSN

　　Sub-System Number to match on

1.11.13 routing-key RCONTEXT DPC ssn SSN

Command

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

Global attributes

Flag: !

　　This command applies immediately

Parameters

routing-key

　　Define a routing key

RCONTEXT

　　Routing context number

DPC

　　Destination Point Code

ssn

　　Match on Sub-System Number

SSN

　　Sub-System Number to match on

1.11.14 sls-shift <0-3>

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

sls-shift

Shift SLS bits used during routing decision

<0-3>

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

1.11.15 traffic-mode (broadcast | roundrobin | override)

Command

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

Parameters

traffic-mode

Specifies traffic mode of operation of the ASP within the AS

broadcast

Broadcast to all ASP within AS

roundrobin

Round-Robin between all ASP within AS

override

Override

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

Command

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

Parameters

traffic-mode

    Specifies traffic mode of operation of the ASP within the AS

loadshare

    Share Load among all ASP within AS

[bindings]

    Configure Loadshare parameters

[sls]

    Configure Loadshare SLS generation parameters

[opc-sls]

    Generate extended SLS with OPC information

[opc-shift]

    Shift OPC bits used during routing decision

[<0-2>]

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

1.12   config-cs7-asp

1.12.1   block

Command

```
block
```

Global attributes

Flag: @

    This command applies on VTY node exit

Parameters

block

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

1.12.2   description .TEXT

Command

```
description .TEXT
```

Parameters

description

    Save human-readable description of the object

.TEXT

    Text until the end of the line

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

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

local-ip

Specify Local IP Address from which to contact ASP

A.B.C.D

Local IPv4 Address from which to contact of ASP

X:X::X:X

Local IPv6 Address from which to contact of ASP

[primary]

Signal the SCTP peer to use this address as Primary Address

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

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

no

Negate a command or set its defaults

local-ip

Specify Local IP Address from which to contact ASP

A.B.C.D

Local IPv4 Address from which to contact of ASP

X:X::X:X

Local IPv6 Address from which to contact of ASP

1.12.5 no quirk (no_notify|daud_in_asp|snm_inactive)

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

quirk

Disable quirk to work around interop issues

no_notify

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

daud_in_asp

Allow Rx of DAUD in ASP role

snm_inactive

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

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

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

no

Negate a command or set its defaults

remote-ip

Specify Remote IP Address of ASP

A.B.C.D

Remote IPv4 Address of ASP

X:X::X:X

Remote IPv6 Address of ASP

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

Command

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

Global attributes

Flag: @

> This command applies on VTY node exit

Parameters

no

> Negate a command or set its defaults

sctp-param

> Configure SCTP parameters

init

> Configure INIT related parameters

num-ostreams

> Configure INIT Number of Outbound Streams

max-instreams

> Configure INIT Maximum Inboud Streams

max-attempts

> Configure INIT Maximum Attempts

timeout

> Configure INIT Timeout (milliseconds)

1.12.8   no shutdown

Command

```
no shutdown
```

Global attributes

Flag: @

> This command applies on VTY node exit

Parameters

no

> Negate a command or set its defaults

shutdown

> Terminates SCTP association; New associations will be rejected

1.12.9 qos-class <0-7>

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

qos-class

Specify QoS Class of ASP

<0-7>

QoS Class

1.12.10 quirk (no_notify|daud_in_asp|snm_inactive)

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

quirk

Enable quirk to work around interop issues

no_notify

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

daud_in_asp

Allow Rx of DAUD in ASP role

snm_inactive

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

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

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

remote-ip

Specify Remote IP Address of ASP

A.B.C.D

Remote IPv4 Address of ASP

X:X::X:X

Remote IPv6 Address of ASP

[primary]

Set remote address as SCTP Primary Address

1.12.12 role (sg|asp|ipsp)

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

role

Specify the xUA role for this ASP

sg

SG (Signaling Gateway)

asp

ASP (Application Server Process)

ipsp

IPSP (IP Signalling Point)

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

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

sctp-param

Configure SCTP parameters

init

Configure INIT related parameters

num-ostreams

Configure INIT Number of Outbound Streams

max-instreams

Configure INIT Maximum Inboud Streams

max-attempts

Configure INIT Maximum Attempts

timeout

Configure INIT Timeout (milliseconds)

<0-65535>

Value of the parameter

1.12.14 shutdown

Command

```
shutdown
```

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

shutdown

Terminates SCTP association; New associations will be rejected

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

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

timer

Configure ASP default timer values

lm

Configure ASP default lm timer values

wait_asp_up

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

wait_notify

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

wait_notify_rkm

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

wait_rk_reg_resp

Restart ASP after timeout waiting for RK_REG_RESP (s) (default: 10)

<1-999999>

Timer value, in seconds

1.12.16 transport-role (client|server)

Command

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

Global attributes

Flag: @

This command applies on VTY node exit

Parameters

transport-role

Specify the transport layer role for this ASP

client

Operate as a client; connect to a server

server

Operate as a server; wait for client connections

1.13   config-cs7-sccpaddr

1.13.1   global-title

Command

```
global-title
```

Global attributes

Flag: !
    This command applies immediately

Parameters

global-title
    Add/Modify Global Title

1.13.2   no global-title

Command

```
no global-title
```

Global attributes

Flag: !
    This command applies immediately

Parameters

no
    Negate a command or set its defaults

global-title
    Remove Global Title

1.13.3   no point-code

Command

```
no point-code
```

Global attributes

Flag: !
    This command applies immediately

Parameters

no
    Negate a command or set its defaults

point-code
    Remove point-code Number

1.13.4 no subsystem-number

Command

```
no subsystem-number
```

Global attributes

Flag: !
    This command applies immediately

Parameters

no
    Negate a command or set its defaults

subsystem-number
    Remove Subsystem Number

1.13.5 point-code POINT_CODE

Command

```
point-code POINT_CODE
```

Global attributes

Flag: !
    This command applies immediately

Parameters

point-code
    Add point-code Number

POINT_CODE
    PC

1.13.6 routing-indicator (GT|PC|IP)

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

routing-indicator

Add Routing Indicator

GT

by global-title

PC

by point-code

IP

by ip-address

1.13.7 subsystem-number <0-4294967295>

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

subsystem-number

Add Subsystem Number

<0-4294967295>

SSN

1.14 config-cs7-sccpaddr-gt

1.14.1 digits DIGITS

Command

```
digits DIGITS
```

Global attributes

Flag: !

This command applies immediately

Parameters

digits

Set Global Title Digits

DIGITS

Number digits

1.14.2 global-title-indicator <0-15>

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

global-title-indicator

Set Global Title Indicator

<0-15>

GTI

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

Command

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

Global attributes

Flag: !
   This command applies immediately

Parameters

nature-of-address-indicator
   Set Global Title Nature of Address Indicator

<0-127>
   NAI

1.14.4 numbering-plan-indicator <0-15>

Command

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

Global attributes

Flag: !
   This command applies immediately

Parameters

numbering-plan-indicator
   Set Global Title Numbering Plan Indicator

<0-15>
   NPI

1.14.5 translation-type <0-255>

Command

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

Global attributes

Flag: !
    This command applies immediately

Parameters

translation-type
    Set Global Title Translation Type

<0-255>
    TT

1.15   config-cpu-sched

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

Command

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

Global attributes

Flag: !
    This command applies immediately

Parameters

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

self
    Set CPU affinity mask on thread running the VTY

all
    Set CPU affinity mask on all process' threads

<0-4294967295>
    Set CPU affinity mask on a thread with specified PID

THREADNAME
    Set CPU affinity mask on a thread with specified thread name

CPUHEXMASK
    CPU affinity mask

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

1.15.2   policy rr <1-32>

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

Global attributes

Flag: !
   This command applies immediately

Parameters

policy
   Set the scheduling policy to use for the process

rr
   Use the SCHED_RR real-time scheduling algorithm

<1-32>
   Set the SCHED_RR real-time priority

1.16   config-net

1.16.1   allow-unusable-timeslots

Command
```
allow-unusable-timeslots
```

Parameters

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

1.16.2   bts <0-65535>

Command
```
bts <0-65535>
```

Global attributes

Flag: !
   This command applies immediately

Parameters

bts
   Select a BTS to configure

<0-65535>
   BTS Number

1.16.3 encryption a5 <0-4> [<0-4>] [<0-4>] [<0-4>] [<0-4>]

Command

```
encryption a5 <0-4> [<0-4>] [<0-4>] [<0-4>] [<0-4>]
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Parameters

encryption

Encryption options

a5

GSM A5 Air Interface Encryption

<0-4>

A5/n Algorithm Number

[<0-4>]

A5/n Algorithm Number

[<0-4>]

A5/n Algorithm Number

[<0-4>]

A5/n Algorithm Number

[<0-4>]

A5/n Algorithm Number

1.16.4 handover (0|1|default)

Command

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

Global attributes

Flag: !

This command applies immediately

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

1.16.5 handover algorithm (1|2|default)

Command

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

Global attributes

Flag: !

> This command applies immediately

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

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

Command

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

Global attributes

Flag: !

> This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

   This command applies immediately

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

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

Command

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

Global attributes

Flag: !

   This command applies immediately

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

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

Command

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

Global attributes

Flag: !

> This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

    This command applies immediately

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

1.16.14 handover2 assignment (0|1|default)

Command

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

Global attributes

Flag: !

    This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

   This command applies immediately

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

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

Command

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

Global attributes

Flag: !

   This command applies immediately

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, where 0 is the best quality (bit error rate < 0.2%) and 7 is
   the worst quality (bit error rate > 12.8%), see 3GPP TS 45.008 8.2.4.

<0-7>

   worst acceptable RxQual

default

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

1.16.24   handover2 penalty-time low-rxqual-assignment (<0-99999>|default)

Command

```
handover2 penalty-time low-rxqual-assignment (<0-99999>|default)
```

Global attributes

Flag: !

This command applies immediately

Parameters

handover2

Handover options for handover decision algorithm 2

penalty-time

Set penalty times to wait between repeated handovers

low-rxqual-assignment

Time to suspend re-assignment after an lchan was re-assigned because of low RxQual

<0-99999>

Seconds

default

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

1.16.25   handover2 penalty-time low-rxqual-ho (<0-99999>|default)

Command

```
handover2 penalty-time low-rxqual-ho (<0-99999>|default)
```

Global attributes

Flag: !

This command applies immediately

Parameters

handover2

Handover options for handover decision algorithm 2

penalty-time

Set penalty times to wait between repeated handovers

low-rxqual-ho

Time to suspend handover back to a cell after bad RxQual caused handover away from it

<0-99999>

Seconds

default

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

   This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

1.16.30 handover2 tdma-measurement (auto|full|subset|default)

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

handover2

Handover options for handover decision algorithm 2

tdma-measurement

Define measurement set of TDMA frames

auto

Use full set when DTX is not in use, use subset when DTX is in use, as indicated by each Measurement Report

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

>	This command applies immediately

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

1.16.34   meas-feed destination ADDR <0-65535>

Command

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

Global attributes

Flag: !
   This command applies immediately

Parameters

meas-feed
   Measurement Report export

destination
   Where to forward Measurement Report feeds

ADDR
   address or hostname

<0-65535>
   port number

1.16.35   meas-feed scenario NAME

Command

```
meas-feed scenario NAME
```

Global attributes

Flag: !
   This command applies immediately

Parameters

meas-feed
   Measurement Report export

scenario
   Set a name to include in the Measurement Report feeds

NAME
   Name string, up to 31 characters

1.16.36   meas-feed write-queue-max-length <1-65535>

Command

```
meas-feed write-queue-max-length <1-65535>
```

Global attributes

Flag: !

This command applies immediately

Parameters

meas-feed

Measurement Report export

write-queue-max-length

Set the maximum length of the message write queue towards the UDP socket

<1-65535>

Maximum number of messages to be queued waiting for transmission

1.16.37   mgw <0-255>

Command

```
mgw <0-255>
```

Global attributes

Flag: !

This command applies immediately

Parameters

mgw

Select a MGCP client config to setup

<0-255>

reference number

1.16.38   mobile network code <0-999>

Command

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

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

Parameters

mobile

> Set the GSM mobile network code

network

> Network Commands

code

> Code commands

<0-999>

> Mobile Network Code to use

1.16.39   neci (0|1)

Command

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

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

Parameters

neci

> New Establish Cause Indication

0

> Don't set the NECI bit

1

> Set the NECI bit

1.16.40   neighbor-resolution bind (A.B.C.D|X:X::X:X) [<0-65535>]

Command

```
neighbor-resolution bind (A.B.C.D|X:X::X:X) [<0-65535>]
```

Parameters

neighbor-resolution

Manage local and remote-BSS neighbor cells

bind

Bind Neighbor Resolution Service (CTRL interface) to given ip and port

A.B.C.D

IP information

X:X::X:X

IPv6 information

[<0-65535>]

Port to bind the service to [defaults to 4248 if not provided]

1.16.41   network country code <1-999>

Command

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

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

network

Set the GSM network country code

country

Country commands

code

Code commands

<1-999>

Network Country Code to use

1.16.42   no mgw <0-255>

Command

```
no mgw <0-255>
```

Global attributes

Flag: !

  This command applies immediately

Parameters

no

  Negate a command or set its defaults

mgw

  Select a MGCP client config to remove

<0-255>

  reference number

1.16.43   no pcu-socket

Command

```
no pcu-socket
```

Global attributes

Flag: !

  This command applies immediately

Parameters

no

  Negate a command or set its defaults

pcu-socket

  Disable BSC co-located PCU

1.16.44   no periodic location update

Command

```
no periodic location update
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

no

Negate a command or set its defaults

periodic

Periodic Location Updating Interval

location

Periodic Location Updating Interval

update

Periodic Location Updating Interval

1.16.45   no timezone

Command

```
no timezone
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

timezone

Disable network timezone override, use system tz

1.16.46 nri bitlen <1-15>

Command

```
nri bitlen <1-15>
```

Global attributes

Flag: !

This command applies immediately

Parameters

nri

Mapping of Network Resource Indicators, for MSC pooling

bitlen

Set number of bits that an NRI has, to extract from TMSI identities (always starting just after the TMSI's most significant octet).

<1-15>

bit count (default: 10)

1.16.47 nri null add <0-32767> [<0-32767>]

Command

```
nri null add <0-32767> [<0-32767>]
```

Global attributes

Flag: !

This command applies immediately

Parameters

nri

Mapping of Network Resource Indicators, for MSC pooling

null

Define NULL-NRI values that cause re-assignment of an MS to a different MSC, for MSC pooling.

add

Add NULL-NRI value (or range)

<0-32767>

First value of the NRI value range, should not surpass the configured 'nri bitlen'.

[<0-32767>]

Last value of the NRI value range, should not surpass the configured 'nri bitlen' and be larger than the first value; if omitted, apply only the first value.

1.16.48   nri null del <0-32767> [<0-32767>]

Command

```
nri null del <0-32767> [<0-32767>]
```

Global attributes

Flag: !

This command applies immediately

Parameters

nri

Mapping of Network Resource Indicators, for MSC pooling

null

Define NULL-NRI values that cause re-assignment of an MS to a different MSC, for MSC pooling.

del

Remove NRI value or range from the NRI mapping

<0-32767>

First value of the NRI value range, should not surpass the configured 'nri bitlen'.

[<0-32767>]

Last value of the NRI value range, should not surpass the configured 'nri bitlen' and be larger than the first value; if omitted, apply only the first value.

1.16.49   paging any use tch (0|1)

Command

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

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

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

1.16.50 pcu-socket PATH

Command

```
pcu-socket PATH
```

Global attributes

Flag: !

  This command applies immediately

Parameters

pcu-socket

  PCU Socket Path for using OsmoPCU co-located with BSC

PATH

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

1.16.51 pcu-socket-wqueue-length <1-2147483646>

Command

```
pcu-socket-wqueue-length <1-2147483646>
```

Global attributes

Flag: !

  This command applies immediately

Parameters

pcu-socket-wqueue-length

  Configure the PCU socket queue length

<1-2147483646>

  Queue length

1.16.52   periodic location update <6-1530>

Command

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

Application specific attributes

Flag: o

   This command applies on A-bis OML link (re)establishment

Parameters

periodic

   Periodic Location Updating Interval

location

   Periodic Location Updating Interval

update

   Periodic Location Updating Interval

<6-1530>

   Periodic Location Updating Interval in Minutes

1.16.53   timer [(net|mgw)] [TNNNN] [(<0-2147483647>|default)]

Command

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

Parameters

timer

   Configure or show timers

[net]

   GSM network

[mgw]

   MGW (Media Gateway) interface

[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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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)

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

Command

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

Global attributes

Flag: !

This command applies immediately

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)

1.17   config-mgw

1.17.1   description .TEXT

Command

```
description .TEXT
```


Parameters

description

   Save human-readable description of the object

.TEXT

   Text until the end of the line

1.17.2   endpoint-domain NAME

Command

```
endpoint-domain NAME
```


Parameters

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.

1.17.3   keepalive request-endpoint NAME

Command

```
keepalive request-endpoint NAME
```

Parameters

keepalive

>   Monitor if the MGCP link against MGW is still usable

request-endpoint

>   Use a given endpoint name when sending an MGCP command to the MGW for keepalive purposes

NAME

>   The name of the endpoint to use

1.17.4   keepalive request-interval <0-4294967295>

Command

```
keepalive request-interval <0-4294967295>
```

Parameters

keepalive

>   Monitor if the MGCP link against MGW is still usable

request-interval

>   Send an MGCP command to the MGW at given interval if no other commands are sent

<0-4294967295>

>   The interval at which send MGCP commands (s), 0 to disable

1.17.5   keepalive timeout <0-4294967295>

Command

```
keepalive timeout <0-4294967295>
```

Parameters

keepalive

>   Monitor if the MGCP link against MGW is still usable

timeout

>   Consider the link to the MGW to be down after time without receiving any message from it

<0-4294967295>

>   The timeout (s), 0 to disable

1.17.6 local-ip (A.B.C.D|X:X::X:X)

Command

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

Parameters

local-ip
    local bind to connect to MGW from

A.B.C.D
    local bind IPv4 address

X:X::X:X
    local bind IPv6 address

1.17.7 local-port <0-65535>

Command

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

Parameters

local-port
    local port to connect to MGW from

<0-65535>
    local bind port

1.17.8 no reset-endpoint NAME

Command

```
no reset-endpoint NAME
```

Parameters

no
    Negate a command or set its defaults

reset-endpoint
    remove an endpoint name from the reset-endpoint list, e.g. 'rtpbridge/*'

NAME
    Endpoint name, e.g. 'rtpbridge/*' or 'ds/e1-0/s-3/su16-4'.

1.17.9 remote-ip (A.B.C.D|X:X::X:X)

Command

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

Parameters

remote-ip
> remote IP address to reach the MGW at

A.B.C.D
> remote IPv4 address

X:X::X:X
> remote IPv6 address

1.17.10 remote-port <0-65535>

Command

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

Parameters

remote-port
> remote port to reach the MGW at

<0-65535>
> remote port

1.17.11 reset-endpoint NAME

Command

```
reset-endpoint NAME
```

Parameters

reset-endpoint
> Add an endpoint name that should be reset (DLCX) on connect to the reset-endpoint list,e.g. 'rtpbridge/*'

NAME
> Endpoint name, e.g. 'rtpbridge/*' or 'ds/e1-0/s-3/su16-4'.

1.18 config-net-bts

1.18.1 (bs-power-control|ms-power-control)

Command

```
(bs-power-control|ms-power-control)
```

Parameters

bs-power-control

BS (Downlink) power control parameters

ms-power-control

MS (Uplink) power control parameters

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

Command

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

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

abis-lower-transport

Configure thee Abis Lower Transport

single-timeslot

Single Timeslot (classic Abis)

super-channel

SuperChannel (Packet Abis)

1.18.3 access-control-class-ramping

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

access-control-class-ramping

Enable Access Control Class ramping

1.18.4   access-control-class-ramping-chan-load <0-100> <0-100>

Command

```
access-control-class-ramping-chan-load <0-100> <0-100>
```

Global attributes

Flag: !

This command applies immediately

Parameters

access-control-class-ramping-chan-load

Configure Access Control Class ramping channel load thresholds

<0-100>

Lower Channel load threshold (%) below which subset size of allowed broadcast ACCs can be increased

<0-100>

Upper channel load threshold (%) above which subset size of allowed broadcast ACCs can be decreased

1.18.5   access-control-class-ramping-step-interval (<5-600>|dynamic)

Command

```
access-control-class-ramping-step-interval (<5-600>|dynamic)
```

Global attributes

Flag: !

This command applies immediately

Parameters

access-control-class-ramping-step-interval

Configure Access Control Class ramping step interval

<5-600>

Set a fixed step interval (in seconds)

dynamic

Use dynamic step interval based on BTS channel load (deprecated, don't use, ignored)

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

Command

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

Global attributes

Flag: !
    This command applies immediately

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

1.18.7   access-control-class-rotate <0-10>

Command

```
access-control-class-rotate <0-10>
```

Global attributes

Flag: !
    This command applies immediately

Parameters

access-control-class-rotate
    Enable Access Control Class allowed subset rotation

<0-10>
    Size of the rotating allowed ACC 0-9 subset (default=10, no subset)

1.18.8   access-control-class-rotate-quantum <1-65535>

Command

```
access-control-class-rotate-quantum <1-65535>
```

Global attributes

Flag: !
    This command applies immediately

Parameters

access-control-class-rotate-quantum
    Time between rotation of ACC 0-9 generated subsets

<1-65535>
    Time in seconds (default=20)

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

Command

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

Application specific attributes

Flag: l
    This command applies for newly created lchans

Parameters

amr
    Adaptive Multi Rate settings

tch-f
    Full Rate

hysteresis
    Hysteresis value(s) to obtain the higher threshold(s) for switching between codec modes

ms
    MS side

bts
    BTS side

<0-15>
    Hysteresis between codec mode 1 and 2 (in 0.5 dB steps)

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

Command

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

Application specific attributes

Flag: 1

This command applies for newly created lchans

Parameters

amr

Adaptive Multi Rate settings

tch-f

Full Rate

hysteresis

Hysteresis value(s) to obtain the higher threshold(s) for switching between codec modes

ms

MS side

bts

BTS side

<0-15>

Hysteresis between codec mode 1 and 2 (in 0.5 dB steps)

<0-15>

Hysteresis between codec mode 2 and 3 (in 0.5 dB steps)

1.18.11 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>
```

Application specific attributes

Flag: 1

This command applies for newly created lchans

Parameters

amr

Adaptive Multi Rate settings

tch-f

    Full Rate

hysteresis

    Hysteresis value(s) to obtain the higher threshold(s) for switching between codec modes

ms

    MS side

bts

    BTS side

<0-15>

    Hysteresis between codec mode 1 and 2 (in 0.5 dB steps)

<0-15>

    Hysteresis between codec mode 2 and 3 (in 0.5 dB steps)

<0-15>

    Hysteresis between codec mode 3 and 4 (in 0.5 dB steps)

1.18.12 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)
```

Application specific attributes

Flag: 1

    This command applies for newly created lchans

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

1.18.13 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)
```

Application specific attributes

Flag: l

This command applies for newly created lchans

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

1.18.14   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)
```

Application specific attributes

Flag: l

    This command applies for newly created lchans

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

1.18.15 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...

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)
```

Application specific attributes

Flag: 1

    This command applies for newly created lchans

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

0

> 4,75k

1

> 5,15k

2

> 5,90k

3

> 6,70k

4

> 7,40k

5

> 7,95k

6

> 10,2k

7

> 12,2k

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

Command

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

Application specific attributes

Flag: 1

> This command applies for newly created lchans

Parameters

amr

> Adaptive Multi Rate settings

tch-f

> Full Rate

start-mode

> Initial codec mode to use with AMR

auto

> Automatically

1

First mode

2

Second mode

3

Third mode

4

Fourth mode

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

Command

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

Application specific attributes

Flag: 1

This command applies for newly created lchans

Parameters

amr

Adaptive Multi Rate settings

tch-f

Full Rate

threshold

Lower threshold(s) for switching between codec modes

ms

MS side

bts

BTS side

<0-63>

Threshold between codec mode 1 and 2 (in 0.5 dB steps)

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

Command

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

Application specific attributes

Flag: l

This command applies for newly created lchans

Parameters

amr

Adaptive Multi Rate settings

tch-f

Full Rate

threshold

Lower threshold(s) for switching between codec modes

ms

MS side

bts

BTS side

<0-63>

Threshold between codec mode 1 and 2 (in 0.5 dB steps)

<0-63>

Threshold between codec mode 2 and 3 (in 0.5 dB steps)

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

Command

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

Application specific attributes

Flag: l

This command applies for newly created lchans

Parameters

amr

Adaptive Multi Rate settings

tch-f

    Full Rate

threshold

    Lower threshold(s) for switching between codec modes

ms

    MS side

bts

    BTS side

<0-63>

    Threshold between codec mode 1 and 2 (in 0.5 dB steps)

<0-63>

    Threshold between codec mode 2 and 3 (in 0.5 dB steps)

<0-63>

    Threshold between codec mode 3 and 4 (in 0.5 dB steps)

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

Command

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


Application specific attributes

Flag: 1

    This command applies for newly created lchans

Parameters

amr

    Adaptive Multi Rate settings

tch-h

    Half Rate

hysteresis

    Hysteresis value(s) to obtain the higher threshold(s) for switching between codec modes

ms

    MS side

bts

    BTS side

<0-15>

    Hysteresis between codec mode 1 and 2 (in 0.5 dB steps)

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

Command

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

Application specific attributes

Flag: l

This command applies for newly created lchans

Parameters

amr

Adaptive Multi Rate settings

tch-h

Half Rate

hysteresis

Hysteresis value(s) to obtain the higher threshold(s) for switching between codec modes

ms

MS side

bts

BTS side

<0-15>

Hysteresis between codec mode 1 and 2 (in 0.5 dB steps)

<0-15>

Hysteresis between codec mode 2 and 3 (in 0.5 dB steps)

1.18.22 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>
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Parameters

amr

Adaptive Multi Rate settings

tch-h

Half Rate

hysteresis

Hysteresis value(s) to obtain the higher threshold(s) for switching between codec modes

ms

MS side

bts

BTS side

<0-15>

Hysteresis between codec mode 1 and 2 (in 0.5 dB steps)

<0-15>

Hysteresis between codec mode 2 and 3 (in 0.5 dB steps)

<0-15>

Hysteresis between codec mode 3 and 4 (in 0.5 dB steps)

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

Command

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

Application specific attributes

Flag: 1

This command applies for newly created lchans

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

1.18.24   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)
```

Application specific attributes

Flag: 1

    This command applies for newly created lchans

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

0

    4,75k

1

5,15k

2

5,90k

3

6,70k

4

7,40k

5

7,95k

1.18.25 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)
```

Application specific attributes

Flag: l

This command applies for newly created lchans

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

0

4,75k

1

5,15k

2

5,90k

3

6,70k

4

7,40k

5

7,95k

0

4,75k

1

5,15k

2

5,90k

3

6,70k

4

7,40k

5

7,95k

1.18.26   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)

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)
```

Application specific attributes

Flag: 1

This command applies for newly created lchans

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

0

4,75k

1

5,15k

2

5,90k

3

6,70k

4

7,40k

5

7,95k

0

4,75k

1

5,15k

2

5,90k

3

6,70k

4

  7,40k

5

  7,95k

0

  4,75k

1

  5,15k

2

  5,90k

3

  6,70k

4

  7,40k

5

  7,95k

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

Command

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

Application specific attributes

Flag: 1

  This command applies for newly created lchans

Parameters

amr

  Adaptive Multi Rate settings

tch-h

  Half Rate

start-mode

  Initial codec mode to use with AMR

auto

  Automatically

1

  First mode

2

    Second mode

3

    Third mode

4

    Fourth mode

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

Command

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

Application specific attributes

Flag: 1

    This command applies for newly created lchans

Parameters

amr

    Adaptive Multi Rate settings

tch-h

    Half Rate

threshold

    Lower threshold(s) for switching between codec modes

ms

    MS side

bts

    BTS side

<0-63>

    Threshold between codec mode 1 and 2 (in 0.5 dB steps)

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

Command

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

Application specific attributes

Flag: 1

    This command applies for newly created lchans

Parameters

amr

    Adaptive Multi Rate settings

tch-h

    Half Rate

threshold

    Lower threshold(s) for switching between codec modes

ms

    MS side

bts

    BTS side

<0-63>

    Threshold between codec mode 1 and 2 (in 0.5 dB steps)

<0-63>

    Threshold between codec mode 2 and 3 (in 0.5 dB steps)

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

Command

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

Application specific attributes

Flag: 1

    This command applies for newly created lchans

Parameters

amr

    Adaptive Multi Rate settings

tch-h

    Half Rate

threshold

    Lower threshold(s) for switching between codec modes

ms

    MS side

bts

    BTS side

<0-63>

    Threshold between codec mode 1 and 2 (in 0.5 dB steps)

<0-63>

    Threshold between codec mode 2 and 3 (in 0.5 dB steps)

<0-63>

    Threshold between codec mode 3 and 4 (in 0.5 dB steps)

1.18.31 band BAND

Command

```
band BAND
```

Application specific attributes

Flag: o

    This command applies on A-bis OML link (re)establishment

Parameters

band

    Set the frequency band of this BTS

BAND

    Frequency band

1.18.32 base_station_id_code <0-63>

Command

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

Application specific attributes

Flag: o

    This command applies on A-bis OML link (re)establishment

Parameters

base_station_id_code

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

<0-63>

    BSIC of this BTS

1.18.33   ccch load-indication-period <0-255>

Command

```
ccch load-indication-period <0-255>
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

ccch

Common Control Channel

load-indication-period

Period of time at which BTS sends RSL CCCH LOAD IND

<0-255>

CCCH Load Indication Period in seconds (Default: 1)

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

Command

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

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

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)

1.18.35   cell bar qualify (0|1)

Command

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

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

Parameters

cell

> Cell Parameters

bar

> Cell Bar Qualify (CELL_BAR_QUALIFY)

qualify

> Cell Bar Qualify (CELL_BAR_QUALIFY)

0

> Set CBQ to 0

1

> Set CBQ to 1

1.18.36   cell barred (0|1)

Command

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

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

Parameters

cell

> Should this cell be barred from access? (CELL_BAR_ACCESS)

barred

> Should this cell be barred from access? (CELL_BAR_ACCESS)

0

> The cell is not barred, see 3GPP TS 23.022

1

> The cell is barred, see 3GPP TS 23.022

1.18.37   cell reselection hysteresis <0-14>

Command

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

Application specific attributes

Flag: r

  This command applies on A-bis RSL link (re)establishment

Parameters

cell

  Cell Parameters

reselection

  Cell re-selection parameters

hysteresis

  Cell Re-Selection Hysteresis in dB

<0-14>

  Cell Re-Selection Hysteresis in dB

1.18.38   cell reselection offset <0-126>

Command

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

Application specific attributes

Flag: r

  This command applies on A-bis RSL link (re)establishment

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

1.18.39   cell_identity <0-65535>

Command

```
cell_identity <0-65535>
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

cell_identity

Set the Cell identity of this BTS

<0-65535>

Cell Identity (default 0)

1.18.40   channel allocator avoid-interference (0|1)

Command

```
channel allocator avoid-interference (0|1)
```

Global attributes

Flag: !

This command applies immediately

Parameters

channel

Channel Allocator

allocator

Channel Allocator

avoid-interference

Configure whether reported interference levels from RES IND are used in channel allocation

0

Ignore interference levels (default). Always assign lchans in a deterministic order.

1

In channel allocation, prefer lchans with less interference.

1.18.41   channel allocator dynamic-param c0-chan-load thresh <0-100>

Command

```
channel allocator dynamic-param c0-chan-load thresh <0-100>
```

Global attributes

Flag: !

This command applies immediately

Parameters

channel

Channel Allocator

allocator

Channel Allocator

dynamic-param

Parameters for dynamic channel allocation mode

c0-chan-load

C0 (BCCH carrier) channel load

thresh

Channel load threshold

<0-100>

Channel load threshold (in %)

1.18.42   channel allocator dynamic-param sort-by-trx-power (0|1)

Command

```
channel allocator dynamic-param sort-by-trx-power (0|1)
```

Global attributes

Flag: !

This command applies immediately

Parameters

channel

Channel Allocator

allocator

Channel Allocator

dynamic-param

> Parameters for dynamic channel allocation mode

sort-by-trx-power

> Whether to sort TRX instances by their respective power levels

0

> Do not sort, use the same order as in the configuration file

1

> Sort TRX instances by their power levels in descending order

1.18.43   channel allocator dynamic-param ul-rxlev thresh <0-63> avg-num <1-10>

Command

```
channel allocator dynamic-param ul-rxlev thresh <0-63> avg-num <1-10>
```

Global attributes

Flag: !

> This command applies immediately

Parameters

channel

> Channel Allocator

allocator

> Channel Allocator

dynamic-param

> Parameters for dynamic channel allocation mode

ul-rxlev

> Uplink RxLev

thresh

> Uplink RxLev threshold

<0-63>

> Uplink RxLev threshold

avg-num

> Minimum number of RxLev samples for averaging

<1-10>

> Minimum number of RxLev samples for averaging

1.18.44 channel allocator mode (set-all|chan-req|assignment|handover|vgcs-vbs) (ascendin...

Command

```
channel allocator mode (set-all|chan-req|assignment|handover|vgcs-vbs) (ascending| ↩
    descending)
```

Global attributes

Flag: !

This command applies immediately

Parameters

channel

Channel Allocator

allocator

Channel Allocator

mode

Channel allocation mode

set-all

Set a single mode for all variants

chan-req

Channel allocation for CHANNEL REQUEST (RACH)

assignment

Channel allocation for assignment

handover

Channel allocation for handover

vgcs-vbs

Channel allocation for VGCS/VBS

ascending

Allocate Timeslots and Transceivers in ascending order

descending

Allocate Timeslots and Transceivers in descending order

1.18.45   channel allocator mode assignment dynamic

Command

```
channel allocator mode assignment dynamic
```

Global attributes

Flag: !

This command applies immediately

Parameters

channel

Channel Allocator

allocator

Channel Allocator

mode

Channel allocation mode

assignment

Channel allocation for assignment

dynamic

Dynamic lchan selection based on configured parameters

1.18.46   channel allocator tch-signalling-policy (never|emergency|voice|always)

Command

```
channel allocator tch-signalling-policy (never|emergency|voice|always)
```

Global attributes

Flag: !

This command applies immediately

Parameters

channel

Channel Allocator

allocator

Channel Allocator

tch-signalling-policy

Configure when TCH/H or TCH/F channels can be used to serve signalling if SDCCHs are exhausted

never

> Never allow TCH for signalling purposes

emergency

> Only allow TCH for signalling purposes when establishing an emergency call

voice

> Allow TCH for signalling purposes when establishing any voice call

always

> Always allow TCH for signalling purposes (default)

1.18.47 channel-description attach (0|1)

Command

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

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

Parameters

channel-description

> Channel Description

attach

> Set if attachment is required

0

> Attachment is NOT required

1

> Attachment is required (standard)

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

Command

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

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

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

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

Command

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

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

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

1.18.50 codec-support fr

Command

```
codec-support fr
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Parameters

codec-support

Codec Support settings

fr

Fullrate

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

Command

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

Application specific attributes

Flag: l

This command applies for newly created lchans

Parameters

codec-support

Codec Support settings

fr

Fullrate

hr

Half Rate

efr

Enhanced Full Rate

amr

Adaptive Multirate

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

Command

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

Application specific attributes

Flag: l

This command applies for newly created lchans

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

1.18.53   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)
```

Application specific attributes

Flag: l

    This command applies for newly created lchans

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

1.18.54 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)
```

Application specific attributes

Flag: 1

> This command applies for newly created lchans

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

1.18.55 con-connection-group <1-31>

Command

```
con-connection-group <1-31>
```

Global attributes

Flag: !

    This command applies immediately

Parameters

con-connection-group

    Configure a CON (Concentrator) Connection Group

<1-31>

    CON Connection Group Number

1.18.56 del-connection-group <1-31>

Command

```
del-connection-group <1-31>
```

Global attributes

Flag: !

    This command applies immediately

Parameters

del-connection-group

    Delete a CON (Concentrator) Connection Group

<1-31>

    CON Connection Group Number

1.18.57 depends-on-bts <0-65535>

Command

```
depends-on-bts <0-65535>
```

Global attributes

Flag: !

   This command applies immediately

Parameters

depends-on-bts

   This BTS can only be started if another one is up

<0-65535>

   BTS Number

1.18.58 description .TEXT

Command

```
description .TEXT
```

Parameters

description

   Save human-readable description of the object

.TEXT

   Text until the end of the line

1.18.59 dtx downlink

Command

```
dtx downlink
```

Application specific attributes

Flag: r

   This command applies on A-bis RSL link (re)establishment

Parameters

dtx

   Configure discontinuous transmission

downlink

   Enable Downlink DTX for this BTS

1.18.60 dtx uplink [force]

Command

```
dtx uplink [force]
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

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).

1.18.61 early-classmark-sending (allowed|forbidden)

Command

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

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

early-classmark-sending

Early Classmark Sending

allowed

Early Classmark Sending is allowed

forbidden

Early Classmark Sending is forbidden

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

Command

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

Application specific attributes

Flag: r
>   This command applies on A-bis RSL link (re)establishment

Parameters

early-classmark-sending-3g
>   3G Early Classmark Sending

allowed
>   3G Early Classmark Sending is allowed

forbidden
>   3G Early Classmark Sending is forbidden

1.18.63   force-combined-si

Command

```
force-combined-si
```

Application specific attributes

Flag: o
>   This command applies on A-bis OML link (re)establishment

Parameters

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

1.18.64   gprs ccn-active (0|1|default)

Command

```
gprs ccn-active (0|1|default)
```

Application specific attributes

Flag: r

 This command applies on A-bis RSL link (re)establishment

Parameters

gprs

 GPRS Packet Network

ccn-active

 Set CCN_ACTIVE in the GPRS Cell Options IE on the BCCH (SI13)

0

 Disable

1

 Enable

default

 Default based on BTS type support

1.18.65 gprs cell bvci <2-65535>

Command

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

Application specific attributes

Flag: o

 This command applies on A-bis OML link (re)establishment

Parameters

gprs

 GPRS Packet Network

cell

 GPRS Cell Settings

bvci

 GPRS BSSGP VC Identifier

<2-65535>

 GPRS BSSGP VC Identifier

1.18.66 gprs cell timer (blocking-timer|blocking-retries|unblocking-retries|reset-timer|...

Command

```
gprs cell timer (blocking-timer|blocking-retries|unblocking-retries|reset-timer|reset- ←
    retries|suspend-timer|suspend-retries|resume-timer|resume-retries|capability-update ←
    -timer|capability-update-retries) <0-255>
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

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

1.18.67 gprs control-ack-type-rach

Command

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

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

Parameters

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

1.18.68 gprs egprs-packet-channel-request

Command

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

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

Parameters

gprs

> GPRS Packet Network

egprs-packet-channel-request

> EGPRS Packet Channel Request support

1.18.69 gprs mode (none|gprs|egprs)

Command

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

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

gprs

GPRS Packet Network

mode

GPRS Mode for this BTS

GPRS Disabled on this BTS

gprs

GPRS Enabled on this BTS

egprs

EGPRS (EDGE) Enabled on this BTS

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

Command

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

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

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

1.18.71   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|tsns-prov) <0-255>
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

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

<0-255>

Timer Value

1.18.72 gprs nsei <0-65535>

Command

```
gprs nsei <0-65535>
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

gprs

GPRS Packet Network

nsei

GPRS NS Entity Identifier

<0-65535>

GPRS NS Entity Identifier

1.18.73 gprs nsvc <0-1> local udp port <0-65535>

Command

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

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

gprs

GPRS Packet Network

nsvc

Network Service Virtual Connection (NS-VC)

<0-1>

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

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

Command

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

Application specific attributes

Flag: o

  This command applies on A-bis OML link (re)establishment

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

1.18.75 gprs nsvc <0-1> remote ip (A.B.C.D|X:X::X:X)

Command

```
gprs nsvc <0-1> remote ip (A.B.C.D|X:X::X:X)
```

Application specific attributes

Flag: o

  This command applies on A-bis OML link (re)establishment

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 IPv4 Address

X:X::X:X

    GPRS NS Remote IPv6 Address

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

Command

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

Application specific attributes

Flag: o

    This command applies on A-bis OML link (re)establishment

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

1.18.77   gprs power-control alpha <0-10>

Command

```
gprs power-control alpha <0-10>
```

Application specific attributes

Flag: r

    This command applies on A-bis RSL link (re)establishment

Parameters

gprs

    GPRS Packet Network

power-control

    GPRS Global Power Control Parameters IE (SI13)

alpha

    Set alpha

<0-10>

    alpha for MS output power control in units of 0.1 (defaults to 0)

1.18.78   gprs routing area <0-255>

Command

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

Application specific attributes

Flag: o

    This command applies on A-bis OML link (re)establishment

Parameters

gprs

    GPRS Packet Network

routing

    GPRS Routing Area Code

area

    GPRS Routing Area Code

<0-255>

    GPRS Routing Area Code

1.18.79 handover (0|1|default)

Command

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

Global attributes

Flag: !

This command applies immediately

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

1.18.80 handover algorithm (1|2|default)

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

   This command applies immediately

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

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

Command

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

Global attributes

Flag: !

   This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !
  This command applies immediately

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

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

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

Global attributes
Flag: !
  This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

> This command applies immediately

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

1.18.89   handover2 assignment (0|1|default)

Command

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

Global attributes

Flag: !

> This command applies immediately

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

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

Command

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


Global attributes

Flag: !

    This command applies immediately

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

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

Command

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


Global attributes

Flag: !
  This command applies immediately

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

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

Command

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


Global attributes

Flag: !
  This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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, where 0 is the best quality (bit error rate < 0.2%) and 7 is the worst quality (bit error rate > 12.8%), see 3GPP TS 45.008 8.2.4.

<0-7>

worst acceptable RxQual

default

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

1.18.98 handover2 penalty-time low-rxqual-assignment (<0-99999>|default)

Command

```
handover2 penalty-time low-rxqual-assignment (<0-99999>|default)
```

Global attributes

Flag: !

This command applies immediately

Parameters

handover2

Handover options for handover decision algorithm 2

penalty-time

Set penalty times to wait between repeated handovers

low-rxqual-assignment

Time to suspend re-assignment after an lchan was re-assigned because of low RxQual

<0-99999>

Seconds

default

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

1.18.99 handover2 penalty-time low-rxqual-ho (<0-99999>|default)

Command

```
handover2 penalty-time low-rxqual-ho (<0-99999>|default)
```

Global attributes

Flag: !

> This command applies immediately

Parameters

handover2

> Handover options for handover decision algorithm 2

penalty-time

> Set penalty times to wait between repeated handovers

low-rxqual-ho

> Time to suspend handover back to a cell after bad RxQual caused handover away from it

<0-99999>

> Seconds

default

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

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

Command

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

Global attributes

Flag: !

> This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

1.18.104 handover2 tdma-measurement (auto|full|subset|default)

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

handover2

    Handover options for handover decision algorithm 2

tdma-measurement

    Define measurement set of TDMA frames

auto

    Use full set when DTX is not in use, use subset when DTX is in use, as indicated by each Measurement Report

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

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

Command

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

Global attributes

Flag: !

    This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

1.18.108 immediate-assignment (post-chan-ack|pre-chan-ack|pre-ts-ack)

Command

```
immediate-assignment (post-chan-ack|pre-chan-ack|pre-ts-ack)
```

Global attributes

Flag: !

    This command applies immediately

Parameters

immediate-assignment

    Configure time of Immediate Assignment after ChanRqd RACH (Abis optimization)

post-chan-ack

    Send the Immediate Assignment after the Channel Activation ACK (normal sequence)

pre-chan-ack

    Send the Immediate Assignment directly after Channel Activation (early), without waiting for the ACK; This may help with double allocations on high latency Abis links

pre-ts-ack

    EXPERIMENTAL: If a dynamic timeslot switch is necessary, send the Immediate Assignment even before the timeslot is switched, i.e. even before the Channel Activation is sent (very early)

1.18.109 interference-meas avg-period <1-31>

Command

```
interference-meas avg-period <1-31>
```

Application specific attributes

Flag: o

    This command applies on A-bis OML link (re)establishment

Parameters

interference-meas

    Interference measurement parameters

avg-period

    Averaging period (Intave)

<1-31>

    Number of SACCH multiframes

1.18.110 interference-meas level-bounds <-120-0> <-120-0> <-120-0> <-120-0> <-120-0> <-12...

Command

```
interference-meas level-bounds <-120-0> <-120-0> <-120-0> <-120-0> <-120-0> <-120-0>
```

Application specific attributes

Flag: o

    This command applies on A-bis OML link (re)establishment

Parameters

interference-meas

    Interference measurement parameters

level-bounds

    Interference level Boundaries. 3GPP do not specify whether these should be in ascending or descending order (3GPP TS 48.058 9.3.21 / 3GPP TS 52.021 9.4.25). OsmoBSC supports either ordering, but possibly some BTS models only return meaningful interference levels with one specific ordering.

<-120-0>

    Interference boundary 0 (dBm)

<-120-0>

    Interference boundary X1 (dBm)

<-120-0>

    Interference boundary X2 (dBm)

<-120-0>

    Interference boundary X3 (dBm)

<-120-0>

    Interference boundary X4 (dBm)

<-120-0>

    Interference boundary X5 (dBm)

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

Command

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

Application specific attributes

Flag: o

   This command applies on A-bis OML link (re)establishment

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

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

Command

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

Application specific attributes

Flag: o

   This command applies on A-bis OML link (re)establishment

Parameters

ipa

   Abis/IP specific options

unit-id

   Set the IPA BTS Unit ID

<0-65534>

   Unit ID (Site)

<0-255>

   Unit ID (BTS)

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

Command

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

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

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

1.18.114 location_area_code (<0-65535>|<0x0000-0xffff>)

Command

```
location_area_code (<0-65535>|<0x0000-0xffff>)
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

location_area_code

Set the Location Area Code (LAC) of this BTS

<0-65535>

LAC in decimal format (default 0, reserved by GSM 04.08)

<0x0000-0xffff>

LAC in hexadecimal format (default 0x0000, reserved by GSM 04.08)

1.18.115   mgw pool-target <0-255> [strict]

Command

```
mgw pool-target <0-255> [strict]
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Parameters

mgw

MGW configuration for this specific BTS

pool-target

Pin BTS to use a single MGW in the pool

<0-255>

Reference Number of the MGW (in the config) to pin to

[strict]

Strictly prohibit use of other MGWs if the pinned one is not available

1.18.116   ms max power <0-40>

Command

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

Application specific attributes

Flag: l

This command applies for newly created lchans

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

1.18.117   ncc-permitted <1-8> [<1-8>] [<1-8>] [<1-8>] [<1-8>] [<1-8>] [<1-8>]

Command

```
ncc-permitted <1-8> [<1-8>] [<1-8>] [<1-8>] [<1-8>] [<1-8>] [<1-8>]
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

ncc-permitted

Set permitted NCCs

<1-8>

Network Colour Code

[<1-8>]

Network Colour Code

[<1-8>]

Network Colour Code

[<1-8>]

Network Colour Code

[<1-8>]

Network Colour Code

[<1-8>]

Network Colour Code

[<1-8>]

Network Colour Code

1.18.118   ncc-permitted all

Command

```
ncc-permitted all
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

ncc-permitted

Set permitted NCCs

all

Permit all NCCs (default)

1.18.119   nch-position num-blocks <1-7> first-block <0-6>

Command

```
nch-position num-blocks <1-7> first-block <0-6>
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

nch-position

NCH (Notification Channel) position within CCCH

num-blocks

Number of blocks reserved for NCH

<1-7>

Number of blocks reserved for NCH

first-block

First block reserved for NCH

<0-6>

First block reserved for NCH

1.18.120   neighbor bts <0-65535>

Command

```
neighbor bts <0-65535>
```

Parameters

neighbor

Manage local and remote-BSS neighbor cells

bts

Add Neighbor cell by local BTS number

<0-65535>

BTS number

1.18.121   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

1.18.122   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

1.18.123 neighbor cgi-ps <0-999> <0-999> <0-65535> <0-255> <0-65535>

Command

```
neighbor cgi-ps <0-999> <0-999> <0-65535> <0-255> <0-65535>
```

Parameters

neighbor

Manage local and remote-BSS neighbor cells

cgi-ps

Add Neighbor cell by cgi (Packet Switched, with RAC)

<0-999>

MCC

<0-999>

MNC

<0-65535>

LAC

<0-255>

RAC

<0-65535>

CI

1.18.124 neighbor cgi-ps <0-999> <0-999> <0-65535> <0-255> <0-65535> arfcn <0-1023> bsic ...

Command

```
neighbor cgi-ps <0-999> <0-999> <0-65535> <0-255> <0-65535> arfcn <0-1023> bsic  ←
    (<0-63>|any)
```

Parameters

neighbor
    Manage local and remote-BSS neighbor cells

cgi-ps
    Add Neighbor cell by cgi (Packet Switched, with RAC)

<0-999>
    MCC

<0-999>
    MNC

<0-65535>
    LAC

<0-255>
    RAC

<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

1.18.125 neighbor lac <0-65535>

Command

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

Parameters

neighbor

    Manage local and remote-BSS neighbor cells

lac

    Add Neighbor cell by LAC

<0-65535>

    LAC

1.18.126   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

1.18.127   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

1.18.128   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

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

Command

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

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

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

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

Command

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

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

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

1.18.131   no (bs-power-control|ms-power-control)

Command

```
no (bs-power-control|ms-power-control)
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Parameters

no

Negate a command or set its defaults

bs-power-control

BS (Downlink) power control parameters

ms-power-control

MS (Uplink) power control parameters

1.18.132   no access-control-class-ramping

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

access-control-class-ramping

Disable Access Control Class ramping

1.18.133   no depends-on-bts <0-65535>

Command

```
no depends-on-bts <0-65535>
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

depends-on-bts

This BTS can only be started if another one is up

<0-65535>

BTS Number

1.18.134   no description

Command

```
no description
```

Parameters

no

Negate a command or set its defaults

description

Remove description of the object

1.18.135   no dtx downlink

Command

```
no dtx downlink
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

no

Negate a command or set its defaults

dtx

Configure discontinuous transmission

downlink

Disable Downlink DTX for this BTS

1.18.136 no dtx uplink

Command

```
no dtx uplink
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

no

Negate a command or set its defaults

dtx

Configure discontinuous transmission

uplink

Disable Uplink DTX for this BTS

1.18.137 no force-combined-si

Command

```
no force-combined-si
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

no

Negate a command or set its defaults

force-combined-si

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

1.18.138   no gprs control-ack-type-rach

Command

```
no gprs control-ack-type-rach
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

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 default RLC/MAC control block

1.18.139   no gprs egprs-packet-channel-request

Command

```
no gprs egprs-packet-channel-request
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

no

Negate a command or set its defaults

gprs

GPRS Packet Network

egprs-packet-channel-request

EGPRS Packet Channel Request support

1.18.140   no gprs nsvc <0-1>

Command

```
no gprs nsvc <0-1>
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

no

Negate a command or set its defaults

gprs

GPRS Packet Network

nsvc

Network Service Virtual Connection (NS-VC)

<0-1>

NSVC Logical Number

1.18.141   no mgw pool-target

Command

```
no mgw pool-target
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Parameters

no

Negate a command or set its defaults

mgw

MGW configuration for this specific BTS

pool-target

Avoid pinning the BTS to any specific MGW (default)

1.18.142   no nch-position

Command

```
no nch-position
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

no

Negate a command or set its defaults

nch-position

Disable NCH in this BTS

1.18.143   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

1.18.144   no neighbor bts <0-65535>

Command

```
no neighbor bts <0-65535>
```

Parameters

no

Negate a command or set its defaults

neighbor

Remove local or remote-BSS neighbor cell

bts

Neighbor cell by local BTS number

<0-65535>

BTS number

1.18.145   no neighbor cgi <0-999> <0-999> <0-65535> <0-65535>

Command

```
no neighbor cgi <0-999> <0-999> <0-65535> <0-65535>
```

Parameters

no

Negate a command or set its defaults

neighbor

Remove local or remote-BSS neighbor cell

cgi

Neighbor cell by cgi

<0-999>

MCC

<0-999>

MNC

<0-65535>

LAC

<0-65535>

CI

1.18.146 no neighbor cgi-ps <0-999> <0-999> <0-65535> <0-255> <0-65535>

Command

```
no neighbor cgi-ps <0-999> <0-999> <0-65535> <0-255> <0-65535>
```

Parameters

no

Negate a command or set its defaults

neighbor

Remove local or remote-BSS neighbor cell

cgi-ps

Neighbor cell by cgi (Packet Switched, with RAC)

<0-999>

MCC

<0-999>

MNC

<0-65535>

LAC

<0-255>

RAC

<0-65535>

CI

1.18.147 no neighbor lac <0-65535>

Command

```
no neighbor lac <0-65535>
```

Parameters

no

Negate a command or set its defaults

neighbor

Remove local or remote-BSS neighbor cell

lac

Neighbor cell by LAC

<0-65535>

LAC

1.18.148   no neighbor lac-ci <0-65535> <0-65535>

Command

```
no neighbor lac-ci <0-65535> <0-65535>
```

Parameters

no

   Negate a command or set its defaults

neighbor

   Remove local or remote-BSS neighbor cell

lac-ci

   Neighbor cell by LAC and CI

<0-65535>

   LAC

<0-65535>

   CI

1.18.149   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.

1.18.150   no overpower dl-acch

Command

```
no overpower dl-acch
```

Application specific attributes

Flag: l

   This command applies for newly created lchans

Parameters

no

Negate a command or set its defaults

overpower

Temporary ACCH overpower

dl-acch

Disable ACCH overpower for this BTS

1.18.151   no repeat (ul-sacch|dl-sacch)

Command

```
no repeat (ul-sacch|dl-sacch)
```

Application specific attributes

Flag: 1

This command applies for newly created lchans

Parameters

no

Negate a command or set its defaults

repeat

FACCH/SACCH repetition

ul-sacch

Disable UL-SACCH repetition for this BTS

dl-sacch

Disable DL-SACCH repetition for this BTS

1.18.152   no repeat dl-facch

Command

```
no repeat dl-facch
```

Application specific attributes

Flag: 1

This command applies for newly created lchans

Parameters

no

> Negate a command or set its defaults

repeat

> FACCH/SACCH repetition

dl-facch

> Disable DL-FACCH repetition for this BTS

1.18.153   no rf-lock-exclude

Command

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

Global attributes

Flag: !

> This command applies immediately

Parameters

no

> Negate a command or set its defaults

rf-lock-exclude

> Exclude this BTS from the global RF Lock

1.18.154   no system-information unused-send-empty

Command

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

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

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.

1.18.155 no timer-dynamic TNNNN

Command

```
no timer-dynamic TNNNN
```

Global attributes

Flag: !

This command applies immediately

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'

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

Command

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

Global attributes

Flag: !

This command applies immediately

Parameters

nokia_site

Nokia *Site related commands

bts-reset-timer

The amount of time between BTS_RESET is sent and the BTS is being bootstrapped

<15-100>

Timer value (in seconds, default 15)

1.18.157   nokia_site hopping-mode (baseband|synthesizer)

Command

```
nokia_site hopping-mode (baseband|synthesizer)
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

nokia_site

Nokia *Site related commands

hopping-mode

Sets the hopping type for Nokia *Site

baseband

Baseband (BB) hopping

synthesizer

Synthesizer (RF) hopping

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

Command

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

Global attributes

Flag: !

This command applies immediately

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

1.18.159 nokia_site skip-reset (0|1)

Command

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

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

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

1.18.160 om2000 sync-source (internal|external)

Command

```
om2000 sync-source (internal|external)
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

om2000

Configure OM2K specific parameters

sync-source

TF Synchronization Source

internal

Use Internal (E1)

external

USe External (GPS)

1.18.161 om2000 version-limit (oml|rsl) gen <0-99> rev <0-99>

Command

```
om2000 version-limit (oml|rsl) gen <0-99> rev <0-99>
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

om2000

Configure OM2K specific parameters

version-limit

Configure optional maximum protocol version to negotiate

oml

Limit OML IWD version

rsl

Limit RSL IWD version

gen

Generation limit

<0-99>

Generation number to limit to (inclusive)

rev

Revision limit

<0-99>

Revision number to limit to (inclusive)

1.18.162 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

1.18.163   oml e1 tei <0-63>

Command

```
oml e1 tei <0-63>
```

Application specific attributes

Flag: o

    This command applies on A-bis OML link (re)establishment

Parameters

oml

    Organization & Maintenance Link

e1

    OML E1/T1 Configuration

tei

    Set the TEI to be used for OML

<0-63>

    TEI Number

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

Command

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

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

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

1.18.165   osmux (on|off|only)

Command

```
osmux (on|off|only)
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Parameters

osmux

RTP multiplexing

on

Enable OSMUX

off

Disable OSMUX

only

Only use OSMUX

1.18.166   overpower (dl-acch|dl-sacch|dl-facch) <1-4>

Command

```
overpower (dl-acch|dl-sacch|dl-facch) <1-4>
```

Application specific attributes

Flag: l

    This command applies for newly created lchans

Parameters

overpower

    Temporary ACCH overpower

dl-acch

    Enable overpower for both SACCH and FACCH

dl-sacch

    Enable overpower for SACCH only

dl-facch

    Enable overpower for FACCH only

<1-4>

    Overpower value in dB

1.18.167   overpower chan-mode (speech-amr|any)

Command

```
overpower chan-mode (speech-amr|any)
```

Application specific attributes

Flag: l

    This command applies for newly created lchans

Parameters

overpower

    Temporary ACCH overpower

chan-mode

    Allow temporary overpower for specific Channel mode(s)

speech-amr

    Speech channels using AMR codec (default)

any

    Any kind of channel mode

1.18.168 overpower rxqual (0|1|2|3|4|5|6|7)

Command

```
overpower rxqual (0|1|2|3|4|5|6|7)
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Parameters

overpower

Temporary ACCH overpower

rxqual

Set RxQual (BER) threshold (default 4)

0

BER >= 0% (always on)

1

BER >= 0.2%

2

BER >= 0.4%

3

BER >= 0.8%

4

BER >= 1.6% (default)

5

BER >= 3.2%

6

BER >= 6.4%

7

BER >= 12.8%

1.18.169 paging free <-1-1024>

Command

```
paging free <-1-1024>
```

Global attributes

Flag: !
    This command applies immediately

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

1.18.170   penalty time <20-620>

Command

```
penalty time <20-620>
```

Application specific attributes

Flag: r
    This command applies on A-bis RSL link (re)establishment

Parameters

penalty
    Cell selection penalty time

time
    Cell selection penalty time

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

1.18.171   penalty time reserved

Command

```
penalty time reserved
```

Application specific attributes

Flag: r
    This command applies on A-bis RSL link (re)establishment

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)

1.18.172 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)
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

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

7

    Access control class 7

8

    Access control class 8

9

    Access control class 9

11

    Access control class 11 for PLMN use

12

    Access control class 12 for security services

13

    Access control class 13 for public utilities (e.g. water/gas suppliers)

14

    Access control class 14 for emergency services

15

    Access control class 15 for PLMN staff

barred

    barred to use access control class

allowed

    allowed to use access control class

1.18.173   rach call-reestablishment allowed (0|1)

Command

```
rach call-reestablishment allowed (0|1)
```

Application specific attributes

Flag: r

    This command applies on A-bis RSL link (re)establishment

Parameters

rach

    Random Access Control Channel

call-reestablishment

    Resume calls after radio link failure

allowed

    Resume calls after radio link failure

0

    Forbid MS to reestablish calls

1

    Allow MS to try to reestablish calls

1.18.174   rach emergency call allowed (0|1)

Command

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

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

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

1.18.175   rach expiry-timeout <4-64>

Command

```
rach expiry-timeout <4-64>
```

Global attributes

Flag: !

> This command applies immediately

Parameters

rach

> Random Access Control Channel

expiry-timeout

> Set the timeout for channel requests expiry

<4-64>

> Maximum timeout before dropping channel requests

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

Command

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

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

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

1.18.177   rach max-delay <1-127>

Command

```
rach max-delay <1-127>
```

Global attributes

Flag: !

This command applies immediately

Parameters

rach

Random Access Control Channel

max-delay

Set the max Access Delay IE value to accept in CHANnel ReQuireD

<1-127>

Maximum Access Delay IE value to accept in CHANnel ReQuireD

1.18.178   rach nm busy threshold <0-255>

Command

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

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

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

1.18.179   rach nm load average <0-65535>

Command

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

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

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

1.18.180   rach tx integer <0-15>

Command

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

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

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

1.18.181   radio-link-timeout <4-64>

Command

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

Application specific attributes

Flag: o

> This command applies on A-bis OML link (re)establishment

Parameters

radio-link-timeout

> Radio link timeout criterion (BTS side)

<4-64>

> Radio link timeout value (lost SACCH block)

1.18.182   radio-link-timeout infinite

Command

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

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

radio-link-timeout

Radio link timeout criterion (BTS side)

infinite

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

1.18.183   repeat (ul-sacch|dl-sacch)

Command

```
repeat (ul-sacch|dl-sacch)
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Parameters

repeat

FACCH/SACCH repetition

ul-sacch

Enable UL-SACCH repetition for this BTS

dl-sacch

Enable DL-SACCH repetition for this BTS

1.18.184   repeat dl-facch (command|all)

Command

```
repeat dl-facch (command|all)
```

Application specific attributes

Flag: l

   This command applies for newly created lchans

Parameters

repeat

   FACCH/SACCH repetition

dl-facch

   Enable DL-FACCH repetition for this BTS

command

   command LAPDm frames only

all

   all LAPDm frames

1.18.185   repeat rxqual (0|1|2|3|4|5|6|7)

Command

```
repeat rxqual (0|1|2|3|4|5|6|7)
```

Application specific attributes

Flag: l

   This command applies for newly created lchans

Parameters

repeat

   FACCH/SACCH repetition

rxqual

   Set RxQual (BER) threshold (default 4)

0

   BER >= 0% (always on)

1

   BER >= 0.2%

2

   BER >= 0.4%

3

   BER >= 0.8%

4

   BER >= 1.6% (default)

5

   BER >= 3.2%

6

   BER >= 6.4%

7

   BER >= 12.8%

1.18.186   rf-lock-exclude

Command

```
rf-lock-exclude
```

Global attributes

Flag: !

   This command applies immediately

Parameters

rf-lock-exclude

   Exclude this BTS from the global RF Lock

1.18.187   rxlev access min <0-63>

Command

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

Application specific attributes

Flag: r

   This command applies on A-bis RSL link (re)establishment

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)

1.18.188   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>
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

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)

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

Command

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


Application specific attributes

Flag: r

    This command applies on A-bis RSL link (re)establishment

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

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

Command

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

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

Parameters

si2quater

> SI2quater Neighbor List

neighbor-list

> SI2quater Neighbor List

del

> Delete from SI2quater manual neighbor list

earfcn

> EARFCN of neighbor

<0-65535>

> EARFCN

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

Command

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

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

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

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

Command

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

Application specific attributes

Flag: r

    This command applies on A-bis RSL link (re)establishment

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

1.18.193   srvcc fast-return (allow|forbid)

Command

```
srvcc fast-return (allow|forbid)
```

Global attributes

Flag: !
    This command applies immediately

Parameters

srvcc
    SRVCC Configuration

fast-return
    Allow or forbid Fast Return to 4G on Channel Release in this BTS

allow
    Allow

forbid
    Forbid

1.18.194 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)
```


Application specific attributes

Flag: r
    This command applies on A-bis RSL link (re)establishment

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

1.18.195   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) ←
    static HEXSTRING
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

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

static

Static System Information filling

HEXSTRING

Static user-specified SI content in HEX notation

1.18.196 system-information unused-send-empty

Command

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

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

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 receival of these messages.

1.18.197 temporary offset <0-60>

Command

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

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

temporary

Cell selection temporary negative offset

offset

Cell selection temporary negative offset

<0-60>

Cell selection temporary negative offset in dB

1.18.198 temporary offset infinite

Command

```
temporary offset infinite
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

temporary

Cell selection temporary negative offset

offset

Cell selection temporary negative offset

infinite

Sets cell selection temporary negative offset to infinity

1.18.199   timer-dynamic TNNNN

Command

```
timer-dynamic TNNNN
```

Global attributes

Flag: !
    This command applies immediately

Parameters

timer-dynamic
    Calculate T3113 dynamically based on channel config and load (default)

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

1.18.200   trx <0-255>

Command

```
trx <0-255>
```

Global attributes

Flag: !
    This command applies immediately

Parameters

trx
    Radio Transceiver

<0-255>
    Select a TRX to configure

1.18.201   type (unknown|bs11|nanobts|rbs2000|nokia_site|osmo-bts)

Command

```
type (unknown|bs11|nanobts|rbs2000|nokia_site|osmo-bts)
```

Application specific attributes

Flag: o

    This command applies on A-bis OML link (re)establishment

Parameters

type

    BTS Vendor/Type

unknown

    Unknown BTS Type

bs11

    Siemens BTS (BS-11 or compatible)

nanobts

    ip.access nanoBTS or compatible

rbs2000

    Ericsson RBS2000 Series

nokia_site

    Nokia {Metro,Ultra,In}Site

osmo-bts

    Osmocom Base Transceiver Station

1.19   config-net-bts-trx

1.19.1   arfcn <0-1023>

Command

```
arfcn <0-1023>
```

Application specific attributes

Flag: o

    This command applies on A-bis OML link (re)establishment

Parameters

arfcn

    Set the ARFCN for this TRX

<0-1023>

    Absolute Radio Frequency Channel Number

1.19.2 description .TEXT

Command

```
description .TEXT
```

Parameters

description

Save human-readable description of the object

.TEXT

Text until the end of the line

1.19.3 max_power_red <0-100>

Command

```
max_power_red <0-100>
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

max_power_red

Reduction of maximum BS RF Power (relative to nominal power)

<0-100>

Reduction of maximum BS RF Power in dB

1.19.4 no description

Command

```
no description
```

Parameters

no

Negate a command or set its defaults

description

Remove description of the object

1.19.5 nominal power <-20-100>

Command

```
nominal power <-20-100>
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

nominal

Nominal TRX RF Power in dBm

power

Nominal TRX RF Power in dBm

<-20-100>

Nominal TRX RF Power in dBm

1.19.6 om2000 rx-diversity-mode (a|ab|b)

Command

```
om2000 rx-diversity-mode (a|ab|b)
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

Parameters

om2000

Configure OM2K specific parameters

rx-diversity-mode

RX Diversity

a

Antenna TX/RX (A)

ab

Both Antennas

b

Antenna RX (B)

1.19.7 rf_locked (0|1)

Command

```
rf_locked (0|1)
```

Global attributes

Flag: !

This command applies immediately

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)

1.19.8 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

1.19.9 rsl e1 tei <0-63>

Command

```
rsl e1 tei <0-63>
```

Application specific attributes

Flag: r

This command applies on A-bis RSL link (re)establishment

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

1.19.10 timeslot <0-7>

Command

```
timeslot <0-7>
```

Global attributes

Flag: !
    This command applies immediately

Parameters

timeslot
    Select a Timeslot to configure

<0-7>
    Timeslot number

1.20 config-net-bts-trx-ts

1.20.1 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)
```

Global attributes

Flag: !
    This command applies immediately

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

1.20.2 hopping arfcn add <0-1023>

Command

```
hopping arfcn add <0-1023>
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

hopping

Configure frequency hopping

arfcn

Configure hopping ARFCN list

add

Add an entry to the hopping ARFCN list

<0-1023>

ARFCN

1.20.3 hopping arfcn del <0-1023>

Command

```
hopping arfcn del <0-1023>
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

hopping

    Configure frequency hopping

arfcn

    Configure hopping ARFCN list

del

    Delete an entry to the hopping ARFCN list

<0-1023>

    ARFCN

1.20.4 hopping arfcn del-all

Command

```
hopping arfcn del-all
```

Application specific attributes

Flag: o

    This command applies on A-bis OML link (re)establishment

Parameters

hopping

    Configure frequency hopping

arfcn

    Configure hopping ARFCN list

del-all

    Delete all previously configured entries

1.20.5 hopping enabled (0|1)

Command

```
hopping enabled (0|1)
```

Application specific attributes

Flag: o

    This command applies on A-bis OML link (re)establishment

Parameters

hopping

Configure frequency hopping

enabled

Enable or disable frequency hopping

0

Disable frequency hopping

1

Enable frequency hopping

1.20.6 hopping maio <0-63>

Command

```
hopping maio <0-63>
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

hopping

Configure frequency hopping

maio

Which hopping MAIO to use for this channel

<0-63>

Mobile Allocation Index Offset (MAIO)

1.20.7 hopping sequence-number <0-63>

Command

```
hopping sequence-number <0-63>
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

hopping

Configure frequency hopping

sequence-number

Which hopping sequence to use for this channel

<0-63>

Hopping Sequence Number (HSN)

1.20.8   phys_chan_config (none|ccch|ccch+sdcch4|tch/f|tch/h|sdcch8|pdch|dynamic/ipaccess...

Command

```
phys_chan_config (none|ccch|ccch+sdcch4|tch/f|tch/h|sdcch8|pdch|dynamic/ipaccess| ↩
    unknown|ccch+sdcch4+cbch|sdcch8+cbch|dynamic/osmocom|tch/f_pdch|tch/f_tch/ ↩
    h_sdcch8_pdch)
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

Parameters

phys_chan_config

Physical Channel Combination

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

dynamic/ipaccess

Dynamic TCH/F or GPRS PDCH (dynamic/ipaccess is an alias for tch/f_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)

dynamic/osmocom

Dynamic TCH/F or TCH/H or SDCCH/8 or GPRS PDCH (dynamic/osmocom is an alias for tch/f_tch/h_sdcch8_pdch)

tch/f_pdch

Dynamic TCH/F or GPRS PDCH (dynamic/ipaccess is an alias for tch/f_pdch)

tch/f_tch/h_sdcch8_pdch

Dynamic TCH/F or TCH/H or SDCCH/8 or GPRS PDCH (dynamic/osmocom is an alias for tch/f_tch/h_sdcch8_pdch)

1.20.9 training_sequence_code <0-7>

Command

```
training_sequence_code <0-7>
```

Application specific attributes

Flag: o

> This command applies on A-bis OML link (re)establishment

Parameters

training_sequence_code

> Training Sequence Code of the Timeslot

<0-7>

> TSC

1.21 oml

1.21.1 change-adm-state (locked|unlocked|shutdown|null)

Command

```
change-adm-state (locked|unlocked|shutdown|null)
```

Parameters

change-adm-state

> Change the Administrative State

locked

> Locked

unlocked

> Unlocked

shutdown

> Shutdown

null

> NULL

1.21.2 opstart

Command

```
opstart
```

Parameters

opstart

Send an OPSTART message to the object

1.22   config-msc

This node allows to configure the MSC connection related settings.

1.22.1 allow-attach

Command

```
allow-attach
```

Global attributes

Flag: !

This command applies immediately

Parameters

allow-attach

Allow this MSC to attach new subscribers (default).

1.22.2 allow-emergency (allow|deny)

Command

```
allow-emergency (allow|deny)
```

Global attributes

Flag: !

This command applies immediately

Parameters

allow-emergency

Allow CM ServiceRequests with type emergency

allow

Allow

deny

Deny

1.22.3 amr-config 10_2k (allowed|forbidden)

Command

```
amr-config 10_2k (allowed|forbidden)
```

Application specific attributes

Flag: r

   This command applies on A-bis RSL link (re)establishment

Parameters

amr-config

   AMR Multirate Configuration

10_2k

   Bitrate

allowed

   Allowed

forbidden

   Forbidden

1.22.4 amr-config 12_2k (allowed|forbidden)

Command

```
amr-config 12_2k (allowed|forbidden)
```

Application specific attributes

Flag: r

   This command applies on A-bis RSL link (re)establishment

Parameters

amr-config

   AMR Multirate Configuration

12_2k

   Bitrate

allowed

   Allowed

forbidden

   Forbidden

1.22.5 amr-config 4_75k (allowed|forbidden)

Command

```
amr-config 4_75k (allowed|forbidden)
```

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

Parameters

amr-config

> AMR Multirate Configuration

4_75k

> Bitrate

allowed

> Allowed

forbidden

> Forbidden

1.22.6 amr-config 5_15k (allowed|forbidden)

Command

```
amr-config 5_15k (allowed|forbidden)
```

Application specific attributes

Flag: r

> This command applies on A-bis RSL link (re)establishment

Parameters

amr-config

> AMR Multirate Configuration

5_15k

> Bitrate

allowed

> Allowed

forbidden

> Forbidden

1.22.7 amr-config 5_90k (allowed|forbidden)

Command

```
amr-config 5_90k (allowed|forbidden)
```

Application specific attributes

Flag: r

>   This command applies on A-bis RSL link (re)establishment

Parameters

amr-config

>   AMR Multirate Configuration

5_90k

>   Bitrate

allowed

>   Allowed

forbidden

>   Forbidden

1.22.8 amr-config 6_70k (allowed|forbidden)

Command

```
amr-config 6_70k (allowed|forbidden)
```

Application specific attributes

Flag: r

>   This command applies on A-bis RSL link (re)establishment

Parameters

amr-config

>   AMR Multirate Configuration

6_70k

>   Bitrate

allowed

>   Allowed

forbidden

>   Forbidden

1.22.9   amr-config 7_40k (allowed|forbidden)

Command

```
amr-config 7_40k (allowed|forbidden)
```

Application specific attributes

Flag: r
> This command applies on A-bis RSL link (re)establishment

Parameters

amr-config
> AMR Multirate Configuration

7_40k
> Bitrate

allowed
> Allowed

forbidden
> Forbidden

1.22.10   amr-config 7_95k (allowed|forbidden)

Command

```
amr-config 7_95k (allowed|forbidden)
```

Application specific attributes

Flag: r
> This command applies on A-bis RSL link (re)establishment

Parameters

amr-config
> AMR Multirate Configuration

7_95k
> Bitrate

allowed
> Allowed

forbidden
> Forbidden

1.22.11 amr-payload (octet-aligned|bandwidth-efficient)

Command

```
amr-payload (octet-aligned|bandwidth-efficient)
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Parameters

amr-payload

Set AMR payload framing mode

octet-aligned

payload fields aligned on octet boundaries

bandwidth-efficient

payload fields packed (AoIP)

1.22.12 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)

1.22.13 bsc-addr NAME

Command

```
bsc-addr NAME
```

Parameters

bsc-addr

Calling Address (local address of this BSC)

NAME

SCCP address name

1.22.14 codec-list .LIST

Command

```
codec-list .LIST
```

Application specific attributes

Flag: r

  This command applies on A-bis RSL link (re)establishment

Parameters

codec-list

  Set the allowed audio codecs and their order of preference

.LIST

  List of audio codecs in order of preference, e.g. 'codec-list fr3 fr2 fr1 hr3 hr1'. (fr3: AMR-FR, hr3: AMR-HR, fr2: GSM-EFR, fr1: GSM-FR, hr1: GSM-HR)

1.22.15 core-mobile-country-code <1-999>

Command

```
core-mobile-country-code <1-999>
```

Global attributes

Flag: !

  This command applies immediately

Parameters

core-mobile-country-code

  Use this country code for the core network

<1-999>

  MCC value

1.22.16   core-mobile-network-code <1-999>

Command

```
core-mobile-network-code <1-999>
```

Global attributes

Flag: !

   This command applies immediately

Parameters

core-mobile-network-code

   Use this network code for the core network

<1-999>

   MNC value

1.22.17   keepalive request-endpoint NAME

Command

```
keepalive request-endpoint NAME
```

Parameters

keepalive

   Monitor if the MGCP link against MGW is still usable

request-endpoint

   Use a given endpoint name when sending an MGCP command to the MGW for keepalive purposes

NAME

   The name of the endpoint to use

1.22.18   keepalive request-interval <0-4294967295>

Command

```
keepalive request-interval <0-4294967295>
```

Parameters

keepalive

   Monitor if the MGCP link against MGW is still usable

request-interval

   Send an MGCP command to the MGW at given interval if no other commands are sent

<0-4294967295>

   The interval at which send MGCP commands (s), 0 to disable

1.22.19   keepalive timeout <0-4294967295>

Command

```
keepalive timeout <0-4294967295>
```

Parameters

keepalive

>   Monitor if the MGCP link against MGW is still usable

timeout

>   Consider the link to the MGW to be down after time without receiving any message from it

<0-4294967295>

>   The timeout (s), 0 to disable

1.22.20   lcls-codec-mismatch (allowed|forbidden)

Command

```
lcls-codec-mismatch (allowed|forbidden)
```

Application specific attributes

Flag: l

>   This command applies for newly created lchans

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

1.22.21   lcls-mode (disabled|mgw-loop|bts-loop)

Command

```
lcls-mode (disabled|mgw-loop|bts-loop)
```

Application specific attributes

Flag: 1

    This command applies for newly created lchans

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

1.22.22 mgw x-osmo-ign call-id

Command

```
mgw x-osmo-ign call-id
```

Application specific attributes

Flag: 1

    This command applies for newly created lchans

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.

1.22.23 msc-addr NAME

Command

```
msc-addr NAME
```

Parameters

msc-addr

    Called Address (remote address of the MSC)

NAME

    SCCP address name

1.22.24 no allow-attach

Command

```
no allow-attach
```

Global attributes

Flag: !

This command applies immediately

Parameters

no

Negate a command or set its defaults

allow-attach

Do not assign new subscribers to this MSC. Useful if an MSC in an MSC pool is configured to off-load subscribers. The MSC will still be operational for already IMSI-Attached subscribers, but the NAS node selection function will skip this MSC for new subscribers

1.22.25 no mgw x-osmo-ign

Command

```
no mgw x-osmo-ign
```

Application specific attributes

Flag: l

This command applies for newly created lchans

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

1.22.26   nri add <0-32767> [<0-32767>]

Command

```
nri add <0-32767> [<0-32767>]
```

Global attributes

Flag: !

This command applies immediately

Parameters

nri

Mapping of Network Resource Indicators, for MSC pooling

add

Add NRI value or range to the NRI mapping for this MSC

<0-32767>

First value of the NRI value range, should not surpass the configured 'nri bitlen'.

[<0-32767>]

Last value of the NRI value range, should not surpass the configured 'nri bitlen' and be larger than the first value; if omitted, apply only the first value.

1.22.27   nri del <0-32767> [<0-32767>]

Command

```
nri del <0-32767> [<0-32767>]
```

Global attributes

Flag: !

This command applies immediately

Parameters

nri

Mapping of Network Resource Indicators, for MSC pooling

del

Remove NRI value or range from the NRI mapping for this MSC

<0-32767>

First value of the NRI value range, should not surpass the configured 'nri bitlen'.

[<0-32767>]

Last value of the NRI value range, should not surpass the configured 'nri bitlen' and be larger than the first value; if omitted, apply only the first value.

1.22.28 osmux (on|off|only)

Command

```
osmux (on|off|only)
```

Application specific attributes

Flag: 1

This command applies for newly created lchans

Parameters

osmux

RTP multiplexing

on

Enable OSMUX

off

Disable OSMUX

only

Only use OSMUX

1.22.29 show nri

Command

```
show nri
```

Parameters

show

Show running system information

nri

Mapping of Network Resource Indicators, for MSC pooling

1.23 om2k

1.23.1 arbitrary <0-65535> [HEXSTRING]

Command

```
arbitrary <0-65535> [HEXSTRING]
```

Parameters

arbitrary

   Send arbitrary OM2k message

<0-65535>

   Command identifier

[HEXSTRING]

   Hex Encoded payload

1.23.2 **capabilities-request**

Command

```
capabilities-request
```

Parameters

capabilities-request

   Request MO capabilities

1.23.3 **configuration-request**

Command

```
configuration-request
```

Parameters

configuration-request

   Send the configuration request for current MO

1.23.4 **connect-command**

Command

```
connect-command
```

Parameters

connect-command

   Connect the MO

1.23.5 disable-request

Command

```
disable-request
```

Parameters

disable-request
    Disable the MO

1.23.6 disconnect-command

Command

```
disconnect-command
```

Parameters

disconnect-command
    Disconnect the MO

1.23.7 enable-request

Command

```
enable-request
```

Parameters

enable-request
    Enable the MO

1.23.8 operational-info <0-1>

Command

```
operational-info <0-1>
```

Parameters

operational-info
    Set operational information
<0-1>
    Set operational info to 0 or 1

1.23.9 reset-command

Command

```
reset-command
```

Parameters

reset-command

Reset the MO

1.23.10 start-request

Command

```
start-request
```

Parameters

start-request

Start the MO

1.23.11 status-request

Command

```
status-request
```

Parameters

status-request

Get the MO Status

1.23.12 test-request

Command

```
test-request
```

Parameters

test-request

Test the MO

1.24 om2k-con-group

1.24.1 con-path (add|del) <0-2047> <0-255> concentrated <1-16>

Command

```
con-path (add|del) <0-2047> <0-255> concentrated <1-16>
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

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

1.24.2 con-path (add|del) <0-2047> <0-255> deconcentrated <0-63>

Command

```
con-path (add|del) <0-2047> <0-255> deconcentrated <0-63>
```

Application specific attributes

Flag: o

This command applies on A-bis OML link (re)establishment

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

1.25 config-bsc

This node allows to configure the BSC connection related settings.

1.25.1 bsc-auto-rf-off <1-65000>

Command

```
bsc-auto-rf-off <1-65000>
```

Global attributes

Flag: !

> This command applies immediately

Parameters

bsc-auto-rf-off

> Disable RF on MSC Connection

<1-65000>

> Timeout

1.25.2 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

1.25.3 bts-setup-ramping

Command

```
bts-setup-ramping
```

Global attributes

Flag: !

This command applies immediately

Parameters

bts-setup-ramping

Enable BTS setup ramping to limit the amount of BTS to configure within a time window.

1.25.4 bts-setup-ramping-step-interval <0-65535>

Command

```
bts-setup-ramping-step-interval <0-65535>
```

Global attributes

Flag: !

This command applies immediately

Parameters

bts-setup-ramping-step-interval

Configure the BTS setup ramping step interval. The time between ramping steps.

<0-65535>

Set a step interval (in seconds)

1.25.5 bts-setup-ramping-step-size <0-65535>

Command

```
bts-setup-ramping-step-size <0-65535>
```

Global attributes

Flag: !
> This command applies immediately

Parameters

bts-setup-ramping-step-size
> Configure the BTS setup ramping step size. The amount of BTS to allow to configure within a ramping interval

<0-65535>
> Amount of BTS to setup while a step size

1.25.6 mid-call-timeout NR

Command

```
mid-call-timeout NR
```

Global attributes

Flag: !
> This command applies immediately

Parameters

mid-call-timeout
> Switch from Grace to Off in NR seconds.

NR
> Timeout in seconds

1.25.7 no bsc-auto-rf-off

Command

```
no bsc-auto-rf-off
```

Global attributes

Flag: !
    This command applies immediately

Parameters

no
    Negate a command or set its defaults

bsc-auto-rf-off
    Disable RF on MSC Connection

1.25.8 no bts-setup-ramping

Command

```
no bts-setup-ramping
```

Global attributes

Flag: !
    This command applies immediately

Parameters

no
    Negate a command or set its defaults

bts-setup-ramping
    Disable BTS ramping and configure all waiting BTS.

1.26 config-cbc

1.26.1 client

Command

```
client
```

Parameters

client
    Configure OsmoBSC's CBSP client role

1.26.2   mode (server|client|disabled)

Command

```
mode (server|client|disabled)
```

Parameters

mode

Set OsmoBSC as CBSP server or client

server

CBSP Server: listen for inbound TCP connections from a remote Cell Broadcast Centre

client

CBSP Client: establish outbound TCP connection to a remote Cell Broadcast Centre

disabled

Disable CBSP link

1.26.3   server

Command

```
server
```

Parameters

server

Configure OsmoBSC's CBSP server role

1.27   config-cbc-server

1.27.1   local-ip (A.B.C.D|X:X::X:X)

Command

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

Parameters

local-ip

Set IP Address to listen on for inbound CBSP from a Cell Broadcast Centre

A.B.C.D

IPv4 address

X:X::X:X

IPv6 address

1.27.2   local-port <1-65535>

Command

```
local-port <1-65535>
```

Parameters

local-port
> Set TCP port to listen on for inbound CBSP from a Cell Broadcast Centre

<1-65535>
> CBSP port number (Default: 48049)

1.28   config-cbc-client

1.28.1   local-ip (A.B.C.D|X:X::X:X)

Command

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

Parameters

local-ip
> Set local bind address for the outbound CBSP link to the Cell Broadcast Centre

A.B.C.D
> IPv4 address

X:X::X:X
> IPv6 address

1.28.2   local-port <1-65535>

Command

```
local-port <1-65535>
```

Parameters

local-port
> Set local bind port for the outbound CBSP link to the Cell Broadcast Centre

<1-65535>
> port number

1.28.3 no local-ip

Command

```
no local-ip
```

Parameters

no

> Negate a command or set its defaults

local-ip

> Remove local IP address bind config for the CBSP client mode

1.28.4 no local-port

Command

```
no local-port
```

Parameters

no

> Negate a command or set its defaults

local-port

> Remove local TCP port bind config for the CBSP client mode

1.28.5 remote-ip (A.B.C.D|X:X::X:X)

Command

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

Parameters

remote-ip

> Set IP Address of the Cell Broadcast Centre, to establish CBSP link to

A.B.C.D

> IPv4 address

X:X::X:X

> IPv6 address

1.28.6 remote-port <1-65535>

Command

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

Parameters

remote-port

Set TCP port of the Cell Broadcast Centre, to establish CBSP link to

<1-65535>

CBSP port number (Default: 48049)

1.29 config-power-ctrl

1.29.1 (rxlev-avg|rxqual-avg) algo (unweighted|weighted|mod-median)

Command

```
(rxlev-avg|rxqual-avg) algo (unweighted|weighted|mod-median)
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Flag: v

This command/parameter is BTS vendor specific

Parameters

rxlev-avg

RxLev (signal strength) measurement averaging (for dynamic mode)

rxqual-avg

RxQual (signal quality) measurement averaging (for dynamic mode)

algo

Select the averaging algorithm

unweighted

Un-weighted average

weighted

Weighted average

mod-median

Modified median calculation

1.29.2   (rxlev-avg|rxqual-avg) algo osmo-ewma beta <1-99>

Command

```
(rxlev-avg|rxqual-avg) algo osmo-ewma beta <1-99>
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Flag: v

This command/parameter is BTS vendor specific

Parameters

rxlev-avg

RxLev (signal strength) measurement averaging (for dynamic mode)

rxqual-avg

RxQual (signal quality) measurement averaging (for dynamic mode)

algo

Select the averaging algorithm

osmo-ewma

Exponentially Weighted Moving Average (EWMA)

beta

Smoothing factor (in %): beta = (100 - alpha)

<1-99>

1% - lowest smoothing, 99% - highest smoothing

1.29.3   (rxlev-avg|rxqual-avg) params hreqave <1-31> hreqt <1-31>

Command

```
(rxlev-avg|rxqual-avg) params hreqave <1-31> hreqt <1-31>
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Flag: v

This command/parameter is BTS vendor specific

Parameters

rxlev-avg

>   RxLev (signal strength) measurement averaging (for dynamic mode)

rxqual-avg

>   RxQual (signal quality) measurement averaging (for dynamic mode)

params

>   Configure general averaging parameters

hreqave

>   Hreqave: the period over which an average is produced

<1-31>

>   Hreqave value (so that Hreqave * Hreqt < 32)

hreqt

>   Hreqt: the number of averaged results that are maintained

<1-31>

>   Hreqt value (so that Hreqave * Hreqt < 32)

1.29.4   bs-power (static|dyn-max) <0-30>

Command

```
bs-power (static|dyn-max) <0-30>
```

Application specific attributes

Flag: 1

>   This command applies for newly created lchans

Parameters

bs-power

>   BS Power IE value to be sent to the BTS

static

>   Fixed BS Power reduction value (for static mode)

dyn-max

>   Maximum BS Power reduction value (for dynamic mode)

<0-30>

>   BS Power reduction value (in dB, even numbers only)

1.29.5 ci-avg (fr-efr|hr|amr-fr|amr-hr|sdcch|gprs) algo (unweighted|weighted|mod-median...

Command

```
ci-avg (fr-efr|hr|amr-fr|amr-hr|sdcch|gprs) algo (unweighted|weighted|mod-median)
```

Application specific attributes

Flag: l

   This command applies for newly created lchans

Flag: v

   This command/parameter is BTS vendor specific

Parameters

ci-avg

   C/I (Carrier-to-Interference) measurement averaging (for dynamic mode)

fr-efr

   Channel Type FR/EFR

hr

   Channel Type HR

amr-fr

   Channel Type AMR FR

amr-hr

   Channel Type AMR HR

sdcch

   Channel Type SDCCH

gprs

   Channel Type (E)GPRS

algo

   Select the averaging algorithm

unweighted

   Un-weighted average

weighted

   Weighted average

mod-median

   Modified median calculation

1.29.6   ci-avg (fr-efr|hr|amr-fr|amr-hr|sdcch|gprs) algo osmo-ewma beta <1-99>

Command

```
ci-avg (fr-efr|hr|amr-fr|amr-hr|sdcch|gprs) algo osmo-ewma beta <1-99>
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Flag: v

This command/parameter is BTS vendor specific

Parameters

ci-avg

C/I (Carrier-to-Interference) measurement averaging (for dynamic mode)

fr-efr

Channel Type FR/EFR

hr

Channel Type HR

amr-fr

Channel Type AMR FR

amr-hr

Channel Type AMR HR

sdcch

Channel Type SDCCH

gprs

Channel Type (E)GPRS

algo

Select the averaging algorithm

osmo-ewma

Exponentially Weighted Moving Average (EWMA)

beta

Smoothing factor (in %): beta = (100 - alpha)

<1-99>

1% - lowest smoothing, 99% - highest smoothing

1.29.7   ci-avg (fr-efr|hr|amr-fr|amr-hr|sdcch|gprs) params hreqave <1-31> hreqt <1-31>

Command

```
ci-avg (fr-efr|hr|amr-fr|amr-hr|sdcch|gprs) params hreqave <1-31> hreqt <1-31>
```

Application specific attributes

Flag: l

   This command applies for newly created lchans

Flag: v

   This command/parameter is BTS vendor specific

Parameters

ci-avg

   C/I (Carrier-to-Interference) measurement averaging (for dynamic mode)

fr-efr

   Channel Type FR/EFR

hr

   Channel Type HR

amr-fr

   Channel Type AMR FR

amr-hr

   Channel Type AMR HR

sdcch

   Channel Type SDCCH

gprs

   Channel Type (E)GPRS

params

   Configure general averaging parameters

hreqave

   Hreqave: the period over which an average is produced

<1-31>

   Hreqave value (so that Hreqave * Hreqt < 32)

hreqt

   Hreqt: the number of averaged results that are maintained

<1-31>

   Hreqt value (so that Hreqave * Hreqt < 32)

1.29.8 ci-thresh (fr-efr|hr|amr-fr|amr-hr|sdcch|gprs) lower <0-30> upper <0-30>

Command

```
ci-thresh (fr-efr|hr|amr-fr|amr-hr|sdcch|gprs) lower <0-30> upper <0-30>
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Flag: v

This command/parameter is BTS vendor specific

Parameters

ci-thresh

Set target C/I thresholds (for dynamic mode), only available in ms-power-control

fr-efr

Channel Type FR/EFR

hr

Channel Type HR

amr-fr

Channel Type AMR FR

amr-hr

Channel Type AMR HR

sdcch

Channel Type SDCCH

gprs

Channel Type (E)GPRS

lower

Lower C/I value

<0-30>

Lower C/I value (Carrier-to-Interference (dB), 0 is worst, 30 is best)

upper

Upper C/I value

<0-30>

Upper C/I value (Carrier-to-Interference (dB), 0 is worst, 30 is best)

1.29.9 ci-thresh (fr-efr|hr|amr-fr|amr-hr|sdcch|gprs|all) (enable|disable)

Command

```
ci-thresh (fr-efr|hr|amr-fr|amr-hr|sdcch|gprs|all) (enable|disable)
```

Application specific attributes

Flag: l

   This command applies for newly created lchans

Flag: v

   This command/parameter is BTS vendor specific

Parameters

ci-thresh

   Set target C/I thresholds (for dynamic mode), only available in ms-power-control

fr-efr

   Channel Type FR/EFR

hr

   Channel Type HR

amr-fr

   Channel Type AMR FR

amr-hr

   Channel Type AMR HR

sdcch

   Channel Type SDCCH

gprs

   Channel Type (E)GPRS

all

   All Channel Types

enable

   Enable C/I comparison in control loop

disable

   Disable C/I comparison in control loop

1.29.10   ci-thresh-comp (fr-efr|hr|amr-fr|amr-hr|sdcch|gprs) lower <0-31> <0-31> upper <0...

Command

```
ci-thresh-comp (fr-efr|hr|amr-fr|amr-hr|sdcch|gprs) lower <0-31> <0-31> upper <0-31>  ↩
    <0-31>
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Flag: v

This command/parameter is BTS vendor specific

Parameters

ci-thresh-comp

Set Carrier-to_interference (C/I) threshold comparators (for dynamic mode)

fr-efr

Channel Type FR/EFR

hr

Channel Type HR

amr-fr

Channel Type AMR FR

amr-hr

Channel Type AMR HR

sdcch

Channel Type SDCCH

gprs

Channel Type (E)GPRS

lower

Lower Carrier-to_interference (C/I) threshold comparators (see 3GPP TS 45.008, A.3.2.1)

<0-31>

Lower P (default 5)

<0-31>

Lower N (default 7)

upper

Upper Carrier-to_interference (C/I) threshold comparators (see 3GPP TS 45.008, A.3.2.1)

<0-31>

Upper P (default 15)

<0-31>

Upper N (default 18)

1.29.11   ctrl-interval <0-31>

Command

```
ctrl-interval <0-31>
```

Application specific attributes

Flag: l

   This command applies for newly created lchans

Flag: v

   This command/parameter is BTS vendor specific

Parameters

ctrl-interval

   Set power control interval (for dynamic mode)

<0-31>

   P_CON_INTERVAL, in units of 2 SACCH periods (0.96 seconds)(default=1)

1.29.12   mode (static|dyn-bts|dyn-bsc) [reset]

Command

```
mode (static|dyn-bts|dyn-bsc) [reset]
```

Application specific attributes

Flag: l

   This command applies for newly created lchans

Parameters

mode

   Power control mode

static

   Instruct the MS/BTS to use a static power level

dyn-bts

   Power control to be performed dynamically by the BTS itself

dyn-bsc

   Power control to be performed dynamically at this BSC

[reset]

   Reset to default parameters for the given mode

1.29.13   no (rxlev-avg|rxqual-avg)

Command

```
no (rxlev-avg|rxqual-avg)
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Flag: v

This command/parameter is BTS vendor specific

Parameters

no

Negate a command or set its defaults

rxlev-avg

RxLev (signal strength) measurement averaging (for dynamic mode)

rxqual-avg

RxQual (signal quality) measurement averaging (for dynamic mode)

1.29.14   no ci-avg (fr-efr|hr|amr-fr|amr-hr|sdcch|gprs)

Command

```
no ci-avg (fr-efr|hr|amr-fr|amr-hr|sdcch|gprs)
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Flag: v

This command/parameter is BTS vendor specific

Parameters

no

Negate a command or set its defaults

ci-avg

C/I (Carrier-to-Interference) measurement averaging (for dynamic mode)

fr-efr

Channel Type FR/EFR

hr

    Channel Type HR

amr-fr

    Channel Type AMR FR

amr-hr

    Channel Type AMR HR

sdcch

    Channel Type SDCCH

gprs

    Channel Type (E)GPRS

1.29.15 rxlev-thresh lower <0-63> upper <0-63>

Command

```
rxlev-thresh lower <0-63> upper <0-63>
```

Application specific attributes

Flag: l

    This command applies for newly created lchans

Flag: v

    This command/parameter is BTS vendor specific

Parameters

rxlev-thresh

    Set target RxLev thresholds (for dynamic mode)

lower

    Lower RxLev value (default is 32, i.e. -78 dBm)

<0-63>

    Lower RxLev value (signal strength, 0 is worst, 63 is best)

upper

    Upper RxLev value (default is 38, i.e. -72 dBm)

<0-63>

    Upper RxLev value (signal strength, 0 is worst, 63 is best)

1.29.16   rxlev-thresh-comp lower <0-31> <0-31> upper <0-31> <0-31>

Command

```
rxlev-thresh-comp lower <0-31> <0-31> upper <0-31> <0-31>
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Flag: v

This command/parameter is BTS vendor specific

Parameters

rxlev-thresh-comp

Set RxLev threshold comparators (for dynamic mode)

lower

Lower RxLev threshold comparators (see 3GPP TS 45.008, A.3.2.1)

<0-31>

P1 (default 10)

<0-31>

N1 (default 12)

upper

Upper RxLev threshold comparators (see 3GPP TS 45.008, A.3.2.1)

<0-31>

P2 (default 10)

<0-31>

N2 (default 12)

1.29.17   rxqual-thresh lower <0-7> upper <0-7>

Command

```
rxqual-thresh lower <0-7> upper <0-7>
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Flag: v

This command/parameter is BTS vendor specific

Parameters

rxqual-thresh

Set target RxQual thresholds (for dynamic mode)

lower

Lower RxQual value (default is 3, i.e. 0.8% <= BER < 1.6%)

<0-7>

Lower RxQual value (signal quality, 0 is best, 7 is worst)

upper

Upper RxQual value (default is 0, i.e. BER < 0.2%)

<0-7>

Upper RxQual value (signal quality, 0 is best, 7 is worst)

1.29.18 rxqual-thresh-comp lower <0-31> <0-31> upper <0-31> <0-31>

Command

```
rxqual-thresh-comp lower <0-31> <0-31> upper <0-31> <0-31>
```

Application specific attributes

Flag: l

This command applies for newly created lchans

Flag: v

This command/parameter is BTS vendor specific

Parameters

rxqual-thresh-comp

Set RxQual threshold comparators (for dynamic mode)

lower

Lower RxQual threshold comparators (see 3GPP TS 45.008, A.3.2.1)

<0-31>

P3 (default 5)

<0-31>

N3 (default 7)

upper

Upper RxQual threshold comparators (see 3GPP TS 45.008, A.3.2.1)

<0-31>

P4 (default 15)

<0-31>

N4 (default 18)

1.29.19 step-size inc <2-6> red <2-4>

Command

```
step-size inc <2-6> red <2-4>
```

Application specific attributes

Flag: l

   This command applies for newly created lchans

Flag: v

   This command/parameter is BTS vendor specific

Parameters

step-size

   Set power change step size (for dynamic mode)

inc

   Increase step size (default is 4 dB)

<2-6>

   Step size (2, 4, or 6 dB)

red

   Reduce step size (default is 2 dB)

<2-4>

   Step size (2 or 4 dB)