

Technical Reference Guide, Unix commands

COMMAND DESCRIPTION



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1 ACCOUNT_CODE_CLOSE

Remove account code range

1.1 FORMAT

account_code_close
-customer -first

1.2 FUNCTION

1.2.1 GENERAL

The command will remove a range of account codes.

1.3 PARAMETERS

-customer

Customer for the account codes. Specified as a customer number between 0 and 50000. The value 0 is the default customer value, which is used when the exchange is not shared by other customers. The default value is all customers.

-first

First account code in the open account code range. An account code has a length of 1 to 15 digits. Leading 0 is not allowed.

1.4 EXAMPLE

Remove an account code range starting at 1000 for customer 0

account_code_close -customer 0 -first 1000

2 ACCOUNT_CODE_ERASE

Erase account code

2.1 FORMAT

account_code_erase
[-customer][-code]

2.2 FUNCTION

2.2.1 GENERAL

The command removes account codes.

2.3 PARAMETERS

-code

Account codes. An account code has a length of 1 to 15 digits. Leading 0 is not allowed. As argument use, a single code, a range of codes, a sequence of codes, or a combination of these. The default value is all codes.

-customer

Customer for the account codes. Specified as a customer number between 0 and 50000. The value 0 is the default customer value, which is used when the exchange is not shared by other customers. The default value is all customers.

2.4 EXAMPLES

Erase all account codes for all customers

account_code_erase

Erase the account codes in the range 100 to 107 and account code 3000 for the default customer

account_code_erase -customer 0 -code 100..107,3000

3 ACCOUNT_CODE_INIT

Initiate new account code

3.1 FORMAT

account_code_init
-customer -code

3.2 FUNCTION

The command will set new account codes. The account code is used for call logging purposes.

3.3 PARAMETERS

-code

Account codes. An account code has a length of 1 to 15 digits. Leading 0 is not allowed. As argument use, a single code, a range of codes, a sequence of codes, or a combination of these.

-customer

Customer for the account codes. Specified as a customer number between 0 and 50000. The value 0 is the default customer value, which is used when the exchange is not shared by other customers.

3.4 EXAMPLES

Initiate account codes in the range 100 to 107 and account code 3000 for the default customer.

account_code_init -customer 0 -code 100..107,3000

Initiate account codes in the range 100 to 108 for customer 2.

account_code_init -customer 2 -code 100..108

4 ACCOUNT_CODE_OPEN

Specify account code range

4.1 FORMAT

account_code_open

-customer -first -last

4.2 FUNCTION

4.2.1 GENERAL

The command will specify a range of account codes that are accepted, even if the individual account code entered by the user is not stored in the account code database.

4.3 PARAMETERS

-customer

Customer for the account codes. Specified as a customer number between 0 and 50000. The value 0 is the default customer value, which is used when the exchange is not shared by other customers. The default value is all customers.

-first

First account code in the open account code range. An account code has a length of 1 to 15 digits. Leading 0 is not allowed.

-last

Last account code in the open account code range. An account code has a length of 1 to 15 digits. Leading 0 is not allowed.

4.4 EXAMPLE

Specify an account code range, 1000-9999999, for customer 0

account_code_open -customer 0 -first 1000 -last 9999999

5 ACCOUNT_CODE_PRINT

Print account code

5.1 FORMAT

```
account_code_print  
[-customer][-code][-sort]
```

5.2 FUNCTION

5.2.1 GENERAL

The command will print the set account codes and the opened account code ranges.

5.3 PARAMETERS

-code

Account codes. An account code has a length of 1 to 15 digits. Leading 0 is not allowed. As argument use, a single code, a range of codes, a sequence of codes, or a combination of these. The default value is all codes.

-customer

Customer for the account codes. Specified as a customer number between 0 and 50000. The value 0 is the default customer value, which is used when the exchange is not shared by other customers. The default value is all customers.

-sort

Sort the result before printing. If this parameter is given the printout will be grouped by customer and with a maximum of 4 account codes per line, otherwise there will be a customer column and an account code column.

5.4

EXAMPLES

Print all account codes for all customers

account_code_print

Print the account codes in the range 100 to 107 and account code 3000 for the default customer.

account_code_print -customer 0 -code 100..107,3000

6 ALARM

Print, configure and erase alarms

6.1 FORMAT

alarm

```
-e [-C][-D][--alarm-severity][--alarm-noticed]\
[-l][--alarm-handle]

-i -C -D --alarm-severity [--alarm-text]\
[--faulty-lim][--faulty-unit][--faulty-equ][--add-text]\
[--add-info1 [--add-info2 [--add-info3 [--add-info4]]]\
[--fake-sender-unit]

-p [-f][-C][-D][--alarm-severity]\
[--alarm-noticed][-l][--alarm-handle][±s]
```

6.2 FUNCTION

alarm with the -p (--print) switch is used to print (list) alarms in the alarm log. The default (without arguments) is to list all alarms.

By specifying arguments a specific subset of the alarms can be listed.

By specifying arguments the format of the listing can also be changed.

Selection of LIM (--lim) affects which LIM is queried, and thus affects all printouts. The switches --alarm-code, --alarm-domain and --alarm-severity only affect the printout of the alarm log list, and does not affect the printout of status and counts.

The switch --alarm-handle implicitly makes a selection of LIMs. This selection of LIMs might be confusing for status and counts printouts. Thus it is normally a good idea not to use the --alarm-handle switch for status and count printouts.

The 'full' format includes all information with a status section, a count section and a log section. The format 'table' has a status section and a log section. The format 'status' is only the status section. The format 'count' is only the count section, and the format 'detail' is only the log section. The (obsolete format) 'allip' has only the count section, and the (obsolete) format 'allop' has only the log section.

Notice that vital information is missing in (the obsolete) format 'allop'. Use format 'detail' or format 'full' for complete information. In the (obsolete) 'allop' format the handle is given the backward compatible name 'ALP'. In the (obsolete) formats 'allip' and 'allop' the severity is given the backward compatible name 'class'.

The 'internal alarm bits' in the 'full' format have a meaning only to skilled Mitel service staff. (Service staff should refer to MD_AlarmAPI.mdl for description.)

alarm with the -e (--erase) switch is used to erase (reset) alarms in the alarm log. The default (without arguments) is to reset all alarms. By specifying arguments a specific subset of the alarms can be erased.

alarm with the -i (--initiate) switch is used to insert alarms into the alarm log. 'alarm -i' sends a message to AL to raise an alarm and then exit. AL will not send an acknowledge and the program cannot receive notification when the alarm is reset.

By using `--fake-sender-unit` several commands can pretend to send the same alarm from the same program unit, to cause the count to be increased instead of storing them as separate alarms in the alarm log.

6.3

PARAMETERS

--add-info1

Optional additional information for the alarm. This is an unsigned 16 bit integer. Range 1-65534 (values 0 and 65535 are special). These integer information parameters are present for compatibility with older systems. Normally it is better to write the information as text using '`--add-text`'.

The switch requires an argument. The argument is single-valued.

--add-info2

Optional additional information for the alarm. This is an unsigned 16 bit integer. Range 1-65534 (values 0 and 65535 are special). These integer information parameters are present for compatibility with older systems. Normally it is better to write the information as text using '`--add-text`'.

The switch requires an argument. The argument is single-valued.

--add-info3

Optional additional information for the alarm. This is an unsigned 16 bit integer. Range 1-65534 (values 0 and 65535 are special). These integer information parameters are present for compatibility with older systems. Normally it is better to write the information as text using '`--add-text`'.

The switch requires an argument. The argument is single-valued.

--add-info4

Optional additional information for the alarm. This is an unsigned 16 bit integer. Range 1-65534 (values 0 and 65535 are special). These integer information parameters are present for compatibility with older systems. Normally it is better to write the information as text using '`--add-text`'.

The switch requires an argument. The argument is single-valued.

--add-text

Optional additional information for the alarm as a text string. For readability reasons the string should not be longer than approximately 500 characters. Accepted argument length is 0 to 2500 characters.

The switch requires an argument. The argument is single-valued.

-C, --alarm-code

Alarm code number (within the alarm domain).

The switch requires an argument.

-D, --alarm-domain

Alarm domain number.

The switch requires an argument.

--alarm-handle

Alarm handle value. A handle is a system unique identifier for an alarm. In commands where this switch is optional the default is all.

The switch requires an argument. The argument can be a comma separated sequence.

--alarm-noticed

Alarm noticed value(s). Possible values are: 'all' (to include both noticed and not noticed alarms), 'yes' (to include only noticed alarms), and 'no' (to include only alarms that are not noticed). Possible values are: 'all', 'no', 'yes'. Default if switch is not given is 'all'.

The switch requires an argument. The argument is single-valued.

--alarm-severity

Alarm severity value(s). Range: 0-4. Default is all.

The switch requires an argument.

--alarm-text

Alarm text (also known as alarm name) to use for this combination of domain and code. It is recommended that the text string (alarm name) is 10 to 35 characters long, as longer strings cause mal-formatting of table format alarm lists. Accepted argument length is 2 to 255 characters.

The switch requires an argument. The argument is single-valued.

-e, --erase

Erase some settings, that is, de-configure an item (or several items).

The switch takes no arguments.

--fake-sender-unit

Unit number or unit name (for instance SIPLP). Faked program unit number or name for use as sender, when several commands pretend to be one single program unit. Switch is optional. If switch is not given the real virtual program unit number of the command is used.

Switch can take a program unit number or name as an optional argument. If switch is given without argument the program unit name/number will be FAKE_UNIT (28671).

The switch takes an optional argument. The argument is single-valued.

--faulty-equ

The equipment position of the faulty equipment. The parameter has the format LLLG-Y-Z-I where LLL=LIM number [range: 1-124], G=gateway [range: A to O]. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine, Z=position, and I=individual.

Example: 1A-0-10-3 (single value)

This information is optional, and should be used only if the alarm is because of a faulty equipment.

The switch requires an argument. The argument is single-valued.

--faulty-lim

LIM number [range: 1-124].

The LIM number of the faulty LIM, or the LIM number of the faulty program unit. This information is optional, and should be used only if the alarm is because of a faulty LIM or faulty program unit.

The switch requires an argument. The argument is single-valued.

--faulty-unit

Unit number or unit name (for instance SIPLP). The program unit number or program unit name of the program unit that should be reported as faulty. This information is optional, and should be used only if the alarm is because of a faulty program unit.

The switch requires an argument. The argument is single-valued.

-f, --format

Format for the printout.

Possible values are: 'ALLIP', 'ALLOP', 'COUNT', 'DETAIL', 'FULL', 'STATUS', 'TABLE', 'XML'.

Default if switch is not given is 'TABLE'.

The switch requires an argument. The argument is single-valued.

Note: The formats ALLIP and ALLOP are obsolete, but can still be entered. The printouts may need some explanation of the legend and abbreviations used:

- ALLIP (and general), legend for the printout

Code	Alarm code
Dom.	Alarm domain
Handle	Alarm handle
First at	Date and time when the alarm first occurred
Latest at	Date and time when the alarm latest occurred
Latest erase/reset	Date and time when the alarm was reset
NoA	Number of active alarms
NoC	Number of cleared alarms
Noticed	The alarm is observed by technician
Noticed time	Date and time when the alarm was noticed
NtC	Number of noticed alarms
Column after NoA	Number of noticed active alarms
Column after NoC	Number of noticed cleared alarms
S	Alarm severity value (0-4)
Where	Faulty unit (which generated the alarm)

- ALLOP, legend for the printout

ALP	Alarm position, also known as alarm handle
CLASS	Alarm class number, also known as alarm severity value
CODE	Fault code, also known as alarm code
DATE	Printout date or date when the alarm was registered in the log
EQU	Faulty equipment position. If the value for LIM is missing, the title is not printed. If any other value is missing, a star (*) is printed, for example 001-*-*-*.
EXPLANATION	A short explanation of the fault code
IDENTITY	Identity of the exchange
INF1-4	Additional information. Only used if additional information is available.
NOAF	Number of active faults. The number of fault that exist in the system with this fault code. System acknowledged alarms are not included.
NOIF	Number of identical faults. States how many times an identical error has occurred. Note that all data in the alarm must be identical, not just the fault code.

RDATE	Receipt date. Only printed if the alarm is system acknowledged.
RTIME	Receipt time. Only printed if the alarm is system acknowledged.
TIME	Printout time or time when the alarm was registered in the log.
UNIT	Faulty program unit (or other entity, which generated the alarm)

-i, --initiate

Initiate some settings, that is, make the initial configuration of an item (or several items).

The switch takes no arguments.

-l, --lim

LIM number [range: 1-124].

The switch requires an argument. The argument can be a comma separated sequence.

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

-s, +s, --sort, ++sort

Select sorting in chronological order, based on the first or the latest instance of the alarm(s). Possible values are: 'CHRONOLOGIC_FIRST', 'CHRONOLOGIC_LATEST'.

Default if this switch is not given is 'CHRONOLOGIC_LATEST'. Then listing is done in severity order.

The switch takes an optional argument. The argument is single-valued.

6.4

EXAMPLES

List all alarms from log.

alarm -p

List alarms in LIM 1 and LIM 3 that have severity 2.

alarm -p -l 1,3 --alarm-severity 2

Print the specific alarm with handle 476.

alarm -p --alarm-handle 476

List all alarms in the compact table format.

alarm -p -f table

List alarms of severity 4 in detail format.

alarm -p -f detail --alarm-severity 4

List alarms that are not (yet) marked as noticed.

alarm -p --alarm-noticed no

Erase (that is, reset) all alarms from the alarm log.

alarm -e

Erase (reset) only alarms in LIM 1 and LIM 3 that have severity 2.

alarm -e -l 1,3 --alarm-severity 2

7

ALARM_ACTION

Alarm action handling

7.1

FORMAT

alarm_action

```
-e [--action-lim][--config-handle]
-i --action-lim [--alarm-code][--alarm-domain]\
  [--alarm-severity][--alarm-noticed][--l] \
  [--alarm-handle][--inverse-selection] \
  --alarm-command
-p [--action-lim]
```

7.2

FUNCTION

alarm_action is used to define mdsh commands that should be run when a specified alarm condition occurs. It is also used to list these commands and alarm conditions. And, it is used to erase (clear) these commands for alarm conditions.

7.3

PARAMETERS

--action_lim

LIM number [range: all, 1-124].

Action LIM or LIMs to select (that is, LIMs for input, output or command execution). Default is all LIMs.

Note: **--action_lim** specifies that action should be done in this LIM, not that the alarm should be present (or sent to) the LIM.

--alarm_code

Alarm code number (within the alarm domain).

The switch requires an argument. The argument can be a comma separated sequence.

--alarm-command

Command to execute when an alarm matches the selection (or when an alarm no longer matches the selection if inverse flag). The command is executed as an mdsh-command. (The command to run can be an mdsh script file.)

The command is subject to the following substitutions:

%D	alarm domain number (decimal)
%C	alarm code number (decimal)
%S	severity number (decimal)
%H	alarm handle (decimal number)
%R	1 if alarm reset/erased, 0 otherwise
%Z	1 if alarm cleared (set to zero), 0 otherwise

If the command includes switches the command must be enclosed in quotes ("). Accepted argument length is 1 to 255 characters.

The switch requires an argument. The argument is single-valued.

--alarm-domain

Alarm domain number.

The switch requires an argument.

The argument can be a comma separated sequence.

--alarm-handle

Alarm handle value.

A handle is a system unique identifier for an alarm. In commands where this switch is optional the default is all.

The switch requires an argument. The argument can be a comma separated sequence.

--alarm-noticed

Alarm noticed values.

Possible values are: 'all', 'no', 'yes'.

- all - to include both noticed and not noticed alarms
Default
- yes - to include only noticed alarms
- no - to include only alarms that are not noticed

The switch requires an argument. The argument is single-valued.

--alarm-severity

Alarm severity values.

Range: 0-4. Default is all.

The switch requires an argument. The argument can be a comma separated sequence.

--config-handle

Configuration handle values.

A handle is a system unique identifier for a configuration. Default is all.

The switch requires an argument. The argument can be a comma separated sequence.

-e, --erase

Erase some settings. That is, de-configure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings.

That is, make the initial configuration of an item (or several items).

The switch takes no arguments.

--inverse-selection

Inverse (negate) the selection (made by other switches).

The switch takes no arguments.

-l, --lim

LIM number [range: 1-124].

The switch requires an argument. The argument can be a comma separated sequence.

-p, --print

Print all or some settings. That is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

7.4

EXAMPLES

List (print) all alarm actions.

alarm_action -p

Run the echo command when an alarm with domain 0 and code 102 is raised.

**alarm_action -i --alarm-domain 0 --alarm-code 102 \
--alarm-command 'echo alarm %D:%C'**

Run the echo command when an alarm with domain 0 and code 102 is erased. (This is a silly example: As the command is from the program unit ALDP, you do not normally have a terminal to echo to. You will only see the command logged in the log files.).

**alarm_action -i --alarm-domain 0 --alarm-code 102 \
--inverse-selection --alarm-command 'echo alarm %D:%C'**

Clear/erase alarm actions with handles/IDs 4 and 5.

alarm_action -e --config-handle 4,5

Clear/erase alarm actions with handles/IDs 4 and 5 in Server 7.

alarm_action -e --config-handle 4,5 --action-lim 7

8 ALARM_BOARD

Alarm board handling

8.1 FORMAT

alarm_board

-b --board-reset

-p [-f][-l]

8.2 FUNCTION

alarm_board is used to list alarm boards. This is useful if you do not remember the position of your alarm board or boards. The command can also be used to order board reset (which is only needed for advanced debugging).

8.3 PARAMETERS

-b, --board-position

Board position. Syntax of argument is LG-M-B, where

L is lim number [1 - 124]

G is gateway [A - O]

M is magazine [0 - 3]

B is board position [0 - 73]

Example of valid syntax: 124N-2-60

The switch requires an argument. The argument is single-valued

--board-reset

Force an extra board reset. (Needed only during advanced debugging.)

The switch takes no arguments.

-f, --format

Select a format for the printout.

Possible values are: 'DEFAULT', 'FULL', 'default', 'full'.

Default if the switch is not given is 'DEFAULT'.

The switch requires an argument. The argument is single-valued.

-l, --lim

LIM number [range: 1-124].

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. That is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

8.4

EXAMPLES

List all alarm boards:

alarm_board -p

List the alarm boards in LIM 1 and LIM 3:

alarm_board -p -l 1,3

List all alarm board in LIM 1 in with complete information:

alarm_board -p -f full -l 1

Reset the alarm board in LIM 1, magazine 0, slot 73:

alarm_board -b 1A-0-73 --board-reset

For more complete help type

alarm_board --help-complete.

9

ALARM_CFG

Configure alarm log

9.1

FORMAT

alarm_cfg

```

[-v][-V] --reread
[-v][-V] -e
[-v][-V] -e --only [--alarm-code --alarm-domain][--reread]
[-v][-V] -i -K --alarm-code --alarm-domain --alarm-severity [--reread]
[-v][-V] -i -K --alarm-code --alarm-domain --alarm-severity [--reread]
[-v][-V] -i -K --alarm-code --alarm-domain --alarm-text [--alarm-severity][--reread]
[-v][-V] -i -K --alarm-severity --incrementation-limit [--reread]
[-v][-V] -i -K --alarm-severity-file [--reread]
[-v][-V] -i -K --alarm-text-file [--reread]
[-v][-V] -i -K [-l] --log-full-action [--reread]
[-v][-V] -i -K [-l] --log-size [--reread]
[-v][-V] -i -K [-l] --reload-action [-A][--reread]
[-v][-V] -i -O --alarm-code --alarm-domain --alarm-severity [--reread]
[-v][-V] -i -O --alarm-code --alarm-domain --alarm-text [--alarm-severity][--reread]
[-v][-V] -i -O --alarm-severity --incrementation-limit [--reread]
[-v][-V] -i -O --alarm-severity-file [--reread]
[-v][-V] -i -O --alarm-text-file [--reread]
[-v][-V] -i -O --alarm-text-file [--reread]
[-v][-V] -i -O [-l] --log-full-action [--reread]
[-v][-V] -i -O [-l] --log-size [--reread]
[-v][-V] -i -O [-l] --reload-action [-A][--reread]
[-v][-V] -p [-f][--include-defaults]

```

9.2

FUNCTION

alarm_cfg is used to write the alarm log configuration into LDAP. alarm_cfg can also be used to print the alarm log configuration that is stored in LDAP.

All configuration options for alarm log (AL) - except texts and severities for old MD110 compatible alarms - have reasonable defaults. Thus, there is usually no need to configure them.

Note: That the switch --reread shall be entered at or after the last changes to tell AL to read the new information from LDAP.

The alarm functionality is based on alarm senders detecting some abnormal conditions and sending alarms to the alarm log (AL). The alarm log (AL) stores the alarms and keeps track of their state, allowing the alarms to be listed (command alarm -p), marked

as noticed (command `alarm_noticed`) and erased (command `alarm -e`). When the alarm sender detects that the abnormal condition is resolved, the alarm sender can send information to the alarm log (AL) that the alarm shall be marked as cleared (zeroed).

Every alarm condition has its unique alarm code within an alarm domain.

The alarm sender knows the text (also known as name) of the alarm conditions it can detect. The alarm sender sends the text (name) for the combination of code and domain (that it reports) to the alarm log (AL). The alarm log (AL) stores the text received from the alarm sender. Old alarm senders (code inherited from MD110 BCxx) do not know the text of their alarms. For these old alarms a default text to show (when no text is received from the alarm sender) can be configured. These default texts are shipped with the MX-ONE Service Node and stored in LDAP at installation. Never configure alarm texts (names) for alarms sent from alarm senders that know the name of the alarm, as this will cause interference.

The alarm sender knows the severity of the alarm. The alarms are sent with a severity between 1 (information) and 4 (critical). The alarm sender sends the severity with every alarm. There is also a severity of 0, that is used for alarms that are marked as cleared (zeroed). Alarms are never sent with the severity 0. It is possible to configure override values for the severity based on the unique alarm code and alarm domain combination. When an alarm is received in the alarm log (AL) that matches the code and domain of a severity override configuration, the alarm is stored with the configured severity value, instead of the severity value sent in the alarm from the alarm sender. If the severity value is changed to 0, the alarm is never stored in the alarm log.

Old alarm senders (code inherited from MD110 BCxx) send not so good severity values. To fix this, default severity override values for these alarms are shipped with the MX-ONE Service Node and stored in LDAP at installation.

The alarm log (AL) is a distributed log. The alarms are stored in a log in every LIM server. At printout the information from all reachable LIMs is merged together. The size of the alarm log per LIM can be configured, but this is usually not recommended as the default is good for most installations. What alarms the alarm log (AL) shall keep when a new alarm arrives to a full alarm log is configurable. The default behavior is recommended.

It is possible to configure commands that should be run when the alarm log (AL) is program reloaded. This might be useful in some special scenarios with alarm supervision at external network management servers.

9.3

PARAMETERS

-A, --add

Add information to some setting.

Keep the previous configuration and add this information to the configuration.

The switch takes no arguments.

--alarm-code

Alarm code number (within the alarm domain).

The switch requires an argument. The argument is single-valued.

--alarm-domain

Alarm domain number.

The switch requires an argument. The argument is single-valued.

--alarm-severity

Alarm severity value. Range: 0-4.

The switch requires an argument. The argument is single-valued.

--alarm-severity-file

File to read severity information from.

File syntax is:

The #-mark starts a comment that continues to the end of the line. Every non-empty, non-comment-only line has three integer columns. The first column is the alarm domain value. The second column is the alarm code in the alarm domain. The third column is the severity for that alarm code in that alarm domain. (File syntax is the same as in alarm_severity.conf in MX-ONE versions 1.0 - 3.1). Argument shall be the name (path) of a file. Argument must exist. A non-existing file will be treated as an error. Read access needed. Argument shall be a valid UNIX/Linux path name. To avoid trouble, the characters used should be limited to US-ASCII.

The switch requires an argument. The argument is single-valued.

--alarm-text

Alarm text (also known as alarm name) to use for this combination of domain and code. It is recommended that the text string (alarm name) is 10 to 35 characters long, as longer strings cause mal-formatting of table format alarm lists. Accepted argument length is 2 to 255 characters.

The switch requires an argument. The argument is single-valued.

--alarm-text-file

File to read alarm text (also known as alarm name) information from.

File syntax is:

The #-mark starts a comment that continues to the end of the line. Every non-empty, non-comment-only line has three columns. The first column is the alarm domain value (integer). The second column is the alarm code (integer) in the alarm domain. The third column is the text (that is, the name) for that alarm code in that alarm domain. The third column continues until the end of the line. (File syntax is the same as in alarm_text.conf in MX-ONE versions 1.0 - 3.1). Argument shall be the name (path) of a file. Argument must exist. A non-existing file will be treated as an error. Read access needed. Argument shall be a valid UNIX/Linux path name. To avoid trouble, the characters used should be limited to US-ASCII.

The switch requires an argument. The argument is single-valued.

-e, --erase

Erase some settings, that is, de-configure an item (or several items).

The switch takes no arguments.

-f, --format

Select a format for the printout.

Possible values are: 'NORMAL', 'SCRIPT', 'SEVFILE', 'TEXTFILE'.

Default if the switch is not given is 'NORMAL'.

The switch requires an argument. The argument is single-valued.

-i, --initiate

Initiate some settings, that is, make the initial configuration of an item (or several items).

The switch takes no arguments.

--include-defaults

By specifying the --include-defaults switch the printout will include the complete configuration: both what is stored in LDAP, and the configuration options where default values are used. Without the switch only what is stored in LDAP is printed.

The switch takes no arguments.

--incrementation-limit

Increment limit for severity. If there are more than this many alarms of this severity in one LIM the increment alarm shall be raised. Default is 20.

The switch requires an argument. The argument is single-valued.

-K, --keep

If there are old values configured, keep the old configured values. Only use the given data for configuration options that have no previous configuration. Given data in the command is silently ignored if there exists an old configuration for that item.

The switch takes no arguments.

-l, --lim

LIM number [range: 1-124].

The switch requires an argument. The argument is single-valued.

--log-full-action

How to act when an alarm arrives to a full alarm log. Possible values are:

- **fifo** - First in first out. Forget oldest.
- **importance** - Forget the least important alarm, that is, forget the alarm with the lowest severity, and if there are several alarms with that severity forget the oldest of those.
The new alarm might be the least important.
- **importance_new** - Forget the least important of the old stored alarms to make room for the new alarm. Default if switch is not given is 'importance_new'.

The switch requires an argument. The argument is single-valued.

--log-size

Set log size to this number of entries per LIM. Default and recommended size is 200.

The switch requires an argument. The argument is single-valued.

--only

Select to erase only this aspect or part. Possible values are: 'RELOADACTIONS', 'SEVERITY', 'SEVERITYANDTEXT', 'TEXT'.

The switch requires an argument. The argument is single-valued.

-O, --override

Use these new configuration values regardless of if there are old configurations for these items. (Any existing old configuration will be changed.)

The switch takes no arguments.

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

--reload-action

Reload action.

Command to run in mdsh when AL has been reloaded. (The command to run can be an mdsh script file.) To configure several commands to be run use the --add switch. If several command are configured the order of execution is undefined. Accepted argument length is 1 to 255 characters.

The switch requires an argument. The argument is single-valued.

--reread

Request to reread the configuration of an item (or several items).

The switch takes no arguments.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

9.4

EXAMPLES

Print the alarm log configuration stored in LDAP in default human readable format.

alarm_cfg -p

Print the alarm log configuration in default human readable format. Include default values for configuration options that are not stored in LDAP. In this way the printout shows how the Alarm Log will behave.

alarm_cfg -p --include-defaults

Extract the alarm log configuration stored in LDAP into a script that can be used to restore the configuration, or create an identical configuration on some other system.

alarm_cfg -p -f script

Erase the complete alarm log configuration. (Notice that a new configuration should be entered after this.) Be verbose and print progress information.

alarm_cfg -e -v

Set the text string to use for alarm code 320 in domain 0 (MD110 compatible) to "TELEPHONY CALLS THROTTLED". The text set this way is only for old (MD110 compatible) alarms where the alarm sender has no information about the text. Set the text regardless of if there is a previous configuration of the text for that alarm or not. (Override any previous configuration.).

**alarm_cfg -i -O --alarm-domain 0 --alarm-code 320
--alarm-text "TELEPHONY CALLS THROTTLED"**

Set the text string to use for alarm code 320 in domain 0 (MD110 compatible) to "TELEPHONY CALLS THROTTLED". The text set this way is only for old (MD110 compatible) alarms where the alarm sender has no information about the text. Set the text only if there is no previous configuration of the text for that alarm.

**alarm_cfg -i -K --alarm-domain 0 --alarm-code 320
--alarm-text "TELEPHONY CALLS THROTTLED"**

Set the severity to use for alarm code 320 in domain 0 (MD110 compatible) to 3. The severity set this way is only needed for old (MD110 compatible) alarms where the alarm sender has no information about the severity. The severity set this way overrides the severity sent by the alarm sender for new alarms. Set the severity only if there is no previous configuration of the severity for that alarm.

alarm_cfg -i -K --alarm-domain 0 --alarm-code 320 --alarm-severity 3

Set the text string to use for alarm code 320 in domain 0 (MD110 compatible) to "Banning new calls", and set the severity of that alarm to 2. The text set this way is only for old (MD110 compatible) alarms where the alarm sender has no information about

the text. Set the text and severity regardless of if there are any previous configuration(s) of the text and/or severity for that alarm or not. (Override any previous configuration).

**alarm_cfg -i -O --alarm-domain 0 --alarm-code 320
--alarm-severity 2 --alarm-text "Banning new calls"**

Read the severity configuration from the file /tmp/alarm_severity.conf. Use the data in the file only for alarms that have no previous configuration of the severity.

alarm_cfg -i -K --alarm-severity-file /tmp/alarm_severity.conf

Read the severity configuration from the file /tmp/alarm_severity.conf. Use the data in the file for all alarms, changing any previous configuration of the severity.

alarm_cfg -i -O --alarm-severity-file /tmp/alarm_severity.conf

Read the text/name configuration from the file /tmp/alarm_text.conf. Use the data in the file only for alarms that have no previous configuration of the name/text.

alarm_cfg -i -K --alarm-text-file /tmp/alarm_text.conf

Read the text/name configuration from the file /tmp/alarm_text.conf. Use the data in the file for all alarms, changing any previous configuration of the text/name.

alarm_cfg -i -O --alarm-text-file /tmp/alarm_text.conf

Read the text/name configuration from the file /tmp/alarm_text.conf. Use the data in the file for all alarms, changing any previous configuration of the text/name. Ask the alarm log (AL) to re-read the configuration after changes are done.

alarm_cfg -i -O --alarm-text-file /tmp/alarm_text.conf --reread

Change the alarm log size in the system to 500 alarms per LIM.

alarm_cfg -i -O --log-size 500

Change the alarm log size in LIM 5 to 450 alarms per LIM. (Making LIM 5 to have a specific log size instead of the system configured log size of alarms per LIM.).

alarm_cfg -i -O -log-size 450 -l 5

Configure AL in LIM 1 to run the script /root/myscript.sh when AL in LIM 1 has been program reloaded:

alarm_cfg -i -O -l 1 --reload-action "unix /root/myscript.sh"

Configure AL in LIM 1 to also run the script /root/anotherscript.sh when AL in LIM 1 has been program reloaded:

alarm_cfg -i -O -A -l 1--reload-action "unix /root/anotherscript.sh"

10 ALARM_INPUT

Alarm input handling

10.1 FORMAT

alarm_input

```
-e [--action-lim][--config-handle]
-i -b --alarm-port [--active-alarm] --alarm-code --alarm-domain --alarm-severity
[--alarm-text][--faulty-lim][--faulty-unit][--faulty-equ][--add-text][--add-info1
[--add-info2
[--add-info3 [--add-info4]]]]
-i -b --alarm-port [--active-alarm] --service-man
-i -b --alarm-port-group [--active-alarm] --alarm-code --alarm-domain
--alarm-severity[--alarm-text][--faulty-lim][--faulty-unit][--faulty-equ][--add-text][--add
-info1 \
[--add-info2 [--add-info3 [--add-info4]]]]
-i -b x --alarm-port-group [--active-alarm] --service-man
-i -m x --alarm-input-id x [--active-alarm] --alarm-code --alarm-domain
--alarm-severity
[--alarm-text][--faulty-lim][--faulty-unit][--faulty-equ][--add-text][--add-info1 \
[--add-info2 [--add-info3 [--add-info4]]]]
-i -m x --alarm-port [--active-alarm] --alarm-code --alarm-domain --alarm-severity
[--alarm-text][--faulty-lim][--faulty-unit][--faulty-equ][--add-text][--add-info1
[--add-info2 [--add-info3 [--add-info4]]]]
-p [--action-lim]
```

10.2 FUNCTION

alarm_input is used to define the alarm input ports (on ALU or MGU) that should raise a specified alarm when input occurs. It is also used to print (list) these alarm inputs and alarms. And, it is used to erase these inputs.

The alarm detection from the ALU boards is interrupt driven. The alarm detection from the MGU is polling based.

10.3 PARAMETERS

--action-lim

LIM number [range: 1-124].

The LIM selected for input, output or command execution. Default is all LIMs.

Note: **--action_lim** specifies that action should be done in the LIM, not that the alarm should be present (or sent to) the LIM.

The switch requires an argument. The argument is single-valued.

--active-alarm

Specifies if an active alarm input is 'open' or 'closed'. Possible values are: 'closed', 'open'. Default if switch is not given is 'closed'.

The switch requires an argument. The argument is single-valued.

--add-info1

This is an unsigned 16 bit integer. Range 1-65534 (values 0 and 65535 are special). These integer information parameters are present for compatibility with older systems. Normally it is better to write the information as text using '-add_text'.

The switch requires an argument. The argument is single-valued.

--add-info2

This is an unsigned 16 bit integer. Range 1-65534 (values 0 and 65535 are special). These integer information parameters are present for compatibility with older systems. Normally it is better to write the information as text using '-add_text'.

The switch requires an argument. The argument is single-valued.

--add-info3

This is an unsigned 16 bit integer. Range 1-65534 (values 0 and 65535 are special). These integer information parameters are present for compatibility with older systems. Normally it is better to write the information as text using '-add_text'.

The switch requires an argument. The argument is single-valued.

--add-info4

This is an unsigned 16 bit integer. Range 1-65534 (values 0 and 65535 are special). These integer information parameters are present for compatibility with older systems. Normally it is better to write the information as text using '-add_text'.

The switch requires an argument. The argument is single-valued.

--add-text

Optional additional information for the alarm as a text string. For readability reasons the string should not be longer than approximately 500 characters. Accepted argument length is 0 to 2500 characters.

The switch requires an argument. The argument is single-valued.

--alarm-code

Alarm code number (within alarm domain).

The switch requires an argument. The argument is single-valued.

--alarm-domain

Alarm domain number.

For manually added alarms, use domain 1000-2000.

The switch requires an argument. The argument is single-valued.

--alarm-input-id

Alarm input ID as reported by the alarm_board command (only applicable to MGU alarm inputs). Accepted argument length is 1 to 255 characters.

The switch requires an argument. The argument is single-valued.

--alarm-port

Port on board (ports are numbered starting with 0).

The switch requires an argument. The argument is single-valued.

--alarm-port-group

Port group on board. When using port groups 4 alarm inputs are grouped together to form an coded alarm input. (inputs 0-3 = group 0, inputs 4-7 = group 1, ...) If the group has the input 0101 it means alarm raise, if the input 1010 it means alarm acknowledge/clear. Any other input is ignored.

The switch requires an argument. The argument is single-valued.

--alarm-severity

Alarm severity value. Range: 0-4.

The switch requires an argument. The argument is single-valued.

--alarm-text

Alarm text (also known as alarm name) to use for this combination of domain and code. It is recommended that the text string (alarm name) is 10 to 35 characters long, as longer strings cause mal-formatting of table format alarm lists. Accepted argument length is 2 to 255 characters.

The switch requires an argument. The argument is single-valued.

-b, --board-position

Board position. Syntax of argument is LG-M-B, where

L is lim number [1 - 124]

G is gateway [A - O]

M is magazine [0 - 3]

B is board position [0 - 73]

Example of valid syntax: 124N-2-60

The switch requires an argument. The argument is single-valued

--config-handle

Configuration handle value(s) to select. A handle is a system unique identifier for a configuration. Default is all.

The switch requires an argument. The argument can be a comma separated sequence.

-e, --erase

Erase some settings, that is, de-configure an item (or several items).

The switch takes no arguments.

--faulty-equ

The equipment position of the faulty equipment. The parameter has the format LLLG-Y-Z-I where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine, Z=position, and I=individual.

Example: 1A-0-10-3 (single value)

This information is optional, and should be used only if the alarm is because of a faulty equipment.

The switch requires an argument. The argument is single-valued.

--faulty-lim

LIM number [range: 1-124].

The LIM number of the faulty LIM, or the LIM number of the faulty program unit. This information is optional, and should be used only if the alarm is because of a faulty LIM or faulty program unit.

The switch requires an argument. The argument is single-valued.

--faulty-unit

Unit number or unit name (for instance SIPLP). The program unit number or program unit name of the program unit that should be reported as faulty. This information is optional, and should be used only if the alarm is because of a faulty program unit.

The switch requires an argument. The argument is single-valued.

-i, --initiate

Initiate some settings, that is, make the initial configuration of an item (or several items).

The switch takes no arguments.

-m, --media-gateway

Media gateway. Syntax of argument is LG, where

L is lim number [1 - 124]

G is gateway [A - O]

Example of valid syntax: 2A

The switch requires an argument. The argument is single-valued

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

--service-man

Set the 'service man present' flag in the system.

The switch takes no arguments.

10.4

EXAMPLES

List (print) all alarm inputs:

alarm_input -p

Create an alarm input so that an activation of port 0 (pin 0) on board 1-0-42 causes the alarm with domain 2, code 1 and severity 3:

```
alarm_input -i -b 1A-0-42 --alarm-port 0 --alarm-domain 2 --alarm-code 1  
--alarm-severity 3
```

Create an alarm input so that an activation of port 0 (pin 0) on board 1A-0-42 causes the alarm with domain 2, code 1 and severity 3. The pin is reversed so that an open contact means active alarm, and a closed means no alarm:

```
alarm_input -i -b 1A-0-42 --alarm-port 0 --alarm-domain 2 --alarm-code 1  
--alarm-severity 3 --active-alarm open
```

Create a coded alarm input group so that an activation of group 1 (ports/pins 4-7) on board 1A-0-42 causes the alarm with domain 2, code 2 and severity 3:

```
alarm_input -i -b 1A-0-42 --alarm-port-group 1 --alarm-domain 2 --alarm-code 2  
--alarm-severity 3
```

Erase (clear) alarm inputs with handles/IDs 4 and 5 in all LIMs:

```
alarm_input -e --config-handle 4,5
```

Erase (clear) alarm inputs with handles/IDs 4 and 5 in LIM 3:

```
alarm_input -e --action-lim 3 --config-handle 4,5
```

Create an alarm input so that an activation of port 6 (pin 6) on board 1A-0-42 causes the "Service man present" flag to be set:

```
alarm_input -i -b 1A-0-42 --alarm-port 6 --service-man
```

Create an alarm input so that an activation of port 0 on media gateway 123D causes the alarm with domain 2, code 1 and severity 3:

```
alarm_input -i -m 123D --alarm-port 0 --alarm-domain 2  
--alarm-code 1 --alarm-severity 3
```

11 ALARM_NOTICED

Mark an alarm as noticed

11.1 FORMAT

alarm_noticed

--alarm-handle [--comment]

11.2 FUNCTION

alarm_noticed is used to tell AL (the alarm log) that a technician has noticed the alarm.

11.3 PARAMETERS

--alarm-handle

Alarm handle value. A handle is a system unique identifier for an alarm. In commands where this switch is optional the default is all.

The switch requires an argument. The argument is single-valued.

--comment

Add this comment text to the item. Can be used for example to say which service man is working on solving this problem. Accepted argument length is 1 to 255 characters.

The switch requires an argument. The argument is single-valued.

11.4 EXAMPLES

Tell AL (the alarm log) that alarm with handle 5 is noticed.

alarm_noticed --alarm-handle 5

Tell AL (the alarm log) that alarm with handle 17 is noticed, and that Steve is working on it.

alarm_noticed --handle 17 --comment "I am working on it. Steve."

12

ALARM_OUTPUT

Alarm output handling

12.1

FORMAT

alarm_output

```
-e [--action-lim][--config-handle]
-i -b --alarm-port
[--alarm-code][--alarm-domain][--alarm-severity][--alarm-noticed][-l]
-p [--action-lim]
```

12.2

FUNCTION

alarm_output is used to define the ALU (alarm device) output ports that should be raised when a specified alarm condition occurs. It is also used to print (list) these alarm outputs and alarm conditions. And, it is used to erase (clear) these outputs for alarm conditions.

Note: The external alarm is raised or cleared according to the state in the internal alarm log.

12.3

PARAMETERS

--action_lim

LIM number.

Allowed range: 1 - 124

The LIM or LIMs where the alarm action is to be taken (that is, LIMs for input, output or command execution). Default is all LIMs.

Note: **--action_lim** specifies that action should be done in this LIM, not that the alarm should be present (or sent to) the LIM.

--alarm-code

Alarm code number (within the alarm domain).

The switch requires an argument. The argument is single-valued.

--alarm-domain

Alarm domain number.

For manually added alarms, use domain 1000-2000.

The switch requires an argument. The argument is single-valued.

--alarm-noticed

Alarm noticed value or values. Possible values are all, yes, and no:

- all - to include both noticed and not noticed alarms
Default
- yes - to include only noticed alarms
- no - to include only alarms that are not noticed

The switch requires an argument. The argument is single-valued.

--alarm-port

Port on board (ports are numbered starting with 0).

The switch requires an argument. The argument is single-valued.

--alarm-severity

Alarm severity value. Range: 0-4.

The switch requires an argument. The argument is single-valued.

--faulty-equ

The equipment position of the faulty equipment. The parameter has the format LLLG-Y-Z-I where LLL=LIM number [range: 1-124], G=gateway [range: A to O]. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine, Z=position, and I=individual.

Example: 1A-0-10-3 (single value)

This information is optional, and should be used only if the alarm is because of a faulty equipment.

The switch requires an argument. The argument is single-valued.

-b, --board-position

Board position. Syntax of argument is LG-M-B, where

L is lim number [1 - 124]

G is gateway [A - O]

M is magazine [0 - 3]

B is board position [0 - 73]

Example of valid syntax: 124N-2-60

The switch requires an argument. The argument is single-valued

--config-handle

Configuration handle values to select. A handle is a system unique identifier for a configuration. Default is all.

The switch requires an argument. The argument can be a comma separated sequence.

-e, --erase

Erase some settings. That is, de-configure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings, that is, make the initial configuration of an item (or several items).

The switch takes no arguments.

-l, --lim

LIM number [range: 1-124].

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. That is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

12.4

EXAMPLES

List (print) all alarm outputs.

alarm_output -p

Create an alarm output so that whenever the alarm with code 1 in domain 2 is raised to severity 3 then port 0 on board 1A-0-42 will be raised and when this internal alarm is cleared or erased this external alarm is cleared.

alarm_output -i --alarm-code 1 --alarm-domain 2 --alarm-severity 3 --alarm-port 0 -b 1A-0-42

Clear/erase alarm outputs with handles/IDs 4 and 5 in all LIMs.

alarm_output -e --config-handle 4,5

Clear/erase alarm outputs with handles/IDs 4 and 5 in LIM 7.

alarm_output -e --config-handle 4,5 --action-lim 7

For more complete help type **alarm_output --help-complete**.

13 ALARM_TOP

View alarms

13.1 FORMAT

alarm_top

```
[--alarm-code][--alarm-domain][--alarm-severity] \
[--alarm-noticed][-l][--alarm-handle]
```

13.2 FUNCTION

alarm_top is used to continuously view alarms from the alarm log. The alarms are viewed in descending alarm severity order. Alarms with the same severity are sorted with the newest alarm first. If more alarms are selected for viewing than what can fit on a screen, then only as many alarms as can fit are viewed. The default (without arguments) is to view all alarms. By specifying arguments a specific subset of the alarms can be viewed.

The following one character commands are available in the program while displaying:

E	Reset (erase) alarm
H	Short help on single letter commands
?	Short help on single letter commands
L	Redraw the display
O	Send operator receipt (that is, that the alarm has been noticed)
N	Mark the alarm as noticed
R	Reset (that is, erase) the alarm
Q	Quit
<spacebar>	Redraw the display

13.3

PARAMETERS

---alarm-code

Alarm code number (within the alarm domain).

The switch requires an argument. The argument can be a comma separated sequence.

--alarm-domain

Alarm domain number.

The switch requires an argument. The argument can be a comma separated sequence.

--alarm-handle

Alarm handle value to select. A handle is a system unique identifier for an alarm. In commands where this switch is optional the default is all.

The switch requires an argument. The argument can be a comma separated sequence.

--alarm-noticed

Alarm noticed value or values. Possible values are all, yes, and no:

- all - to include both noticed and not noticed alarms
Default
- yes - to include only noticed alarms
- no - to include only alarms that are not noticed

The switch requires an argument. The argument is single-valued.

--alarm-severity

Alarm severity value(s) to select. Range: 0-4. Default is all.

The switch requires an argument. The argument can be a comma separated sequence.

-l, --lim

LIM number [range: 1-124].

The switch requires an argument. The argument can be a comma separated sequence.

13.4

EXAMPLES

View all alarms from the log.

alarm_top

View only alarms in LIM 1 and LIM 3 that have severity 2.

alarm_top -l 1,3 --alarm-severity 2

View the specific alarm with handle 476 in the own LIM.

alarm_top --alarm-handle 476

View all alarms that are not marked as noticed.

alarm_top --alarm-noticed no

For more complete help type **alarm_top --help-complete**.

14 AUTH_CODE

Handle authorization codes.

14.1 FORMAT

auth_code

```
--encrypt --hash-type -d
-e [--customer ][--auth-code m][ -d ]
-i [--customer ] --auth-code --cil [-d [--restricted] [--hash-type ]] [--csp ] [--category ]\
[--new-customer ]
-p [--customer ][--auth-code ][ -d ][±s [x]]
```

14.2 FUNCTION

14.2.1 GENERAL

'auth_code -i' is used to initialize (that is, set) new authority codes. Authority codes can be used to lock and unlock terminals. They can also be used for pre-dialing, and for changing customer. An authority code must specify either a category or a csp or both. Authority codes may be common (without directory number) or directory number specific. There may be any number or directory specific authority codes for a directory number.

'auth_code -p' is used to print authority codes.

'auth_code -e' is used to erase authority codes.

'auth_code -p' and 'auth_code -e' without further switches prints/erases all authority codes. When the '--dir' switch is given only the directory number specific authority codes for the given directory number(s) are printed/erased. When the '--auth-code' switch is given only matching authority codes are printed/erased. If '--auth-code' is given without '--dir' only matching common (not directory number specific) authority codes are printed/erased. If '--auth-code' is given together with '--dir' only matching directory number specific (not common) authority codes are printed/erased.

'auth_code --encrypt' is used to change clear-text passwords to hashed ones.

Note that You can only change from clear-text.

14.3 PARAMETERS

--auth-code

Authority code. Accepted argument length is 2 to 64 characters or digits. Characters are only valid for SIP terminals which support it. Leading 0 is allowed. The switch requires an argument.

--category

Category (CAT). Category is used for ATS and DTS. (Category is somewhat similar to CSP). Each category represents a combination of characteristics.

The switch requires an argument. The argument is single-valued.

--cil

CIL (call information logging) value for this authority code. The CIL value is output to the call information log, when the authority code is used to make a call. This allows the reader of a call information log to know which authentication code was used, without revealing the authentication code itself to people reading the log. The CIL value is not used for anything else. Accepted argument length is 1 to 20 digits. Note that some call logging output formats do not support more than 6 or 15 digits.

The switch requires an argument. The argument is single-valued.

--csp

Each Common Service Profile (--csp) represent a combination of characteristics for --ext-cdiv, --ext-npres, --ext-roc, --ext-serv and --ext-traf.

Range: 0-256.

The switch requires an argument. The argument is single-valued.

--customer

Customer number for the extension. Customer 0 is the default customer of the exchange. Argument must be an integer in the range 0 to 50000. For print operations the default is function dependent, for all other operations the default is 0 (zero).

The switch requires an argument. The argument is single-valued.

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument.

--encrypt

Encrypt existing clear-text password into a hashed one.

The switch requires an argument.

-e, --erase

Erase some settings. That is, de-configuration of an item (or several items).

The switch takes no arguments.

--hash-type

States how entered authority code shall be hashed.

Possible values are: 'CLEARTEXT', 'MD5A1', 'SHA256', 'SHA256+MD5A1', 'cleartext', 'md5a1', 'sha256', 'sha256+md5a1'.

cleartext = no hashing (default)

sha256+md5a1 = both SHA256 and MD5-A1

sha256 = SHA256

md5a1 = MD5-A1

Default if switch is not given is 'CLEARTEXT'.

The switch requires an argument. The argument is single-valued.

-i, --initiate

Initiate some settings. I.e. make initial configuration of an item (or several items).

The switch takes no arguments.

--new-customer

Customer number for the extension. Customer number that the user can change to by using this authority code. Customer 0 is the default customer of the exchange. Argument must be an integer in the range 0 to 50000. For print operations the default implementation dependent, for all other operations the default is 0 (zero).

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. That is, print configuration of an item, several items, or all items.

The switch takes no arguments.

--restricted

The use of this authority code is restricted so that it can only be used the from extension specified by the '--dir' switch.

The switch takes no arguments.

-s, +s, --sort, ++sort

Specify sorting criteria for printout. If no sorting is specified, the printout is unsorted. If sort switch is given without arguments, the printout will be sorted on CUSTOMER.

-s and --sort specify ascending sort order. +s and ++sort specify descending sort order.

Possible values are: 'CODE', 'CUSTOMER', 'DIR'.

The switch takes an optional argument. The argument is single-valued.

14.4

EXAMPLES

Erase all authority codes for all customers.

auth_code -e

Erase common authority codes in the range 100 to 107 and common authority code 3000 for customer 0 (the default customer).

auth_code -e --customer 0 --auth-code 100..107, 3000

Erase all directory number specific authority codes for directory number 100 for customer 0 (the default customer).

auth_code -e --customer 0 -d 100

Erase directory number specific authority codes in the range 100 to 107 and directory number specific authority code 3000 for directory numbers 56000 to 56900 for customer 0 (the default customer).

auth_code -e --customer 0 --auth-code 100..107, 3000 -d 56000..56900

Print all authority codes for all customers.

auth_code -p

Print authority codes in the range 100 to 107 and authority code 3000 for customer 0 (the default customer).

auth_code -p --customer 0 --auth-code 100--107, 3000

Print all authority codes for customer 5.

auth_code -p --customer 5

Print directory number specific authority codes for directory numbers 100 to 107 and customer 0 (the default customer).

auth_code -p --customer 0 --auth-code -d 100..107

Print directory number specific authority codes 9897 and 8989 for directory numbers 100 to 107 and customer 0 (the default customer).

auth_code -p --customer 0 -d 100..107 --auth-code 9897, 8989

Initiate individual authority code 1234 with cil 456 and category 7 for customer 0 (the default customer) and with hashing (both SHA256 and MD5-A1).

auth_code -i --customer 0 -d 789 --auth-code 1234 --hash-type sha256+md5a1 --cil 456 --category 7

Initiate authority individual code 1234 with cil 456 and category 7 for customer 0 default customer) and SHA256 hashing. Restrict the usability of the authority code so that it can only be used from that directory number.

auth_code -i --customer 0 -d 789 --auth-code 1234 --hash-type sha256 --cil 456 --category 7 --restricted

Initiate common authority code 1234 with cil 456 and category 7 for customer 0 (the default customer).

auth_code -i --customer 0 --auth-code 1234 --cil 456 --category 7

Initiate common authority code 987 with cil 654, csp 3, category 2 for default customer, that enables the user to change to customer 12

auth_code -i --customer 0 --auth-code 987 --cil 654 --csp 3 --category 2 --new-customer 12

Change a clear-text individual auth code to be encrypted using SHA256 hashing.

auth_code --encrypt -d 777 --hash-type sha256

15 BLOCK

Manual blocking of device

15.1 FORMAT

block

-bpos
-equ
-lim

15.2 FUNCTION

By manually blocking a device, it is taken out of service. The supervision and fault reporting for that device is also suspended.

15.3 PARAMETERS

-bpos

Board position. The parameter has the format LLLG-Y-Z where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine and Z=position.

Example: 1A-0-10 (single value)
1C-0-10...1C-0-30 (series)
1A-0-10,1B-0-30 (multiple values)
1K-0-10...1K-0-30,1M-0-50...1D-0-60 (combination)

-equ

Equipment position. The parameter has the format LLLG-Y-Z-I where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine, Z=position, and I=individual.

Example: 1A-0-10-3 (single value)
1C-0-10-3...1C-0-10-7 (series)
1A-0-10-9,1B-0-30-6 (multiple values)
1K-0-10-3...1K-0-10-7,1M-0-50-6 (combination)

-lim

LIM number [range: 1-124]

Example: 3 (single value) all (all lims) 1...4 (series) 1,5,8 (multiple values)
1,3...5,7 (combination)

Note: All unsaved data in the targeted LIMs is lost when using command block -lim.

15.4 EXAMPLES

Manually block lim 3.

block -lim 3

Manually block board 20 of magazine 2 in gateway c in lim 1.

block -bpos 1c-2-20

Manually block individual 3 and 4 of board.

block -equ 1c-2-20-3,1c-2-20-4

16 BLOCK_FLAGS

List messages communication block flags

16.1 FORMAT

block_flags
[-unit]

16.2 FUNCTION

block_flags is used to list the status of the shared memory flags that block messaging communication of program units (PUs). Also lists the status of the clear timers flags of program units (PUs).

This command is primarily intended as a debugging aid for experienced programmers. The use of the command is harmless.

This command only lists the status in the current LIM.

16.3 PARAMETERS

-unit
List only message communication blocking flags for specified program unit.

16.4 EXAMPLES

List all message block flags and clear timer flags.

block_flags

List flags for program unit LLSP.

block_flags -unit LLSP

17 BLOCK_LIST

List blocked or disturbance marked devices

17.1 FORMAT

block_list
[-lim]

17.2 FUNCTION

List blocked and disturbance marked devices in the system.

17.3 PARAMETERS

-lim

LIM number [range: 1-124].

Example: 3 (single value) all (all lims) 1...4 (series) 1,5,8 (multiple values)
1,3...5,7 (combination)

17.4 PRINTOUT

Equ	Boardid	Blocking	Distmark	Linelock
.
.
.

Equ

Equipment position

Boardid

Interface identity for boards.

Values: integer, with the range 1 - 127.

The switch requires an argument. The argument is single-valued.

See the parameter BRDID in *TECHNICAL REFERENCE GUIDE. MML PARAMETER DESCRIPTION* for details.

Blocking

Blocking variable This value embraces 16 position. Each position where a digit 1 is placed indicates a fault marking or blocking. The positions are named b0-b15. b0 is the right most bit in the printout.

b00	Manual blocking of individual on the device board
b01	Internal blocking during handling of exchange data
b02	Faulty device board
b03	Faulty device or line fault
b04	Fault in equipment connected to a device board
b05	Blocked by equipment outside the system
b06	Device program in start phase
b07	Manual blocking of device board via command
b08	Manual blocking of busy individual has been initiated
b09	Manual blocking of device board has been initiated
b10	Blocking caused by external equipment
b11–15	Vacant

Distmark

Disturbance marked

no	Not disturbance marked
yes	Disturbance marked and will be only used as last choice

Linelock

Line blocked

yes	Device individual is blocked due to line error
no	No fault found on line

17.5

EXAMPLES

List blockings in LIM 3.

block_list -lim 3

List all blockings in system.

block_list

block_list				
Faulty devices				
Equ	Boardid	Blocking	Distmark	Line-lock
001a-0-70-0	87	B'0000000010000001	no	no
001a-0-70-1	87	B'0000000010000001	no	no
001a-0-70-2	87	B'0000000010000001	no	no
001a-0-70-3	87	B'0000000010000001	no	no

18 BOARD_CONFIG

Board configuration

18.1 FORMAT

board_config

```
-scan [-mgw]
-remove -bpos
-insert -bpos -boardid -numind
```

18.2 FUNCTION

A new board can be identified by the system in two ways:

- Scan all board positions in stated LIM to detect newly inserted boards. Scanning is initiated with the parameter *-scan*
- Define the new board manually using parameter *-insert*.

When a board is taken out of service, it can be removed with the parameter *-remove*.

18.3 PARAMETERS

-bpos

Board position. The parameter has the format LLLG-Y-Z where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine and Z=position.

Example: 1A-0-10 (single value)
 1C-0-10...1C-0-30 (series)
 1A-0-10,1B-0-30 (multiple values)
 1K-0-10...1K-0-30,1M-0-50...1D-0-60 (combination)

-boardid

The board identity of the created board.

Values: integer, with the range 1 - 127.

The switch requires an argument. The argument is single-valued.

See the parameter BRDID in *TECHNICAL REFERENCE GUIDE. MML PARAMETER DESCRIPTION* for details.

-insert

Create a new board in the system tables.

-mgw

Gateway has the format LLLG where LLL=lim number [range: 1-124], G=gateway letter [range: A-O].

Example: 1B (single value)
 1B...1E (series)

1A,1C (multiple values)
 1B...1D,1F (combination)

-numind

The number of individuals of the created board.

-remove

Remove a board from the system.

-scan

Start a scan for new boards.

18.4

EXAMPLES

Scan LIM 3 for new boards.

board_config -scan -lim 3

Remove a board from LIM 1, gateway B, magazine 2, and board position 20.

board_config -remove -bpos 1B-2-20

Manually create a board with board id 87 and with 16 individuals.

board_config -insert -bpos 2A-2-20 -boardid 87 -numind 16

19 BOARD_LIST

Prints device board configuration and status

19.1 FORMAT

board_list

```
[-all | - boardid]
-bpos [-all | - boardid]
-mgw [-all | - boardid]
-lim [-all | - boardid]
```

19.2 FUNCTION

The board_list command is used to examine what boards are inserted and found by the software. A list of boards are printed and different board features are listed.

19.3 PARAMETERS

-all

Print out empty positions.

-boardid

Identity of the boards that will be handled.

Values: integer, with the range 1 - 127.

The switch requires an argument. The argument is single-valued.

See the parameter BRDID in *TECHNICAL REFERENCE GUIDE. MML PARAMETER DESCRIPTION* for details.

-bpos

Board position. The parameter has the format LLLG-Y-Z where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine and Z=position.

Example: 1A-0-10 (single value)
 1C-0-10...1C-0-30 (series)
 1A-0-10,1B-0-30 (multiple values)
 1K-0-10...1K-0-30,1M-0-50...1D-0-60 (combination)

-lim

LIM number [range: 1-124].

Example: 3 (single value) all (all LIMs) 1...4 (series) 1,5,8 (multiple values)
 1,3...5,7 (combination)

-mgw

Gateway has the format LLLG where LLL=lim number [range: 1-124], G=gateway letter [range: A-O].

Example: 1B (single value)
 1B...1E (series)

1A,1C (multiple values)
1B...1D,1F (combination)

19.4

PRINTOUT

Device board position information					
Boardpos	Boardid	Individs	Signal format	State	Status
.
.
.

Boardpos	Board position	
Brdid	Board interface identity	
Individs	Number of individuals	
Signal	Signalling format	
format	The signal format can be:	
	long	Long signalling format
	short	Short signalling format
State	State of the board: The following states are possible:	
	active	Executing
	passive	Not executing, an error condition if a board is assigned in this position.
Status	Status of the board position. The following values are possible	
	no board	No board is detected in this position
	not assigned	A board is detected, but not assigned in this position.
	equipped	A board is assigned in this position

19.5

EXAMPLES

List boards in one position.

board_list -bpos 1B-0-60

List boards in LIM 1.

board_list -lim 1

List boards of type 106 in LIM 1.

board_list -boardid 106 -lim 1

20 BOARD_RESTART

Board restart

20.1 FORMAT

board_restart
-bpos

20.2 FUNCTION

Reset a board and activate it again.

20.3 PARAMETERS

-bpos

Board position. The parameter has the format LLLG-Y-Z where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine and Z=position.

Example: 1A-0-10 (single value)
 1C-0-10...1C-0-30 (series)
 1A-0-10,1B-0-30 (multiple values)
 1K-0-10...1K-0-30,1M-0-50...1D-0-60 (combination)

20.4 EXAMPLE

Restart board 20 of magazine 2, gateway A, in LIM 1:

board_restart -bpos 1A-2-20

21

BOARD_SW

Firmware status and upgrade on device boards

21.1

FORMAT

board_sw

```
-activate (-bpos | -mgw -boardid) [-ind ][-add]
-change (-bpos | -mgw -boardid) [-ind][-add]
-confirm (-bpos | -mgw -boardid) [-ind][-add]
-load (-bpos | -mgw -boardid ) [-ind ][-add ] -file
-netload (-bpos | -mgw -boardid) [-ind][-add] -path -host [-port][-protocol][-user
-password]
-sesboards -mgw
-status -bpos [-extdev]
-status -mgw [-boardid][-extdev]
-version [-lim |-mgw |-bpos]
```

Change hardware information on device board

```
-boarddata -bpos -boardid -prodno -rev -brdnam
```

Handling of media gateway software

```
-gateway -netload -path -host [-port][-protocol p][-mgw]
-gateway -activate [-mgw]
-gateway -status [-mgw]
```

21.2

FUNCTION

The board_sw command is used to administer loadable software on boards and some gateways. A board or an individual attached to the board can be loaded with new software, changed to the newly loaded version, or reverted back to the previous version with command. The present software status can be investigated, to verify the software status. The board name and revision information string can also be updated. Do not use the 'all' option (omitted -mgw parameter) unless you know that all media gateways are of the same type. You can only load/activate one type at a time.

21.3

PARAMETERS

-activate

Will change the program version that is active to the new version.

-add

Additional information text string that is sent to the board. If omitted an empty string is sent. Maximum 15 characters surrounded by the quotation mark, “, character.

-boarddata

Will upgrade the string describing the board name, revision and so on.

-boardid

Identity of the boards that will be handled. Integer.

Values: integer, with the range 1 - 127.

The switch requires an argument. The argument is single-valued.

See the parameter BRDID in *TECHNICAL REFERENCE GUIDE. MML PARAMETER DESCRIPTION* for details.

-bpos

Board position. The parameter has the format LLLG-Y-Z where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine and Z=position.

Example: 1A-0-10 (single value)
 1C-0-10...1C-0-30 (series)
 1A-0-10,1B-0-30 (multiple values)
 1K-0-10...1K-0-30,1M-0-50...1D-0-60 (combination)

-brdnam

The name of the board. Maximum 12 characters surrounded by the quotation mark, “, character.

-change

Will remove passive software. If kept, the unit will be in the “OLD” state, otherwise it will be removed.

-confirm

Will change the status of the newly loaded and active program, so that it will be the default choice at later starts.

-extdev

Used to print information from external devices connected to this board.

-file

File name including path where the software is stored that will be loaded to the stated device. String.

-gateway

The target for the command is a media gateway.

-host

Computer name or IP address of the host where the update files resides.

-ind

Individual on the board to handle. Integer.

-lim

LIM number [range: 1-124]

Example: 3 (single value) all (all lims) 1...4 (series) 1,5,8 (multiple values)
 1,3...5,7 (combination)

-load

Will load the stated boards with a new version of software.

-mgw

Gateway has the format LLLG where LLL=lim number [range: 1-124],
G=gateway letter [range: A-O].

Example: 1B (single value)
 1B...1E (series)
 1A,1C (multiple values)
 1B...1D,1F (combination)

-netload

The device board should load the new program version over the network.

-password

Password to be used when fetching files from the host.

-path

Path to the directory where the software, which is to be loaded to the board, is stored. String.

-port

Port, if an other than the default one, to use when fetching a file from the host.

-prodno

The product number of the board. Maximum 20 characters surrounded by the quotation mark, ", character.

-protocol

Protocol to use when fetching a file from the host (by http, ftp, and so on). Http is default value.

-rev

The revision state of the board. String of maximum 8 characters surrounded by the quotation mark, ", character.

-sesboards

Will print information from boards that have no switch position. In general LSU and DSU boards.

-status

Will print the hardware id and software status of the stated boards.

-user

User name to be used when fetching a file from the host.

-version

Will print the hardware and software version. Argument values can be:

format= Printout of board data
warning= Mismatch with configuration file
faulty= Mismatch with configuration file
raw= Raw format on info from boards.

21.4

PRINTOUT

Boardpos	Boardid/Ind	Board name	Product number	Rev	Status	Add
.
.
.

Status	Status of the board firmware:
exe	Executing.
exes	Executing, after activation of new sw.
exet	Executing, after restart forcing old sw back.
pas	Passive.
sby	Stand By, The sw that will become "exet".
fb	Forced back, The sw that will become "old".
old	Old state, Dormant sw that will be overwritten.

21.5

EXAMPLES

Investigate a board software status.

board_sw -status -bpos 1C-0-60

Start loading new operating system software file.

board_sw -load -bpos 1C-0-60 -file /usr/firmware/elf31_r7a

Change to the new version of software.

board_sw -activate -bpos 1c-0-60

Confirm that the new version was tested and should be used as default:

board_sw -confirm -bpos 1C-0-60

Revert back to the previous version.

board_sw -change -bpos 1C-0-60

Update the revision information of the board.

board_sw -boarddata -bpos 1C-0-60 -boardid 17 -prodno "ROF 123 345" -rev R2A -brdnam "ELU99"

Update the software on a Media Gateway by network.

board_sw -gateway -netload -path MGU/0.1.234 -protocol http -host 203.0.113.40 -mgw 2A

Update the software on several Media Gateways by network. Note that if you have a mix of different types of media gateways, you should not try to update more than one type of media gateway at a time, or else you will get a partly failed command, with negative responses from the media gateways of faulty type. Here the MGUs are updated, but Media Servers would need a different path.

board_sw -gateway -netload -path MGU/0.1.234 -protocol http -host 203.0.113.40 -mgw 1A...1D,1F

Activate the software on a Media Gateway

board_sw -gateway -activate -mgw 2A

Activate the software on several Media Gateways. Note that if you have a mix of different types of media gateways, you should not try to activate more than one type of media gateway at a time, or else you will get a partly failed command, with negative responses from the media gateways of faulty type. Here the -mgw parameter is omitted, so the command will try activating all media gateways (which should be of the same type).

board_sw -gateway -activate

22

CALL_LIST

Manage a call list

22.1

FORMAT

call_list

```
[-v][-V] -c -d --list --delay-seizure-list-number
[-v][-V] -c -d [--list] --position
[--busy-position][--dest-number][--dnd-position][--one-call][--origin][--ringing-time][--
sms-support][--delay-seizure-list-number][--ird-bypass][--instant-messaging-support
t][--call-list-cdiv]
[-v][-V] -d --list
[-v][-V] -e -d [--list][--position]
[-v][-V] -i -d [--busy-position] --dest-number
[--dnd-position][--delay-seizure-list-number][--list][--one-call][--origin] --position
[--ringing-time][--sms-support][--ird-bypass][--instant-messaging-support][--call-list-
cdiv]
[-v][-V] -p [-d][--list][-f]
```

For a description of the parameter arguments, see the command description for *Command Help Frame*.

22.2

FUNCTION

The command is used to change, erase, initiate, and print a call list. It is also used to set the active call list.

The call list is a distribution list for individual extensions, using the deflect service to forward the call to up to 10 different destinations in series. The distribution can be interrupted by various conditions, for example encountering a busy user or a user with DND active. Different call origins can optionally be treated differently. The ringing time and other options can also be configured.

22.3

PARAMETERS

--busy-position

Busy Position. States to which position the call shall be distributed in case the --dest-number is busy, OR if the calling party shall receive busy and be offered busy services (call back, for example).

Value:

0	No busy position. The distribution process is finished, and the calling party has received a busy tone).
2..10	Selected position to distribute the call to in case of busy (must be a higher number than specified in --position).
11	Distribution process is finished in case of busy, and the call is rerouted if rerouting is defined.

Example: '--busy-position 5', the call shall be distributed to the 5th position in the list.

The switch requires an argument. The argument is single-valued.

--call-list-cdiv

Repeated distribution call diversion category. Pad to length is enabled for this switch.

The digits have the following meaning:

D ₁	External follow-me is allowed to be executed on the destination.
0	No
1	Yes
D ₂	Follow-me is allowed to be executed on the destination
0	No
1	Yes
D ₃	Diversion Immediate (direct diversion) is allowed to be executed on the destination.
0	No
1	Yes
D ₄	Diversion on no reply is allowed to be executed on the destination.
0	No
1	Yes

If the parameter is omitted, default value is 0000. The switch requires an argument. The argument is single-valued.

Note: IRD service/list and diversion must be located in the same system. Otherwise the call is distributed to the following position in the IRD list.

-c, --change

Change some settings, that is, reconfigure an item (or several items).

The switch takes no arguments.

--delay-seizure-list-number

Delay seizure list number.

Value:

0	No active delay seizure list number (can only be set via call_list and parallel_ringing, use --delay-seizure-list-number 0 to deactivate sequential ringing).
1..999	Valid numbers

The switch requires an argument. The argument is single-valued.

--dest-number

Destination to a number in the call list. The destination number may be most numbers that can be routed from a --dir in the PBX.

More specifically the destinations can be extension directory numbers, including groups, voice mail, virtual extensions, common or individual PBX operator, private network destination numbers, and public destinations numbers (including LCR). If a public number (external destination), then the external destination code must be included.

The other number types are not allowed (abbreviated numbers, paging numbers, etc.)

Example: --dest-number 007195555, where 00 is the external destination code.

The switch requires an argument. The argument is single-valued.

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument.

--dnd-position

DND Position. States to which position the call shall be distributed in case the --dest-number has do not disturb active.

Value:

- | | |
|-------|--|
| 0 | The distribution process is finished, and the calling party shall receive a no progress tone. |
| 1..10 | Selected position to distribute the call to in case of DND. The value must be either equal or higher than --position. DND is bypassed if the value is equal to the --position. |

Example: '--dnd-position 5', the call shall be distributed to the 5th position in the list.

The switch requires an argument. The argument is single-valued.

-e, --erase

Erase some settings, that is, deconfigure an item (or several items). Prerequisite: Remove any PEN key monitoring before erasing Personal Number list 1.

The switch takes no arguments.

-f, --format

Possible value is: 'list'. Select a format for the printout. 'list' means that data associated with a list is printed, normally the data printed is associated with a position.

The switch requires an argument. The argument is single-valued.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item (or several items).

The switch takes no arguments.

--instant-messaging-support

States whether instant messaging between end-points is supported for the --position (and the related --dest-number).

The switch is only valid if the --dir is a generic extension.

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'. Default: true.

The switch requires an argument. The argument is single-valued.

Note that --one-call must be set to allow multiple calls, if --instant-messaging-support is set true.

--ird-bypass

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'. States whether Individual Repeated Distribution (IRD) bypass is allowed for the --position (and the related --dest-number). Default: false.

When this option is true an extension specified in an active Personal Number (PN) list can call the PN list owner without being subject to PN list distribution. This can be used, for example, by a secretary calling or being Single Step Transferred to the boss.

The switch requires an argument. The argument is single valued.

--list

Answering position list. The number corresponds to the Personal Number Profile number. One list contains one deflection list.

Value:

0	No active list (can only be set via call_list --dir x --list 0 to inactivate personal number).
1..5	list 1 to 5.

The switch requires an argument. The argument is single-valued.

--one-call

States that the entered answering position can only be called once while the call is being distributed.

When the parameter is set to false, the selected answering position can be called as many times as the Personal Number is called.

When the parameter is set to true, once the selected answering position has received a call, it will not be called again by another incoming call to the service while the deflection to that answering position is ongoing. New incoming calls deflected to that answering position will be directly distributed to the next answering position in the active list, regardless of the value for parameter --busy-position.

The recommended value for --one-call, when --dest-number belongs to the public network, is true.

Note: Switch --one-call and switch --instant-messaging-support cannot both be set to true.

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'.

The switch requires an argument. The argument is single-valued.

--origin

Origin selection. The --position (and the related --dest-number) can be selected depending on the calling party type. Pad to length is enabled for this switch.

Value;

D ₁	Internal/Private origin: 0 - Not allowed, 1 - Allowed
D ₂	PBX operator origin: 0 - Not allowed, 1 - Allowed
D ₃	Public/unknown origin: 0 - Not allowed, 1 - Allowed
Default value: 111	

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

--position

Position order. The answer position place in the --list. There can be up to ten positions in each list. Value: 1..10

The switch requires an argument. The argument is single-valued.

--ringing-time

States the ringing time when calling to an answering position (--dest-number) before deflecting the call to the next position (choice) in the list or, if it is the last one, the call shall be terminated. Value: 2..60 seconds.

Example: '--ringing-time 20', the --dest-number will be called for 20s before the call is deflected to the next position.

The switch requires an argument. The argument is single-valued.

--sms-support

States whether SMS is supported for the --position (and the related --dest-number). Default: false.

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'.

The switch requires an argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

22.4

EXAMPLES

22.4.1

EXAMPLE 1

The call list for directory number 1000 is already initiated and its new changed data will be: For the list number 2 and position 3, the call will be distributed to position 4 in case the third one is busy.

call_list -c --dir 1000 --list 2 --position 3 --busy-position 4

22.4.2

EXAMPLE 2

The call list for directory number 2000 is already initiated. It will change the following data for the list number 2 and position 3: A destination number of 024823535. A ringing supervision time of 14 seconds. The new destination number specified above can only be called once while the call is being distributed. It will not be called again by another incoming call until the terminal is free.

**call_list -c --dir 2000 --list 2 --position 3\
--dest-number 024823535 --ringing-time 14 --one-call 1**

22.4.3

EXAMPLE 3

The call list for directory number 1500 will change the switch --origin in its position 1 of its list number 2: The call shall be answered only when calling from a PBX operator.

call_list -c --dir 1500 --list 2 --position 1 --origin 010

22.4.4

EXAMPLE 4

The already initiated call list for directory number 2500 will change the following data for the list number 2 and position 3: A destination number of 2255. The new destination number specified above is allowed to receive SMS messages.

```
call_list -c --dir 2500 --list 2 --position 3\  
--dest-number 2255 --sms-support 1
```

22.4.5

EXAMPLE 5

The already initiated call list for directory number 2500 will change the following data for list number 2 and position 3: A destination number of 2255 is allowed to execute ird-bypass.

```
call_list -c --dir 2500 --list 2 --position 3 --dest-number 2255 --ird-bypass 1
```

22.4.6

EXAMPLE 6

The already initiated call list for directory number 2500 will change the following data for the list number 2: Delay seizure list number 5.

```
call_list -c --dir 2500 --list 2 --delay-seizure-list-number 5
```

22.4.7

EXAMPLE 7

The already initiated call list for directory number 2500 will change the following data for the list number 2 and position 3: Delay seizure list number 10.

```
call_list -c --dir 2500 --list 2 --position 3 \ --delay-seizure-list-number 10
```

22.4.8

EXAMPLE 8

Delete all the lists associated to the call list for directory number 2000.

```
call_list -e --dir 2000
```

22.4.9

EXAMPLE 9

Delete the second list associated to the call list for directory number 2000.

```
call_list -e --dir 2000 --list 2
```

22.4.10

EXAMPLE 10

Delete the third position in the second list associated to the call list for directory number 1000.

```
call_list -e --dir 1000 --list 2 --position 3
```

22.4.11

EXAMPLE 11

Delete the third position in the first list associated to the call list for directory number 1000.

```
call_list -e --dir 1000 --position 3
```

22.4.12

EXAMPLE 12

Initiate a list for the call list for dir 2000. No list has been initiated before for this call list, so the initiated list will be list number 1. The initiated list contains answering positions with the following data:

- For list position 3 the destination number is 8322 with a ringing supervision time of 10 seconds. Calls from the public network will not be answered from this position.
- For list position 1 the destination number is 03413227. In case this dest number is busy, position 4 will answer the call. This dest number can only be called once and it does not depend on the origin.
- For list position 5 the destination number is 3000 with a ringing supervision of 5 seconds. Calls from the operator will not be sent to this position.
- For list position 2 the destination number is 8325 with a ringing supervision time of 10 seconds.
- For list position 4 the destination number is 5255, which is allowed to receive SMS messages.
- For list position 6 the destination number is 5256, which is allowed to do IRD bypass when calling from 5256 to Personal Number list directory number 2000.
- For list position 7 the internal destination number is 5238. In case this dest number has do not disturb active, position 9 will answer the call.

```
call_list -i --dir 2000 --position 3 --dest-number 8322 \ --ringing-time 10 --origin 110
```

```
call_list -i --dir 2000 --position 1 --dest-number 03413227 \ --busy-position 4 --one-call 1
```

```
call_list -i --dir 2000 --position 5 --dest-number 3000 \ --ringing-time 5 --origin 101
```

```
call_list -i --dir 2000 --position 2 --dest-number 8325 --ringing-time 10
```

```
call_list -i --dir 2000 --position 4 --dest-number 5255 --sms-support 1
```

```
call_list -i --dir 2000 --position 6 --dest-number 5256 --ird-bypass 1
```

```
call_list -i --dir 2000 --position 7--dest-number 5238 --dnd-position 9
```

22.4.13

EXAMPLE 13

Initiate the second position in list number 3 associated to the call list for dir 1500, with the destination number 8776. It will only answer calls from the PBX operator. In case the dest number is busy, the distribution process is stopped.

```
call_list -i --dir 1500 --list 3 --position 2 \ --dest-number 8776 --origin 010 --busy-position 11
```

22.4.14

EXAMPLE 14

Print all call lists in the 'normal' format.

```
call_list -p
```

22.4.15

EXAMPLE 15

Print all call lists that have the 'list' format.

call_list -p -f list

For more complete help type 'call_list --help-complete'.

22.4.16

EXAMPLE 16

Initiate a first position in a call list 1 for extension 2000 that supports instant messaging calls. Several calls must be allowed, and the destination number shall be 5256.

**call_list -i -dir 2000 --list 1 --dest-number 5256 \
--one-call 0 --position 1 --instant-messaging-support 1**

22.4.17

EXAMPLE 17

Initiate a first position in a call list 1 for extension 2000 that supports --instant-messaging-support, the destination number shall be 5256, and set Delay seizure list number to 1.

**call_list -i -dir 2000 --list 1 --dest-number 5256 --position 1
--instant-messaging-support 1 --delay-seizure-list-number 1**

23

CALL_LIST_PROFILE

Manage a call list profile

23.1

FORMAT

call_list_profile

```
[-v][-V] -c -d [--call-list-npres][--call-list-serv]
```

```
[-v][-V] -p [-d]
```

For a description of the parameter arguments, see the command description for *Command Help Frame*.

23.2

FUNCTION

The command is used to change or print a call list profile.

23.3

PARAMETERS

--call-list-npres

Repeated distribution presentation options.

The digits have the following meaning:

- D₁ Repeated distribution (call list) presentation category. States the display information for the **calling party**. The directory number used to represent the distribution number list is denoted as 'repeated distribution service'. The answer position in the distribution list is denoted as 'connected party information'.
 - 0 Do not show repeated distribution service and connected party information.
 - 1 Show only repeated distribution service.
 - 2 Show both repeated distribution service and connected party information.
- D₂ Repeated distribution (call list) idle display presentation restriction category. States if active re-direction information shall be displayed in idle state for **the owner of the list**.
 - 0 Presentation of repeated distribution service information in idle state is allowed. (Default)
 - 1 Presentation of repeated distribution service information in idle state is restricted.

If the parameter is omitted, the default value of D₁ is 2, and the default of D₂ is 0.

Note: The D₂ parameter is only valid for generic extensions.

The switch requires an argument. The argument is single-valued.

--call-list-serv

Repeated distribution service category. Pad to length is enabled for this switch.

The digits have the following meaning:

- D₁ Repeated distribution after diversion or follow me or message diversion.

- | | | |
|----------------|---|--|
| | 0 | Repeated distribution after direct diversion or follow me or message diversion is NOT allowed. |
| | 1 | Repeated distribution after direct diversion or follow me or message diversion is allowed. |
| D ₂ | | First ring tone |
| | 0 | First ring tone will be provided |
| | 1 | First ring tone will NOT be provided |

If the parameter is omitted, the default value is 00.

Note: The “First ring tone” parameter only controls if the ring tone shall be provided or not, it does **not** affect the signaling protocol towards the caller, i.e. Ringing/Alerting or equivalent messages will be sent regardless how the parameter is set.

The switch requires an argument. The argument is single-valued.

-c, --change

Change some settings, that is, reconfigure an item (or several items).

The switch takes no arguments.

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument.

-p, --print

Print all or some settings. That is, print configuration of an item, several items, or all items.

The switch takes no arguments.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

23.4

EXAMPLES

The call list profile for directory number 1000 is already initiated and its new changed category will be:

Repeated distribution after diversion or follow me will be executed and a first ring tone will be provided.

Both repeated distribution service and connected party information will be displayed on the calling party. The owner of the list shall get repeated distribution service display information in idle state.

call_list_profile -c --dir 1000 --call-list-serv 10 --call-list-npres 20

The call list profile for dir 2000 is already initiated and its new changed category will be:

Repeated distribution after diversion or follow me will not be executed and a first ring tone will not be provided. Only repeated distribution service information will be displayed on the calling party. The owner of the list shall get repeated distribution service display information in idle state.

call_list_profile -c --dir 2000 --call-list-serv 01 --call-list-npres 10

The call list profile for dir 3000 is already initiated and its new changed category will be:

No display on repeated distribution service or connected party information on calling party. Repeated distribution after diversion or follow me will depend on the already initiated value of the --call-list-serv switch. The owner of the list shall not get repeated distribution service display information in idle state.

call_list_profile -c --dir 3000 --call-list-npres 01

For more complete help type 'call_list_profile --help-complete'.

24 CALLINFO_CONDCODE_PRINT

Print information about condition codes

24.1 FORMAT

callinfo_condcode_print

`[-code | -seg -pos] | -custom_cc`

24.2 FUNCTION

The command will print information about how a condition code is printed. The printout can show all codes, a selected code, or codes that are custom defined. These codes are the ones used in the call information logging file or printout.

The condition code is used in outputs generated by the 36 `callinfo_output_set` on page 88 `callinfo_output_set` command with the **-format** parameter.

24.3 PARAMETERS

-code

Condition code to print.

Integer: 0-255, "all" or "custom".

-custom_cc

Custom defined condition code.

Get the custom defined condition code strings in a format that is suitable as input to the `-custom_cc` switch of *callinfo_file_to_file*. This switch takes an optional argument that is the file name of the output file. If no file name is given the output is written to standard output.

-pos

Position part of the call condition code to print.

Integer: 0-31.

For the meaning of the numbers, see the interworking description for *Station Message Detail Recording, Call Information Logging, Quality Logging* in chapter Call Logging Record Fields.

-seg

Segment part of the call condition code to print.

Integer: 0-7.

For the meaning of the numbers, see the interworking description for *Station Message Detail Recording, Call Information Logging, Quality Logging* in chapter Call Logging Record Fields.

24.4

EXAMPLES

Print condition codes (default all):.

callinfo_condcode_print

Print all condition codes.

callinfo_condcode_print -code all

Print a specific code.

callinfo_condcode_print -code 5

Print a specific code.

callinfo_condcode_print -seg 0 -pos 5

Print the custom defined codes.

callinfo_condcode_print -code custom

Print the custom defined codes in computer readable format to the file /tmp/custom.dat

callinfo_condcode_print -custom_cc /tmp/custom.dat

25 CALLINFO_CONDCODE_SET

Set the custom strings for condition codes

25.1 FORMAT

callinfo_condcode_set

```
-code -string
-seg -pos -string
-code -restore
-seg -pos -restore
```

25.2 FUNCTION

The `callinfo_condcode_set` command will set information strings to be printed in the call logging output when a condition code is translated to a custom format. If a custom code is not set the CC3 condition code is printed.

25.3 PARAMETERS

-code

Condition code to be translated to a custom character string.

Values: 0-255, or "all" together with the "-restore" parameter.

-pos

Position part of the call condition code to be translated to a custom character string.

Values: 0-31.

For the meaning of the numbers, see the interworking description for *Station Message Detail Recording, Call Information Logging, Quality Logging* in chapter Call Logging Record Fields.

-restore

Restore the custom set string to a CC3 string.

-seg

Segment part of the call condition code to be translated to a custom character string.

Values: 0-7.

For the meaning of the numbers, see the interworking description for *Station Message Detail Recording, Call Information Logging, Quality Logging* in chapter Call Logging Record Fields.

-string

Text, surrounded by the quotation character, " , that should be printed for the condition code.

25.4

EXAMPLES

Set the condition code translation for internal call.

callinfo_condcode_set -code 8 -string "Normal call"

Revert back to the CC3 default for internal call.

callinfo_condcode_set -restore -code 8

26

CALLINFO_FILE_RESTART

Restart file for call info output.

26.1

FORMAT

callinfo_file_restart

-lim -output -old_data

26.2

FUNCTION

The command `callinfo_file_restart` is used for grabbing the call information for calls this far, from an output to a file that is active. The command can only be used for outputs of type "file".

`callinfo_file_restart` flushes all buffered data on an output to the open file. Then the file is closed, and renamed to the given name. Finally the output is opened again to the original file name. When there is new data to write (to the output) the output will continue with the original file name.

`callinfo_file_restart` guarantees that no data is lost while restarting the file (that is, all calls are logged to either the old or the new file). `callinfo_file_restart` guarantees that no data item is duplicated in both files (that is, if the call is logged to the old file, it is not logged to the new file). `callinfo_file_restart` guarantees that the restart is done on a record boundary (that is, the last record of the file with old data is complete).

The command `callinfo_file_restart` can only restart a file and rename the old output file to a new name if the given file name is for a file on the same file system (partition) as the active output. The given file name (in the switch `-old_data`) must not be on another file system (partition). After restarting, the file with old data can be moved (by command `mv`) to any location.

Note: Reading from an active (open) output file with normal tools might miss the last calls, and might see incomplete records. This is due to the write buffers and write caches in both the call logging and in the Linux/Unix file handling. `callinfo_file_restart` provides a solution to this problem.

Note: Never use Linux or Unix commands (like `rm`, `cp`, `mv`) to rename, copy or move an active (open) output file. The Linux file system has a sophisticated system of reference counters to enable a process to keep reading and writing to or from an open file, even if the file is deleted. This will cause undesired effects if you try to rename, move or copy an active (open) call logging output file. Use the command `callinfo_file_restart` to restart the file before moving, copying or deleting the file.

26.3

PARAMETERS

-lim

LIM number [range: 1-124].

LIM number where logged output is located.

-old_data

File name that the old output data shall be renamed to.

-output

Output number where the file is to be restarted.

26.4**EXAMPLE**

Restart the output file for output 2 in LIM 3. The old data shall be stored in /var/opt/eri_sn/call_logging/old_log.dat.

```
callinfo_file_restart -lim 3 -output 2 \  
-old_data /var/opt/eri_sn/call_logging/old_log.dat
```

27 CALLINFO_FILE_TO_FILE

Transfer selected data from one file to another

27.1 FORMAT

callinfo_file_to_file

```
[ -fromtime ][ -totime ][ -charged ][ -seqlim ][ -fromseqnumber ][ -toseqnumber ] -insubtype  
[ -infilename ] -outsubtype [ -outfilename ][ -format ][ -eol ][ -custom_cc ]
```

27.2 FUNCTION

The command will convert data from one file to a another file, while changing format or selecting what data to be copied, depending on charged number or time of call.

Note: callinfo_file_to_file is an off-line command.

27.3 PARAMETERS

-charged

Charged number of data records to be converted.

-custom_cc

File with custom condition code strings. The syntax of the file is the same as that generated from chapter 24 callinfo_condcode_print on page 65.

-eol

Type of “end of line” used. Values: NL, CR, CRNL, NLCR, or CRNL000

-format

Format string to produce output in different layouts. See chapter 35 callinfo_output_info on page 85 on the type of files and their subtypes. **Note** : Sometimes an empty parameter is needed.

-fromseqnumber

From this sequence number data records are converted.

-fromtime

From this start time data records are converted.

-infilename

Name of the source file

-insubtype

File subtype of the source database. See the chapter 35 callinfo_output_info on page 85 on the file subtypes .

-outfilename

Name of the destination file

-outsubtype

File subtype that will be created. See the command 35 callinfo_output_info on page 85 on the file subtypes .

-seqlim

The LIM number where the call record was created.

-toseqnumber

Up to this sequence number data records are converted.

-totime

Until this stop time data records are converted.

27.4

EXAMPLES

Convert the xml file "/var/opt/eri_sn/call_logging/data.1.xml" to an asb501 format file called /var/opt/eri_sn/call_logging/conv.

```
callinfo_file_to_file -insubtype xml
-infilename /var/opt/eri_sn/call_logging/data.1.xml \
-outfilename /var/opt/eri_sn/call_logging/conv \
-outsubtype asb501 -format "utc"
```

Convert the comma separated file called "endyear.1.dat" in directory "/var/opt/eri_sn/call_logging" to an asb501 formatted file called "lastweek" using start time 2004 24/12 7.00 am and stop time 2004 31/12 11.59 pm, Pacific Standard Time.

```
callinfo_file_to_file -insubtype commaseparated \
-infilename /var/opt/eri_sn/call_logging/endyear.1.dat \
-outfilename /var/opt/eri_sn/call_logging/lastweek \
-outsubtype asb501 -format "utc" \
-fromtime "2004-12-24 19:00 (PST)" \
-totime "2004-12-31 23:59 (PST)"
```

27.5

NOTES

This command must be run on the LIM or computer where the files are located. Use the command 35 callinfo_output_info on page 85callinfo_output_info to print more information on how formatting is done for the type file and its subtypes.

28 CALLINFO_FILE_TO_SQL

Transfer data from a file to an SQL database

28.1 FORMAT

callinfo_file_to_sql

```
[ -fromtime ][ -totime ][ -charged ] -sqlsubtype -dbname -server -port -user -password
-exchangenname -lim -filename -filesubtype
```

28.2 FUNCTION

The callinfo_file_to_sql command will extract data from a file into a database.

28.3 PARAMETERS

-charged

Charged number of data records to be converted.

-dbname

Name of the database to be used on the database server.

-exchangenname

The exchange name of the system to be inserted in the database.

Note: No check is done!

-filesubtype

File subtype of the input file. See chapter 35 callinfo_output_info on page 85 on the type file and its subtypes .

-fromtime

From this start time data records are converted.

-lim

LIM number [range: 1-124].

The LIM number to be inserted in the database.

Note : No check is done!

-password

Password of the account used for database server login.

-port

TCP/IP port number to connect the stream to. (The default port for the selected type and subtype will be chosen if "0" is entered.)

-server

Server where the database is located.

-sqlsubtype

Sql subtype of the target database. See chapter 35 callinfo_output_info on page 85 on the type sql and its subtypes .

-totime

Until this stop time data records are converted.

-user

Username of the account used for database server login.

28.4

EXAMPLE

Convert the xml file /var/opt/eri_sn/call_logging/conv to a PostgreSQL database “smdr1” on server “my.secure.net”. On port 123 and account “sqlstorer” with password “hushhush”. The lim number is 1 and the exchange is “office”.

```
callinfo_file_to_sql -sqlsubtype postgresSQL -dbname smdr1 \  
-filesubtype xml -lim 1 -exchangenname office \  
-server my.secure.net -port 123 -user sqlstorer \  
-password hushhush -filename /var/opt/eri_sn/call_logging/conv
```

28.5

NOTES

This command must be run on the LIM or computer where the file is located. Use the command 35 callinfo_output_info on page 85callinfo_output_info to print more information about subtypes.

29 CALLINFO_FORMAT_PRINT

Print a (preconfigured) format string

29.1 FORMAT

callinfo_format_print

`[-lim][-format] -subtype`

29.2 FUNCTION

The command is used to print a preconfigured format string of a subtype. This is useful if you want to use the general subtype to create your own format based on one of the preconfigured formats.

You can send a format string to the command, just as you can when you initiate the output of that subtype. The resulting output is the format string constructed by the subtype, and used by the general format to implement the subtype format.

Note: This command only works for the general and the predefined formats. It does not work for the fixed formats like postgresql, comma separated, or XML.

29.3 PARAMETERS

-format

Add the accompanying string to the preconfigured format string of the subtype, according to the rules of the subtype.

-lim

Node where the output is generated.

Values: integer, or list of integers with range 1 - 124, or all

-subtype

Subtype of output to print. See chapter 35 `callinfo_output_info` on page 85.

29.4

EXAMPLES

Get the preconfigured format string for the FP15 format.

callinfo_format_print -subtype fp15

Get a format string for output in ASB501 format, but omit calls shorter than 10 seconds.

**callinfo_format_print -subtype asb501 **

-format "[duration < 10]: {exit} ;"

Get a format string for output in MDFP15 format, but omit calls shorter than 2 seconds, and only include calls to external lines (with access code 00).

**callinfo_format_print -subtype mdfp15 **

-format " [duration < 2] : {exit} ; [accessCode1 == 00] "

30 CALLINFO_LIMIT_PRINT

Print QoS alarm data configuration and status

30.1 FORMAT

```
callinfo_limit_print  
[-lim]
```

30.2 FUNCTION

The command will print information of QoS alarm. It can be used for the system or a specific LIM.

30.3 PARAMETERS

-lim
Node from where the information is fetched.

30.4 EXAMPLES

Print the configuration and status for all LIMs.

```
callinfo_limit_print
```

Print the configuration and status for LIM 1.

```
callinfo_limit_print -lim 1
```

31

CALLINFO_LIMIT_SET

Set alarm values for QoS in IP telephony

31.1

FORMAT

callinfo_limit_set

[-samples][-red][-yellow][-bad][-warn]

31.2

FUNCTION

The command will set the alarm levels and quality levels used for quality of service supervision in IP telephony.

The **bad** and **warn** levels are used to determine if a call is good, at warning, or bad. The results of the evaluation is stored in a buffer containing a set of samples. When more than **red** number of **bad** samples are in the buffer the red alarm is raised. When more than **yellow** number of **bad** AND **warn** samples are in the buffer the yellow alarm is risen.

31.3

PARAMETERS

-bad

Indicates an R-value limit, below this value the call was **bad**

Values: integer 100-10000 = 1-100%.

-red

Number of **bad** samples in the statistics to raise the red alarm.

-samples

Number of samples that are used in the statistics.

Values: 1-200.

-warn

Indicates an R-value limit, below this value the call was at **warn** .

Values: 100-10000 = 1-100%.

-yellow

Number of **warn** and **bad** samples in the statistics to raise the yellow alarm.

31.4

EXAMPLES

Change the numbers of samples in buffer.

callinfo_limit_set -samples 40

Change the alarm level for red and yellow alarm.

callinfo_limit_set -red 5 -yellow 12

Change the R-value limits, bad = 40% and warning = 55.2%.

callinfo_limit_set -bad 4000 -warn 5520

31.5

NOTES

When changing the alarm limits, alarms are cleared and the supervision is started, or restarted, with the new values.

32 CALLINFO_MASK_PRINT

Print how masking of numbers is done

32.1 FORMAT

callinfo_mask_print
[-lim]

32.2 FUNCTION

The `callinfo_mask_print` command will print information regarding masking of digits when protecting integrity by removing last digits or replacing them in the call information data output.

32.3 PARAMETERS

-lim
LIM number [range: 1-124].

32.4 EXAMPLES

Print masking configuration.

callinfo_mask_print

Print masking configuration for LIM 2.

callinfo_mask_print -lim 2

33 CALLINFO_MASK_SET

Set how dialled numbers are truncated

33.1 FORMAT

callinfo_mask_set

```
-all Y-Z [-showas]
-dialed Y-Z [-showas]
-connected Y-Z [-showas]
-extensiona Y-Z [-showas]
-extensionb Y-Z [-showas]
```

33.2 FUNCTION

The command determines how to mask the digits when protecting integrity by removing the last digits or replacing them in the callinfo printout.

33.3 PARAMETERS

-all

All types of outputs are masked in the same way. The first digit states the minimum number length for the rule. The second digit the number of last digits to remove or replace. "none" will reset the mask info.

-connected

Masking for connected number. (Call data) The first digit states the minimum number length for the rule. The second digit the number of last digits to remove or replace. "none" will reset the mask info.

-dialed

Masking for dialled number. (Call data) The first digit states the minimum number length for the rule. The second digit the number of last digits to remove or replace. "none" will reset the mask info.

-extensiona

Masking for extension A-number. (QoS data) The first digit states the minimum number length for the rule. The second digit the number of last digits to remove or replace. "none" will reset the mask info.

-extensionb

Masking for extension B-number. (QoS data) The first digit states the minimum number length for the rule. The second digit the number of last digits to remove or replace. "none" will reset the mask info.

-showas

This is the character to use when replacing the last digits that are surrounded by the quotation mark, " , character.

33.4

EXAMPLES

Set all types of number masking configuration to use "?" as replacement and to replace 2 digits when at least 4 digits are dialled.

callinfo_mask_set -all 4-2 -showas "?"

Set all types of number masking configuration to use a blank space, " ", as replacement and to replace 2 digits when at least 4 digits are dialled, and replace 3 digits when at least 7 digits are dialled.

callinfo_mask_set -all 4-2,7-3

34 CALLINFO_OUTPUT_CHANGE

Change or append format information

34.1 FORMAT

callinfo_output_change

-output -format -lim [-append]

34.2 FUNCTION

The command is used to change the formatting of printouts from the call information recording function. The command will substitute or append to the existing formatting rules used for the stated output.

34.3 PARAMETERS

-append

The new format string entered in this command is to extend the original format.

-format

Format string, enclosed in quotation mark characters, ", to produce call data in different layouts. May be used for some type or subtype combinations. Use the command 35 callinfo_output_info on page 85 callinfo_output_info for more information .

-lim

LIM number [range: all, 1-124].

Single value, multiple values (1,3,8), series (1...6), or a combination (1...10,12) are valid. Duplication of LIM number is not allowed. ('All' is not case sensitive.)

-output

Identity of the output data Values: 0-9

34.4

EXAMPLES

Change the formatting of output 1 in LIM 1.

```
callinfo_output_change -lim 1 -output 1 -format "{callingNumber L 20 20} talked  
to \  
{connectedNumber L 0 20} {newline};"
```

Extend the format of output 1 in LIM 1.

```
callinfo_output_change -lim 1 -output 1 -append \  
-format "[connectedNumber != dialedNumber]: dialed number {dialedNumber L  
20 20} {freeOfChargeCallInformation R 3 3} {newline};"
```

35 CALLINFO_OUTPUT_INFO

Print types and format information

35.1 FORMAT

callinfo_output_info

[-lim][-format][-type [-subtype]]

35.2 FUNCTION

The command `callinfo_output_info` will print information of what types and printouts that are available in the current version of the call information recording function.

The command will list each type and subtype, together with information on what parameters are used for each combination. The command will also provide several extensive examples how to do a proper setup.

35.3 PARAMETERS

-format

Print formatting information

-lim

LIM numer [range: all, 1-124].

Example: 3 (single value) all (all LIMs) 1...4 (series) 1,5,8 (multiple values)
1,3...5,7 (combination)

-subtype

Subtype of output that will be performed

-type

Type of output that will be performed

Type	-bitrate	-databits	-dbname	-eol	-flowcontrol	-format	-heartbeat	-lim	-local	-output	-parity	-paritycheck	-password	-port	-record	-server	-stopbits	-user
sql																		
postsql			x					x	[x]	x			x	x	[x]	x		x
none								x	[x]	x					[x]			
file																		
none								x	[x]	x					[x]			
commaSeparated			x	[x]				x	[x]	x					[x]			
xml			x	[x]				x	[x]	x					[x]			
general			x	[x]		x	[x]	x	[x]	x					[x]			
fp15			x	[x]		x	[x]	x	[x]	x					[x]			
mdfp15			x	[x]		x	[x]	x	[x]	x					[x]			
asb501			x	[x]		x	[x]	x	[x]	x					[x]			
asbumdfp15			x	[x]		x	[x]	x	[x]	x					[x]			
demo1			x	[x]				x	[x]	x					[x]			
demo2			x	[x]				x	[x]	x					[x]			
tcp																		
commaSeparated				[x]				x	[x]	x				x	[x]	x		
xml				[x]				x	[x]	x				x	[x]	x		
general				[x]		x	[x]	x	[x]	x				x	[x]	x		
fp15				[x]		x	[x]	x	[x]	x				x	[x]	x		
mdfp15				[x]		x	[x]	x	[x]	x				x	[x]	x		
asb501				[x]		x	[x]	x	[x]	x				x	[x]	x		
asbumdfp15				[x]		x	[x]	x	[x]	x				x	[x]	x		
demo1				[x]		x	[x]	x	[x]	x				x		x		
demo2				[x]			[x]	x	[x]	x				x		x		
V24																		
commaSeparated	[x]	[x]	x	[x]	[x]			x	[x]	x	[x]	[x]			[x]		[x]	
xml	[x]	[x]	x	[x]	[x]			x	[x]	x	[x]	[x]			[x]		[x]	
general	[x]	[x]	x	[x]	[x]	x	[x]	x	[x]	x	[x]	[x]			[x]		[x]	
fp15	[x]	[x]	x	[x]	[x]	x	[x]	x	[x]	x	[x]	[x]			[x]		[x]	
mdfp15	[x]	[x]	x	[x]	[x]	x	[x]	x	[x]	x	[x]	[x]			[x]		[x]	
asb501	[x]	[x]	x	[x]	[x]	x	[x]	x	[x]	x	[x]	[x]			[x]		[x]	
asbumdfp15	[x]	[x]	x	[x]	[x]	x	[x]	x	[x]	x	[x]	[x]			[x]		[x]	
demo1	[x]	[x]	x	[x]	[x]			x	[x]	x	[x]	[x]			[x]		[x]	
demo2	[x]	[x]	x	[x]	[x]			x	[x]	x	[x]	[x]			[x]		[x]	
asyncfile																		
commaSeparated			x	[x]				x	[x]	x					[x]			
xml			x	[x]				x	[x]	x					[x]			
general			x	[x]		x	[x]	x	[x]	x					[x]			

Type	-bitrate	-databits	-dbname	-eol	-flowcontrol	-format	-heartbeat	-lim	-local	-output	-parity	-paritycheck	-password	-port	-record	-server	-stopbits	-user
fp15			x	[x]		x	[x]	x	[x]	x					[x]			
mdfp15			x	[x]		x	[x]	x	[x]	x					[x]			
asb501			x	[x]		x	[x]	x	[x]	x					[x]			
asbumdfp15			x	[x]		x	[x]	x	[x]	x					[x]			
demo1			x	[x]				x	[x]	x					[x]			
demo2			x	[x]				x	[x]	x					[x]			

35.4

NOTE

The **file** type writes synchronously to a file. It is efficient, but should only be used with a reliable local hard disk. The **asyncFile** type writes asynchronously to a file. It is inefficient, but can handle unreliable network file systems. If you are logging onto an NFS-mounted file system, it must be mounted with the options "soft" and "intr".

The V.24 serial interface is normally not used by the MX-ONE. When it is needed, for example, at Call Logging to a V.24 port, the system service user (a Unix daemon), `eri_sn_d`, must be reconfigured. To reconfigure `eri_sn_d`, see operational directions for User Account Management, section V.24 Service.

35.5

EXAMPLES

Print configuration possibilities.

callinfo_output_info

Print configuration format information.

callinfo_output_info -format

36

CALLINFO_OUTPUT_SET

Set configuration for call information

36.1

FORMAT

callinfo_output_set

```
-output -lim -type -subtype [-local][-dbname][-server -port
][-user][-password][-format][-heartbeat][-eol][-record][ -localtime | -utc ][ [-noinit] | [
[-bitrate X.Y] ][-databits][-stopbits][-parity][-paritycheck][-flowcontrol hw | xon] ] ]
```

36.2

FUNCTION

The callinfo_output_set command will setup an output stream of call information data. The command will set formatting rules, destination of the data, together with information used to at the destination, for example, user information, parameters for data transport, and so on.

Ten output channels can be defined per LIM, where each channel will store the data generated to the assigned destination, and in the assigned format independently from the other channels. In multi-LIM systems one or more collect-nodes can be assigned where the output can be forwarded. To prevent duplication of data in a central collecting point a local only flag may be set so that only locally generated data will be stored at that output.

36.3

PARAMETERS

-bitrate

Data speed used on the serial port. (Specified as "out.in" with two numbers or as "bothway" with one number).

Values: 75, 110, 134, 150, 200, 300, 600, 1200, 1800, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400.

-databits

Number off data bits used on the interface. Values: 5-8.

-dbname

Name of the database to be used on database server.

-eol

Type of "end of line" used. Values: NL, CR, CRNL, NLCR, or CRNL000.

-flowcontrol

Type of flow control used, hw or xon. (RTS/DSR or xon/xoff)

-format

Format string to produce output in different layouts. The format string is used for some type - subtype combinations. Use the command 35 callinfo_output_info on page 85callinfo_output_info for more info .

Note : Sometimes an empty parameter is needed.

Note: The format string is not parsed until the output is activated. It is a good idea to use the 27 `callinfo_file_to_file` on page 71 `callinfo_file_to_file` command to verify the syntax of the format string, before it is used on an output.

-heartbeat

Heartbeat will be used for this output.

Note : Functional only on streams.

-lim

LIM number [range: all, 1-124].

Single value, multiple values (1,3,8), series (1...6), or a combination (1...10,12) are valid. Duplication of LIM number is not allowed. ('All' is not case sensitive.)

-local

Forwarded data will not be output

-localtime

Use local time as default time format for outputs that are based on a format string (general, fp15, mdfp15, ...). Cannot be combined with -utc. The default if neither -localtime or -utc is given is UTC. (This switch has no effect for output to SQL or to machine readable formats, like commaseparated, or XML.)

-noinit

Do not initialize the V24 port.

(Useful if the device is not really for the V24 port, but for a similar port, like a parallel port.)

-output

Identity of the output data. Values: 0-9.

-parity

Type of parity control bits sent on external interface.

Values: no, even or odd.

-paritycheck

Turns on parity control for incoming data.

-password

Password of the account used for database server login.

-port

TCP/IP port number to connect the stream to (default port for the selected type and subtype will be chosen if "0" is entered).

-record

Type of data recorded.

Values: call, mobile, all. Default = call.

-server

Server where the database is located.

-stopbits

Number of stop bits. Values: 1, 2.

-subtype

Subtype of output that will be performed. See chapter 35 `callinfo_output_info` on page 85.

-type

Type of output that will be performed. See chapter 35 `callinfo_output_info` on page 85.

-user

Username of the account used for database server login.

-utc

Use UTC as the default time format for outputs that are based on a format string (general, fp15, mdfp15, ...). Cannot be combined with -localtime. The default if neither -localtime or -utc is given is UTC. (This switch has no effect for output to SQL or to machine readable formats, like commaseparated, or XML.)

36.4

EXAMPLES

Configure all LIMs to output all call information locally on output 0 on a comma separated file on the hard disk.

```
callinfo_output_set -output 0 -lim all -type file \  
-subtype commaseparated -dbname /var/smdr/log -local
```

Configure all LIMs to output all call information locally on output 0 on a comma separated file on a network mounted disk (over NFS).

```
callinfo_output_set -output 0 -lim all -local -type asyncfile \  
-dbname /nfs_server/call_logging/log -subtype commaseparated
```

Configure LIM 1 to output all call information on output 1 to a PostgreSQL database "smdr1" on server "my.secure.net". Use port 123 and account "sqlstorer" with password "hushhush".

```
callinfo_output_set -output 1 -lim 1 -type sql \  
-subtype PostgreSQL -dbname smdr -server my.secure.net \  
-port 123 -user sqlstorer -password hushhush
```

Configure all LIMs to output all call information locally on output 3 on a demo1 format to the printer.

```
callinfo_output_set -output 3 -lim all -local \  
-type v24 -subtype demo1 -dbname /dev/lp0 -noinit
```

36.5

NOTES

Use 35 callinfo_output_info on page 85 callinfo_output_info to print more information what parameters are needed for each type and subtype, and how the format parameter is used.

The heartbeat parameter will produce heartbeat information only on streams (like tcp/ip or tty, not on files or SQL).

The path for call logging is "/var/opt/eri_sn/call_logging".

The common device name for com1 is "/dev/ttyS0". The common device name for the Printer is "/dev/lp0".

The **file** type writes synchronously to a file. It is efficient, but should only be used with a reliable local hard disk. The **asyncFile** type writes asynchronously to a file. It is inefficient, but can handle unreliable network file systems. If you are logging onto an NFS-mounted file system, it must be mounted with the options "soft" and "intr".

37

CALLINFO_QOS_REPORT_SET

Set VoIP QoS reporting from endpoints

37.1

FORMAT

```
callinfo_qos_report_set  
{ -off | -on }
```

37.2

FUNCTION

Voice over IP Quality of Service reporting from endpoints is turned on or off. A reporting interval can be defined when reporting is turned on, but this setting has no effect since periodic reporting is not supported by the endpoints.

Use the command 39 `callinfo_status_print` on page 95 to view the current settings.

37.3

PARAMETERS

-off

Turn off VoIP QoS reporting from endpoints.

-on

Turn on VoIP QoS reporting from endpoints, and specify the reporting time interval.

37.4

EXAMPLES

Turn off VoIP QoS reporting from endpoints.

```
callinfo_qos_report_set -off
```

Turn on VoIP QoS reporting from endpoints with a reporting interval of 20 seconds.

```
callinfo_qos_report_set -on 20
```

38

CALLINFO_SQL_TO_FILE

Transfer data from SQL database to file

38.1

FORMAT

callinfo_sql_to_file

```
[ -fromtime ][ -totime ][ -charged ][ seqlim ][ -fromseqnumber ][ -toseqnumber ] -sqlsubtype
-dbname -server -port -user -password
[ -delete ][ -custom_cc ][ -filename ][ -filesubtype ][ -format ][ -eol ]
```

38.2

FUNCTION

The callinfo_sql_to_file command will convert data in the database to a file, in the desired format.

The command is an off-line command.

38.3

PARAMETERS

-charged

Charged number of data records to be converted.

-custom_cc

File with custom condition code strings.

The syntax of the file is the same as that generated from '24 callinfo_condcode_print on page 65callinfo_condcode_print -custom_cc'

-dbname

Name of the database to be used on database server.

-delete

Delete entries in the database after conversion to file.

-eol

Type of "end of line" used. Values: NL, CR, CRNL, NLCR, or CRNL000.

-filesubtype

File subtype that will be used. See chapter 35 callinfo_output_info on page 85 on the type file and its subtypes.

-format

Format string to produce call data in different layouts. See chapter 35 callinfo_output_info on page 85 on the type file and its subtypes.

Note : Sometimes an empty parameter is needed.

-fromseqnumber

From this sequence number data records are converted.

-fromtime

From this stop time data records are converted.

-password

Password of the account used for database server login.

-port

TCP/IP port number to connect the stream to (default port for the selected type and subtype will be chosen if "0" is entered).

-seqlim

The LIM number where the call record was created.

-server

Server where the database is located.

-sqlsubtype

Sql subtype of the source database. See chapter 35 callinfo_output_info on page 85 on type sql and its subtypes.

-toseqnumber

Up to this sequence number data records are converted.

-totime

Until this stop time data records are converted.

-user

Username of the account used for database server login.

38.4

EXAMPLE

Convert the PostgreSQL database "smdr1" on server "my.secure.net" on port 123, using account "sqlstorer" with password "hush", to an xml file called /var/opt/eri_sn/call_logging/conv.

```
callinfo_sql_to_file -sqlsubtype postgresSQL -dbname smdr \  
-server my.secure.net -port 123 -user sqlstorer \  
-password hush -filename /var/opt/eri_sn/call_logging/conv \  
-filesubtype xml
```

38.5

NOTE

This command must be run on the LIM or computer where the file is created. Use the command 35 callinfo_output_info on page 85callinfo_output_info to print more information how formatting is done for the type file and its subtypes.

39 CALLINFO_STATUS_PRINT

Output status and configuration print

39.1 FORMAT

```
callinfo_status_print  
[-lim][-output]
```

39.2 FUNCTION

The command will print where call information is stored, and in what format. The command will also print the current state of the outputs.

39.3 PARAMETERS

-lim

LIM numer [range: all, 1-124].

Example: 3 (single value) all (all LIMs) 1...4 (series) 1,5,8 (multiple values)
1,3...5,7 (combination)

-output

Identity of the output data. Values: 0-9. Single values, list of values or "all".

39.4 EXAMPLES

Print the configuration of all LIMs for all active outputs **callinfo_status_print**

Print the configuration for LIM 1 for all outputs **callinfo_status_print -lim 1 -output all**

Print the configuration for all LIMs for outputs two and four **callinfo_status_print -lim all -output 2,4**

39.5 NOTE

If no -output parameter is given, only activated outputs are printed.

40

CALLINFO_STATUS_SET

Enable or disable call information output

40.1

FORMAT

callinfo_status_set

-lim -forward -state

-lim -output -state

40.2

FUNCTION

The callinfo_status_set command will enable data to be forwarded to a specified output, or forwarded to another LIM.

Ten output destinations can be defined, where each channel will store the data generated to the assigned destination, and in the assigned format set by the 36 callinfo_output_set on page 88 callinfo_output_set command. In multi-LIM systems up to three central forward-nodes can be assigned where the data will be handled and stored.

40.3

PARAMETERS

-forward

LIM where the data is centrally stored in a multi server system (integer or list of integers).

-lim

LIM number [range: all, 1-124]

Single value, multiple values (1,3,8), series (1...6), or a combination (1...10,12) are valid. Duplication of LIM number is not allowed. ('All' is not case sensitive.)

-output

Identity of the output data.

-state

Turns the output on or off. Values: "on", "off".

40.4

EXAMPLES

Add LIM 2 and 3 to the list of forward LIMs.

callinfo_status_set -lim all -forward 2,3 -state on

Remove LIM 2 from the list of forward LIMs.

callinfo_status_set -lim all -forward 2 -state off

Turn information logging on for output 2.

callinfo_status_set -lim all -output 2 -state on

41 CALLINFO_TCP_PRINT

Test program that works as TCP/IP server

41.1 FORMAT

```
callinfo_tcp_print  
-server -port
```

41.2 FUNCTION

This program runs as a test server, that listens to TCP and prints received data to standard output. It is a useful test program for testing configurations where printable data is sent over TCP/IP to some port.

This test server only accepts a single connection, and exits when the client closes the connection. Control-C can be used to interrupt or abort the program.

41.3 PARAMETERS

-port
Port number that the server should open and listen to.

-server
Host name or IP-address for the IP-interface the server should listen to.

41.4 EXAMPLES

Set up a server that listens to port 9876 at the interface localhost.

```
callinfo_tcp_print -server localhost -port 9876
```

Set up a server that listens to port 3245 at the interface 203.0.113.10.

```
callinfo_tcp_print -server 203.168.0.113 -port 3245
```

42

CALL_TRACE

The command prints ongoing calls based on optional filter conditions.

42.1

FORMAT

```
call_trace [-v] -E
call_trace [-v] -b
call_trace [-v] -d
call_trace [-v] -l [--ip-net]
```

42.2

FUNCTION

Call trace print.

The command prints ongoing calls based on optional filter conditions.

The data that is printed for a call is the type of connection, the call start date and time, the ongoing call's duration time (so far, in a format of ddhh:mm:ss, where d is days, h is hours, m is minutes and s is seconds). Days will however always be 0 (printing the value 0d), and hours maximum 09, due to the fact that Call Information Logging has the maximum 64K seconds = 9.1 h. A long duration call will thus never be longer than 9.1 h.

In addition the command also prints encryption information, attenuation values, for IP types of end-points RTP IP address and type of codecs used, for TDM types of end-points multiple position (HW address), calling A-number, dialed number, connected B-number, and charged number (which may differ from the A-number). Type of involved media gateway (if any) is also printed.

42.3

PARAMETERS

-b, --board-position

Board position. The syntax of the argument is LG-M-B, where

L is lim number	[1 - 124]
G is gateway	[A - O]
M is magazine	[0 - 3]
	[4 - 6], for MGU based media resources
	[7], for dynamic fictitious magazine
B is board position	[0 - 73]

Example of valid syntax: 124N-2-60

The switch requires an argument. The argument is single-valued

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument. The argument can be a combination of comma separated sequences and ranges (first...last).

-E, --equipment-position

Equipment position.

Syntax of argument is LG-M-B-I where

L is LIM number	[range: 1 - 124]
G is gateway	[range: A - O]
M is magazine	[range: 0 - 3]
B is board position	[range: 0 - 73]
I is individual	[range: 0 - 31]

Example of valid syntax: 124A-0-10-3.

The switch requires an argument. The argument is single-valued.

--ip-net

States an IP subnet as IP address (no port number allowed) / number of mask bits. Example: 203.0.113.0/24

The switch requires an argument. The argument is single-valued.

-l, --lim

Lim number.

Syntax of argument is L where L is lim number [range: 1 - 124].

Example of valid syntax: 2, 1,3...5,124

The switch requires an argument. The argument can be the special word 'all' or it can be a combination of comma separated sequences and ranges (first...last).

-v, --verbose

Turn on verbose output (that is, progress information) to standard error. The switch takes no arguments.

42.4

EXAMPLES

Print call involving board position 1a-0-60

call_trace --board-position 1a-0-60.

Print call involving directory number 123

call_trace --dir 123

43 CHECK_CORE_FILES

43.1 FORMAT

check_core_files

43.2 FUNCTION

Check if there are core files from the program units (in */tmp/*). If core files are found, analyze the core files (using command **core_report**).

If (after the analysis) there are analyzed core files (as */tmp/report_core_*.zip*) an alarm is raised to call attention to this fact.

Attach analyzed core files to the trouble reports written for the fault that created the cores.

The command **check_core_files** can only be run by root or mxone_admin. The command **check_core_files** is intended to be run as a cron job, but it can also be run manually.

43.3 PARAMETERS

-

43.4 EXAMPLE

Check for core files from program units.

check_core_files

44 CONFIG_MIRROR

Create mirrors of all LIMs in the system

44.1 FORMAT

config_mirror

[--backup dnsname,[dnsname..]

[--export dnsname,[dnsname..]

[--mail mailaddress]

44.2 FUNCTION

The command creates a data storage in the directory */mxone/mirror* on Server (LIM) 1. For each server a tar file is created and data is copied by using rsync from that Server. The data that will be copied are the backup created with the command *data_backup* together with all configuration files.

Also the data from Server 1 itself will be stored in a directory under */mxone/mirror*.

When done, all data needed to reconfigure the system can be found in */mxone/mirror* on Server (LIM) 1.

44.3 PARAMETERS

-b --backup

Comma separated list of hosts to copy the mirror data from. The host name is specified as FQDN (DNS name, e.g. server2.MX-ONE). The data is copied to LIM 1.

If this argument is omitted all servers will be copied. If this argument is empty no servers will be copied.

-e --export

Comma separated list of hosts to copy the mirror data to. The host name is specified as FQDN (DNS name, e.g. server2.MX-ONE)

If this argument is omitted the mirror will remain in server 1. If this argument is empty the mirror will not be copied to any server.

-m --mail

Name of mail recipient. A mail reporting the result will be sent to this recipient.

44.4 EXAMPLES

Create mirrors from all servers in the system. No export.

config_mirror

Create mirror copy to all servers.

config_mirror -e all

Create mirror copy to all servers in the system.

config_mirror -e server2.MX-ONE

45 CONFIG_RESTORE

Restore configuration from a mirror in a multi-LIM system

45.1 FORMAT

config_restore

45.2 FUNCTION

Retrieves a configuration from a data storage in the directory */mxone/mirror* on Server (LIM)1.

For each Server, there is a tar file containing a data backup together with all necessary configuration files. The data is distributed to the corresponding directories to the slave Servers and Server 1 by using rsync.

When done, the complete system can be restored by running the command *data_restore*. If an argument is given *config_restore* will restore only one host. The argument shall be FQDN name of the Server to repair.

45.3 PARAMETERS

-

45.4 EXAMPLES

Restore configuration from a mirror in a multi-LIM system

config_restore

Restore configuration from 'my_server.mydomain'

config_restore 'my_server.mydomain'

46 CORE_REPORT

46.1 FORMAT

core_report

--core <core_file>

46.2 FUNCTION

This program is used to collect related data due to program failure. This data is packed into a zip file and placed in the */tmp* directory. The core file must be specified.

The **core_report** script analyzes the specified core file and produces a zipped archive of text files that describes the failure (*gdb output* and *syslog* messages), as well as, the running system.

46.3 PARAMETERS

--core <core_file>

The core file to be analyzed.

46.4 EXAMPLE

-

47

CSTA

Manage CSTA servers.

47.1

FORMAT

csta

```
[ -v ][ -V ] -e -l --port
[ -v ][ -V ] -i -l [--csta-serv][ --port]
[ -v ][ -V ] -devices [[R]] [--calls][ --summary][ --trunks]
```

47.2

FUNCTION

The command is used to erase, initiate and print csta phase 3 servers in the system.

For more information on CSTA servers, see *CSTA Phase III, Description*, 56/1551-ANF 901 14.

47.3

PARAMETERS

--calls

Print the CSTA monitored calls.

The switch takes no arguments.

--csta-serv

States the service characteristics of the CSTA Server. Pad to length is enabled for this switch.

The digits have the following meaning:

D₁ Heartbeat support by external application.

0 No

1 Yes

Message 'systemStatus' is sent to client; 'systemStatusResponse' is expected back. If response is not received within stipulated time is the connection closed.

D₂ Bypass of personal number/IRD.

0 No

1 Yes

An application can also set the options allowing diversion after deflection (D₃) and replace dialled number (D₄) through private data in the request from the CSTA application. Selection from the CSTA application has higher priority than the configuration of D₃ and D₄ in the service parameter.

D₃ Permit diversion after deflection.

0 No

1 Yes

D₄ Replace dialed number with deflected-to number.

- 0 No
1 Yes
- D₅ Connection view type.
States the connection view type used by the CSTA Server.
Defines how data is presented in conference and transfer CSTA events created by the PBX.
Using a fixed view, all devices included are given the same primary old call and secondary old call data as the device that initiates the conference. This means, for example, that events for a monitored, third-party in a conference will contain data on all calls included in the conference.
0 Local view.
1 Fixed view.
- D₆ Send encryption keys in private event.
0 No
1 Yes
- D₇ Type of interface.
0 ECMA323
1 TR87 uaCSTA
- D₈ Security. Use TLS to communicate with client.
0 No
1 Yes
Using TLS demands that a valid certificate exists. Check with the command `mxone_certificate`. The minimum TLS version allowed is stated in the `ip_telephony.conf` file. Use the command `mxone_maintenance` to change. TR87 interface does not support TLS. Default TLS version is 1.0.
- D₉ Diversion category override.
Set feature request does not check the diversion category of the terminal when this is set to Yes.
This allows activation of ECF, Follow-Me, Diversion On Busy and Diversion On No Reply when the extension category is not allowing activation of the diversion from terminal.
0 No
1 Yes
- D₁₀ Application authentication.
CSTA application is required to send application id and password when connect to the system.
Recommended that security is activated, see above.
Requires that data is set with command `csta_authentication`.
The switch requires an argument. The argument is single-valued.
0 No
1 Yes

--devices

Print the monitored devices.

The switch takes no arguments. The argument can be the special word 'all' or a range (first...last).

-e, --erase

Erase some CSTA related settings. that is, deconfiguration of an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some CSTA settings, that is, make initial configuration of an item (several items).

The switch takes no arguments.

-l, -lim

LIM number. Syntax of argument is L where L is lim number [range: all, 1-124].

Example of valid syntax: 2 all 1,5,124.

The switch requires an argument.

--port

Port number. The port number for the CSTA server to use.

Allowed range: 1025 to 65535.

With no security, default port 8882 is used if the parameter is omitted. With security, the default port 8883 is used if the parameter is omitted.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. That is, print configuration of an item, several items, or all items.

The switch takes no arguments.

--summary

Print a summary.

The switch takes no arguments

--trunks

Print the monitored trunks.

The switch takes no arguments.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-v, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

47.4

EXAMPLES

Initiate CSTA Server in lim 1.

csta -i --lim 1

Initiate CSTA Server in lim 1 with port and service characteristics.

csta -i --lim 1 --port 8882 --csta-serv 1000000000

Erase the CSTA server on port 8882 in lim 1.

csta -e --lim 1 --port 8882

Print all CSTA servers.

csta -p --lim all

Print all monitored devices in lim 2.

csta -p --lim 2 --devices

48

CSTA_AUTHENTICATION

Manage CSTA application session.

48.1

FORMAT

csta_authentication

```
[-v][-V] -c --application-id [--password] [--duration-time] [--csta-session-serv]
```

```
[-v][-V] -e [--application-id]
```

```
[-v][-V] -i --application-id --password [--duration-time] [--csta-session-serv]
```

```
[-v][-V] -p [--application-id]
```

48.2

FUNCTION

The commands is used to change, erase, initiate and print the CSTA authentication criteria.

Application supports ECMA-354 Application Session Service. Specify the application identity, password and optional duration time. The actual duration time is set by the application.

Duration time set by this command is use when application does not send request for duration time. Duration time can be set to 0, then the session is not supervised. Shortest supervision time that can be requested is 1 minute, longest is 1440 minutes.

Session serv defines if a call control event shall override the party number restriction or not, shall the restricted number be sent in event or not.

It can also change session serv for default user. Default user is used for all application that does not use application Session Service to connect to MX-ONE.

48.3

PARAMETERS

-T

Do a function trace on command while command is executing. The argument to this switch is a string of the function trace flags. Function trace is only possible for the debug version of the commands (not for the optimized version).

The switch requires an argument. The argument is single-valued.

--application-id

Name of the application connecting to the CSTA server.

application-id is a character string that identifies the CSTA application requesting the application association. Accepted argument length is 7 to 30 characters.

The switch requires an argument. The argument is single-valued.

-c--change

Change some settings. That is, reconfiguration of an item (or several items). The switch takes no arguments.

--csta-session-serv

States the session characteristics of the established CSTA session. Pad to length is enabled for this switch. The digit have the following meaning:
D1: Future use.

0 - No.

D2: Number presentation restriction override category.

0 - No number restriction override.

1 - Override external A-Party number restriction.

2 - Override A-Party number restriction.

1 - Override all number restriction.

When party has number restriction can this category override this restriction and show the number anyway. Default session serv is 00, no restriction override. The switch requires an argument. The argument is single-valued.

--duration-time

Specifies the length of time (in minutes) that the application session is maintained. The session duration timer can be periodically refreshed through the Reset Application Session Timer service. Duration time specifies the default time used when application does not request something else.

Application can request a shorter or longer duration time. Shortest supervision time that can be requested is 1 minute, longest is 1440 minutes. Duration time set to 0 is not supervised.

Accepted argument is 0 to 1440 minutes. Default duration time is 60 minutes. The switch requires an argument. The argument is single-valued.

-e, --erase

Erase some settings. That is, reconfiguration of an item (or several items).

The switch takes no arguments.

-, --help

Print the help text of the command. The printed help text is only the help text that is unique for this command. Help text on the command parsing framework (MD_COM) that is identical to all commands is not included. See also '--help-complete'.

The switch takes no arguments.

--help-complete

Print the complete help text of the command. The printed help text includes help text on the command parsing framework (MD_COM) that is identical to all commands is. See also '--help' and '--help-framework'.

The switch takes no arguments.

--help-framework

Print the help text of the command parsing framework (MD_COM). That is, print help text for the switches and features that are identical to all commands using the framework.

The switch takes no arguments.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item (several items).

The switch takes no arguments.

--password

Password is a character string that used to authenticating the CSTA application, requesting the application association.

Accepted argument length is 8 to 100 characters. A special input format is encr: hash_value to enter an already prepared authentication hash, as printed out by 'csta_authentication -p'. Accepted argument length is 8 to 160 characters.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. That is, print configuration of an item, several items, or all items.

The switch takes no arguments.

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error.

The switch takes no arguments.

-v, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

--version

Print the version information for the current command.

The switch takes no arguments.

48.4

EXAMPLES

Initiate CSTA application identity MiCollab001 with password xxxx, time before application has to send a rest timer request 60 minutes.

csta_authentication -i --application-id MiCollab001 --password xxxx --duration-time 60

Re-initiate CSTA application identity MiCollab001 after an upgrade. Use the complete text received from printout.

csta_authentication -i --application-id MiCollab001 --password encr:zJTMmWd-IAfDiKKslrMjm8w== --duration-time 60

Erase the CSTA application identity MiCollab001.

csta_authentication -e --application-id MiCollab001

Change the password for application identity MiCollab001 with new password yyyy, time before application has to send a rest timer is unchanged. Do not forget to do the same change in the application.

csta_authentication -c --application-id MiCollab001 --password yyyy

Print all CSTA applications that are allowed to connect to the CSTA server.

csta_authentication -p

Print information about application identity MiCollab001.

csta_authentication -p --application-id MiCollab001

49 DATA_BACKUP

Backup of exchange data

49.1 FORMAT

data_backup

49.2 FUNCTION

Backup of exchange data for all LIMs in the entire system. Exchange data includes:

- system configuration data
- application data (for example, extensions, trunks)

Remember to always perform a backup after:

- initial load of the system
- changing hardware configuration
- adding a program unit
- removing a program unit
- program change has been performed
- alterations of application data

A new directory is created for the backup in the *var* directory. The backup directory is named *xdata_y_z*, where y is LIM number and z is a time stamp (date and time). A data file for each program unit is stored in the backup directory.

The file *xdata_y.conf* (where y is LIM number) in the *var* directory is updated to include the new backup. Valid backups are specified in this file.

The system will store the five latest backup directories. If more backups are made, the oldest backup directory is deleted.

Alteration of exchange data is inhibited during backup of exchange data.

49.3 PARAMETERS

-

49.4 EXAMPLE

Backup exchange data for the entire system

data_backup

50 DATA_CHANGE

Data change due to command

50.1 FORMAT

data_change
 -display
 -reset
 -set

50.2 FUNCTION

50.2.1 GENERAL

Reload data change, set and reset, can be used to protect a series of command initiated actions, for example replacing a program unit with the program unit change feature. None of the commands in the series must then try to set reload data change.

Reload data change reset can be used to allow other commands to begin changing reload data. This feature can be used when the currently running reload data change command hangs or misses to reset the reload data change.

Status of reload data change due to command can be displayed.

50.2.2 SET RELOAD DATA CHANGE TO BEGIN

Set reload data change to begin in the system. The optional information string is stored in the system and can be displayed.

Use command **data_change -set** or command **data_change -set <information string>**.

50.2.3 RESET RELOAD DATA CHANGE

Reset reload data change due to command in the system. The optional information string can be used to reset reload data change due to a certain command. If no information string is used, the reload data change will be unconditionally reset. This should only be used if the current command hangs or when a command misses to reset.

Use command **data_change -reset** or command **data_change -reset <information string>**.

50.2.4 DISPLAY STATUS OF RELOAD DATA CHANGE

Display status of reload data change due to command. The current reload data change command is shown. The program unit and LIM from which the command was issued is also shown.

Use command **data_change -display**.

50.3

PARAMETERS

-display

Display status of the reload data change due to command.

-reset

Reset the reload data change due to command. If command information is given after the parameter, the reload data change will only be reset if the current reload changing command matches the command information. If no command information is given, the reload data change will be unconditionally reset.

-set

Set reload data change to begin in the system. An information string can be given after the parameter to indicate what change that will begin. If no information string is given, "data_change" will be used.

50.4

EXAMPLES

Set reload data change and "example_command" as information string:

data_change -set example_command

Set reload data change:

data_change -set

Reset reload data change by "example_command":

data_change -reset example_command

Reset pending command reload data change:

data_change -reset

51 DATA_INFO

Show exchange data backup information

51.1 FORMAT

data_info

51.2 FUNCTION

Shows the time stamp of the current exchange data backup. The valid exchange data backups are listed. Time stamp and system release version that was in service when the backup was made are shown for each backup.

51.3 PARAMETERS

-

51.4 EXAMPLE

Show exchange data backup information:

data_info

52 DATA_RESTORE

Restore of exchange data

52.1 FORMAT

data_restore

52.2 FUNCTION

Exchange data for all LIMs in the entire system is restored from backup and start phase after data restore will be executed.

The measure is appropriate when mismatch in the exchange data in the system is suspected. The exchange data will be restored to the status it had at the last successful backup occasion.

Alteration of exchange data is inhibited during restore of exchange data.

During start phase after data restore program units have the possibility to update their connections between reload and dynamic data.

52.3 PARAMETERS

-

52.4 EXAMPLE

Restore exchange data for the entire system

data_restore

53

DEBLOCK

Manual deblocking of device

53.1

FORMAT

deblock

```
{-lim | -bpos | -equ} [-allfm]
```

53.2

FUNCTION

By manually deblocking a device, it is put in service. The supervision and fault reporting for that device is also resumed.

53.3

PARAMETERS

-allfm

In addition to clearing manual block, remove all fault and disturbance markings.

-bpos

Board position. The parameter has the format LLLG-Y-Z where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine and Z=position.

Example: 1A-0-10 (single value)
 1C-0-10...1C-0-30 (series)
 1A-0-10,1B-0-30 (multiple values)
 1K-0-10...1K-0-30,1M-0-50...1D-0-60 (combination)

-equ

Equipment position. The parameter has the format LLLG-Y-Z-I where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine, Z=position, and I=individual.

Example: 1A-0-10-3 (single value)
 1C-0-10-3...1C-0-10-7 (series)
 1A-0-10-9,1B-0-30-6 (multiple values)
 1K-0-10-3...1K-0-10-7,1M-0-50-6 (combination)

-lim

LIM number [range: all, 1-124]

Single value, multiple values (1,3,8), series (1...6), or a combination (1...10,12) are valid. Duplication of LIM number is not allowed. ('All' is not case sensitive.)

53.4

EXAMPLES

Manually deblock LIM 3:

deblock -lim 3

Manually deblock board 20 of magazine 2 in gateway c in LIM 1, also clear all disturbance markings:

deblock -bpos 1c-2-20 -allfm

Manually deblock individual 3 and 4 of board in previous example:

deblock -equ 1c-2-20-3,1c-2-20-4

54

DECT_CFP

Manage common fixed part for DECT system.

54.1

FORMAT

dect_cfp

```
[-v] -c --fpi
[--compensation][--allow-sync][--ring-prio][--delay][--info][--mcdm][--test-mode][--tr
m]
[-v] -e --fpi
[-v] -e --only --fpi
[-v] -i --fpi -b [--compensation][--info][--allow-sync][--ring-prio] [--trm]
[-v] -i --fpi -b [--mcdm [--delay]][--info][--allow-sync]
[--ring-prio][--trm ]
[-v] -p [--fpi][--f][±s]
```

54.2

FUNCTION

The `--initiate` switch is used to initiate a Common Fixed Part (CFP) for Cordless extensions. Before this command can be entered, system data must be initiated with command `dect_system_id`.

Setting of `ring-prio` and `allow-sync` is only valid on ring master/member, bus slave that have `ring-prio` or `allow-sync` set will remove this data.

When setting `ring-prio` to on must `allow-sync` be set to no, ring master must not be allowed to distribute synchronization to its own gateway.

The `--erase` switch is used to remove one or more common fixed parts for cordless extensions. All RFPs on the CFPs must be removed before the common fixed parts can be removed.

The `--change` switch is used to change data for a CFP for cordless extensions.

The `--print` switch is used to print out data for CFP.

`-f detailed` gives more detailed information about synchronization

54.3

PARAMETERS

--allow-sync

The parameter states if this board is allowed to act as synchronization source for the gateway. Only valid for ring members.

Possible values are: 'no', 'yes'.

The switch requires an argument. The argument is single-valued

-b, --board-position

Board position. The syntax of the argument is LG-M-B, where

L is lim number	[1 - 124]
G is gateway	[A - O]

M is magazine [0 - 3]
[4 - 6], MGU based media resources
[7], dynamic fictitious

B is board position[0 - 73]

Example of valid syntax: 124N-2-60

The switch requires an argument. The argument is single-valued

-c, --change

Change some settings, that is, reconfigure an item (or several items).

The switch takes no arguments.

--compensation

The parameter states the additional compensation for the ACDM value. The parameter can be used to provide manual delay when ACDM function is on (MCDM switch is omitted).

The value represents number of steps in 122 nanosecond units(255 x 122 nanoseconds = 31.11 microseconds).

Range 0-255. Default value 0.

The switch requires an argument. The argument is single-valued

--delay

The parameter states the delay time of the incoming synchronization signal. The parameter can be used to provide manual delay when ACDM function is off (MCDM switch is given). The value represents number of steps in 122 nanosecond units (255 x 122 nanoseconds = 31.11 microseconds).

Range 0-255. Default value 0.

The switch requires an argument. The argument is single-valued

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

-f, --format

Select a format for the printout. Possible values are:

DETAILED	More detailed print out
FAULTY	FPI with faulty synchronization is printed.
INFO	Short printout with FPI, BPOS and information.
REGEN	Information needed to initiate the board again is printed.
RING	ring configuration is printed, with the master board first, all FPIs are fetched. Needs ELU31/4 switch set to /4 mode or later in the ring
STANDARD	More detailed print out

Default is 'STANDARD'.

The switch requires an argument. The argument is single-valued.

--fpi

The parameter states a number identity for a Fixed part. The value must be unique for an MX-ONE. When an FPI is initiated, the MX-ONE will generate a PARI -Primary Access Right Identity for the current fixed part. See also parameter RPN.

The switch requires an argument.

--info

Information string. This can be used to define the coverage area for this board. For example "Covers floor 2,3 and main stair case." Shown in -f detailed or -f info. Accepted argument length is 1 to 50 characters.

The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/> In unicode number mode the numbers are separated by space ' ', or by semicolon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name 'Üßü-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued

-i, --initiate

Initiate some settings, that is, make initial configuration of an item (or several items).

The switch takes no arguments.

--mcdm

The switch indicates that manual cable delay measurement is done. When mcdm is given can a cable DELAY value be entered manually.

An additional compensation can be entered manually When mcdm is omitted is cable delay values be calculated automatically on the ELU31 board. This cannot be done ELU31/1 boards.

The switch takes no arguments

--only

Select to handle only this aspect or part. Possible values are: 'INFO', 'MCDM', 'TEST-MODE', 'info', 'mcdm', 'test-mode'.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items.

The switch takes no arguments.

--ring-prio

The parameter states that this board has priority to be selected as ring master in an unbroken ring. Recommendation is to set this on only one board per synchronization ring.

Only valid for ring members.

Verify the result with verbose print out "-v". Possible values are: 'off', 'on'.

The switch requires an argument. The argument is single-valued.

-s, +s, --sort, ++sort

Specify sorting criteria for printout. If no sorting is specified, the printout is unsorted. If sort switch is given without arguments, the printout will be sorted on FPI -s and --sort specify ascending sort order. +s and ++sort specify descending sort order. Possible values are: 'BPOS', 'FPI', 'bpos', 'fpi'.

The switch takes an optional argument. The argument is single-valued.

'fpi' data is printed sorted on FPI value.

'bpos' data is printed sorted on BPOS value.

--test-mode

The switch states that the synchronization adjust mode for an ELU31.

If the LSU synchronization slips then the ELU31 ring synchronization must adjust accordingly because the LSU acts as a synchronization master source to the ELU31 boards. During normal traffic shall this switch be left out. Then the ELU31 ring will be adjusted softly without restarting the base stations.

The switch sets the ELU31 board in test mode. This should only be done for test purpose. The test mode is used for testing the DELAY time values. The idea with the test mode is to disconnect the ELU31 ring cable when the boards are in test mode and see if any base stations restarts. If base stations are restarting then DELAY time value needs to be adjusted.

The switch takes no arguments

--trm

The parameter states the selection of the transmission characteristics in the switch (amplification and attenuation). This is achieved with the aid of a transmission matrix. For a voice signal from the party it states the row in the matrix and for a voice signal to the party it states the column. From the identified element in the matrix an indication concerning amplification or attenuation between the A-party and the B-party is obtained. The values of the matrix elements are market dependent.

For more information consult description of relevant application system. The recommended value of parameter TRM is 0. If the parameter is omitted, the default value (0) will be used.

The switch requires an argument. The argument is single-valued

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error. The switch takes no arguments.

54.4

EXAMPLES

Initiate a CFP with transmission characteristics 3 and automatic cable delay measurement on board position 12A-1-30, where A is the used gateway in LIM 12. Use an arbitrary FPI number.

```
dect_cfp -i --b 12A-1-30 --fpi 1212 --trm 3
```

Initiate a CFP with automatic cable delay measurement and additional compensation 366 nanoseconds on board position 12B-1-30, where B is the used gateway in LIM 12. Use an arbitrary FPI number.

```
dect_cfp -i --b 12B-1-30 --fpi 1 --compensation 3
```

Initiate a CFP with manual cable delay measurement and additional delay 122 nanoseconds on board position 12A-1-30, where A is the used gateway in LIM 12. Use an arbitrary FPI number.

```
dect_cfp -i --b 12A-1-30 --fpi 2 --mcdm --delay 1
```

Change the compensation value to 244 nanoseconds on CFP with fixed part identity 2

```
dect_cfp -c --fpi 2 --compensation 2
```

Change the test-mode value to normal, on CFP with fixed part identity 2

```
dect_cfp -e --only test-mode --fpi 2
```

Change the delay value from 9 to 0, on CFP with fixed part identity 2

dect_cfp -c --fpi 2 --mcdm --delay 0

Change the to automatic cable delay measurement, on CFP with fixed part identity 2

dect_cfp -e --only mcdm --fpi

Remove the CFP with fixed part identity 2 from the system.

dect_cfp -e --fpi 2

Print the all CFP in the system.

dect_cfp -p

Print the CFP range 1-6.

dect_cfp -p --fpi 1..6

Print the CFP range 1-3 with detailed synchronization information.

dect_cfp -p --fpi 1..3 -v

Print the ring configuration.

dect_cfp -p -s ring

55 DECT_EXTENSION

Manage authentication key for dect extension.

55.1 FORMAT

dect_extension

```
[ -v ][ -V ] -e -d M
[ -v ][ -V ] -i -d --authentication-par
[ -v ][ -V ] -i -d --ipei --authentication-key
[ -v ][ -V ] -p [ -d ][ --authentication-details ]
```

55.2 FUNCTION

The command is used to initiate, erase and print authentication data for the stated directory number. The authentication data are used for security control of a dect extension, and is imperative for a dect extension when executing the location registration procedure.

'ipei' is used during the access rights procedure. 'authentication-key' and 'ipei' are used when the portable accesses the system the first time.

During the access rights procedure (which is initiated from the portable) the authentication key will be expanded to an encrypted authentication parameter. For PPs with SIM-card the serial number (IPDI) for the SIM-card is used instead of the serial number (IPEI) for the PP, as the value in parameter IPEI. If the access rights procedure has been performed, and the 'authentication-parameter' is known, this can be entered directly and there is no need to perform the procedure again.

The --erase switch orders removal of the authentication key for stated directory numbers. Note that it is important to also remove the authentication key from the portable part (PP), in order to avoid problems with conflicting authentication keys in the future, when a new PP tries to activate the old authentication key in the system.

The --print switch orders a printout of authentication key data for stated directory numbers. 'authentication-key' and 'ipei' are used when the portable accesses the system for the first time. During the access rights procedure (which is initiated from the portable) the authentication key will be expanded to an encrypted authentication parameter. 'authentication-key' and 'ipei' are then removed from the system. If the parameter 'authentication-details' is omitted, the 'authentication-key' and 'ipei' of the directory number(s) will be printed. If the parameter 'authentication-details' is included, the authentication parameter, is printed, and data will only be printed for the dect extensions which have performed the access rights procedure.

55.3 PARAMETERS

--authentication-details

Print the 'encrypted authentication parameter' for a dect extension directory number. The parameter is created when a dect extension performs access right procedure, after which it is stored in both the handset and in the exchange.

The switch takes no arguments

--authentication-key

States the authentication key data to be associated with --ipei and -d. The authentication key is imperative for dect extension. It is used by the dect extension to execute location registration procedure. Accepted argument length is 1 to 8 digits.

Note: Minimum 4 digits are required by DT4x0 and DT4x2.

The switch requires an argument. The argument is single-valued.

--authentication-par

States the 'encrypted authentication parameter' to be associated with -d. The parameter is created when a dect extension performs the access right procedure, after which it is stored in both the handset and in the exchange. This parameter shall only be used to re-initiate data for dect extension that have performed the access right procedure.

Accepted argument length is 48.

The switch requires an argument. The argument is single-valued

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument.

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item (or several items).

The switch takes no arguments.

--ipei

States the 'international portable equipment identity'. The first 12 digits in the parameter is a decimal representation of the Portable Part's(PP) Ipei or the SIM-card's IPDI depending on which type of PP is used. The last digit is a checksum in the range of 1-10, where the value 10 represented as an asterisk(*).

Accepted argument length is 13.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items.

The switch takes no arguments.

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error. The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages). The switch takes no arguments.

55.4

EXAMPLES

Initiate authentication key data 01234567 for a dect extension with directory number 4496 and IPEI 0000707404102.

```
dect_extension -i -d 4496 --authentication-key 01234567  
-ipei 0000707404102
```

Initiate encrypted authentication parameter 1ABF694FD8742D7C100FB36F1A

```
dect_extension -i -d 4496 --authentication-parameter  
1ABF694FD8742D7C100FB36F1A BF694FD8742D7C100FB36F
```

Remove the authentication key for a dect extension with directory number 4496.

```
dect_extension -end -d 4496
```

Print authentication data for a dect extension with directory number 4496.

```
dect_extension -p -d 4496
```

Print authentication data details for a dect extension with directory number 4496.

```
dect_extension -p -d 4496 --authentication-details
```

56

DECT_LOGGING

Manage mobility reporting for DECT system.

56.1

FORMAT

dect_logging

```
-e
-i [--connection-hand-over]
-p
```

56.2

FUNCTION

The command is used to initiate, erase, change and print Mobility reporting in a system with cordless extensions. With Mobility reporting activated, mobility events such as location registration, detach, short message, external handover and the like, will be reported. Both successful and unsuccessful events will be reported.

Note: Note that Call Information Logging (CIL) must be activated in order for mobility reporting to work. This is due to the fact that Mobility Information Logging (MIL) uses CIL to get call/calling information from the system.

To activate CIL, the `callinfo_output_set` command is used. For more information, see Online Help for CIL, or see interworking description for STATION MESSAGE DETAIL RECORDING, CALL INFORMATION LOGGING, QUALITY LOGGING.

56.3

PARAMETERS

--connection-hand-over

With this switch is connection hand over reporting activated on all boards. This can generate high workload on the boards. That can disturb traffic. Should only be used during site planing or fault location.

The switch takes no arguments.

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item (or several items).

The switch takes no arguments.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items. The switch takes no arguments.

56.4

EXAMPLES

Initiate mobility reporting for the system.

dect_logging -i

Change mobility reporting to include connection handover for the system.

dect_logging -i --connection-hand-over

Change mobility reporting not to include connection handover for the system.

dect_logging -i

Remove mobility reporting from the system.

dect_logging -e

Print the mobility reporting status.

dect_logging -p

57

DECT_RFP

Manage radio fixed part for DECT system.

57.1

FORMAT

dect_rfp

```
--reset --fpi[--rpn]
-c --fpi--rpn --info
-e --fpi--rpn
-i --fpi--rpn [--info]
-p [--fpi][--rpn]
```

57.2

FUNCTION

The --initiate switch is used to initiate one or more RFPs for cordless extensions.

The --erase switch is used to remove one or more Radio Fixed Part for cordless extension. Erase has a erase only flag to remove the information text.

The --change switch is used to over write the information text for one or more Radio Fixed Part for cordless extension.

The --print switch is used for printing data for one or more RFPs for cordless extensions, connected to the selected FPI.

The --reset switch is use to resets an already initiated RFP

57.3

PARAMETERS

-c, --change

Change some settings, that is, reconfigure an item (or several items).

The switch takes no arguments.

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

--fpi

The parameter states a number identity for a Fixed part. The value must be unique for an MX-ONE. When an FPI is initiated, the MX-ONE will generate a PARI -Primary Access Right Identity for the current fixed part. See also parameter RPN.

The switch requires an argument

--info

Information string. This can be used to define the coverage area for this base station.

For example "Placed at floor 2, Nothern end of main corridor." Shown in verbose print out. Accepted argument length is 1 to 50 characters. The 'narrow' string will

be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance

<http://std.dkuug.dk/JTC1/SC2/WG2> In unicode number mode the numbers are separated by space ' ', or by semicolon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name 'Üßü-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued

-i, --initiate

Initiate some settings, that is, make initial configuration of an item (or several items).

The switch takes no arguments.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items.

The switch takes no arguments.

--reset

With this switch is a reset request made to RFP

The switch takes no arguments.

--rpn

The parameter states a number for an RFP base station, connected to a CFP. Together with the ARI, the RPN forms a radio fixed part identity (RFPI), which is transmitted on the radio interface and used to control the access and operation of the system. RPN = 1 corresponds to the first outlet on the ELU31 board.

The switch requires an argument. The argument can be the special word 'all' or it can be a combination of comma separated sequences and ranges (first..last)

57.4

EXAMPLE

Initiate Radio Fixed Part 7 on Common Fixed Part 12

dect_rfp -i --fpi 12 --rpn 7

Remove all RFP on Common Fixed Part 2.

dect_rfp -e --fpi 2 --rpn all

Change text on RFP 2 on Common Fixed Part 2.

dect_rfp -c --fpi 2 --rpn 2 --info "Placed over door 7A30."

Print all RFP in the system.

dect_rfp -p

Print all RFP on Common Fixed Part range 12..16.

dect_rfp -p --fpi 12..16 --rpn all

Reset all RFP on Common Fixed Part 13.

dect_rfp --reset --fpi 13 --rpn allPrint all RFP in the system.

58 DECT_SYSTEM_ID

Manage secondary access rights identity for DECT system.

58.1 FORMAT

dect_system_id

```
-c --eic [--log-missed-call-at-busy]
-e
-i --sari [--log-missed-call-at-busy]
-p
```

58.2 FUNCTION

The `--initiate` switch is used to initiate SARI in a system with cordless extensions. The SARI has to be initiated before any CFPs can be initiated. Secondary access rights identity. For value, see the parameter description for cordless extension.

The `--erase` switch is used to remove SARI in a system with cordless extensions. All CFPs in the system must be removed before the SARI can be removed.

The `--change` switch is used to change EIC in a system with cordless extensions. If the EIC is changed this will indirectly change the PARI broadcasted from all base stations.

The `--print` switch orders printout of the cordless extension system data.

The command is also used to initiate/change/erase/print the value for the log missed call at busy functionality.

58.3 PARAMETERS

-c, --change

Change some settings, that is, reconfigure an item (or several items).

The switch takes no arguments.

--eic

The parameter states an EIC, (Equipment Installers Code), for a system. The value of EIC must be granted to Mitel by ETSI, and shall identify the PBX as an Mitel system. When EIC is changed it will indirectly change the PARI value that is broadcast by air from the base stations to each PP.

Accepted argument length is 4.

The switch requires an argument. The argument is single-valued.

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item (or several items).

The switch takes no arguments.

--log-missed-call-at-busy

Category for logging of missed call at busy functionality. Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'.

The switch takes no arguments. The argument is single-valued.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items.

The switch takes no arguments.

--sari

States a SARI (Secondary Access Right Identity) for a system.

The SARI is globally unique and shall be granted by Mitel for each new system. See operational directions for CORDLESS EXTENSION for details on how to obtain the Sari value.

Accepted argument length is 8.

The switch requires an argument. The argument is single-valued.

58.4

EXAMPLES

Initiate sari 12345678 for the system

dect_system_id -i --sari 12345678

Change the EIC part of PARI for all fixed parts in the system to 1B3D.

dect_system_id -c --eic 1B3D

Remove the sari from the system.

dect_system_id -e

Print the system id.

dect_system_id -p

59 DELAY_SEIZURE_LIST

Manage a delay seizure list.

59.1 FORMAT

delay_seizure_list

```
[ -v ][ -V ] -c --delay-seizure-list-number --delay-seizure-identifier
[ --delay-seizure-option ][ --delay-time ]

[ -v ][ -V ] -e [ --delay-seizure-list-number ]
[ --delay-seizure-identifier ]

[ -v ][ -V ] -i --delay-seizure-list-number --delay-seizure-identifier
[ --delay-seizure-option ][ --delay-time ]

[ -v ][ -V ] -p [ --delay-seizure-list-number -f ]

[ -v ][ -V ] -p [ [ --delay-seizure-list-number ][ --delay-seizure-identifier ]
[ ±s [ x ] ] ]
```

59.2 FUNCTION

The command is used to change, erase, initiate and print delay seizure lists. The delay seizure list command creates a pattern for how a users logged on terminals are seized (e.g. parallel and/or serial and/or appending). The user must have multi terminal service (forking or parallel ringing) to get this functionality. The delay seizure lists can be used in the commands `call_list` and `parallel_ringing`. A delay seizure list that does not exist (has not been initiated) can be assigned in either command, if that is done the default functionality for a delay seizure list (i.e. parallel ringing) will be used until the list are changed.

59.3

PARAMETERS

-c, --change

Change some settings, that is, reconfigure an item (or several items).

The switch takes no arguments.

Note: If the value for delay-seizure-option is 0 and the value for delay-time is 0 for all delay-seizure-identifiers for a *delay-seizure-list-number* after the change the list is erased.

--delay-seizure-identifier

Delay seizure identifier - which terminal type is the --delay-time intended for.

Possible values are: 'ANALOG', 'DECT', 'DIGITAL', 'H323', 'REMOTE', 'SIP', 'SIP_CORDLESSPHONE', 'SIP_ORDINARYPHONE', 'SIP_REMOTEPHONE', 'SIP_SOFTPHONE', and 'SIP_VIDEOPHONE'.

'SIP' is used to denote all versions of 'SIP_*'. If set it will be used when no delay time value is found for a specific SIP- subtype.

The switch requires an argument. The argument is single-valued.

--delay-seizure-list-number

Delay seizure list number.

Value:

0	No active delay seizure list number (can only be set via call_list and parallel_ringing, use --delay-seizure-list-number 0 to inactivate sequential ringing).
1..999	Valid numbers

If the switch is used in the 'call_list -c' or 'parallel_ringing -i' the switch '--dir' has to represent a generic extension.

The switch requires an argument. The argument is single-valued.

--delay-seizure-option

Delay seizure option.

Value:

0	Keep alerting/ringing at next delay seizure.
1	Release the alerting/ringing terminal at next successful delay seizure.
2	Never to be seized

The switch requires an argument. The argument is single-valued.

--delay-time

A specific time in seconds used to delay an action. Accepted argument is 0 to 120 seconds.

The switch requires an argument. The argument is single-valued.

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

-f, --format

Possible value is: 'all'. Select a format for the printout. 'all' means that both default (normally not printed) and entered values will be printed.

The switch requires an argument. The argument is single-valued.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item (or several items).

The switch takes no arguments.

Note: One of the parameters `delay-seizure-option` or `delay-time` must have a value different then the default 0, otherwise no change in the list will be done

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

-s, +s, --sort, ++sort

Possible values are: 'delayseizureidentifier', 'delayseizurelistnumber', 'delayseizureoption', 'delaytime'.

Specify sorting criteria for printout. If no sorting is specified, the printout is unsorted. If sort switch is given without arguments, the printout will be sorted on DELAYSEIZURELISTNUMBER

-s and --sort specify ascending sort order. +s and ++sort specify descending sort order.

The switch takes an optional argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

59.4

EXAMPLES

`delay_seizure_list 1` with `--delay-seizure-identifier SIP` shall alter the `--delay-time` to 10.

```
delay_seizure_list -c --delay-seizure-list-number 1 \
--delay-seizure-identifier SIP --delay-time 10
```

`delay_seizure_list 1` with `--delay-seizure-identifier SIP` shall be erased.

```
delay_seizure_list -e --delay-seizure-list-number 1 \
--delay-seizure-identifier SIP
```

`delay_seizure_list 1` shall be erased.

```
delay_seizure_list -e --delay-seizure-list-number 1
```

All delay seizure lists shall be erased.

```
delay_seizure_list -e
```

Initiate `delay_seizure_list 1` for a digital extension. Wait for 10 seconds before starting to ring on this terminal type and stop ringing on the previous terminal at that time.

```
delay_seizure_list -i --delay-seizure-list-number 1 \
--delay-seizure-identifier digital --delay-seizure-option 1 \
--delay-time 10
```

Print `delay_seizure_list 1`.

```
delay_seizure_list -p --delay-seizure-list-number 1
```

Print all delay seizure lists.

delay_seizure_list -p

59.4.1

EXAMPLE 1

Initiate a more complex scenario, with a user with three telephones of different types, either forked on the same number, or not forked, with parallel ringing.

A generic extension as the main extension in the parallel ringing list shall be associated with a delay seizure list as "ringing list". Different delay seizure identifiers shall be used.

Case 1)

A forked user with 3 telephone types:

- SIP phone is seized after 0 seconds.
- DECT phone is seized after 5 seconds.
- Remote Extension is seized after 10 seconds.

The telephones shall be ringing in series, one after the other. (Only one phone is ringing at any given time).

```
delay_seizure_list -i --delay-seizure-list-number 1 \ --delay-seizure-identifier sip
--delay-seizure-option 1 --delay-time 0
```

```
delay_seizure_list -i --delay-seizure-list-number 1 \
--delay-seizure-identifier dect --delay-seizure-option 1 \
--delay-time 5
```

```
delay_seizure_list -i --delay-seizure-list-number 1 \ --delay-seizure-identifier remote
--delay-seizure-option 1 \ --delay-time 10
```

```
parallel_ringing -i d 3000 --delay-seizure-list-number 1
```

Case 2)

A NON-forked user with 3 telephone types.

- SIP phone is seized after 0 seconds.
- Digital phone is seized after 5 seconds.
- Analog phone is seized after 10 seconds.

The SIP phone will ring for 5 seconds and then stop. The digital phone will then start to ring. After 10 seconds the analog phone will join the digital phone, and both will ring.

```
delay_seizure_list -i --delay-seizure-list-number 1 \ --delay-seizure-identifier sip
--delay-seizure-option 1 \
--delay-time 0
```

```
delay_seizure_list -i --delay-seizure-list-number 1 \ --delay-seizure-identifier digital
--delay-seizure-option 0 \ --delay-time 5
```

```
delay_seizure_list -i --delay-seizure-list-number 1 \ --delay-seizure-identifier analog
--delay-seizure-option 1 \ --delay-time 10
```

```
parallel_ringing -i d 3000 --secondary-dir 2000,1000 \ --delay-seizure-list-number
1
```

59.4.2

EXAMPLE 2

Initiate a generic extension as the main extension in a parallel ringing list associated with a delay seizure list as "ringing list". The delay seizure option shall be set to never be seized for secondary extensions. This means that the secondary extensions will

never be called, but will be displayed with the main extension's number when called from (single number indication).

```
delay_seizure_list -i --delay-seizure-list-number 1 \ --delay-seizure-identifier sip  
--delay-seizure-option 1 --delay-time
```

```
delay_seizure_list -i --delay-seizure-list-number 1 \ --delay-seizure-identifier  
digital --delay-seizure-option 2 --delay-time 0
```

```
delay_seizure_list -i --delay-seizure-list-number 1 \ --delay-seizure-identifier  
analog --delay-seizure-option 2 --delay-time 0
```

```
parallel_ringing -i d 3000 --secondary-dir 2000,1000 \ --delay-seizure-list-number  
1
```

59.4.3

EXAMPLE 3

Initiate a delay seizure list used in a SIP multi-terminal configuration. This example shows the use of the delay seizure identifiers, for example SIP_ORDINARYPHONE.

Initiate a forked user with 3 different SIP telephones, one desk phone, one soft client and one SIP DECT phone.

- SIP_ORDINARYPHONE shall be seized after 0 seconds.
- SIP_SOFTPHONE and SIP_CORDLESSPHONE shall both be seized after 5 seconds.

```
delay_seizure_list -i --delay-seizure-list-number 1 \ --delay-seizure-identifier  
SIP_ORDINARYPHONE \ --delay-seizure-option 1 --delay-time 0
```

```
delay_seizure_list -i --delay-seizure-list-number 1 \ --delay-seizure-identifier  
SIP_SOFTPHONE \  
--delay-seizure-option 1 --delay-time 5
```

```
delay_seizure_list -i --delay-seizure-list-number 1 \ --delay-seizure-identifier  
SIP_CORDLESSPHONE \ --delay-seizure-option 1 --delay-time 5
```

```
parallel_ringing -i d 3000 --delay-seizure-list-number 1
```

59.4.4

EXAMPLE 4

Examples to show that it is possible to set delay seizure list together with the call_list command and together with the parallel_ringing command.

Initiate a forked user with 3 telephone types.

Delay seizure list 1 is used at work.

- SIP phone is seized after 0 seconds.
- DECT phone is seized after 5 seconds.
- Remote extension is seized after 10 seconds.

The telephones shall be ringing in series, one after the other. (Only one phone is ringing at any given time).

Delay seizure list 2 is used outside of work.

- Remote extension is seized after 0 seconds.
- SIP phone and DECT phone are never seized.

Parallel ringing shall be set up for forking with delay seizure list number 1 as default.

Call lists shall be set up for when at work (list 1) and when not at work (list 2), and both lists shall use voice mail as fallback.

```
delay_seizure_list -i --delay-seizure-list-number 1 \ --delay-seizure-identifier sip  
--delay-seizure-option 1 --delay-time 0
```

```
delay_seizure_list -i --delay-seizure-list-number 1 \ --delay-seizure-identifier dect  
--delay-seizure-option 1 --delay-time 5
```

```
delay_seizure_list -i --delay-seizure-list-number 1 \ --delay-seizure-identifier  
remote --delay-seizure-option 1 --delay-time 10
```

```
delay_seizure_list -i --delay-seizure-list-number 2 \ --delay-seizure-identifier  
remote --delay-seizure-option 1 --delay-time 0
```

```
delay_seizure_list -i --delay-seizure-list-number 2 \ --delay-seizure-identifier sip  
--delay-seizure-option 2 --delay-time 0
```

```
delay_seizure_list -i --delay-seizure-list-number 2 \ --delay-seizure-identifier dect  
--delay-seizure-option 2 \  
--delay-time 0
```

```
parallel_ringing -i d 3000 --delay-seizure-list-number 1
```

```
call_list -i -d 3000 --list 1 --position 1 --dest-number 3000 \  
--delay-seizure-list-number 1
```

```
call_list -i -d 3000 --list 1 --position 2 --dest-number <voice mail number>
```

```
call_list -i -d 3000 --list 2 --position 1 --dest-number 3000 \  
--delay-seizure-list-number 2
```

```
call_list -i -d 3000 --list 2 --position 2 --dest-number <voice mail number>
```

60 DIAGNOSTIC_JOB_TIME

60.1 FORMAT

diagnostic_job_time

```
-lim -unit -level {-start | -stop | -clear | {-print [-clear]}} [-num_latest][-num_longest]
-status
```

60.2 FUNCTION

The command **diagnostic_job_time** is a debugging command to be used by trained service technicians or by software engineers. It measures the time spent executing one job (the work done as a response to a single event). It sets up a FIFO buffer with information about the latest jobs, and another buffer with information about the longest jobs. The size of the buffers can be configured. Both the wall clock execution time of the jobs and the Central Processing Unit (CPU) time usage of the jobs are measured. The resolution of the CPU time use measurement is one *tick*. The length of a tick depends on both the hardware and the version of the operating system. (On the computer's printing this help text, there are 100 ticks per second, that is, one tick is 10,000 microseconds.) CPU use is printed only if it is more than two ticks.

If the recording of job time is enabled and there is a simultaneous unit trace (see command **trace**), the recorded times will also be written to the trace at the end of each job. Enabling the recording of job time, hurts overall performance, especially if the buffers are set to be very large, if it is done on many program units simultaneously, or in case of both at the same time. Except for the negative impact on overall performance, the command is harmless. The output printing is intended to be interpreted by the program unit designer, and may be cryptic to others. This command is to be used by trained service technicians and software engineers only.

60.3 PARAMETERS

-level

The level of the thread. Possible values are **A**, **B**, **X**, **Y**, and **Service**. Not all the program units have all the levels

-lim

LIM number [range: all, 1-124].

Single value, multiple values (1,3,8), series (1...6), or a combination (1...10,12) are valid. Duplication of LIM number is not allowed. ('All' is not case sensitive.)

-clear

Clear (erase) the recorded job execution times. (Clearing is allowed on both started and stopped recordings). Can be combined with switch **-print**, in which case, the recorded values are cleared as they are printed.

-num_latest

Set the buffer size for the recording of the latest job execution times to a specified number of jobs. The valid range is 10 to 32,000. Setting the buffer size will be remembered regardless of stopping, clearing, or both stopping and clearing the buffer. The default buffer size is 10.

-num_longest

Set the buffer size for the recording of the longest job execution times to a specified number of jobs. The valid range is 10 to 32,000. Setting the buffer size will be remembered regardless of stopping, clearing, or both stopping and clearing the buffer. The default buffer size is 10.

-print

Print the recorded job execution times. (Printing is allowed on both started and stopped recordings). Can be combined with switch **-clear**, in which case, the recorded values are cleared as they are printed.

-start

Start the recording of job execution times

-status

Give a status listing of all the active measurements in the system. Using this switch will query every level in every unit in every LIM to collect the information. (The status listing will ignore or exclude information about units, LIMs, and levels that are currently not reachable for message communication.)

-stop

Stop the recording of job execution times

-unit

The name of the program unit (PU)

60.4

EXAMPLES

Start the recording of job times at IPLP, level A in LIM 1, setting the number of the longest jobs to record to 120.

**diagnostic_job_time -lim 1 -unit IPLP -level A -start
-num_longest 120**

Print recorded job times at IPLP, level A in LIM 1, without clearing the printed items.

diagnostic_job_time -lim 1 -unit IPLP -level A -print

Print recorded job times at IPLP, level A in LIM 1, clearing the printed items.

diagnostic_job_time -lim 1 -unit IPLP -level A -print -clear

Stop the recording of job times at IPLP, level A in LIM 1.

diagnostic_job_time -lim 1 -unit IPLP -level A -stop

Clear the recorded job times at IPLP, level A in LIM 1, resetting the number of the longest and latest jobs to record to 10.

**diagnostic_job_time -lim 1 -unit IPLP -level A -clear
-num_longest 10 -num_latest 10**

Get a list of all the levels and units that have job time recording active or have recorded data.

diagnostic_job_time -status

61 DIAGNOSTIC_LDAP

61.1 FORMAT

diagnostic_ldap
[-restart]

61.2 FUNCTION

diagnostic_ldap is a script for diagnosing the status of LDAP on a specific host/LIM. The LDAP status data is collected and stored in a ZIP file. The ZIP file contains the information usually needed by the skilled service technician to find the cause of the problem.

diagnostic_ldap can only be run as root or mxone_admin.

The diagnosis done by diagnostic_ldap will for a short time period cause interference in telephony traffic.

Run diagnostic_ldap first on the LDAP master (usually LIM 1) , then on the LIM that causes problems. Running the command will take several minutes.

61.3 PARAMETERS

-restart
Do restart of OpenLDAP server for more information. Default is not to restart

61.4 EXAMPLES

Diagnose and collect information about LDAP on this host/LIM.

diagnostic_ldap

Diagnose and collect information about LDAP on this host/LIM. Restart LDAP server to get more information.

diagnostic_ldap -restart

62

DIVERSION

Manage individual diversion data

62.1

FORMAT

diversion

```
[-v][-V] -c -d [--div-destination-number] [--div-busy] [--div-immediate] [--div-noreply ]
[-v][-V] -e -d
[-v][-V] -i -d --div-destination-number [--div-busy] [--div-immediate] [--div-noreply ]
[-v][-V] -p [-d] [±s [x]]
```

62.2

FUNCTION

The command is used to change, erase, initiate and print individual diversion data. Initiation of diversion destination will not activate any diversions for generic extensions. For non-generic extensions the activation is controlled by an AS parameter.

Activation of diversion for generic extensions must be done by end user procedure (*FC) or by command *extension_procedure* after initiation.

Note: The command `diversion_info` gives the current diversion state.

62.3

PARAMETERS

-c, --change

Change some settings. I.e. reconfiguration of an item (or several items). The switch takes no arguments.

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument.

--div-busy

Controls if 'Diversion on Busy' shall be active after a system/LIM reload. Only used for generic extensions. Controlled with AS parameter for non-generic extensions.

0 - No.

1 - Yes.

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'. The default, if the switch is not used, is Yes.

The switch requires an argument. The argument is single-valued.

--div-destination-number

The parameter states the directory number for an individual diversion position. The diversion position receives the diverted calls. The parameter can be, instead of a directory number, the procedure for the ordering of follow me to a paging unit. The procedure is, however, only permitted if the extension who is to receive

the diverted call is a voice extension. Directory number for an individual diversion position can be:

- Voice extension
- Individual PBX operator
- Common PBX operator group
- Group hunting group
- ACD group
- Common abbreviated number, only applicable for an ACD group or a Group hunting group
- Procedure where: A = *, B = #
- External number within a private network.
- DNIS number

This is a string as it could be dialled on the telephone, with digits, star and hash (0-9*#). For backward compatibility reasons 'A' is accepted as '*' and 'B' is accepted as '#'. If '#' is used the whole input has to be quoted like this "'feature-Code*destinationNumber#". Accepted argument length is 1 to 10 characters.

The switch requires an argument. The argument is single-valued.

--div-immediate

Controls if 'Immediate Diversion' shall be active after a system/LIM reload. Only used for generic extensions. Controlled with AS parameter for non-generic extensions.

0 - No.

1 - Yes.

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'. The default, if the switch is not used, is No.

The switch requires an argument. The argument is single-valued.

--div-noreply

Controls if 'Diversion on No Reply' shall be active after a system/LIM reload. Only used for generic extensions. Controlled with AS parameter for non-generic extensions.

0 - No.

1 - Yes.

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'. The default, if the switch is not used, is Yes.

The switch requires an argument. The argument is single-valued.

-e, --erase

Erase some settings. I.e. deconfiguration of an item (or several items). The switch takes no arguments.

-i, --initiate

Initiate some settings. I.e. make initial configuration of an item (or several items). The switch takes no arguments.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items. The switch takes no arguments.

-s, +s, --sort, ++sort

Specify sorting criteria for printout. If no sorting is specified, the printout is unsorted. If sort switch is given without arguments, the printout will be sorted on DIR -s and --sort specify ascending sort order. +s and ++sort specify descending sort order. Possible values are: 'DIR', 'dir'.

The switch takes an optional argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error. The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

62.4

EXAMPLES

Initiate directory number 3320713 as individual diverttee position number for extension 4462. Default values for 'Diversion on Busy' and 'Diversion on No Reply' is 1 (on) and for 'Immediate Diversion' it is 0 (off).

diversion -i -d 4462 --div-destination-number 3320713

Initiate directory number 5119 as individual diverttee position number for extensions 4490-4493 and 4498. 'Diversion on No Reply' is set to 0 (off). Default values for 'Diversion on Busy' is 1 (on) and for 'Immediate Diversion' it is 0 (off).

diversion -i -d 4490..4493,4498 --div-destination-number 5119 --div-noreply 0

Erase the individual diverttee position number for the voice extensions 730 and 750-753.

diversion -e -d 730,750..753

Change the individual diverttee position number for the voice extensions 5462 to 9320.

diversion -c -d 5462 --div-destination-number 9320

63

DIVERSION_COMMON

Manage common diversion data

63.1

FORMAT

diversion_common

```
[-v][-V] -c [--customer][--divcom-extension][--divcom-operator][--divcom-private]\
[--divcom-public]
[-v][-V] -e [--customer]
[-v][-V] -i [--customer][--divcom-extension][--divcom-operator][--divcom-private]\
[--divcom-public]
[-v][-V] -p [--customer]
```

63.2

FUNCTION

The command is used to change, erase, initiate and print common diversion data per system or per customer. The diversion destinations can be set differently depending on whether the origin of the call is an extension, attendant, public or private external line.

63.3

PARAMETERS

-c, --change

Change some settings. I.e. reconfiguration of an item (or several items). The switch takes no arguments.

--customer

Customer number for the extension. Customer 0 is the default customer of the exchange. Argument must be an integer in the range 0 to 50000. For print operations the default is function dependent, for all other operations the default is 0 (zero).

The switch requires an argument. The argument is single-valued.

--divcom-extension

The parameter states the directory number for a common divertee position for internal calls. The diversion position accepts diverted calls. Instead of a directory number the switch can receive the procedure for ordering follow me to a paging unit. The procedure is however only permitted if the extension who is to receive the diverted call is a voice extension.

Directory number for a common diversion position for internal calls can be:

- Voice extension
- Individual PBX operator
- Common PBX operator group
- Group hunting group
- Common bell group

- Integrated voice mail (it is permitted for all generic extensions, but it is not recommended for mobile terminals like cordless DECT).
- Procedure where: A = *, B = #
- External number within a private network of the type ISDN/H.323/SIP

This is a string as it could be dialled on the telephone, with digits, star and hash (0-9*#). For backward compatibility reasons 'A' is accepted as '*' and 'B' is accepted as '#'. If '#' is used the whole input has to be quoted like this `"*feature-Code*destinationNumber#"`. Accepted argument length is 1 to 10 characters.

The switch requires an argument. The argument is single-valued.

--divcom-operator

The parameter states the directory number for a common diverttee position for calls originating from operators internally or in a private network. The diversion position accepts the diverted calls. If the switch is not used, diversion is bypassed for calls originating from operators internally or in a private network.

Directory number for a common diversion position for calls from individual operators internally or in a private network, if message diversion is activated, that can be:

- Voice extension
- Individual PBX operator
- Common PBX operator group
- Group hunting group
- Common bell group
- Integrated voice mail (it is permitted for all generic extensions, but it is not recommended for mobile terminals like cordless DECT).
- Procedure where: A = *, B = #
- External number within a private network of the type ISDN/H.323/SIP

This is a string as it could be dialled on the telephone, with digits, star and hash (0-9*#). For backward compatibility reasons 'A' is accepted as '*' and 'B' is accepted as '#'. If '#' is used the whole input has to be quoted like this `"*feature-Code*destinationNumber#"`. Accepted argument length is 1 to 10 characters.

The switch requires an argument. The argument is single-valued.

--divcom-private

The parameter states the directory number for a common diverttee position for calls within private network. The diversion position accepts diverted calls. Instead of a directory number the switch can receive the procedure for ordering follow me to a paging unit. The procedure is however only permitted if the extension who is to receive the diverted call is a voice extension.

Directory number for a common diversion position for calls within private networks can be:

- Voice extension
- Individual PBX operator
- Common PBX operator group
- Group hunting group

- Procedure where: A = *, B = #
- External number within a private network of the type ISDN/H.323/SIP

This is a string as it could be dialled on the telephone, with digits, star and hash (0-9*#). For backward compatibility reasons 'A' is accepted as '*' and 'B' is accepted as '#'. If '#' is used the whole input has to be quoted like this `"*feature-Code*destinationNumber#"`. Accepted argument length is 1 to 10 characters.

The switch requires an argument. The argument is single-valued.

--divcom-public

The parameter states the directory number for a common divertee position for calls from a public network. The diversion position accepts diverted calls. Instead of a directory number the switch can receive the procedure for ordering follow me to a paging unit. The procedure is however only permitted if the extension who is to receive the diverted call is a voice extension.

Directory number for a common diversion position for calls from public networks can be:.

- Voice extension
- Individual PBX operator
- Common PBX operator group
- Group hunting group
- Procedure where: A = *, B = #
- External number within a private network of the type ISDN/H.323/SIP

This is a string as it could be dialled on the telephone, with digits, star and hash (0-9*#). For backward compatibility reasons 'A' is accepted as '*' and 'B' is accepted as '#'. If '#' is used the whole input has to be quoted like this `"*feature-Code*destinationNumber#"`. Accepted argument length is 1 to 10 characters.

The switch requires an argument. The argument is single-valued.

-e, --erase

Erase some settings. I.e. deconfiguration of an item (or several items). The switch takes no arguments.

-i, --initiate

Initiate some settings. I.e. make initial configuration of an item (or several items). The switch takes no arguments.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items. The switch takes no arguments.

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error. The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

63.4

EXAMPLES

Initiate a common PBX operator group as common divertee position for internal calls. However calls from private networks are to be diverted to number 4308071. Calls from operators are to be diverted to number 08 when message diversion is activated. It is assumed that calls to the common PBX operator group use call number 09. It is initiated for the default customer 0

```
diversion_common -i --divcom--extension 09 \  
--divcom-private 4308071 --divcom-operator 08
```

Initiate diversion positions for internal calls and for calls from the public network for customer number 62. Internal calls are to be diverted to the number 6233 while calls from the public network are to be diverted to the PBX operator group. It is assumed that calls to the common PBX operator group for customer number 62 use call number 091.

```
diversion_common -i --customer 62 --divcom-extension 6233 \  
--divcom-public 091
```

Erase the common divertee position numbers for customer 14.

```
diversion_common -e --customer 14
```

Change diversion positions for internal calls and for calls from the public network for customer number 32. Internal calls are to be diverted to the number 6262, while calls from the public network are to be diverted to the PBX operator group for customer 32 with access number 091.

```
diversion_common -c --customer 32 --divcom-extension 6262 \  
--divcom-public 091
```

64 DIVERSION_INFO

Print diversion information

64.1 FORMAT

diversion_info

`[-v][-V] -p [-d][±s [x]] [-f]`

64.2 FUNCTION

The command is used to print information of active diversion services for extensions. The print will show status for direct diversion, diversion on no answer, diversion on busy, message diversion (ICS diversion), ECF and Follow me. The abbreviation FME is short for follow me. The Active Diversion column shows the diversion that has the highest priority.

64.3 PARAMETERS

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument. The argument can be the special word 'all' or it can be a combination of comma separated sequences and ranges (first..last).

-f, --format

Select a format for the printout.

Possible values are: 'EXTENSION_PROCEDURE', 'extension_procedure'.

Default if switch is not given is "".

The switch requires an argument. The argument is single-valued.

'extension_procedure' print as extension_procedure command input.

If printed before an upgrade, this data can be used to set the same ACTIVE diversion status after an upgrade, a PASSIVE diversion status will not generate a command.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items. The switch takes no arguments.

-s, +s, --sort, ++sort

Specify sorting criteria for printout. If no sorting is specified, the printout is unsorted. If sort switch is given without arguments, the printout will be sorted on DIR. -s and --sort specify ascending sort order. +s and ++sort specify descending sort order. Possible values are: 'DIR' and 'dir'.

The switch takes an optional argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error. The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

64.4

EXAMPLES

Print diversion information for extension 20713.

diversion_info -p -d 20713

Print diversion information for extensions 51525 and 96720.

diversion_info -p -d 51525,96720

65

DIVERSION_SYSTEM

Manage diversion related system data

65.1

FORMAT

diversion_system

```
[ -v ][ -V ] -c [--div-network-chaining][--div-noreply-timefirst][--div-noreply-timesecsecond]\
[ --div-type-priority ]
[ -v ][ -V ] -p
```

65.2

FUNCTION

The command is used to change and print diversion related system data.

65.3

PARAMETERS

-c, --change

Change some settings. I.e. reconfiguration of an item (or several items). The switch takes no arguments.

--div-network-chaining

The parameter states the maximum number of chainings for network diversion that are allowed in a common channel signalling (CCS) (ISDN/H.323) private network. In case of ISDN/H.323 (Call Diversion with UUI) network the diversion counter is placed in the gateway/originating PINX and is increased every time an outgoing trunk is seized. This counter is checked against the maximum number of diversions allowed. In case of ISDN/H.323 (Call forwarding with GFP) network the diversion counter is passed with the call setup and diversion messages. This is stepped up at each served user PINX and checked against the maximum number of diversions allowed of that PINX.

Accepted argument range is 0 to 255.

The switch requires an argument. The argument is single-valued.

--div-noreply-timefirst

The parameter states after how long time diversion on no reply shall take place for the first call that encounters no reply. Accepted argument range is 1 to 30 (seconds). Shall normally be longer than the timesecsecond parameter.

The switch requires an argument. The argument is single-valued.

--div-noreply-timesecsecond

The parameter states after how long time diversion on no reply shall take place for the second (and subsequent) calls that encounters no reply. Accepted argument range is 1 to 30 (seconds). Shall normally be shorter than the timefirst parameter.

The switch requires an argument. The argument is single-valued.

--div-type-priority

The switch states which of direct diversion/follow me or interception diversion shall have priority.

0 - Direct diversion/follow me.

1 - Interception diversion.

The default, if the switch is not used, is direct diversion/follow-me.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items. The switch takes no arguments.

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error. The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

65.4

EXAMPLE

Change diversion system data to allow up to 3 network chainings. Diversion on no reply timers shall be 15 seconds for long (first) and 5 seconds for short (second). Interception diversion shall have priority.

```
diversion_system -c --div-network-chaining 3 --div-noreply-timefirst 15\  
--div-noreply-timessecond 5 --div-type-priority 1
```

66

EXCHANGE_INFO

Get system information

66.1

FORMAT

exchange_info

[-printinfo [-msg]] [-verbose]

[-setinfo "string" [-msg]] [-verbose]

[-unit] [-verbose]

66.2

FUNCTION

exchange_info returns the build date for the system, or for a specific program unit. The command can also be used to set or print the system information string.

66.3

PARAMETERS

-msg

Send messages to query/set the system information string. The default is to query/set directly using LDAP interface.

-printinfo

Print the system information string.

-setinfo

Set the system information string.

-unit

Get build information for specific program unit.

-verbose

More verbose reporting of versions.

66.4

EXAMPLES

Get system build date.

exchange_info

Get build date for RMP.

exchange_info -unit RMP

Set system information string.

exchange_info -setinfo "Nacka 2"

Print the system information string.

exchange_info -printinfo

67 EXTENSION

Manage extension

67.1 FORMAT

extension

```
[ -v ] [ -V ] -c -d m --emergency
[ -v ] [ -V ] -c -d [--backup-number][[--hotline-number] --hotline-option][--csp x]
[--csta-support][--customer][--free-on-second-line][--language-code]
[--max-call-cost][--secretary][--security-exception] [--area-code]
[--blustar-client-model][--third-party-sip-client][--video][--max-terminals][--amc]
[--feature-level][--virtual][--emergency]]

[ -v ] [ -V ] -e -d [--only]

[ -v ] [ -V ] -i -d -l --csp [--emergency]

[ -v ] [ -V ] -i -d --domain-name --csp [--emergency]
[ -v ] [ -V ] -i -d --domain-name --csp [[[--hotline-number] --hotline-option]
[--backup-number][--csta-support][--customer][--free-on-second-line]
[--language-code][--max-call-cost][--max-terminals][--secretary][--security-exception]
[--area-code][--blustar-client-model][--third-party-sip-client][--video][--amc]
[--feature-level][--edn][--virtual]]

[ -v ] [ -V ] -i -d -l --csp [--emergency]

[ -v ] [ -V ] -i -d -l --csp [[[--hotline-number] --hotline-option][--backup-number]
[--csta-support][--customer][--free-on-second-line][--language-code][--max-call-cost]
[--max-terminals][--secretary][--security-exception][--area-code]
[--blustar-client-model][--third-party-sip-client][--video][--amc][--feature-level][--edn]
[--virtual]

[ -v ] [ -V ] -p [-l] --summary
[ -v ] [ -V ] -p [-l][-d][--csp][±s [x]][--customer][--type][--format]
```

67.2 FUNCTION

67.2.1 GENERAL

The command is used to change, erase, initiate, and print individual generic extension user data.

67.3 PARAMETERS

--amc

Category setting for Mitel Mobile Client (AMC) functionality.

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'.

The switch requires an argument. The argument is single-valued.

--area-code

States the area code associated to the extension. It can be used to prefix the dialed number before routing the call.

Accepted argument length is 1 to 6 digits.

The switch requires an argument. The argument is single-valued. .

--backup-number

States the backup answering position for a directory number (--dir). The call will be re-directed to the backup answering position (typically a public number) if the directory number cannot be reached. Setting will only have effect for H.323 extensions. Omitted for normal extensions.

Accepted argument length is 2 to 20 digits.

The switch requires an argument. The argument is single-valued.

--blustar-client-model

STANDARD

- BluStar SIP client (8000i is not licensed); messaging, voice, video (--video yes).
- BluStar on App (Iphone..) and 8000i requires video (--video yes) to be allowed registration.
- BluStar on PC now has plug-in on MS Lync included and the BluStar may still be limited to messaging only when switching to CTI (using for example a deskphone). The license enables one or many BluStar clients to be registered to the directory number (--dir)

NONE

- Default. (NONE is used to remove setting using --change).

The switch requires an argument. The argument is single-valued.

-c, --change

Change some settings. I.e. reconfiguration of an item (or several items).

The switch takes no arguments

--csp

Each Common Service Profile (--csp) represents a combination of characteristics for --ext-cdiv, --ext-npres, --ext-roc, --ext-serv, and --ext-traf.

Range 0 - 256

The switch requires an argument. The argument is single-valued.

--csta-support

CSTA support category for this extension.

The digits have the following meaning:

D ₁	Mitel applications.
0	Presence/status information only.
1	Full support.
D ₂	Third party applications.
0	No support.
1	Presence/status information only.
2	Full support.

If the parameter is omitted, the default value is 00.

Presence/status information allows CSTA monitoring and receiving all CSTA events, plus CSTA services used for getting status.

The switch requires an argument. The argument is single-valued.

--customer

Customer number for the extension. Customer 0 is the default customer of the exchange. Argument must be an integer in the range 0 to 50000. For print oper-

ations the default is implementation dependent, for all other operations the default is 0 (zero).

Note: It is not possible to reconfigure customer number for the extension.

The switch requires an argument. The argument is single-valued

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument.

--domain-name

States an identification label that defines a realm of administrative autonomy, authority, or control. Accepted argument length is 1 to 64 characters.

The domain name given here is the one that holds the server where the extension shall register.

The switch requires an argument. The argument is single-valued.

--edn

Category for Extra Directory Number (EDN) functionality (for SIP extensions).

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'.

The switch requires an argument. The argument is single-valued

--emergency

Category for virtual extension used for emergency call back. Use this category for extensions appearing as emergency A-number. This type of terminal cannot be used to make regular calls.

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'.

The switch requires an argument. The argument is single-valued

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

--feature-level

Category setting for extension feature level. Valid only if the function feature levels is in use.

To determine this and to obtain level definitions use command `license_print_defintion`.

The level definition is the last part of the license tag, e.g. if the license tag is LICENSE-USER-BASIC, then use --feature-level basic.

Allowed values are: 'basic', 'entry', 'standard', 'premium', 'mobile' and 'dect'.

The switch requires an argument. The argument is single-valued

--format

Available print formats.

The following print formats are supported:

l(ong)	Long format, with all details (default)
s(hort)	Short format, omitting both features and numbers
f(eatures)	Short format, including features but excluding numbers
n(umbers)	Short format, including numbers but excluding features

The switch requires an argument. The argument is single-valued.

--free-on-second-line

Category setting for free-on-second line functionality. This function is only supported by Mitel SIP extensions. for details see description Functionality DTS vs SIP and DECT/TDM/IP vs SIP.

The digits have the following meaning:

- 0 Yes, but can be changed via terminal menu.
- 1 No, but can be changed via terminal menu.
- 2 Yes, can not be changed via terminal menu.
- 3 No, can not be changed via terminal menu..

If parameter is omitted, default value is 0.

The switch requires an argument. The argument is single-valued.

--hotline-number

The parameter states the dial-string which automatically will be dialled (by the system) when the user lifts the handset (direct hot-line number) or after a delay (delayed hot-line number). In the case when a Proceed To Send (PTS) signal is to be detected, its place in the complete number should be stated with C, D or E.

- C** Normal PTS. If time-out occurs the sending of digits is continued with the same type of register signalling as before the time-out
- D** PTS followed by DTMF sending of digits. If time-out occurs the sending of digits should be continued with DTMF register signalling.
- E** PTS followed by DTMF sending of digits. If time-out occurs, no more digits will be sent and the external line is disconnected.

For backward compatibility reasons A is accepted as '*' and B is accepted as '#'. For example, the hotline number (auto dial string) "0005C11E13D11675" means: Auto dial access code 00 and destination code 05, and after the destination code a PTS is expected.,

When a PTS is received or timeout expires, next digits should be 11. After digits 11 a special PTS signal is expected followed by DTMF digit sending, it time out expires the external line is disconnected. If the PTS is received, next digits should be 13. After digits 13 a PTS signal is expected and if time out expires DTMF digit sending is performed. After that next digits should be 11675.

The switch requires an argument. The argument is single-valued.

Accepted argument length is 1 to 26 characters.

--hotline-option

States the hot-line option to be used. Omitted for normal extensions. Possible values are: DELAYED, DIRECT, REMOVE. The meaning of the possible values are:

- DELAYED** Delayed hot-line. It is possible to use the terminal to dial a number during approximately 4 seconds. The timer can be altered through the ASPAC command, PARNUM182. If no attempt to dial a number has been made, the system will call the hot-line number. (A basic SIP terminal will act as a normal terminal with this option. A Mitel 6900/6800/6700 terminal will behave as intended, as the command will configure the built-in auto-dial feature.)
- DIRECT** Direct hot-line. The terminal with directory number (--dir) is a hot-line terminal only. The system will call a hot-line number after the hand set is lifted. (On a SIP terminal the user must press a digit and dial. The system will convert the dialed number to the hot-line number. The Mitel 6900/6800/6700 terminal has a corresponding built in hotline/auto-dial feature.)

REMOVE Remove the hot-line (if already initiated).

The switch requires an argument. The argument is single-valued.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item or several items).

The switch takes no arguments.

--language-code

States the language alternative. This parameter is used to overrule the exchange language for an extension user. Values:

cs	Czech
da	Danish
de	German
default	System language
en	English
es	Spanish
es-MX	Latin American Spanish
et	Estonian
eu	Euskara/Basque
fi	Finnish
fr	French
fy	Frisian
it	Italian
nl	Dutch
no	Norwegian
pl	Polish
pt	Portuguese
pt_BR	Brazilian Portuguese
ro	Romanian
ru	Russian
sv	Swedish
zh	Chinese

The switch requires an argument. The argument is single-valued.

-l, --lim

Lim (Service Node server) number [range: 1-124].

The switch requires an argument. The argument is single-valued.

--max-call-cost

States the maximum charging cost in pulses assigned a directory number. When entered, the call will be disconnected once the entire number of pulses is used. If not entered, calls have no cost limitation for this directory number.

Prerequisite: The service provider must send a cost pulse tone in public trunk calls.

The switch requires an argument. The argument is single-valued.

--max-terminals

Maximum number of terminals that are allowed to be logged on simultaneously using one directory number.

Values: 1 to 4. Default is 1.

The switch requires an argument. The argument is single-valued.

--only

Select to erase only this aspect or part. Allowed values are: 'AREACODE', 'BACKUP', 'MAXCALLCOST', 'areacode', 'backup', 'maxcallcost'.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings, that is, print configuration of an item, several items, or all items.

The switch takes no arguments.

--secretary

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'. Category setting for Boss-Secretary functionality. Used to enable a "secretary" to make function procedures for a user, who has the secretary's directory number as answer position in his personal number list. The secretary has similar capability as an attendant.

The switch requires an argument. The argument is single-valued.

--security-exception

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'. The switch manages exceptions for central enforcement of VoIP security. All extensions handled by command "extension" have to be treated the same, for example, if the sip terminals should use TLS then all extensions (by the "extension" command) in the system must have the value 'no' for this switch. If "sec_policy" has the value 'ALL_SECURE+EXC_EXT':

no Requires the terminal, that supports it, to logon with TLS and make encrypted calls (SRTP).

yes The terminal has the option to logon insecure (without TLS) and make unencrypted calls (RTP).

If the switch is omitted, the default will be 'yes'. If there is no "sec_policy" set this means that the security is set according to the capabilities of the terminal and the available system security.

Prerequisites for security:

If TLS or SRTP, or both, should be used, a permanent license file with "VOIP SECURITY" enables (set to yes), must be loaded to the system. Passwords should be set via command: auth_code. However, if passwords are not set:

- TLS authentication will use --dir as password for H.323 and SIP terminals.
- For H.323 terminals, if --security_exception 'no', then --dir will be used as password authentication for normal logon.

The switch requires an argument. The argument is single-valued.

-s, +s, --sort, ++sort

Specify sorting criteria for printout. If no sorting is specified, the printout is unsorted. If sort switch is given without arguments, the printout will be sorted on DIR -s and --sort specify ascending sort order. +s and ++sort specify descending sort order. Possible values are: 'AMC', 'AREACODE', 'BACKUP', 'BLUSTAR', 'CSP', 'CUSTOMER', 'DIR', 'EDN', 'FEATURELEVEL', 'FREEONSECONDLINE', 'HOTLINENUMBER', 'HOTLINEOPTION', 'LANGUAGE', 'LIM', 'MAXCALL-

COST', 'MAXTERMINALS', 'SECRETARY', 'SECURITYEXCEPTION', 'THIRDPARTYSIPCLIENT', 'VIDEO', 'amc', 'areacode', 'backup', 'blustar', 'csp', 'customer', 'dir', 'edn', 'featurelevel', 'freeonsecondline', 'hotlinenumber', 'hotlineoption', 'language', 'lim', 'maxcallcost', 'maxterminals', 'secretary', 'securityexception', 'thirdpartysipclient', 'video'.

The switch takes an optional argument. The argument is single-valued.

--summary

Print a summary.

The switch takes no arguments.

--third-party-sip-client

States whether a third party SIP client is permitted to be used, default (if missing) is FALSE = not permitted.

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'.

The switch requires an argument. The argument is single-valued.

--type

Type(s) of extensions to print. Allowed types are:

all	All extensions (default)
dect	Extensions of the specific terminal type <i>DECT</i> cordless
edn	Extra Directory Number (EDN) extensions only
emergency	Extension used for call back in emergency call.
h323	Extension of the specific terminal type <i>H.323</i> IP phone
remote	Extension of the specific terminal type <i>remote</i> (<i>mobile</i>)
sip	Extension of the specific terminal type <i>SIP</i> IP phone
typed	All extensions with a specific terminal type (i.e. except virtual, edn and undefined).
undefined	Extension type not yet usable.
virtual	Extension without specific terminal type (no registered phone)

Note that an extension must be terminal type specific, EDN or virtual, and assigned a feature level to be used. Undefined extensions can be made usable by changing them to virtual, or assigning a type with for example the *ip_extension* command.

The switch requires an argument. The argument can be single, or a comma separated sequence.

-v, --verbose

Turn on verbose output, that is, progress information, to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to */var/log/messages*).

The switch takes no arguments.

--video

Category for video media functionality. Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'. Default is 'no', video not permitted.

The switch requires an argument. The argument is single-valued.

--virtual

Category for virtual extension functionality. Use this category for extensions that are intended to be without specific terminal type (i.e. with no terminal/client registered). Note that unspecified extension cannot be used. Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'.

The switch requires an argument. The argument is single-valued.

67.4

EXAMPLES

An extension with directory number 1767 shall alter the common service profile to 142.

extension -c -d 1767 --csp 142

An extension with directory number 4491 shall alter the language to Italian.

extension -c -d 4491 --language-code it

An extension with directory number 1232 shall alter the common service profile to 27, the language to Spanish and maximum charging cost to 1250.

**extension -c -d 1232 --csp 27 --language-code es
--max-call-cost 1250**

Alter extension 3801 to be a delayed hot-line extension with non-dialled connection number 0005C11E13D11675. The translated number consists of the route access code 00 and destination code 05 and after the destination code a PTS is expected. When a PTS is received or time out expires the next digits shall be 11. After digits 11 a PTS signal is expected followed by DTMF digit sending. If time out expires the external line is disconnected. If the PTS is received the next digits shall be 13. After digits 13 a PTS signal is expected and if time out expires DTMF digit sending is performed. After that the next digits shall be 11675.

**extension -c -d 3801 --hotline-option DELAYED
--hotline-number 0005C11E13D11675**

Erase the directory numbers 5235-5240.

extension -e -d 5235..5240

Erase the backup destination number value for directory number 5235.

extension -e -d 5235 --only backup

Initiate a directory number for an extension with number 4525 in LIM 3. The extension categories for TRAF, SERV, CDIV, ROC and NPRES are to be those stated in the common service profile 7. Exchange language is used. Maximum charging cost (pulses) assigned is 500.

extension -i -d 4525 -l 3 --csp 7 --max-call-cost 500

Initiate a directory number for an extension with number 4530 in LIM 2. The extension categories for TRAF, SERV, CDIV, ROC and NPRES are to be those stated in the common service profile 5. Exchange language is used. Area Code used is 464.

extension -i -d 4530 -l 2 --csp 5 --area-code 464

Initiate a directory number for an extension with number 4491 in LIM 3. The extension categories for TRAF, SERV, CDIV, ROC and NPRES shall be those stated in the common service profile 5. The extension is affiliated to customer 13. The selected language for the extension is to be German.

extension -i -d 4491 -l 3 --csp 5 --customer 13 --language-code de

Initiate a directory number for an extension with number 4421 in LIM 1. The extension categories for TRAF, SERV, CDIV, ROC and NPRES are to be those stated in the

common service profile 8. The extension will have a special purpose option with a non-dialled number as 1432.

extension -i -d 4421 -l 1 --csp 8 --hotline-option DIRECT --hotline-number 1432

Initiate a directory number for an extension with number 4422 in LIM 1. The extension categories for TRAF, SERV, CDIV, ROC and NPRES are to be those stated in the common service profile 8. The extension shall support dual forking.

extension -i -d 4422 -l 1 --csp 8 --max-terminals 2

Initiate a directory number for an extension with number 4423 using the --domain-name switch. The possible ip-range is in domain branch-office-3 and the server where the extension shall register is included in this domain. The extension categories for TRAF, SERV, CDIV, ROC and NPRES are to be those stated in the common service profile 8.

extension -i -d 4423 --domain-name branch-office-3 --csp 8

Server farm case: Initiate a directory number for an extension with number 4423 using the --domain-name switch. The possible ip-range is in domain branch-office-3, but the server where the extension shall register is NOT included in this domain. The extension categories for TRAF, SERV, CDIV, ROC and NPRES are to be those stated in the common service profile 8.

extension -i -d 4423 --domain-name DEFAULT --csp 8

Initiate a directory number for an extension with number 4525 in LIM 3. The extension categories for TRAF, SERV, CDIV, ROC and NPRES are to be those stated in the common service profile 7. Exchange language is used. The home area code assigned is 464.

extension -i -d 4525 -l 3 --csp 7 --area-code 464

Initiate a directory number for an extension with number 4526 in LIM 3. The extension categories for TRAF, SERV, CDIV, ROC and NPRES are to be those stated in the common service profile 6. Exchange language is used. The home area code assigned is 464. Two terminals shall be allowed to register on the directory number. A BluStar client of standard model shall be possible to use, and video shall be permitted.

**extension -i -d 4526 -l 3 --csp 6 --area-code 464 --max-terminals 2
--blustar-client-model STANDARD --video yes**

Initiate a directory number for an extension with number 4526 in LIM 15. The extension categories for TRAF, SERV, CDIV, ROC and NPRES are to be those stated in the common service profile 7. Exchange language is used. Two terminals shall be allowed to register on the directory number. Non Mitel terminals (third-party-sip-client) shall be able to register with 4526.

**extension -i -d 4526 -l 15 --csp 7 --max-terminals 2 --video yes
--third-party-sip-client yes**

Initiate an extension used for emergency calls in a system that is NOT using feature levels.

extension -i --emergency yes -d 5556 -l 1 --csp 1

Initiate extension 3355 with feature level premium. This also results in seizing license FEATURE-USER-PREMIUM.

extension -i -d 3355 -l 1 --csp 1 --feature-level premium

Print the category information for extensions 4498 and 4499.

extension -p -d 4498,4499

Print the directory number data for extensions 4100-4328.

extension -p -d 4100..4328

Print the generic extension directory numbers assigned to the common service profile 15.

extension -p --csp 15

68

EXTENSION_GROUP_SYSTEM

Manages extension group system data.

68.1

FORMAT

extension_group_system

[-v][-V] -c --group-member-availability

[-v][-V] [-p]

68.2

FUNCTION

68.2.1

GENERAL

The command is used to change and print extension group system data.

You can change and print the Group member availability functions.

68.3

PARAMETERS

-c, --change

Change some settings. I.e. reconfiguration of an item (or several items). The switch takes no arguments.

-g, --group-member-availability

Group Member Availability functionality on/off. Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'. Default is 0/no.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

-v, --verbose

Turn on verbose output, that is, progress information, to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

68.4

EXAMPLES

Modify the Group Member Availability data to on.

extension_group_system -c --group-member-availability true

Print extension group system data.

extension_group_system -p

69 EXTENSION_INFO

Print extension info

69.1 FORMAT

extension_info

`[-v][-V] --terminal-info -d [--terminal-type][-p]`

`[-v][-V] -d [--terminal-type][--summary][-p]`

`[-v][-V] -d [-f][-p]`

`[-v][-V] -l [--terminal-type][--summary][-p]`

69.2 FUNCTION

69.2.1 GENERAL

The command is used to print info for extensions (`--dir`). Per default HLR(Home Location Register) and ULR(User Location Register) is printed. HLR is the LIM where the extension data is stored (ref: HLR is set in extension `-i --dir <dir> --lim <HLR>`). ULR is the LIM where the terminal of `--dir` is registered to. Auto-registered terminals, like remote extension over SIP trunk always uses the HLR as ULR.

69.3 PARAMETERS

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument. The argument can be the special word 'all' or it can be a combination of comma separated sequences and ranges (first..last).

-f, --format

Select a format for the printout.

Possible values are: 'EXTENSION_PROCEDURE', 'extension_procedure'.

Default if switch is not given is ''.

The switch requires an argument. The argument is single-valued.

'extension_procedure' print as extension_procedure command input.

If printed before an upgrade, you can use this data to set the same diversion status after an upgrade.

-l, --lim

LIM number [range: 1-124].

Specify the User Location Register (URL) LIM.

The switch requires an argument. The argument is single valued.

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

--summary

Print a summary.

The switch takes no arguments.

--terminal-info

Print terminal specific information.

The switch takes no arguments.

--terminal-type

Possible values are:

DECT	DECT Extension
EDN_ONLY	Can only be used as Extra Directory Number on SIP extension
EMERGENCY	Virtual extension, only for Emergency call back
FREE_SEATING	Free Seating
H323	H323 Extension
REMOTE	Remote Extension
SIP	SIP Extension
SMS	SMS Server Extension
UNDEFINED	Virtual extension, only for Emergency call back, but not yet allowed to use.
VIRTUAL	Virtual extension, i.e. not logged on generic extension.

Note: EMERGENCY, EDN_ONLY, FREE_SEATING, UNDEFINED and VIRTUAL can only be used by command *extension_info*.

The switch requires an argument. The argument can be a comma separated sequence.

-v, --verbose

Turn on verbose output, that is, progress information, to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

69.4

EXAMPLES

Print information for the directory number 2773.

extension_info -d 2773

Print information for registered SIP terminals.

extension_info -d all --terminal-type SIP

Print a summary of the registered terminals

extension_info -d all --summary

Print information for the registered terminals in LIM 2.

extension_info -l 2

Print terminal specific information for the directory number 2773.

extension_info -d 2773 --terminal-info

70

EXTENSION_KEY

Manages an extension key.

70.1

FORMAT

extension_key

```

[-v][-V] -e -d M --line
[-v][-V] -e -d M --line-dir
[-v][-V] -e -d M --monitored-dir
[-v][-V] -e -d m --key
[-v][-V] -i --function -d m --key --key-sequence [--line] [--display-text]
[-v][-V] -i --function -d m [--key --line-dir [--line] [--display-text]]
[-v][-V] -i --function -d m [--key] --record-on-demand-uri [--display-text]
[-v][-V] -i --function -d m [--key] --xml-on-demand-uri [--display-text]
[-v][-V] -i --function -d m [--monitored-dir] [--alert-type]
[--display-text][--key-off-call-list][--key-on-call-list] [--key-sequence]
[-v][-V] -i --function -d m --line [--key] [--line-dir] [--display-text]
[-v][-V] -p [--line-dir M] [±s [x]]
[-v][-V] -p [--monitored-dir M] [±s [x]]
[-v][-V] -p [--d M] [--key] [±s [x]]

```

70.2

FUNCTION

70.2.1

GENERAL

The command is used to initiate, erase or print a dial-by-function key (TNS), a Diversion MoNitoring key (DMN), a group member availability key (GMA), a Mobile integration key (MOB), a telephone lock key (LOCK), a speed dial transfer key (SXFER), a multiple representation of a directory number on a key (MNS), a MNS key with transfer functionality (MXFER), a Personal number key (PEN key), a Malicious Call Trace key (MCT), a VoIP recording key (REC) or an string to send to the system (XML) for a generic extension.

The command is also used to initiate, erase or print a Shared Call Appearance number (SCA, SCABR) or an Extra Directory Number (EDN) or a Pickup Group Monitored key (PGM) for SIP extension directory numbers.

For an Aastra/Mitel SIP 6700i/6800/6900 extensions, a Record-on-demand XML key (REC) can be initiated, erased or printed. When initiating such a REC, *-record-on-demand-uri* can optionally be used. One REC can be used to start recording and another REC to stop the recording or just one REC can be used for both start and stop.

For Mitel H.323 terminals, only one REC is needed and does not use *-record-on-demand-uri*.

The use of each branch of the command depends on the *--function* switch value.

When initiating a TNS (or SXFER), the `--key-sequence` switch must be used. The `--line` switch is optional and has default value 1. Only Mitel SIP 6900/6800/6700i terminals may associate the TNS to another line than 1.

When initiating a DMN, the `--monitored-dir` switch (and optionally the `--alert-type` switch) must be used.

When initiating a GMA, the `--monitored-dir` switch must be used.

When initiating a MNS (or MXFER), the `--monitored-dir` switch (and optionally the `--alert-type` switch) must be used. Multiple representation means that a directory number belonging to a digital key system telephone (ODN or ADN), an analog telephone set (primary or ordinary), or a generic extension, can be represented in up to 40 extensions (DTS or generic extensions). This MNS functionality can be initiated for any kind of generic extension.

When initiating an EDN, the `--line-dir` is the Extra Line Directory Number. An EDN may only be initiated on one or more `--key(s)` or `--line(s)`.

When initiating SCA or SCABR, the `--line-dir` is the Shared Call Appearance Number. To set SCA/SCABR as main directory number, you may omit `--line-dir` (as `--line-dir` is then assumed to be -d) and set `--line 1`. `--line` represents the terminal's line number (Lx). An Lx number will be represented on all predefined line keys on a terminal.

To set SCA/SCABR as an Extra/additional Directory Number, `--line-dir` and either `--line` or `--key` must be used. When the SCA/SCABR is represented on a `--key`, then `--line` may be omitted, `--line` will then be calculated by the command and shown on `--print`.

When initiating a PEN, the `--monitored-dir`, `--key-off-call-list` and `--key-on-call-list` switch can be optionally used. `--monitored-dir` extension must have `call_list` initiated. If `--key-off-call-list` is not set the default is 0 and if `--key-on-call-list` is not set the default is 1.

When initiating a PGM, the `--alert-type` switch is optional.

Note: Switch `--line` shall only be used with switch `--erase` if there is no value for switch `--key`.

70.3

PARAMETERS

--alert-type

Call alternative for functional key (FCN) with value MNS multiple representation and name selection).

0 Not ringing (default).

Ringing options while own terminal is idle

1 Ringing

2 Ringing after delay

3 Only the first ringing period (low volume)

4 Ringing period after delay (low volume)

5 Only the first ringing period (normal volume)

6 Ringing period after delay (normal volume)

Ringing options while own terminal is idle or in a call

7 Ringing (in call)

8 Ringing after delay (in call)

9 Only the first ringing period (low volume) (in call)

- 10** Ringing period after delay (low volume) (in call)
- 11** Only the first ringing period (normal volume) (in call)
- 12** Ringing period after delay (normal volume) (in call)

The switch requires an argument. The argument is single-valued.

Note: Values 5...12 only works with Mitel 6xxxi terminals.

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument.

--display-text

Text to be displayed on an Mitel SIP, DBC434, DBC444 and DBC446 capable instrument. Accepted argument length is 1 to 24 characters. The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/>

In unicode number mode the numbers are separated by space ' ', or by semi-colon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x). The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name 'Üßü-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued.

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

--function

Function to be assigned to the key. The meaning of the possible values are:

DMN	Diversion Monitoring.
EDN	Extra Directory Number key.
GMA	Group Member Availability.
LOCK	Telephone Lock key.
MCT	Malicious Call Tracing key.
MNS	Monitor call state information on directory numbers stated in the MNS switch.
MOB	Mobile Phone Integration key.
MXFER	MNS and transfer key.
PEN	Personal Number. Key led on matches <i>--key-on-call-list</i> and key led off matches <i>--key-off-call-list</i> .
PGM	Pickup Group Monitoring.
REC	VoIP Recording.

TNS	Defines a speed dial number or functional procedure stated in the <i>--key-sequence</i> switch.
SCA	Shared Call Appearance (no bridging).
SCABR	Shared Call Appearance with Bridging; enables barge in on a call in the same SCA group, that is, intrude to create a conference.
SXFER	Speed dial and transfer key. Transfer call to number stated in the <i>--key-sequence</i> switch.
XML	Sends an XML order to system. (that is, streaming). This function is supported on 68xx terminals and later.

Possible values are: 'DMN', 'EDN', 'GMA', 'LOCK', 'MCT', 'MNS', 'MOB', 'MXFER', 'PEN', 'PGM', 'REC', 'SCA', 'SCABR', 'SXFER', 'TNS', and 'XML'.

The switch requires an argument. The argument is single-valued.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item or several items).

The switch takes no arguments.

--key

States the logical key number on the terminal, where the function (according to *--function*) is loaded. For DBC 42x terminals see 'CONFIGURATION FILE FOR DBC42x', which defines system keys, which will be given physical keys that are the same for a certain model. The personal keys defined here, make use of the remaining set of keys in a logical order.

For 67xxi terminals, *--key N* maps to 'expmod1 keyN' if expansion module M670i or M675i is used. If no expansion module is used the *--key N* will be mapped to different types of keys on the terminal depending on the type of model according to */etc/opt/eri_sn/ip_telephony.conf*.

The switch requires an argument.

--key-off-call-list

Key off call list. The number corresponds to the Call List number.

If the key indicator is on and the button is pressed this call list becomes active and the key indicator is off.

Value: 0 - No active list
1..5 - list 1 to 5

The switch requires an argument. The argument is single-valued.

--key-on-call-list

Key on call list. The number corresponds to the Call List number.

If the key indicator is off and the button is pressed this call list becomes active and the key indicator is on. If the monitored call list matches this call list number, the key indicator will be on.

Value: 1..5 - list 1 to 5

The switch requires an argument. The argument is single-valued.

--key-sequence

States a speed dial number, or a speed dial 'function procedure' on a key with '*--function TNS*', '*--function SXFER*', or '*--function MNS*' or '*--function MXFER*'. This is a string as it could be dialled on the telephone, with digits, star and hash (0-9, +, #). For backward compatibility reasons 'A' is accepted as '*' and 'B' is accepted as '#'. If '#' is used the whole input has to be quoted like this "'23*0#". + can be used to configure a number in E.164 format.

For 6700i/6800/6900 phones and function TNS then comma "," and "+" have special meaning. It is possible to configure a preset string of numbers followed by a "+". This feature allows the phone to speed dial a prefix number and then pause to let you enter the remaining phone number. A comma can be used to insert 500ms pause in the number.

Accepted argument length is 1 to 40 characters.

The switch requires an argument. The argument is single-valued.

--line

States the logical terminal line.

- 1) Used to set physical lines (except for standard main line)
 - * --line 1, 3, 4 for *--function* SCA.
 - * --line 3, 4 for *--function* EDN.
- 2) Logical lines are automatically allocated when using SCA and EDN for *--key*
- 3) *--line* may be set for *--function* TNS (or SXFER) to choose originating call line. (*--line* 1 is default)

Allocated lines are shown when printing.

The terminal type defines the limit on the maximum lines (physical and logical) that can be configured on the phone. As for example, 6800i series only have 2 physical keys, so physical line (*--line* 3 and 4) does not appear on this phone.

The switch requires an argument. The argument is single-valued.

--line-dir

States the directory number of a logical terminal line assigned with *--line*. Mandatory in case of *--function* EDN. Optional in case of *--function* SCA, in this case is the directory number of the terminal used.

Accepted argument length is 2 to 10 digits.

The switch requires an argument. The argument is single-valued.

--monitored-dir

In case of *--function* with value 'DMN' or 'MNS' or 'MXFER'.

States the call state monitored directory number assigned to a *--key*. In case of *--function* with value 'GMA'. States own member availability in monitored group number assigned to a *--key*.

In case of *--function* with value 'PEN'. States the Personal Number assigned to a *--key*. Accepted argument length is 2 to 10 digits.

The switch requires an argument.

-p, --print

Print all or some settings, that is, print configuration of an item, several items, or all items.

The switch takes no arguments.

--record-on-demand-uri

Optional for *--function* REC.

States the URI to be associated with a record-on-demand key for SIP 6900/6800/6700i terminals. The URI shall be RFC3986 compliant.

Any characters considered special by 6700i/6800/6900 must be escape encoded (see 6900/6800/6700 XML API doc. For example, & is escape encoded by: &).

It is recommended to use single quote, if double quote is used any characters considered special by the command shell must also be escape encoded (e.g. \$ is escaped encoded by: \\$)

Accepted argument length is 7 to 240 characters.

The switch requires an argument. The argument is single-valued.

-s, +s, --sort, ++sort

Specify sorting criteria for printout. If no sorting is specified, the printout is unsorted. If sort switch is given without arguments, the printout will be sorted on DIR -s and --sort specify ascending sort order. +s and ++sort specify descending sort order. Possible values are: 'ALERTTYPE', 'DIR', 'FUNCTION', 'KEY', 'KEYSEQUENCE', 'LINE', 'LINEDIR', 'MONITOREDDIR', 'alerttype', 'dir', 'function', 'key', 'keysequence', 'line', 'linedir', 'monitoreddir'. Sorting on either keysequence, monitoreddir or linedir will result in the same printout.

The switch takes an optional argument. The argument is single-valued.

-v, --verbose

Turn on verbose output, (that is, progress information) to standard error.

The switch takes no arguments.

-v, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

--xml-on-demand-uri

The switch requires an argument. The argument is single-valued.

Used with --function XML. States the URI to be associated with a xml-on-demand key for SIP terminals. The URI shall be RFC3986 compliant. Any characters considered special by Mitel terminals must be escape encoded (see 68xxi XML API doc. E.g. & is escape encoded by: &). It is recommended to use single quote; if double quote is used, then any characters considered special by the command shell must also be escape encoded (for example, \$ is escaped encoded by: \\$).

70.4

EXAMPLES

Initiates an MNS key for the generic extension with directory number 41910. The logical key number is to be 11. The multiple represented extension is to be directory number 41999. The call alternative is to be not ringing. Not ringing, default for --alert-type.

**extension_key -i -d 41910 --key 11 --function MNS
--monitored-dir 41999**

Initiate the MNS key for the generic extension with directory number 41911. The logical key number is to be 12. The multiple represented extension is to be directory number 42910. The call alternative is to be ringing.

**extension_key -i -d 41911 --key 12 --function MNS
--monitored-dir 42910 --alert-type 1**

Initiate MNS key for the generic extension with directory number 41911. The logical key number is to be 12. The multiple represented extension is to be directory number 42910. The number to be called when the key is pressed is 42555.

**extension_key -i -d 41911 --key 12 --function MNS
--monitored-dir 42910 --key-sequence 42555**

Initiate a TNS key for the generic extension with directory number 41910. The logical key number is to be 14. The dial-by function number is to be 42910.

extension_key -i -d 41910 --key 14 --function TNS --key-sequence 42910

Initiate MCT on key number 13 for the IP extension with the directory number 43110.

extension_key -i -d 43110 --key 13 --function MCT

Initiate a PEN key for the generic extension with directory number 41910. The logical key number is to be 11. The Personal Number extension is to be directory number 42910.

**extension_key -i -d 41910 --key 12 --function PEN
--monitored-dir 42910**

Initiate a PEN key on the personal number 42910. The logical key number is to be 12.

extension_key -i -d 42910 --key 11 --function PEN --monitored-dir 42910 extension_key -i -d 42910 --key 12 --function PEN

Initiate two additional SCA lines, line 3 and 4 (L3, L4) on an Aastra/Mitel 6757 with number 42800. Status after initiation: L1, L2 has normal directory number 42910 and L3, L4 has SCA number 42800.

extension_key -i -d 42910 --line 3 --function SCA --line-dir 42800

extension_key -i -d 42910 --line 4 --function SCA --line-dir 42800

Initiate two additional SCA lines, line 3 and 4 (L3, L4) on an Aastra/Mitel 6757i with number 42800. Status after initiation: L1, L2 has normal directory number 42910 and L3, L4 has SCA number 42800.

extension_key -i -d 42910 --line 3 --function SCA --line-dir 42800 extension_key -i -d 42910 --line 4 --function SCA --line-dir 42800

Initiate two additional SCA lines for directory number 42999, on softkey 1 and 2 on an Aastra/Mitel 6739i with number 42222. Status after initiation: L1, L2, L3 has main directory number 42999 and softkey 1, 2 has SCA number 42222. (On the terminal, number 42999 will be stored in the next uniquely available line repository per key. The line used is shown on print and can be set explicitly here as well).

extension_key -i -d 42999 --key 1 --function SCA --line-dir 42222

extension_key -i -d 42999 --key 2 --function SCA --line-dir 42222

Initiate SCABR as main directory number 43110 (that is, the free-seating number). Line 1 is the host for main directory number. Note that the number on line 1 will be represented on all predefined line keys. Aastra/Mitel 6739i has predefined line keys, L1, L2 and L3.

extension_key -i -d 43110 --line 1 --function SCABR

Initiate an EDN number 50001 to line 3 on an Aastra/Mitel 6739i (L3 is a predefined key) with the directory number 43110. This example is a continuation of the above example. Status now is L1, L2 has main number 43110 as SCABR and L3 has EDN number 50001.

extension_key -i -d 43110 --line 3 --function EDN --line-dir 50001

Initiate a TNS key for the EDN number 50001 on line 3 on the main directory number 43110 on an Aastra/Mitel 6739i. The logical key is to be 1. The dial-by function number is to be 50005. When the key is pressed 50001 is calling 50005. The key shall be displayed "Priv-50005".

**extension_key -i -d 43110 --key 1 --line 3 --function TNS --key-sequence 50005
--display-text "Priv-50005"**

Initiate a record-on-demand key on an Aastra/Mitel SIP 6739i with directory number 44100. The terminal will replace \$\$SIPUSERNAME\$\$ with its directory number.


```
extension_key -i -d 44100 --key 8 --function REC --record-on-demand-uri  
'http://203.0.113.1:80/VOIP?START&OPN=$$SIPUSERNAME$$'  
--display-text "Record-on-demand".
```

Initiate a streaming key on an Aastra/Mitel SIP 6869i with directory number 44100. The terminal will replace \$\$SIPUSERNAME\$\$ with its directory number.

```
extension_key -i -d 44100 --key 8 --function XML --xml-on-demand-uri  
"http://$PROXYURL$:2222/StreamingMenu?user=$$SIPUSERNAME$$"  
--display-text "Streaming".
```

Initiate a speed dial transfer key on an Aastra/Mitel SIP 6869i that allows to easily transfer calls to number 401.

```
extension_key -i -d 44100 --key 7 --function SXFER --key-sequence 401  
--display-text "SXFER401".
```

Initiate a mobile integration key on a Mitel 6930 SIP phone

```
extension_key -i -d 44100 --key 8 --function MOB
```

Initiate a telephone lock key on an Aastra/Mitel 6869i SIP phone

```
extension_key -i -d 44100 --key 9 --function LOCK
```

Initiate a PGM key for the generic extension with directory number 41911. The logical key number is to be 12. The call alternative is to be ringing after delay.

```
extension_key -i -d 41911 --key 12 --function PGM --alert-type 2
```

Initiate a GMA key for the generic extension with directory number 41911. The logical key number is to be 4. The monitored group number is 77777.

```
extension_key -i -d 41911 --key 4 --function GMA --monitored-dir 77777
```

Erase the multiple represented number 18115 for generic extension 58900. (Erases both MNS and PEN).

```
extension_key -e -d 58900 --monitored-dir 18115
```

Erase multiple represented number 58999 on all generic extensions. (Erases both MNS and PEN).

```
extension_key -e -d all --monitored-dir 58999
```

Erase line directory number 42800 to all associated SIP extensions. (Erases either EDN or SCA/SCABR).

```
extension_key -e -d all --line-dir 42800
```

Erase the function on logical key number 1 for the generic extension 58918.

```
extension_key -e -d 58918 --key 1
```

Erase the function (SCA or SCABR) on the main directory number, hosted on line 1 for the extension 58918. This will make the line type change to a normal directory.

```
extension_key -e -d 58918 --line-dir 58918
```

or

```
extension_key -e -d 58918 --line 1
```

Print the key information for directory numbers 41910 and 41911.

```
extension_key -p -d 41910, 41911
```

Print the key information for directory number 41910 at key 3.

```
extension_key -p -d 41910 --key 3
```

Print the MNS and PEN monitoring directory number 42910.

```
extension_key -p --monitored-dir 42910
```

Print the EDN directory number 42910 or print the SCA/SCABR lines subscribing to directory number 42910.

extension_key -p --line-dir 42910

71 EXTENSION_PROCEDURE

Execute a procedure

71.1 FORMAT

extension_procedure
 [-v][-V] -d --proc

71.2 FUNCTION

71.2.1 GENERAL

The command is used to execute the procedure stated in parameter PROC for the directory number DIR.

Note: Free seating logon or logoff procedure cannot be executed by the command.

71.3 PARAMETERS

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument.

--proc

Digits states 'function procedure' to be executed for --dir.

Example: '--proc *10*2#', in order to change to Personal Number profile 2. This is a string as it could be dialled on the telephone, with digits, star and hash (0-9*#). For backward compatibility reasons 'A' is accepted as '*' and 'B' is accepted as '#'. If '#' is used the whole input has to be quoted. E.g. "**feature code*destination number#", or "**feature code*absence reason#".

Accepted argument length is 1 to 40 characters.

The switch requires an argument. The argument is single-valued.

-v, --verbose

Turn on verbose output, that is, progress information, to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

71.4

EXAMPLES

Execute the procedure *10#, activation of Personal Number list, for the directory number 4525. (Service code examples are from application system Standard, but may differ for other application systems).

extension_procedure -d 4525 --proc "*10#"

Execute the procedure *21*4599#, activation of Follow-me to directory number 4539, for the directory number 4525.

extension_procedure -d 4525 --proc "21*4539#"**

Execute the procedure *29*4500#, logon to hunt group number 4500, for the extension directory number 4525.

extension_procedure -d 4525 --proc "29*4500#"**

72

EXTENSION_PROFILE

Manage an extension profile

72.1

FORMAT

extension_profile

```
[ -v ] [ -V ] -c --csp [ --customer ] [ --csp-name ] [ --ext-cdiv ] [ --ext-cnnlog ] [ --ext-npres ]
[ --ext-roc ] [ --ext-serv ] [ --ext-traf ] [ --forced-disconnect-time ] [ --offered-time ]

[ -v ] [ -V ] -e --csp [ --customer ]

[ -v ] [ -V ] -i --csp [ --csp-name ] [ --customer ] --ext-cdiv [ --ext-cnnlog ] --ext-npres
--ext-roc --ext-serv
--ext-traf [ --forced-disconnect-time ] [ --offered-time ]

[ -v ] [ -V ] -p [ --csp ] [ --csp-name ] [ --customer ] [ --ext-cdiv ] [ --ext-cnnlog ] [ --ext-npres ]
[ --ext-roc ] [ --ext-serv ] [ --ext-traf ] [ --forced-disconnect-time ] [ --offered-time ]
[ ±s [ x ] ]
```

72.2

FUNCTION

72.2.1

GENERAL

The command is used to change, erase, initiate, and print common (extension) user data.

72.3

PARAMETERS

-c, --change

Change some settings, that is, reconfiguration of an item (or several items).

The switch takes no arguments.

--csp

Each Common Service Profile (--csp) represents a combination of characteristics for --ext-cdiv, --ext-cnnlog, --ext-npres, --ext-roc, --ext-serv, --ext-traf etc.

Range: 0 - 256

The switch requires an argument. The argument is single-valued.

--csp-name

States a name for a Common Service Profile (CSP). Allowed characters: (0..9,a..z,A..Z,)

Accepted argument length is 1 to 20 characters.

The switch requires an argument. The argument is single-valued.

--customer

Customer number for the extension. Customer 0 is the default customer of the exchange. Argument must be an integer in the range 0 to 50000. For print operations the default is function dependent, for all other operations the default is 0 (zero).

The switch requires an argument. The argument is single-valued.

-e, --erase

Erase some settings, that is de-configuration of an item (or several items).

The switch takes no arguments.

--ext-cdiv

A switch that has a collection of individual settings. Each individual setting is a digit in the numerical value string. Pad to length is enabled for this switch. The digits have the following meaning:

D₁ External Follow-me:
0 - no
1 - yes

States whether user is permitted to do external Follow-me using service code *22# (or equivalent soft key).

D₂ Follow-me:
0 - no
1 - yes

States whether user is permitted to do internal Follow-me using service code *21* (or soft key 'Follow-Me')

D₃ Diversion bypass:
0 - no
1 - permitted (yes)

States whether diversion bypass is permitted or not. (Bypass of diversion can be set to always permit by using an AS parameter (PARNUM=75)).

D₄ Diversion on origin extension and PBX-operator:
0 - Default. Feature not permitted (DiversionBypass=no)
1 - Individual diversion position
2 - Common diversion position
3 - No diversion shall take place

States whether diversion on origin (internal extension or operator) is permitted or not, and if common or individual diversion position should be used.

D₅ Diversion on origin public line:
0 - Default. Feature not permitted (DiversionBypass=no)
1 - Individual diversion position
2 - Common diversion position
3 - No diversion shall take place

States whether diversion on origin (public external line) is permitted or not and if common or individual diversion position should be used.

D₆ Diversion on origin private line:
0 - Default. Feature not permitted (DiversionBypass=no)
1 - Individual diversion position
2 - Common diversion position
3 - No diversion shall take place

States whether diversion on origin (private external line) is permitted or not and if common or individual diversion position should be used. See also D₁₅.

D₇ Auto bypass of FM for SMS:
0 - no
1 - permitted (recommended)

States if diversion bypass for SMS is permitted for follow me.

D₈ Auto bypass of EFM for SMS:
 0 - no
 1 - permitted (recommended)

States if diversion bypass for SMS is permitted for external follow me.

D₉ Permits direct diversion to:
 0 - only an individual divertee position (**)
 1 - an individual or common divertee position (*).

D₁₀ Permits diversion to an individual divertee position on busy (**).
 0 - no
 1 - yes

D₁₁ Permits diversion to an individual divertee position on no-answer (**).
 0 - no
 1 - yes

D₁₂ Multi Directory Diversion and Multi Directory Do Not Disturb:
 0 - no (default)
 1 - yes (not relevant for EDNs)

This facility is only allowed for ODN, on SIP terminals (a similar function is also available for DTS). Setting this parameter to yes means that when follow me, direct diversion, message diversion, or DND facility are activated or canceled for an ODN, the **DND** facility is activated or canceled for all EDNs of the same terminal.

D₁₃D₁₄ Remote programming of diversion:
 00 - Default or feature not permitted
 01 - Permitted to initiate Follow-me on other extensions or groups.
 02 - Permitted to initiate External follow-me (ECF) on other extensions or groups.
 04 - Permitted to initiate Diversion on no-reply on other extensions or groups.
 08 - Permitted to initiate Diversion on busy on other extensions or groups.
 16 - Permitted to initiate Direct diversion on other extensions or groups.

By allowing an extension to perform remote programming of diversion, the extension can be used for remote initiation of diversion on other, internal extensions or groups. (Provided that the selected diversion type is allowed for these extensions/groups.)

D₁₅ Diversion on origin in private network, states whether private network parties shall have influence or not about which of D₄-D₆ to use.

0 - Default. Only local type of origin is used for the decision of which of D₄-D₆ to use.
 1 - Both local and private network type of origin is used for the decision of which of D₄-D₆ to use.

(*) If an individual divertee position has not been initiated the common divertee position is chosen. If no common divertee position has been initiated the procedure for diversion cannot be done.

(**) If no individual divertee position has been initiated the procedure for this facility cannot be utilized.

The switch requires an argument. The argument is single-valued.

--ext-cnnlog

The switch states the characteristics for the centralized name and number log function. Pad to length is enabled for this switch. The digits have the following meaning:

- D₁** General centralized name and number log
 0 - The centralized name and number log is not active (default).
 1 - The centralized name and number log is active.

The switch requires an argument. The argument is single-valued.

--ext-npres

A switch that has a collection of individual settings. Each individual setting is a digit in the numerical value string. Pad to length is enabled for this switch. The digits have the following meaning:

- D₁** A-number request sent to the PSTN:
 0 - No
 1 - Yes
 The extension is allowed or not allowed to request an A-number from the PSTN (if the feature is offered).
- D₂** Number presentation restricted:
 0 - No
 1 - Internal
 2 - External
 3 - Internal and External
 States whether the number is restricted or not (SIP tie line is treated as internal). For example, if the A-number is presented to the B-party or not.
- Note:** For internal calls and for private network calls using SIP tie-lines, the CLIR/COLR category is sub-divided in CLIR/COLR-internal and CLIR/COLR-external. CLIR/COLR-internal is used for internal calls and private network calls using SIP tie-lines. CLIR/COLR-external is used for public network calls using SIP trunk lines. If the other party is outside the own PBX (and SIP trunk/tie-line is not used), restriction is sent for the number if any of CLIR/COLR-internal or CLIR/COLR-external are set.
- D₃** Calling Line Identity Restriction (CLIR) per call:
 0 - No
 1 - Yes, permitted
 States whether name and number restriction (CLIR) is permitted per call by dialing the procedure *42# before the B-party number.
- D₄** Extension number to PSTN:
 0 - No
 1 - Yes
 States whether the extension number or common public number is sent to the PSTN (For this to be permitted, the extension number must belong to the public number series of the PBX).
- D₅** CLIR/COLR (name and number presentation restriction override):
 0 - CLIR/COLR override not permitted. (Default)
 1 - CLIR/COLR override is permitted when type of connected party is private¹.
 2 - CLIR/COLR override restriction override is permitted when type of connected party is public².
 3 - Both 1 and 2 above are permitted.

¹) Private means an extension or a tie-line without network services in the same system (internal call) or within the private network.

²) Public means subscriber in the public network. Extension is able to display the other party's number even if the presentation is restricted.

- D₆** Never display number from PSTN:
 0 - No
 1 - Yes
 States whether number from PSTN should be displayed or not. No means that the number will be displayed.
- D₇** Use group identity for incoming calls:
 0 - No
 1 - Yes
 States if the group number and name shall be used when sending the number and name identities to the calling user.
 No means that the user number will be sent.
 The switch requires an argument. The argument is single-valued.

The switch requires an argument. The argument is single-valued.

--ext-roc

A switch that has a collection of individual settings. Each individual setting is a digit in the numerical value string. Pad to length is enabled for this switch. The digits have the following meaning:

- D₁** Facility restriction level (0..7). Attribute level to make a selective restriction of the use of the outgoing routes.
- D₂** Account code for LCR (0..2). States forced account code when the value of the ACCT parameter stated in the LCR tables is X.
- D₃** Off-hook queuing level (0..3). Specifies the off hook queuing level, it is compared against the outgoing route's threshold level.
 0 - Search for a free route choice is done up to threshold level 1.
 1 - Search for a free route choice is done up to threshold level 1. After that the call is put into queue for 8 seconds (AS PARNUM 107) waiting for the first hand choice to become free. If that does not occur, search is started again from the first hand choice up to the choice marked as threshold level 2.
 2 - Search for a free route choice is done up to threshold level 2. After that the call is put into queue for 8 seconds (AS PARNUM 107) waiting for the first hand choice to become free. If that does not occur, search is started again from the first hand choice up to the last hand choice.
 3 - Less restricted level. Search is done for all available route choices, and no queuing is applied.
- D₄** Authorization type for route selection. Attribute to make a selective restriction of the use of the outgoing routes.
 0 - Normal extension
 1 - Class A
 2 - Class B
 3 - Class C
 4 - Class D
 5 - Data extension (obsolete)
 6 - PBX operator
 7 - Class E

- D₅D₆** Toll Exchange. Attribute level (category) to make a selective restriction of the use of the outgoing routes.
- 01 - (default) Toll exchange not used or extension authorized to make outgoing calls towards automatic zone, trunk and international network
 - 02 - Hospitality extension authorized for outgoing calls as category 01
 - 03 - Extension authorized for local calls only
 - 04 - Extension with priority, authorized to make outgoing calls towards automatic zone, trunk and international network as well as chargeable services.
 - 05 - Extension without priority, free of charge, authorized to make the same calls as category 04.
 - 06 - Trunk coin box or post office switch board authorized to make the same calls as category 01.
 - 07 - Extension without priority, authorized to make calls as category 04.
 - 09 - Coin box
 - 11 - Dispatcher (used for private networks)

The switch requires an argument. The argument is single-valued.

--ext-serv

States the characteristics for services that may be initiated to or from an extension. A switch that has a collection of individual settings. Pad to length is enabled for this switch. The digits have the following meaning:

- D₁** Callback characteristics as calling party.
- 0 - Not permitted to initiate call back
 - 1 - Permitted to initiate automatic call back towards another extension in the same exchange or the private network
 - 2 - Permitted to initiate automatic call back towards another extension in the same exchange, in the private network or towards an external line (no restriction).
 - 3 - Permitted to initiate automatic call back towards the private network and towards an external line, without dialling a procedure. (No restriction and automatic initiation of callback at busy. This value is mostly used if the terminal is controlled by an application)

- D₂** Call waiting request permission
- 0 - no
 - 1 - yes
- States whether call waiting is permitted to be requested.

D₂, D₃ and D₄ define the characteristics for the Call Waiting service in busy states. If the called party (B-party) is busy, the calling party (A-party) may (after receiving busy tone, and in D₂ allows it) request (initiate) Call Waiting via DTMF signaling (standard market: '5').

[Note: The settings for B-party (D₃) and C-party (D₄) will have no effect for SIP terminals and for H.323 terminals with Free-On-2nd activated. A multi-line terminal (as for free-On-2nd) will display incoming calls on a terminal Line key which also may generate a local Call Waiting tone (in the ongoing call). The A-party will just get alerting/ring tone.]

- D₃** Call waiting protection on B. The B-party is the target of the Call Waiting request. B terminal is notified via call waiting tone and/or blinking led on a line key.
- 0 - Full protection. No Call Waiting notification.
 - 1 - Only Call Waiting notification from another extension.
 - 2 - Only Call Waiting notification from another extension and PBX operator.
 - 3 - No protection. Call waiting notification from another extension, PBX operator and external line.

D₄	<p>Call waiting protection for third party C</p> <p>0 - no call waiting tone</p> <p>1 - yes, call waiting tone provided to C</p> <p>The C-party is the one in speech with the target of the Call Waiting request.</p>
D₅	<p>Intrusion capability level (ICL). The intrusion requester capability level, which will be compared to the intruded and third party intrusion protection level.</p> <p>0 - Intrusion request is not allowed</p> <p>1 - Intrusion capability level 1</p> <p>2 - Intrusion capability level 2</p> <p>3 - Intrusion capability level 3 (highest)</p>
D₆	<p>Intrusion protection level (IPL). The intruded or third party's intrusion protection levels, which will be compared to the intrusion capability level (ICL) of the requester.</p> <p>0 - No protection. Intrusion always allowed.</p> <p>1 - Protection level 1. Can be intruded by users who have ICL higher than 1.</p> <p>2 - Protection level 2. Can be intruded by users who have ICL higher than 2.</p> <p>3 - Protection level 3. Cannot be intruded.</p>
D₇	<p>Malicious call tracing</p> <p>0 - no call tracing</p> <p>1 - call tracing</p> <p>States if an extension is authorized to initiate malicious call tracing (in public ISDN networks).</p>
D₈	<p>Manual message waiting</p> <p>0 - not allowed</p> <p>1 - allowed</p> <p>States if an extension is allowed to use the service Manual Message Waiting.</p>
D₉	<p>Call Metering</p> <p>0 - Per route (exchange)</p> <p>1 - Per extension</p>
D₁₀	<p>A-Number request from MFC (0 - no, 1 - allowed (yes)). The extension is allowed or not allowed to request an A-number from the MFC trunk (Swiss).</p>
D₁₁	<p>A-Subscriber charged:</p> <p>0 - normal</p> <p>1 - not charged</p> <p>Specify if the A-number will be charged or not (only for Swiss MFC DID trunks)</p>
D₁₂	<p>Individual do-not-disturb (DND):</p> <p>0 - DND not permitted</p> <p>1 - Individual DND permitted</p> <p>A call to an Individual Do Not Disturb-marked extension will not be signaled on the receiving extension. An Individual Do Not Disturb-marked extension can still make outgoing calls in the normal way.</p>
D₁₃	<p>0 Reserved/Not used.</p>
D₁₄	<p>Hospitality class. States the privilege classes.</p> <p>0 - normal extension (default)</p> <p>1 - room vacant</p> <p>2 - room occupied</p>
D₁₅	<p>Collect call:</p> <p>Specify if an extension is permitted to accept incoming collect calls.</p> <p>0 - not allowed</p> <p>1 - allowed</p>
D₁₆	<p>0 Reserved/Not used</p>

- D₁₇** Unconditional forced Gateway:
 0 - no (default)
 1 - yes
 States whether all the calls to/from IP extensions will be unconditionally forced gateway
- D₁₈** Free seating permitted
 0 - no (default)
 1 - yes
 States whether the extension is permitted free seating. **Note:** does not affect IP terminals with capability to logon/logoff.
- D₁₉** SMS permitted
 0 - no
 1 - SMS service permitted for extension
- D₂₀** External Controlled Call distribution.
 States whether the external controlled call distribution is permitted. (CSTA3 is required for this function).
 0 - Normal call distribution.
 1 - Call distribution controlled by external application.
- NOTE:** if value 1 is set the switch '--offered-time' has to be set as well.
- D₂₁** Common authorization code forbidden.
 States if common authorization code is forbidden (yes) to be used from this user or not (no).
 0 - No
 1 - Yes
- D₂₂** Multiple terminal service busy option. This category is valid at calls towards a user/person which has the multiple terminal service.
 0 - If any of the users/persons logged on terminals is busy, the user will be treated as busy. (default)
 1 - If any of the users/persons logged on terminals is busy, the system will ignore the user/person busy status and always try to seize the logged on terminals. If any of the users terminals replies busy during the seizure, the terminal and the user are treated as busy for the actual call.
- D₂₃** Extended services in Intrusion state.
 0 - No extended services.
 1 - Extended services: Parking, Inquiry and Single Step Transfer are permitted for the extension.
- D₂₄** Call list deactivation permission. The category controls if the extension user is allowed to deactivate his/her call list.
 0 - Call list deactivation is allowed. (Default)
 1 - Call list deactivation is forbidden. (Primarily for SIP extension users with only default call list).
- D₂₅** Programming Of Group Do Not Disturb category.
 0 - Extension does not have permission to activate Group do not disturb. (Default).
 1 - Extension has permission to activate Group do not disturb.
- D₂₆** Automatic answer.
 States whether the extension shall be ordered to answer automatically or not. This function is only supported by Mitel SIP extensions.
 0 - Automatic/immediate answer will not be ordered (Default).
 1 - Automatic/immediate answer will be ordered.
- Note:** Automatic/immediate answer should not be initiated for an extension number that has Shared Call Appearance, Multiple representation, Parallel ringing or similar 'multiple terminal services'.

D₂₇D₂₈ Transfer permission.
 States whether call transfer of an outgoing PSTN call is permitted or not, that is, a transfer of an internal call to a public external line or to transfer a public external line in an outgoing call to an internal extension.
 Transfer category, that is, whether the extension is permitted to transfer an internal call to a public external line in an outgoing call, or to transfer a public external line in an outgoing call to an internal extension. Authorization is required both for transfer and for receipt of transferred outgoing public external calls.
 The necessity of a category for this type of transfer depends on the AS parameter.
 As intruding party in an intrusion conference the user is permitted to change the conference type from intrusion to normal. This is done by executing call transfer in the intrusion conference. When calling an extension conference leader and performing an intrusion the intruding party is permitted to transfer a call into the ongoing conference
 00 - Not permitted to accept transferred or to transfer outgoing external public calls to an internal party or this feature is not used in the system.
 01 - Permitted to transfer outgoing external calls.
 02 - Permitted to accept transferred outgoing external calls. (Above can be altered through command ASPAC, PARNUM=67).
 04 - Not used.
 08 - Permitted to transfer a call into intrusion conference. (If intrusion conference is set, consider the command *global_traffic_data*, switch *conference-release*).

The value D₂₇D₂₈ is the sum of the above category values.
 The switch requires an argument. The argument is single-valued.

D₂₉ Answer handling
 States whether the extension user shall be ordered to answer via terminal or via an external application (e.g. SeC Call Center application). Tone shall be provided if answered by external application.
 0 - Answer is controlled by the extension user (Default).
 1 - Answer is controlled by an external application (via CSTA). Tone shall be provided.

The switch requires an argument. The argument is single-valued.

D₃₀ Log-off restriction (for SIP extensions).
 States whether the extension shall be fully restricted, semi-restricted or not restricted from log-off.
 0 - Not restricted. (Permitted to log off, default).
 1 - Semi-restricted. The first registration will be considered as the "default extension". The log-off key will then be labeled "TempUser", allowing temporary registration to own extension. An automatic registration back to the default extension will take place if the log-off key is pressed, or after 4 hours. (Example: Conference phone).
 2 - Fully restricted. Log-off is not allowed. (Example: Elevator or reception phone).
Note: Change command for Log-off restriction in ext-serv is only allowed from value 0.
Note: This has no effect for VDP Login as this is a native phone function

The switch requires an argument. The argument is single-valued.

--ext-traf

States the traffic characteristics that an extension may generate.

A switch that has a collection of individual settings. Pad to length is enabled for this switch. The digits have the following meaning:

- | | |
|------------------------------------|---|
| D₁ | Emergency Switching:
0 - Blocked
1 - Open
States whether the extension is blocked or open for traffic in an emergency-switched PBX. |
| D₂ | Direct indialing:
0 - Blocked
1 - Open
States whether direct in-dialing traffic to the extension is blocked or open. |
| D₃ | Rerouting Limitation:
0 - No limitation
1 - Rerouting blocked
States whether incoming calls towards the extension is permitted to be rerouted. This facility makes it possible to avoid rerouting calls to an extension, which can be, for example, a facsimile, even though the incoming route is categorized to allow rerouting. |
| D₄ | Common abbreviated number class (0,1,2,3).
States the class of common abbreviated numbers that the extension should belong to. One 'abbreviated dialling common number' is assigned to one or several classes in another command. |
| D₅D₆ | TCD Night (00..15: 15 - Fully Open) |
| D₇D₈ | TCD Day (00..15: 15 - Fully Open)
States the TCD category in the number analysis that should be mapped to the extension during Day service (see D5D6) and Night service (see D7D8). The category states the numbers the extension may dial. |
| D₉D₁₀ | Traffic Connect Class (00..15: 15 - Fully Open). States the traffic class in the traffic group matrix to which the extension belongs.
The value in the interception point of the traffic group matrix between the traffic class belongings of the A-party and B-party, decides whether they are permitted to connect. (see operational directions 'Traffic connection matrix').
Example:
The extension traffic category should be as follows: <ul style="list-style-type: none"> • Extension open for all traffic in emergency switched PBX (1) • Open for direct in-dialing traffic (1). • The extension has no rerouting limitations (0). • Permitted to use the common abbreviated numbers that have classified with the abbreviated number category 3 (3). • During night service, the extension's TCD category 07 should be used. Transmission by the extension during night service is then limited by TCD data in the number analysis in accordance with category 07. (07) • During day service, the extension should be fully open (15). The extension should then be connected to A- and B- parties according to the prerequisites for traffic connect class 14 (14).
gives: '--ext-traf 1103071514' |

The switch requires an argument. The argument is single-valued

--forced-disconnect-time

Forced disconnect time. The parameter states the maximum call duration of outgoing calls to PSTN. Default value = 0 (no limitation)

Range is 0, 60-65535 in seconds.

The switch requires an argument. The argument is single-valued

-i, --initiate

Initiate some settings, that is, make initial configuration of an item or several items).

The switch takes no arguments.

--offered_time

The timeout in seconds for the 'offered' state.

If the time is zero (0), calls to the extension never enter the offered state. If non-zero, all calls to the extension enter the offered state and wait for actions (for instance from CSTA).

If no action is received within the specified time the call processing continues.

The argument must be an integer in the range 0 to 60.

The default, if the switch is omitted, is zero (0).

The switch requires an argument. The argument is single valued.

-p, --print

Print all or some settings, that is, print configuration of an item, several items, or all items.

The switch takes no arguments.

-s, +s, --sort, ++sort

Specify sorting criteria for printout. If no sorting is specified, the printout is unsorted. If the sort switch is given without arguments, the printout will be sorted on CSP. -s and --sort specify ascending sort order. +s and ++sort specify descending sort order.

Possible values are: 'cdiv', 'cnnlog', 'csp', 'cspname', 'forceddisconnect', 'npres', 'offeredtime', 'roc', 'serv', 'traf'.

The switch takes an optional argument. The argument is single-valued.

-v, --verbose

Turn on verbose output, that is, progress information, to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

72.4

EXAMPLES

72.4.1

EXAMPLE 1

Change the common service profile 10 to have the following

--ext-serv categories:

- Not permitted to initiate automatic callback.
- Permitted to initiate transmission of call waiting.
- Permitted to see a Call Waiting notification from another extension.
- Not permitted to hear the Call Waiting notification as C-party.
- Permitted to initiate intrusion and open for intrusion.
- Priority of intrusion 2.
- The extension is not permitted to initiate malicious call tracing.
- Not permitted to use the function Manual Message Waiting.
- Calls are to be metered per extension.
- The extension is not permitted to do A-Number request from MFC.
- The extension does not have A-Subscriber charged.

- The extension is permitted to use Individual Do Not Disturb.
- The extension shall belong to the hospitality class Normal extension.
- Permitted to accept collect calls.
- No conversion is done of the internal ring signal.
- Do not force the calls from or to IP terminal to be GW.
- The extension is not a free seating extension.
- The extension shall not have SMS service.
- Common authorization code is not forbidden.
- For multiple terminal service busy option, if any of the users terminals is busy the user will be treated as busy.
- The extension shall support Extended services in Intrusion state.
- Call list deactivation is allowed.
- Extension is allowed to program Group do not disturb.
- Answer is controlled by the extension user.
- No logoff restriction.

Change the common service profile 10 to have the following

--ext-npres categories:

- The request of A-number from the PSTN is not restricted for the extension.
- The presentation of number is not restricted. CLIR per call is not permitted.
- The directory number of the extension may be sent to the public exchange.
- CLIR/COLR override restriction override not active.
- Never display number from PSTN is not active.
- User identity shall be used for incoming calls.

**extension_profile -c --csp 10 --ext-serv 0110200010110010000000000000100
--ext-npres 1001000**

72.4.2

EXAMPLE 2

Erase the common service profile 18.

extension_profile -e --csp 18

72.4.3

EXAMPLE 3

Create the common service profile 4 with:

Offered time category **--offered-time**:

- Maximum time duration for the extension in the offered state is 45 seconds.

Traffic category **--ext-traf**:

- The extension is blocked for initiation of traffic for an emergency switched PBX.
- Open for indialing traffic from the public exchange.
- The extension has no rerouting limitations.
- Permitted to use the common abbreviated numbers that have the abbreviated number traffic class 3.
- During night service the extension TCD-category 07 should be used. Digit transmission by the extension during night service is then limited by the TCD-data in the number analysis in accordance with category 07. During day service the extension should be fully open. The extension should then be connected to A and B-parties according to the prerequisites for traffic group 14.

Service category **--ext-serv**:

- Permitted to initiate automatic call back towards another extension and towards an external line.

- Permitted to initiate call waiting tone towards another party and permitted to accept call waiting tone from another extension and PBX operator as both B- and C-party.
- Permitted to initiate intrusion and open for intrusion. Priority of intrusion 1.
- No intrusion protection.
- The extension is permitted to initiate malicious call tracing.
- Not permitted to use the function Manual Message Waiting.
- Calls are to be metered per route.
- The extension is not permitted to do A-Number request from MFC.
- The extension does not have A-Subscriber charged.
- The extension is not permitted to use Individual Do Not Disturb.
- The extension should belong to the hospitality class Normal extension.
- Permitted to accept collect calls.
- Force the calls from or to IP terminal to be GW. The extension is not a free seating extension.
- The extension should not have SMS service.
- Call distribution is controlled by an external application.
- The extension shall support Extended services in intrusion state, i.e. it can park the existing call and make an inquiry call even when intruded.
- Common authorization code shall be allowed.
- Multiple terminal service busy option shall have default setting.
- Deactivation of call list shall be allowed.
- The extension is not permitted to activate Group do not disturb.
- Automatic/immediate answer shall not be ordered.
- The extension should be permitted to both transfer and receive transferred outgoing external public calls.
- Answer shall be controlled by the extension user.
- Log-off shall not be restricted.

Diversion category **--ext-cdiv**:

- External Follow me is not permitted.
- Follow me is not permitted.
- The extension has permission to initiate diversion bypass.
- There is no diversion on origin for internal extension.
- Diversion on origin, for public external line, to a common position.
- Diversion on origin, for private external line, to an individual position.
- No diversion bypass for SMS messages.
- The extension is permitted to use the facility direct diversion to the individual divertee position.
- The extension is permitted to use the facility diversion on busy.
- The extension is permitted to use the facility diversion on no-answer.
- The extension is not permitted to use the Multi Directory Diversion/DND facility.
- The extension is permitted to initiate Follow-me and Diversion on busy on other extensions.
- Diversion on origin, use only local type of origin.

Routing categories **--ext-roc**:

- FRL category 2 is assigned.
- Forced account code is not required. LCR number 2 is to be used.
- Class B is the authorization type for route selection.
- Toll exchange category (AON) is not used.

Number presentation category **--ext-npres**:

- The request of A-number from the PSTN is restricted for the extension.
- The presentation of number is not restricted.
- CLIR per call is not permitted.
- The directory number of the extension may be sent to the public exchange.

- CLIR/COLR override restriction override is permitted when the type of connected party is private.
- Never display number from PSTN is not active.
- When calling a group member use the group name and number for display.

```
extension_profile -i --csp 4 --ext-traf 0103071514 \  
--ext-serv 212110100010001010011010000100 --ext-cdiv 001021000110090 \  
--ext-roc 222201 --ext-npres 0001101 --offered-time 45
```

72.4.4

EXAMPLE 4

Create the common service profile 23 intended for Hospitality Room Vacant extensions and another service profile 24 intended for Hospitality Room Occupied extensions, both with the same settings as in example 3 above, except that offered-time shall not be used, and the central name and number log shall be enabled:

Service category **--ext-serv**, same settings as in example 3, except D₁₄:

- The extension should belong to the hospitality class Room Vacant extension for profile 23, and Room Occupied extension for profile 24.

Offered time category **--offered-time**:

- Maximum time duration for the extension in offered state shall not be used. Omit the parameter for both profiles.

Number presentation category **--ext-cnnlog**:

- Central Name and Number Log function shall be used, since the Room extensions is a Mitel 6800 phone. Same for both profiles.

Thus for the Room Vacant extension profile, initiate the following:

```
extension_profile -i --csp 23 --ext-serv 212110100010011010011010000100 \  
--ext-traf 0103071514 --ext-cdiv 001021000110090 \  
--ext-roc 222201 --ext-npres 0011000 --ext-cnnlog 1
```

And for the Room Occupied extension profile this:

```
extension_profile -i --csp 24 --ext-serv 212110100010021010011010000100 \  
--ext-traf 0103071514 --ext-cdiv 001021000110090 \  
--ext-roc 222201 --ext-npres 0011000 --ext-cnnlog 1
```

If the profile is changed (from occupied to vacant, or from vacant to occupied), the Name and Number log will be erased. (Only supported for Mitel 6800 phones).

72.4.5

EXAMPLE 5

Print the data for the common service profile number 3.

```
extension_profile -p --csp 3
```

72.4.6

EXAMPLE 6

Print the common service profiles in the system that have the values stated for the parameters **--ext-traf**, **--ext-serv**, and **--ext-cdiv**.

```
extension_profile -p --ext-traf 0103071514 --ext-serv \  
212110100010101010000000000000 --ext-cdiv 001021000110090
```

73 EXTENSION_REGISTRATION_DISTRIBUTION

Manage the extension registration distribution function.

73.1 FORMAT

```
extension_registration_distribution
    [-v][-V] -c -l [--max-terminals]
    [-v][-V] -e
    [-v][-V] -i
    [-v][-V] -p
```

73.2 FUNCTION

73.2.1 GENERAL

The command is used to manage the extension registration distribution function.

73.3 PARAMETERS

-c, --change

Change some settings, that is, reconfiguration of an item (or several items).

The switch takes no arguments.

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item or several items).

The switch takes no arguments.

-l, --lim

Lim number [range: 1-124].

The switch requires an argument. The argument is single-valued.

--max-terminals

Maximum number of terminals that are allowed to be initiated in one LIM server. If omitted the maximum number of terminals will be set to the default value.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings, that is, print configuration of an item, several items, or all items.

The switch takes no arguments.

-v, --verbose

Turn on verbose output, that is, progress information, to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

For more complete help type 'extension_registration_distribution --help-complete'.

73.4

EXAMPLES

Change the maximum number of terminals allowed in LIM 2 to 500.

extension_registration_distribution -c -l 2 --max-terminals 500

Change the maximum number of terminals allowed in LIM 3 to default.

extension_registration_distribution -c -l 3

Inactivate the extension registration load distribution function.

extension_registration_distribution -e

Activate the extension registration distribution function.

extension_registration_distribution -i

Print the status of the extension registration distribution function.

extension_registration_distribution -p

74 EXTENSION_TEXT

Manage an extension text

74.1 FORMAT

extension_text

```
[-v][-V] -c --ext-display-option [--language-code]
[--ext-display-string][--ics-time-format]
[-v][-V] -p --ext-display-option [--language-code]
```

74.2 FUNCTION

74.2.1 GENERAL

The command is used to change and print the stored text strings for displaying information for the extensions. At least one of the two optional switches `--ext-display-string` or `--ics-time-format` must be stated. The value of the switch `--ext-display-string` must be surrounded by double quotes (").

The optional switch `--language-code` states in which of the ten available languages the text string is to be changed. If no particular language is stated, the value of the application system parameter for the exchange language will be used.

The `--ics-time-format` switch may only be used for `--ext-display-option`'s of the ICS family. Any change in the `--ics-time-format` will affect the stated `--ext-display-option` in all the languages, regardless of which language was stated in the command.

See 75 `extension_text` options on page 202 for a complete description of the *--ext-display-option* possibilities.

74.3 PARAMETERS

-c, --change

Change some settings, that is, reconfigure an item (or several items).

The switch takes no arguments.

--ext-display-option

States the traffic case and state to match to a text string to be shown on the display of extensions. The value is combined by appending an offset (integer) value to a base (string) value. The possible base values are:

BSY	The called party is busy.
CAL	The telephone is in ringing state.
CNF	Conference
DIV	The called party is not the dialled party.
EXT	The telephone is connected to an external party.
ICS	The selected party has ongoing message diversion.

IDL	Idle state.
MIS	Miscellaneous
MON	Abbreviations of months.
NOP	Termination message state.
PRK	The telephone has any parked party.
REG	Register state.

If the `--format` option is set to 'long', the following base values are also possible:

ABS	Absence message. (DTS only)
DIR	Directory number for Dial By Name. (DTS only)
FCN	Programming of function key (DTS only)
SKG	Soft-Key Graphical information.
SKI	Soft-Key Information for terminals with fix displays. (DTS only)
TIM	Timer messages. (DTS only)
TOP	Top menu information for DBC225 terminals (DTS only)
VSU	Recorded Voice Announcement messages (with VSU board, DTS only).

The allowed offset (integer) values to append depend on the base value. See 75 extension_text options on page 202 for a description of the allowed combinations.

Example: `--ext_string_option BSY2` corresponds to default `--ext_display_string = 'Line Busy'` for `--language-code en` (English).

Offset, 2, defines the situation in which the call is busy. In this case the line to the user is busy.

Using the `--print` option, if the offset is omitted, all strings for the base value, for example BSY, is printed. ('ALL' will print all available string options.)

The switch requires an arguments.

--ext-display-string

States the display info to be shown or changed for a certain `--language-code`.

Maximum 12 or 20 characters can be shown on display (depends on terminal type). Accepted argument length is 1 to 20 characters.

The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string.

In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/>

In unicode number mode the numbers are separated by space ' ', or by semi-colon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`.

To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name 'Üßü-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued.

-f, --format

Select a format for the printout. Possible values are: 'LONG', 'SHORT', 'long', 'short'. Default if switch is not given is 'SHORT'.

The switch requires an argument. The argument is single-valued.

'short' means the 12 characters text strings.

'long' means the 20 characters text strings.

--ics-time-format

Possible values are: 'DATE', 'NONE', 'TIME'. States how time for Message Diversion Strings (ICS) (see --ext-display-option) should be displayed. Possible values:

DATE Time indication is shown as date

NONE No time indication is shown

TIME Time indication is shown as HH:MM

The switch requires an argument. The argument is single-valued.

--language-code

States the language alternative. This parameter is used to overrule the exchange language for an extension user. Values:

cs	Czech
da	Danish
de	German
default	System language
en	English
es	Spanish
es-MX	Latin American Spanish
et	Estonian
eu	Basque
fi	Finnish
fr	French
fy	Frisian
it	Italian
nl	Dutch
no	Norwegian
pl	Polish
pt	Portuguese
pt_BR	Brazilian Portuguese
ro	Romanian
ru	Russian
sv	Swedish
zh	Chinese

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings, that is, print configuration of an item, several items, or all items.

The switch takes no arguments.

-v, --verbose

Turn on verbose output, that is, progress information, to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

74.4

EXAMPLE

74.4.1

EXAMPLE 1

Modify the data of the ICS1 string number so that the string reads Trip, back and the date information is displayed for this message.

```
extension_text -c --ext-display-option ICS1\ --ext-display-string "Trip,back"
--ics-time-format DATE
```

74.4.2

EXAMPLE 2

Modify the data of the DIV5 string number in Spanish so that the string reads Capturado.

```
extension_text -c --ext-display-option DIV5\ --ext-display-string "Capturado"
--language-code es
```

74.4.3

EXAMPLE 3

For a Norwegian user of the MX-ONE Service Node the available language code *no* has been chosen for the Norwegian language. The Norwegian words for meeting until (møte til) should be inserted in the list of text strings for ICS messages. As this message contains a special Norwegian character, that character can be written directly on the command line if the *locale* settings support it. (Check \$LANG, \$LC_ALL, and the settings of any terminal emulation program used - for instance PuTTY.)

```
extension_text -c --ext-display-option ICS3 \ --ext-display-string "MØTE TIL"
--language-code no --ics-time-format TIME
```

In the previous example, if the locale does not support writing of Norwegian letters on the command line, then the unicode code for the letter can be quoted on the command line as %216% and it will be correctly displayed on the terminal.

```
extension_text -c --ext-display-option ICS3 \
--ext-display-string "M%216%TE TIL" --language-code no \
--ics-time-format TIME
```


74.4.4 EXAMPLE 4

Print the data of the string number ICS3. No particular language is stated, so if the English language is being used in the exchange at the moment of entering the `extension_text` command, the English language is selected.

`extension_text -p --ext-display-option ICS3`

74.4.5 EXAMPLE 5

Print the data of the string number EXT1, in Italian.

**`extension_text -p --ext-display-option EXT1 \`
`--language-code it`**

74.4.6 EXAMPLE 6

Print the data of all the strings of the CNF family, in English.

`extension_text -p --ext-display-option CNF --language-code en`

74.4.7 EXAMPLE 7

Print data of all string numbers between REG3 and REG11. No particular language is stated, so if the English language is being used in the exchange (default is English) at the moment of entering the `extension_text` command, the English language is selected.

`extension_text -p --ext-display-option REG3..REG11`

74.4.8 EXAMPLE 8

Print the data of the string number NOP2 in all the available languages.

`extension_text -p --ext-display-option NOP2 --language-code all`

75

EXTENSION_TEXT OPTIONS

Allowed extension text strings

75.1

FORMAT

extension_text options

--ext-display-option=D₁D₂D₃D₄D₅D₆

D ₁ D ₂ D ₃	Message type	
	ABS	Absence menu (for DTS)
	BSY	The called party is busy.
	CAL	The telephone is in ringing state.
	CNF	Conference
	DIR	Directory (Dial by name, for DTS)
	DIV	The called party is not the dialled party.
	EXT	The telephone is connected to an external party.
	ICS	The selected party has ongoing message diversion.
	IDL	Idle state
	MIS	Miscellaneous
	MON	Abbreviations of months
	NOP	Termination (no progress) message state
	PRK	The telephone has any parked party.
	REG	Register state
	SKG	Soft-key Graphical information
	SKI	Soft-key information
	TIM	Timer (for DTS)
	TOP	Top menu information (for DTS)
	VSU	Revorded voice message (for DTS)
D ₄ D ₅ D ₆	Offset	
	0-255	Number within message type
		May be omitted

75.2

FUNCTION

75.2.1

GENERAL

The parameter states the text string to be shown on the display of the generic extensions for different traffic cases or states.

When this parameter is used for printout commands, it may be given with only the message type, that is, without offset number. This will lead to the printout of all the messages of the stated message type.

Note: For DTS telephones the text strings should be initiated by the command extension_text, i.e. KSTSC has been replaced. Only long format version of the text strings is shown here. For short format, if supported, use online help printout.

75.3

ABS (ABSENCE MENU)

Messages shown in the absence menu when the party is programming Message Diversion.

Table 1 Absence messages, DTS only

	Lunch, back	Reason for absence
ABS0	Select profile	Call list (Personal Number) programming (activation)
ABS1	Direct Diversion to	Activate/deactivate direct Diversion to predefined number.
ABS2	Follow Me	Set Follow Me diversion.
ABS3	Absence reason	Interception/message diversion service programming (activation)
ABS4	External Follow Me	Set external follow me diversion.
ABS5	Do Not Disturb	Activate/deactivate Do Not Disturb
ABS6	Div on no answer to	Activate/deactivate Diversion on no answer to predefined number. When combined with ABS8 and ABS9 a maximum of 160 pixels all together.
ABS7	Div on busy to	Activate/deactivate Diversion on busy to predefined number. When combined with ABS8 and ABS9 a maximum of 160 pixels all together.
ABS8	Active	Information about diversion state. Maximum 10 characters. When combined with ABS8 and ABS9 a maximum of 160 pixels all together.
ABS9	Not active	Information about diversion state. Maximum 10 characters. When combined with ABS8 and ABS9 a maximum of 160 pixels all together.
ABS10	No profile	Call list (personal Number) deactivation.
ABS11	Choice	Answering position from a call list profile.

75.4

BSY (BUSY)

Messages shown when the called party is busy. For DTS maximum 20 characters.

Note: The table shows the long format strings, not the short format ones (used by some DTS and DECT terminals).

Table 2 BSY messages

Entry	Display	Meaning
BSY1	Busy	The called party is busy, that is, not free or not blocked, not in line lockout.
BSY2	Line busy	All lines are busy on an outgoing external call, but it is possible to initiate call back.
BSY3	Failed	The order for call back to the internal party is unsuccessful.
BSY4	Failed	The order for call waiting with post-dialling (suffix) procedure is unsuccessful.
BSY5	Failed	Intrusion is unsuccessful.
BSY6	Line busy	The external line for the most cost effective route selection is busy.
BSY9	Failed	The order for call back to route or external line is unsuccessful.
BSY11	Failed	Intrusion is unsuccessful.
BSY19	Not accepted	The ordering of call back at busy external route/external line has failed due to that a call back mission already exists for the ordering extension/PBX operator.
BSY20	Not Reachable	A call to an unavailable generic extension (cordless extension).

75.5

CAL (CALLING/ALERTING/QUEUING)

Messages shown when the telephone is in ringing control state.

Note: The table shows the long format strings, not the short format ones (used by some DTS and DECT terminals).

Table 3 CAL messages

CAL1	Calling	A call to a free extension, a free PBX operator or a free queue position to a PBX operator. Automatically initiated call waiting.
CAL2	Failed	The order for call back on no reply is unsuccessful.
CAL3	Accepted	The ordered call waiting towards an analogue extension has been executed.
CAL4	Accepted	Call waiting towards a digital extension has been ordered.
CAL5	Paging...	The order for paging is successful, wait for answer. Wait for meet-me after termination of speech via radio.
CAL6	Call queued	A call to a group number (hunt group or common bell) when all members of the sought group are busy, but the caller has been queued to the group. The calling party is a PBX operator or an external line.
CAL7	Call queued	The call is queued to the night common bell. The sought group is busy, but the caller has been queued to the group. The calling party is a PBX operator or an external line.
CAL8	Paging...	The call is queued to paging equipment.
CAL9	Calling	A call to an external line. Send ringing tone.
CAL10	Calling	A call to an external line. Do not send ringing tone.

CAL20	Call queued	A call to a group with Music on Hold initiated is queued.
CAL21	Call queued	A call to a group with Music on Hold initiated is queued.
CAL23	Call queued	A call is queued to a PBX/ACD group. Do not send ringing tone.
CAL28	Accepted	The call waiting has been executed. Do not send ringing tone.
CAL34	Calling	A call to a free extension is put in Offered state.

75.6

CNF (CONFERENCE)

Messages shown during ongoing conference.

Note: The table shows the long format strings, not the short format ones (used by some DTS and DECT terminals).

Table 4 CNF messages

CNF1	Conf leader	Conference leader. Short format, maximum 10 characters.
CNF2	Conf member	Conference member. Short format, maximum 10 characters.
CNF3	Conference leader	Conference leader in speech state.
CNF4	Conference member	Conference member in speech state.
CNF5	Members	Conference members in speech state. Short format, maximum 10 characters.

75.7

DIR (DIRECTORY)

Messages shown when the directory function (Dial by name feature) is in use. (Only for DTS, and maximum 20 characters).

Note: The table shows the long format strings, not the short format ones (used by some DTS and DECT terminals).

Table 5 DIR messages

DIR1	No match found!	No matching name found in the data base.
DIR2	Top of directory	The top of the name list is reached.
DIR3	End of directory	The end of the name list is reached.
DIR4	Empty directory!	The data base is empty.

75.8

DIV (DIVERSION)

Messages shown when the called party is not the selected party. For DTS maximum 10 characters.

Note: The table shows the long format strings, not the short format ones (used by some DTS and DECT terminals).

Table 6 DIV messages

DIV1	>Direct	Direct diversion.
DIV2	>Busy	Diversion on busy.
DIV3	>NoAnswer	Diversion on no reply.
DIV4	>FollowMe	Follow me.
DIV5	Picked up	Call pick up.
DIV6	Group call	Group call.
DIV7	>External	External follow me.
DIV8	--	(Not used).
DIV9	--	(Not used).
DIV10	Redirect	Call deflection.
DIV11	Redirect	Call deflection with maintained queue position.
DIV12	Redirect	Call deflection to an external destination.
DIV13	DNIS call	DNIS call.

75.9

EXT (EXTERNAL)

Messages shown when the telephone is connected to an external party.

Table 7 EXT messages

EXT1	External	Public external line (exchange line).
EXT2	Corporate	Private external line (tie line).

75.10

FCN (FUNCTION KEY)

Messages shown when a function key is pressed in programming mode. (DTS only).

A maximum of 20 characters. For graphical displays with a maximum of 120 pixels, font type Small.

Table 8 Function key messages

FCN0	AccLine, ring type:	Own directory number and ring type for this line.
FCN1	AddLine, ring type:	Additional (extra) directory number and ring type for this line.
FCN2	MultLine, ring type:	Multiple represented directory number and ring type for this line.
FCN3	Menu activation key	Menu
FCN4	Function key 1	Soft-key 1 (F1)
FCN5	Function key 2	Soft-key 2 (F2)
FCN6	NameKey, 1-20 digits:	Telephone name selection (TNS).
FCN7	--	(Not used)
FCN8	Number redial	Last number redial.
FCN9	Function key 3	Soft-key 3 (F3)
FCN10	Function key 4	Soft-key 4 (F4)
FCN11	Automat. answer mode	Automatic (hands-free) answer.
FCN12	Free on 2nd line key	Free on second line.
FCN13	Call back key	Automatic callback.
FCN14	Divert all calls key	Diversion.
FCN15	--	(Not used)
FCN16	Call pickup/Hold key	Call pickup.
FCN17	Call waiting key	Call waiting.
FCN18	Conference key	Conference.
FCN19	Intrusion key	Intrusion.
FCN20	Paging key	Paging.
FCN21	Unanswered calls key	Name and number log.
FCN22	Message waiting key	Message waiting.
FCN23	Programming mode key	Programming mode.
FCN24	Malicious call trace key	Malicious call tracing.
FCN25	--	(Not used)
FCN26	Do not disturb key	Individual do not disturb.
FCN27	Manual message waiting key	Manual message waiting.
FCN28	Clerical time key	Test shown for the CLT-KEY for ACD agent phone in programming mode. Maximum 20 characters.
FCN29	MultName, ring type	Multiple Name Selection directory number (line pickup).
FCN30	--	Not used.
FCN31	--	Not used.
FCN32	Local mode key	Local mode.

FCN33	Redirection key	Redirection of calls to ISDN S0, only for DBC 6xx.
FCN34	Transfer key	Transfer/switch of B-channel to ISDN S0, only for DBC 6xx.
FCN35	Personal No. Profile	Call list (Personal number) profile.
FCN36	--	Not used.
FCN37	Transfer key	Call Transfer
FCN38	--	Not used.
FCN39	--	Not used.
FCN40	--	Not used.
FCN41	Personal Number key	Call list monitoring key.

75.11

ICS (INTERCEPTION/ABSENCE)

Messages shown when the selected party has an active message diversion.

A maximum of 10 characters, including a blank character (space) in the first position, can be used for DTS.

Note: The values below are defaults (long format). The absence reasons can be changed per customer by command.

Table 9 ICS messages

ICS0	Lunch	Reason for absence
ICS1	Busy	..
ICS2	Absent	..
ICS3	Meeting	..
ICS4	Trip	..
ICS5	Course	..
ICS6	Vacation	..
ICS7	Day off	..
ICS8	Gone Home	..
ICS9	Illness	..
ICS10	* to dial	Press the * key to execute the message diversion. (Reason for called party's absence shown to the caller).

75.12

IDL (IDLE)

Messages shown when the telephone is in idle state.

Note: The table shows the long format strings, not the short format ones (used by some DTS and DECT terminals). The short format idle strings just show a > for all re-direction services.

Table 10 IDL messages

IDL1	(Blank string)	The telephone is in idle state and is in normal idle state (blank string, 1-row display). The string can be set by command. The string is only valid for DTS.
IDL2	DivertedTo	The telephone is in idle state and diversion is activated (maximum 20 characters).
IDL3	FollowMeTo	The telephone is in idle state and Follow-me is activated (maximum 10 characters).
IDL4	Do Not Disturb!	The telephone is in idle state and Individual do not disturb is activated (maximum 20 characters).
IDL5	Diverted to external	The telephone is in idle state and External follow me is activated (maximum 20 characters).
IDL6	All lines busy!	All lines are busy. (Only for DTS with access 1 categorized for multiple busy).
IDL7	Direct div	The telephone is in idle state and has direct diversion active (maximum 10 characters).
IDL8	Diverted to pager	The telephone is in idle state and diversion to paging is active.
IDL9	Absent	The telephone is in idle state and has Message Diversion active (maximum 10 characters).
IDL10	Message waiting!	The telephone is in idle state and has message waiting (maximum 20 characters).
IDL11	Manual message waiting	The telephone is in idle state and has manual message waiting (maximum 20 characters).
IDL12	(Blank string)	The telephone is in idle state and is in normal idle state (blank string, 2-row display). The string is only valid for DTS.
IDL15	Profile	The telephone is in idle state and personal number (call list) is activated.

75.13

MIS (MISCELLANEOUS)

Miscellaneous messages, usually used for additional display information in some specific service.

Note: The table shows the long format strings, not the short format ones (used by some DTS and DECT terminals). Most of the messages allow maximum 20 characters, but MIS2, 4, 11, 14 and 22 allow fewer.

Table 11 MIS messages

MIS2	On hold	Parking information shown together with the latest party on hold. Maximum 10 characters.
MIS3	--	(Not used)
MIS4	Ring type:	The telephone is in programming mode and no other key is active. DTS only. Maximum 19 characters.
MIS5	--	(Not used)
MIS6	Tone sender on	The End-to-End DTMF function is activated.
MIS7	System busy!	A data change is not allowed during dump.
MIS8	Diverted to external	The outgoing external line has been seized for an External follow me call. (Short format: >)

MIS9	Call tracing failed!	The requested malicious call tracing could not be initiated. Send one-way rejection tone.
MIS10	Call tracing OK	The requested malicious call tracing has been initiated. Send one-way acknowledgement tone.
MIS11	Anonymous	The calling party COS does not permit number presentation.
MIS12	Enter account code!	The soft-key for account code has been pressed and the telephone is ready for receiving the account code.
MIS13	Enter author. code!	The soft-key for authorization code has been pressed and the telephone is ready for receiving the authorization code.
MIS14	Cost in:	Shows the monetary unit used to display the cost of a call.
MIS15	Enter ACD PIN code!	The PIN code is requested when an ACD agent logs on.
MIS16	Request accepted	A request of service is under progress.
MIS17	Enter CQ-code	An ACD agent presses the Call Qualification-key.
MIS18	CQ-code incomplete	An ACD agent has entered an incomplete CQ-code.
MIS19	Free of charge	Text used for the AOC feature. Free of charge.
MIS20	No cost information	Text used for the AOC feature. Charging information is un-available.
MIS21	No logged calls	No stored number in call log. (DTS)
MIS22	New missed calls	Stored number in call log. (DTS)
MIS23	End of log list	Text used for end of call log. (DTS)
MIS24	Enter Freeseat Num!:	Shown at Free Seating logon.
MIS25	Unanswered	Text used in call log, for missed/unanswered calls. (DTS)
MIS26	Incoming	Text used in call log, for received calls. (DTS)
MIS27	Outgoing	Text used in call log, for made calls. (DTS)
MIS28	Make a new call	Text used in call log, to make a new call to a log entry.
MIS29	Enter Follow Me num:	Text used in programming of Follow Me.
MIS30	Return time (HHMM):	Return time for certain absence reasons, hour before minute.
MIS31	Return date (DDMM):	Return date for certain absence reasons, day before month.
MIS32	Return date (MMDD):	Return date for certain absence reasons, month before day.
MIS33	Enter External num:	Shown in programming of External Follow Me.
MIS34	No name	Text used when no name is assigned.

75.14

MON (MONTH)

Abbreviations of months (maximum 3 characters).

Table 12 MON messages

MON1	Jan	January
MON2	Feb	February
MON3	Mar	March
MON4	Apr	April
MON5	May	May
MON6	Jun	June
MON7	Jul	July
MON8	Aug	August
MON9	Sep	September
MON10	Oct	October
MON11	Nov	November
MON12	Dec	December

75.15

NOP (NO PROGRESS)

Messages shown when the telephone is in the termination message state. All noprog-
ress messages can have a maximum of 20 characters.

Note: The table shows the long format strings, not the short format ones (used by
some DTS and DECT terminals).

Table 13 NOP messages

NOP1	Timed out!	Time out on number dialling in state REGISTER, or in state EXLLINCON, when it is definite that no complete external number has been dialled.
NOP2	Congestion!	Congestion in switch or common resources.
NOP3	Timed out!	Time out on outgoing call.
NOP4	Timed out!	Time out on busy message.
NOP5	Timed out!	Time out on wait for proceed-to-send message from interworking exchange.
NOP6	Congestion!	A call to a busy route.
NOP7	Not allowed!	Category blocking for connection A-->B.
NOP8	Line blocked!	The called party is blocked or in line lockout state.
NOP9	Vacant number!	The dialled number is vacant.
NOP10	OperAbsent/NighM ode	A call to an absent marked individual PBX operator or a free common PBX operator in a night switched PBX.
NOP11	Hung up	The connected party has requested disconnection.
NOP12	Accepted	The order or cancellation of call back is successful. The programming of internal abbreviated number is successful. The programming or erasure of individual night service position is successful.
NOP13	Failed!	The order for diversion is unsuccessful. Bypass of diversion is not permitted. The programming of individual abbreviated number is unsuccessful. The programming of individual night service position is unsuccessful.
NOP14	No number programmed	The dialled individual abbreviated number is not programmed.
NOP15	All members absent!	A call to a data group without available members.
NOP16	Not a group member!	An answer attempt on a call to a group number from a non-member.
NOP17	Congestion!	Queue congestion on a call to a pick-up group.
NOP18	No waiting call	Answer attempt at group number without waiting call.
NOP19	Absent!	An order for a paging call to an absent marked receiver.
NOP20	Paging req. rejected	An order for a paging call is unsuccessful due to - category blocking - temporary congestion in the call queue to a paging unit - display message to a receiver without display - voice call to a receiver without voice circuit - paged number without receiver - congestion on speech path - another paging call is in progress to this number.
NOP21	Number barred!	Category blocking.
NOP22	Alarm centre busy!	The alarm center already has a maximum number of parties connected.
NOP23	Faultman's ringback	A message after answer to Faultman's ring back.
NOP24	Operator hung up	The PBX operator has cleared.

NOP25	Wrong format!	The dialled procedure has incorrect format.
NOP26	OperAbsent/NightM ode	Party in outgoing call state to the PBX operator, when the individual PBX operator marks her/himself absent or the common PBX operator marks her/himself absent in conjunction with which night-switching takes place.
NOP28	Not accepted!	A facility, ordered with a service code, cannot be executed.
NOP29	In emergency state	A call attempt at emergency switching from an extension lacking priority.
NOP31	Not compatible!	The originator is barred for connection to the terminator due to the terminal interfaces not being compatible.
NOP33	Timed out!	Time out during handshaking between the TAUs at internal traffic (data extension).
NOP34	Congestion!	A call to a route when all external lines are busy and call back to the route is not allowed.
NOP35	Busy...	The sought party in another exchange is busy. The post-dialling (suffix) facilities are not allowed.
NOP38	Blocked!	The calling party is not allowed to initiate a call.
NOP40	Hung up	A disconnection signal is received from the connected external line which is in outgoing call state.
NOP41	Wrong format!	Wrong format in the code typed on a DTS.
NOP42	Wrong format!	Unknown service request. (DPNSS)
NOP43	Not compatible!	Data call. (DPNSS)
NOP44	Not allowed!	A netservice is not allowed. The netservice function is restricted. Route optimization is not allowed.
NOP46	Enter account code!	A valid account code is required for the call.
NOP47	Wrong autoriz. code	An invalid authorization code has been dialled.
NOP50	Congestion!	A call to a PBX group without free member but with at least one member busy and available, when the call cannot be queued due to queue congestion.
NOP52	Extension locked!	The extension has successfully locked the own extension.
NOP53	Extension unlocked!	The extension has successfully unlocked the own extension.
NOP54	Failed to lock!	The extension has failed to lock the own extension.
NOP55	Failed to unlock!	The extension has failed to unlock the own extension.
NOP56	Do not disturb!	An internal call to an Individual do not disturb marked extension, or an attempt to by-pass Individual do not disturb from an extension.
NOP57	Not accepted!	The calling party's facility restriction level is not accepted for routing the call forward.
NOP58	Congestion!	A call to an External follow me diverted extension when no outgoing trunk is available.
NOP59	Not accepted!	A call to an External follow me diverted extension has failed due to both A- and B-party lacks clearing signal.
NOP60	Busy...	A call to an External follow me diverted extension that is busy in an External follow me call.
NOP65	Tracing call	The requested malicious call tracing has been initiated. Send one-way acknowledgement tone.
NOP66	Tracing not accepted	The requested malicious call tracing could not be initiated. Send one-way rejection tone.
NOP69	Busy...	The ISDN extension line is busy, no free B-channel.

NOP72	Not accepted!	The calling party's call service information category does not allow routing of the call onwards. Send one-way rejection tone.
NOP74	Not accepted!	The signalling systems are incompatible. The requested supplementary service is not supported by the signalling system of the selected route or the service is not supported in the gateway exchange.
NOP75	Not available!	The service is unavailable. The requested supplementary service is supported by the exchange, but not by the called party.
NOP76	Not available!	The service is temporarily unavailable. The requested supplementary service is available in the exchange, but cannot be provided at the moment.
NOP77	Extension not locked	Already unlocked.
NOP78	Absent	A direct call to an unobtainable ACD agent member with no divertee position initiated.
NOP79	Already locked!	Already locked.
NOP89	CAC-Congestion!	Call Authorization Control has rejected the call.
NOP93	Not available!	Unavailable for repeated individual diversion service.
NOP99	(Blank)	The system is blocked. Short format: 'Syst.blocked'.

Table 14 Additional Q.850 based values

NOP100	-	Invalid information element contents
NOP101	-!	Message not compatible with call state
NOP102	-	Recovery on timer expiry
NOP103 - 110		Not used/Reserved
NOP111	-	Protocol error, unspecified
NOP112-126		Not used/Reserved
NOP127	-	Interworking, unspecified
NOP128-199		Not used/Reserved

Table 15 Deviation from Q.850 based values

NOP200	-	Max charging pulses/cost reached for the call
NOP201	-	Connect acknowledge never received
NOP202	-	Call completed/answered elsewhere
NOP203		Called party has Do Not Disturb
NOP204	-	Gateway Route number dialed

75.16

PRK (PARKING)

Messages shown when the extension has any parked party, or has been parked. Maximum 20 characters.

Note: The table shows the long format strings, not the short format ones (used by some DTS and DECT terminals).

Table 16 PRK messages

PRK0	InqOnHold	The third line is on hold. (Short: 3 on hold)
PRK1	A2 on hold	The second line is on hold. (2 on hold)
PRK2	A1 on hold	The first line is on hold. (1 on hold)
PRK3	On hold	The other line parked. (Other parked)
PRK4	L2 on hold	The second line is on hold (DBC 22x only)
PRK5	L1 on hold	The firstline is on hold (DBC 22x only)

75.17

REG (REGISTER)

Messages shown when the telephone is in the register message state.

Note: The table shows the long format strings, not the short format ones (used by some DTS and DECT terminals).

Table 17 REG messages

REG5	Account code OK	A valid account code has been dialled.
REG7	Account code invalid	An invalid account code has been dialled.
REG10	Authoriz. code OK	A valid authorization code has been dialled.
REG14	ManualMessageWaiting	The manual message waiting is activated.
REG15	Message waiting!	The message waiting from an information system is activated.
REG16	Message waiting!	Both Message waiting and Call diversion or Follow me are activated.
REG17	ManualMessageWaiting	Both Manual message waiting and Call diversion or Follow me are activated.
REG18	Access code+number:	The ordering of the first part of External follow me is successful.
REG19	External diversion	The call is External follow me-diverted or a call towards Remote extension.
REG20-22		Not used/Reserved
REG23		Procedure for interrogation of divertee position of dialed position.
REG24		Not used/Reserved
REG25		Call from a remote extension terminal dialling R2 access code. RVA announcement expected.
REG26		Call from a remote extension terminal dialling R2 access code and expecting of PIN code dialling.

75.18

SKG (SOFT-KEY GRAPHICAL INFORMATION)

The SKG string is displayed above a key on DTS, in the bottom row of the display. Some of the strings are also shown on Mitel 6900/6800/6700 SIP terminals.

There is no empty space between the sections, i.e. two long strings cannot be used close to each other. Therefore the maximum number of pixels can only be used for a string that has two shorter strings on both sides. To make it simple, use the recommended maximum number of pixels and it will always work.

Spaces within a string (i.e. two words) should not be used! That can make it more difficult to understand which word that belongs to a specific key. When two or more words shall be used, combine the words into one word. Example: Call list = CallList

If the real maximum value should be used, the following information must be considered:

Fixed combination

Some strings are used in a fixed combination of four strings (= each string has a fixed position in that combination). Each combination must be studied to learn where a maximum long string can be used.

Dynamic combinations

Other strings are used in long lists of strings where each list has more than four strings. For such a list, the fourth key (right most) is always marked with more... and only three SKG strings are shown at the time for key 1, 2 and 3.

Each list has an order how to show its strings, but depending on traffic cases, extra strings can pop up in the beginning of the list and put all the other strings 1 to 2 steps to the right. This results in that it is hard to see the string that will be close to every string. All the possible positions must be considered, and the worst case to be chosen. The lists differ between DBC 4223 and DBC 4225.

A maximum of 12 characters can be used for DTS. For Mitel 6700i/6800/6900 SIP terminals, a maximum of 20 or 16 characters can be used, depending on model.

For DBC 4223 a maximum of 60 pixels (recommended max 56, see above), font type Small. For DBC 4225 a maximum of 80 pixels (recommended max 74, see above), font type Medium.

As different fonts and different max number of pixels are required for the two telephones, the worst case shall be used, probably the DBC 4223 value.

Note: Only long format is supported for this string type.

Table 18 SKG messages

SKG0	Account	Account code
SKG1	Authority	Authorization code
SKG2	Back	Return to the name entry (Dial by name, level 1)
SKG3	Call	Dial the displayed number (Dial by name/NLOG functions)
SKG4	Callback	Call back (call completion on busy or no answer)
SKG5	CallPager	Paging
SKG6	CallPickUp	Individual Cal Pickup
SKG7	CallWaiting	Call waiting
SKG8	Clear	Clear all the dialled digits when entering different codes. Also resets the timer (when not automatic)
SKG9	CommonHold	Common Hold/Parking

SKG10	Conference	Conference
SKG11	--	(Not used)
SKG12	CostInfo	Display cost information
SKG13	Delete	Delete the dialled digit when entering different codes (Dial by name or NLOG functions)
SKG14	MoreInfo	Execute Message Diversion. Press the soft-key to reach the ICS answer position
SKG15	Down	Show the next entry in the Dial by name database
SKG16	NotDisturb	Do not disturb
SKG17	Enter	Send dialled code
SKG18	Exit	Exit the Dial by name or NLOG function
SKG19	Find	Find (Dial by name, level 1)
SKG20	ForcedRel	Force the release (after Intrusion)
SKG21	GrpPickUp	Group call pickup
SKG22	HideMenu	Hide soft-key menu
SKG23	Intrusion	Intrusion on busy user
SKG24	Lock	Lock the telephone
SKG25	LogOn	Free seating logon
SKG26	LogOff	Free seating logoff
SKG27	more...	Display more soft-key functions
SKG28	Next	Next stored call (in NLOG function)
SKG29	Open	Unlock the telephone
SKG30	PhoneBook	Access the directory function (Dial by name, level 1)
SKG31	Qualify	Call Qualification (for ACD agent)
SKG32	Queue	Display ACD queue information (for agent)
SKG33	Redial	Last number redial
SKG34	Return	Return to first level in the soft-key information
SKG35	ShowDate	Show date when timer is being displayed
SKG36	ShowMenu	Show soft-key menu
SKG37	ShowTimer	Show timer when date is being displayed
SKG38	Space	Insert a white space character (in Dial by name, level 1)
SKG39	Start	Start the timer (not available when automatic timer is set)
SKG40	Stop	Stop the timer (not available when automatic timer is set)
SKG41	Timer	Enter to Timer
SKG42	Tones	End to end DTMF tones
SKG43	TraceMalC	Malicious Call Tracing
SKG44	Up	Show the previous entry in the Dial by name database
SKG45	CallList	Show unanswered calls already checked
SKG46	Missed	Show unanswered calls (the number of calls is displayed before)
SKG47	Select	Select option from Top menu

SKG48	Program	Enter programming mode
SKG49	Transfer	Make a transfer of two calls
SKG50	Conf/Transf	Make an Inquiry call as a prerequisite to Conference or Transfer
SKG51	AddMember	Make an Inquiry call to add a new member into Conference
SKG52	Activate	Activate Message Diversion (Absence activated)
SKG53	Deactivate	Deactivate Message Diversion (Absence cancelled)
SKG54	Absence	Enter the absence reason (Message Diversion)
SKG55	NoDiversion	Cancel active Diversion
SKG56	CancelDND	Cancel Do Not Disturb
SKG57	Details	View divertee positions in selected call list (Personal Number list)
SKG58	PhoneSet	Access the terminal settings

The table only shows default settings (in English). Use the `extension_text print` command to see the current setting.

75.19

SKI (SOFT-KEY INFORMATION)

Soft-key (SKI) strings are only used for system telephones (DTS) with either a fixed 20 or a 40 characters display. I.e., all characters have the same width (no need for a pixel length). When DBC 4223 is connected to a system running in this so called D3 mode, it automatically uses a fixed font table for 40 characters width. When localizing, be aware of that each text string consists of 20 characters divided into 4 sections with 5 characters each. At least one space must always be written between each section. If no space is left, the two texts will be written together and will therefore be difficult to read and understand.

See the Directions for use for DBC 6xx, DBC 213 and DBC 22x for layouts of the soft-key displays.

Note: Only long format is supported for this string type.

The space(s) before and/or after are also used to centre each text above its key below the display. I.e. text with two or three characters must have space(s) both before and after the text in its section.

Note for the first (most left) section: Only when the text uses two or one character, a space should be added at the very first character position (otherwise it will look bad in the DBC 3213 display).

When displayed on a 40 characters display, the system automatically adds extra spaces to the string (3 before, 5 between each section, and 2 spaces at the end). Therefore it is important that every section always consists of 5 characters including the dividing space(s).

Only in exceptional cases a space between two of the four sections can be excluded, but is not recommended.

Spaces within a section (i.e. two words/characters) should not be used. Instead combine the words into one word.

Example: Account Code = AcCo

A maximum of 5+5+5+5 characters including spaces. Font type D3 Small.

SKI0	Open	AcCo	AutCo	Time	The telephone is in idle or register state and the soft-keys are defined as: F1 Unlock the telephone F2 Account Code F3 Authorization Code F4 Time
SKI1	Lock	AcCo	AutCo	Time	The telephone is in idle or register state and the soft-keys are defined as: F1 Lock the telephone F2 Account Code F3 Authorization Code F4 Time
SKI2	CBack	Page		Time	The telephone is in call originating state and the soft-keys are defined as: F1 Call Back F2 Paging F3 (not defined) F4 Time
SKI3	CBack	CWait	Pick	Intr	The telephone is in busy state and the soft-keys are defined as: F1 Call Back F2 Call Waiting F3 Call Pickup F4 Intrusion
SKI4	Tones	AcCo	Cost	Time	The telephone is in speech state and the soft-keys are defined as: F1 End To End DTMF F2 Account Code in speech F3 Display charging information F4 Time
SKI5	Tones	AcCo	Conf	Time	The telephone is in speech state and the soft-keys are defined as: F1 End To End DTMF F2 Account Code in speech F3 Conference F4 Time
SKI6	Clear	Del		Enter	The user is dialling account/authorization code (after pressing the appropriate soft-key) and the soft-keys are defined as: F1 Clear dialled digits F2 Clear last dialled digit F3 (not defined) F4 Send dialled account/authorization code
SKI7				Dial	The telephone is in call originating state and the soft-keys are defined as: F1 (not defined) F2 (not defined) F3 (not defined) F4 Execute Message Diversion
SKI8	RDial	AcCo	Pick	Time	The telephone is in idle or register state and the soft-keys are defined as: F1 Last number redial F2 Account Code F3 Pick up F4 Time

SKI12			AcCo		The telephone is in call originating state and the soft-keys are defined as: F1 (not defined) F2 (not defined) F3 (not defined) F4 Account Code
SKI14	Lock	Que	AutCo	Qual	The telephone (ACD agent position only) is in IDLE-CLERICAL-TIME state and the soft-keys are defined as: F1 Lock the telephone F2 Display the ACD queue (controlled by PARNUM=137) F3 Authorization Code F4 Call Qualification
SKI15	Lock	Que	AutCo	Time	The telephone (ACD agent position only) is in idle state and the soft-keys are defined as: F1 Lock the telephone F2 Display the ACD queue (controlled by PARNUM=137) F3 Authorization Code F4 Time
SKI16	Tones	AcCo	Cost	Qual	The telephone (ACD agent position only) is in speech state and the soft-keys are defined as: F1 End To End DTMF F2 Account Code F3 Display charging information F4 Call Qualification
SKI17	Tones	AcCo	Conf	Qual	The telephone (ACD agent position only) is in speech state and the soft-keys are defined as: F1 End To End DTMF F2 Account Code F3 Conference F4 Call Qualification
SKI20	Open	DND	AutCo	Time	The telephone is in idle or register state and the soft-keys are defined as: F1 Unlock the telephone F2 Do Not Disturb F3 Authorization Code F4 Time
SKI21	Lock	DND	AutCo	Time	The telephone is in idle or register state and the soft-keys are defined as: F1 Lock the telephone F2 Do Not Disturb F3 Authorization Code F4 Time
SKI23	CBack	CWait	CUp	Time	The telephone is in busy state and the soft-keys are defined as: F1 Call Back F2 Call Waiting F3 Group Call Pickup F4 Time
SKI24	Tones	Mal	Cost	Time	The telephone is in speech state (with a trunk with charging) and the soft-keys are defined as: F1 End To End DTMF F2 Malicious Call tracing F3 Display charging information F4 Time

SKI25	Tones	Mal	Conf	Time	The telephone is in speech state (with a trunk with charging) and the soft-keys are defined as: F1 End To End DTMF F2 Malicious Call tracing F3 Conference F4 Time
SKI28	RDial	DND	Pick	Time	The telephone is in idle or register state and the soft-keys are defined as: F1 Last number redial F2 Do Not Disturb F3 Individual Call Pickup F4 Time
SKI30	Next	Del	Call	Exit	The Name and Number Log function is active, the user is not dialling a logged number, and the soft-keys are defined as: F1 Next entry in the log F2 Delete the displayed log entry F3 Dial the displayed number, i.e. make a call F4 Exit the Name and Number Log feature
SKI31	Next:+	Delete:-			The Name and Number Log function is active, the user is not dialling a logged number, and the keys are defined as: F1 Next entry in the log F2 Delete the displayed log entry DBC222 only
SKI32	Exit:C				The Name and Number Log function is active, the user is not dialling a logged number, and the keys are defined as: F1 Exit the log (using the C-key) DBC222 only.
SKI33	Back:1				The Name and Number Log function is active, the user is not dialling a logged number, and the keys are defined as: F1 Previous entry in the log DBC222 only.
SKI36	Tones	Mal	Cost	Qual	The telephone (ACD agent position only) is in speech state and the soft-keys are defined as: F1 End To End DTMF F2 Malicious Call Tracing F3 Display charging information F4 Call Qualification
SKI37	Tones	Mal	Conf	Qual	The telephone (ACD agent position only) is in speech state and the soft-keys are defined as: F1 End To End DTMF F2 Malicious Call Tracing F3 Conference F4 Call Qualification
SKI40	Del	Space	Find	Exit	The user is keying in a name to look in the Dial by Name database, and the soft-keys are defined as: F1 Delete previous character F2 Insert a white space character F3 Search the database F4 Exit the Dial by Name feature
SKI41	Up	Down	Call	Back	The user is browsing through the Dial by Name database, and the soft-keys are defined as: F1 Show the previous entry in the database F2 Show the next entry in the database F3 Dial the number associated to this entry F4 Return to Name entry

SKI42	Open	AcCo	AutCo	Dir	Replaces SKI0 when Dial by Name is used. The telephone is in idle or register state and the soft-keys are defined as: F1 Unlock the telephone F2 Account Code F3 Authorization Code F4 Directory function
SKI43	Lock	AcCo	AutCo	Dir	Replaces SKI1 when Dial by Name is used. The telephone is in idle or register state and the soft-keys are defined as: F1 Lock the telephone F2 Account Code F3 Authorization Code F4 Directory function
SKI44	RDial	AcCo	Pick	Dir	Replaces SKI8 when the Dial by Name feature is used. The telephone is in idle or register state and the soft-keys are defined as: F1 Last number redial F2 Account Code F3 Pick up F4 Directory function
SKI45	Lock	Que	AutCo	Dir	Replaces SKI15 when the Dial by Name feature is used. The telephone (ACD agent position only) is in idle state and the soft-keys are defined as: F1 Lock the telephone F2 Display the ACD queue (controlled by PARNUM=137) F3 Authorization Code F4 Directory function
SKI46	Open	DND	AutCo	Dir	Replaces SKI20 when the Dial by Name feature is used. The telephone is in idle or register state and the soft-keys are defined as: F1 Unlock the telephone F2 Do Not Disturb F3 Authorization Code F4 Directory function
SKI47	Lock	DND	AutCo	Dir	Replaces SKI21 when the Dial by Name feature is used. The telephone is in idle or register state and the soft-keys are defined as: F1 Lock the telephone F2 Do Not Disturb F3 Authorization Code F4 Directory function
SKI48	RDial	DND	Pick	Dir	Replaces SKI28 when the Dial by Name feature is used. The telephone is in idle or register state and the soft-keys are defined as: F1 Last number redial F2 Do Not Disturb F3 Individual Call Pickup F4 Directory function

75.20

TIM (TIMER)

The TIM messages show the functions assigned to the soft-keys (F1 - F4) when the timer function is active. Valid for DTS system telephones.

Note: Only long format is supported for this string type.

The rules for the TIM strings are the same as for the SKI strings, see SKI.A maximum of 5+5+5+5 characters, including spaces, can be used with font type D3 Small.

The TIM messages are shown in two ways:

Table 19 Manual timer

TIM1	Stop	Clr	Date	Exit	The timer function is active, the timer is running, and the display shows the timer information. The soft-keys are defined as: F1 Stop the timer F2 Reset the timer F3 Delete the timer information from display F4 Exit from timer (the timer is deactivated)
TIM2	Start	Clr	Date	Exit	The timer function is active, the timer is running, and the display shows the timer information. The soft-keys are defined as: F1 Stop the timer F2 Reset the timer F3 Delete the timer information from display F4 Exit from timer (the timer is deactivated)
TIM3	Start	Clr	Date	Exit	The timer function is active, the timer is running, and the display does not show the timer information. The soft-keys are defined as: F1 Stop the timer F2 Reset the timer F3 Delete the timer information F4 Exit from timer (the timer is deactivated)
TIM4	Start	Clr	Time	Dir	The timer function is active, the timer is running, and the display does not show the timer information. The soft-keys are defined as: F1 Stop the timer F2 Reset the timer F3 Delete the timer information F4 Exit from timer (the timer is deactivated)

Table 20 Automatic Timer

TIM1			Date	Exit	The timer function is active, the timer is running, and the display shows the timer information. The soft-keys are defined as: F3 Delete the timer information from display F4 Exit from timer (the timer is deactivated)
TIM2			Date	Exit	The timer function is active, the timer is stopped, and the display shows the timer information. The soft-keys are defined as: F3 Delete the timer information from display F4 Exit from timer (the timer is deactivated)
TIM3			Time	Exit	The timer function is active, the timer is running, and the display does not show the timer information. The soft-keys are defined as: F3 Display the timer information F4 Exit from timer (the timer is deactivated)
TIM4			Time	Exit	The timer function is active, the timer is stopped, and the display does not show the timer information. The soft-keys are defined as: F3 Display the timer information F4 Exit from timer (the timer is deactivated)

Note: Soft-keys F1 and F2 are not available.

75.21

TOP (TOP MENU INFORMATION)

The TOP messages show the function assigned in the Top Menu, for DBC 225. Maximum 20 characters can be used.

Note: Only long format is supported for this string type.

TOP0	Program	The menu section offers more options about
TOP1	Programming of keys	Allows the programming of the keys of the telephone.
TOP10	PhoneSet	The section offers options for the terminal settings.
TOP11	Display Contrast	Allows the selection of the display contrast.
TOP12	Melody Programming	Allows the programming of melody.
TOP13	Firmware Indication	Allows the presentation of telephone firmware version.
TOP14	Headset Preset	Allows the selection of Headset preset.
TOP15	Local Test Mode	Allows to enter into local test mode.
TOP16	Option Unit Settings	Allows change of the settings of the option unit(s).
TOP17	Set Hearing Level	Allows change of the Headset hearing volume.
TOP20	CallList	This section offers options related to the Number and Name Log list.
TOP21	Call List	Shows all logged calls.
TOP22	Unanswered calls	Shows all unanswered calls.
TOP23	Outgoing calls	Shows all calls started from this telephone.
TOP24	Incoming calls	Shows all received calls.
TOP40	PhoneBook	This section offers phone book options.
TOP41	Central Directory	Access to directory functions (level 1)
TOP50	Messages	The menu section offers option about messages.
TOP51	Message Waiting	Allows access to a waiting message.
TOP52	Voice mail:	Allows to call initiated voice mail system.

75.22

VSU (RECORDED VOICE STORAGE)

Messages shown when the DTS is recording or playing Recorded Voice Announcements (stored in the VSU board). Maximum 20 characters.

Note: This type of recording cannot be used with MGU, only with VSU board. Only long format is supported for this string type.

VSU1	Ready!	The VSU is ready.
VSU2	Playing...	The playing has started.
VSU3	Recording...	The recording has started.
VSU4	Digit time out	Digit time out.
VSU5	Wrong format!	Wrong format.
VSU6	Rejected!	The procedure is rejected.
VSU7	Message timed out	Message time out.
VSU8	Message not stored	A message is not stored.
VSU9	Memory full!	The VSU memory is full.

75.23

EXAMPLE

Text string to be shown when the generic extension has made a call and the called party is busy:

-- ext-display-option = BSY1

76

EXTENSION_UNREGISTRATION

Unregister extension

76.1

FORMAT

extension_unregistration

`[-v][-V] -d [--forced][--terminal-type][--reset]`

`[-v][-V] -l [--forced][--terminal-type][--reset]`

76.2

FUNCTION

76.2.1

GENERAL

The command is used to force an unregistration of a terminal. The terminal will be logged off. The function can be useful in certain error/exception situations, or at upgrading of terminal SW.

76.3

PARAMETERS

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument. The argument can be the special word 'all' or it can be a combination of comma separated sequences and ranges (first..last).

--forced

Override checks.

The switch takes no arguments.

Note: Registered (Logged On) Mitel 6900/6800/6700 terminals will clear the local cfg file when the --forced parameter is used.

This means that the user has to manually enter extension number and optional PIN code to register in the MX-ONE system again.

-l, --lim

Lim number [range: 1-124].

Specify the User Location Register (ULR) LIM.

The switch requires an argument. The argument can be the special word 'all' or it can be a combination of comma separated sequences and ranges (first..last).

--reboot

Reboot the terminal.

The switch takes no argument.

--reset

Reset the extension.

The switch takes no argument.

--terminal-identity

States an RFC3261 compliant URI.

An IPv6 host address must be enclosed in square brackets States the terminal identity.

Accepted argument length is 7 to 100 characters.

Format:

"xxx:user@host", where xxx is: 'H323', 'sip'.

'user' must be equal to --dir for H323.

'user' must be RFC3261 compliant for SIP

'host' host can be an IP address or host name. '

host' can be any characters, there is no check if 'host' is valid. The host is the contact address of the terminal (or the communication server) representing the directory number.

To find terminal identity for a registered terminal, use command *resource_status*.

The switch requires an argument. The argument is single-valued

--terminal-type

Type of terminal associated with the extension directory number.

Supported values in the command *extension_unregistration*:

H323 H323 Extension (Generic)

SIP SIP Extension (Generic)

The other defined values are not supported in this command.

The switch requires an argument. The argument is single-valued.

-v, --verbose

Turn on verbose output, that is, progress information, to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

76.4

EXAMPLES

1. Unregister the directory number 2773.

For H323 the command will unregister the of directory number 2773 which triggers the terminal to check for new FW or configuration file and immediately log on if no new configuration file or FW is found, otherwise the terminal will reboot and load new FW and configuration file on bootup.

For SIP, the command will unregister the directory number. A SIP Mitel 6900/6800/6700 will check for new FW or configuration files. If it finds any new item, the terminal will reboot and load FW and configuration files on bootup. Mitel 1023i and Mitel 8000i will reboot.

The system will force the command of the directory number 2773 even if the terminal is in speech.

extension_unregistration -d 2773 --forced

2. Unregister the directory number 2773 with reset.

The Reset switch is only supported on SIP terminals. The terminal of directory number 2773 will even if the terminal is in speech be reset (clear local setting or logout+reboot).

A SIP Mitel 8000i and 1023i will be logged out and rebooted. A SIP Mitel 6900/6800/6700 will clear local and user configuration (which will result in logout). The terminals will be configured according to configuration files and check FW at boot.

extension_unregistration -d 2773 --reset

3. Unregister the directory number 501 with terminal identity "sip:501@203.0.113.108".

extension_unregistration -d 501 --terminal-identity "sip:501@203.0.113.108"

77 EXTERNAL_DATABASE

Manage access to external data bases

77.1 FORMAT

external_database

```
[-v] [-V] -c --name [--host] [--port][--user] [--password]
[--base-dn][--filter][--attributes][--max-entries] [--prefix-number] [--intl-format [x]]

[-v] [-V] -e --name

[-v] [-V] -i --name --host --port --user --password [--base-dn] [--filter]
[--attributes s][--max-entries ][--prefix-number ][--intl-format [x]]

[-v] [-V] -p [--name]

[-v] [-V] --test --name [--search-for ][--resolve-query] [--attributes ] [--attr-only]
[--filter][--attributes] [--max-entries]
```

77.2 FUNCTION

77.2.1 GENERAL

The command is used to erase, initiate and print access data for external databases. The access is done using LDAP, i.e. via the ESTOS meta directory, which can connect to multiple external databases.

This data is used to connect to and query content of external databases.

77.3 PARAMETERS

--attr-only

'Attributes only' query. Use this in combination with an empty attributes query to list all possible attributes at test of an external data base.

The switch takes no arguments.

--attributes

Attributes, used when communicating with an external LDAP data base.

The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/>

In unicode number mode the numbers are separated by space ' ', or by semi-colon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the

unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name '?????-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued.

--base-dn

Distinctive name base, used when communicating with an external LDAP data base.

The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/>

In unicode number mode the numbers are separated by space ' ', or by semi-colon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name '?????-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued.

-c, --change

Change some settings. I.e. reconfiguration of an item (or several items).

The switch takes no arguments.

-e, --erase

Erase some settings. I.e. deconfiguration of an item (or several items).

The switch takes no arguments.

--filter

Search filter, used when communicating with an external LDAP database.

The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/>

In unicode number mode the numbers are separated by space ' ', or by semi-colon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name '?????-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued.

--host

Host name or IP address of external LDAP database.

States a computer name. Examples of valid syntaxes: 203.0.113.10, mx-design.se.aastra.com

The switch requires an argument. The argument is single-valued.

-i, --initiate

Initiate some settings. I.e. make initial configuration of an item (or several items). The switch takes no arguments.

--intl-format

International format. If set to yes a queried number will always use a + prefix. Not valid at data base test.

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'.

The switch takes an optional argument. The argument is single-valued.

--max-entries

Maximum number of entries to be delivered in a search. Default value is 3.

The switch requires an argument. The argument is single-valued.

--name

Name of the database resource. Accepted argument length is 1 to 20 characters.

The internal name association of the external LDAP database, and its predefined function. The following names are reserved for specific functions in the system:

- PublicName; public subscriber name obtained via an external LDAP interface.

The switch requires an argument. The argument is single-valued.

--password

Password to use as credentials at log on to external data base.

The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/>

In unicode number mode the numbers are separated by space ' ', or by semi-colon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name '?????-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an arguments. The argument is single valued.

--port

Port number of external LDAP database.

The switch requires an arguments. The argument is single valued.

--prefix-number

Prefix number, will be prefixed to number to ensure number plan uniformity. Will typically be an international prefix. Not valid at data base test.

The switch requires an arguments. The argument is single valued.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items.

The switch takes no arguments.

--resolve-query

Resolve query filter. Determines if query shall be resolved or sent directly to data base. In this context resolving means insertion of values from the parameter --search-for into the data base filter.

The switch takes no arguments.

--search-for

Value for search filter parameters at test of an external data base.

The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/>

In unicode number mode the numbers are separated by space ' ', or by semi-colon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name '?????-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued.

--test

Test a data base. This switch indicates testing of an existing external data base.

The switch takes no arguments.

--user

User id to use with credentials at log on to external data base.

The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/>

In unicode number mode the numbers are separated by space ' ', or by semi-colon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name '?????-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued.

-v, --verbose

Turn on verbose output, that is, progress information, to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

77.4

EXAMPLES

Initiate access data for external data base ESTOS with appropriate IP address, port, user and password. ESTOS is accessed using the predefined function PublicName. The base device context is dc=meta. The search filter to which the system inserts the number is searchNumber=.

The attributes to return are sn, givenName and displayName. The number shall be of international format and the prefix for non international numbers is 46.

external_database -i --name PublicName --host\

192.168.17.100 --port 712 --user myUser --password myPassword
--filter searchNumber= --attributes sn,givenName,displayName --intl-format --prefix 46

Change user and password for external data base function PublicName.

external_database -c --name PublicName--user newUser --password newPassword

Erase access data external data base function PublicName.

external_database -e --name PublicName

Perform a test access to existing external data base function PublicName. Search for number +46856867000.

external_database --test --name PublicName--search-for +46856867000

For more complete help type '**external_database --help-complete**'.

78

EXTERNAL_DIRECTORY

Manage the external directory data base

78.1

FORMAT

external_directory

```

[-v][-V] --export
[-v][-V] --import
[-v][-V] -c --number --number-type [--customer][--name1][--name2]
[--presentation-priority][--presentation-restricted][--add-info][--blacklisted [x]]
[--blacklist-destination][--blacklist-expiration-date]
[-v][-V] -e --number --number-type [--customer]
[-v][-V] -i --number --number-type [--customer][--name1][--name2]
[--presentation-priority][--presentation-restricted][--add-info][--blacklisted [x]]
[--blacklist-destination][--blacklist-expiration-date]
[-v][-V] -p [--number] [--number-type][--customer][--name1][--name2]
[--blacklisted [x]][--expired [x]]

```

78.2

FUNCTION

78.2.1

GENERAL

The command is used to erase, initiate and print access data for external databases. The databases can be used for example for the Blacklisting function, where specific public subscriber numbers are barred from calling in to the PBX.

The data is used to connect to and query content.

78.3

PARAMETERS

--add-info

Additional free text information.

Note: Semicolon <;> is not allowed in text. Use 'none' to remove

The switch requires an argument. The argument can be a comma separated sequence.

--blacklist-destination

Destination to route call to in case of blacklisting. Use 'none' to remove.

The switch requires an argument. The argument is single-valued.

--blacklist-expiration-date

Expiration date for blacklisted directory date. The format is YYYY-MM-DD. Use 'none' to remove.

The switch requires an argument. The argument is single-valued.

--blacklisted

Blacklisted number. Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'.

The switch takes an optional argument. The argument is single-valued.

-c, --change

Change some settings. I.e. reconfiguration of an item (or several items).

The switch takes no arguments.

--customer

Customer number for the extension.

Customer 0 is the default customer of the exchange. Argument must be an integer in the range 0 to 50000. For print operations the default is function dependent, for all other operations the default is 0 (zero).

The switch requires an argument. The argument is single-valued

-e, --erase

Erase some settings. I.e. deconfiguration of an item (or several items).

The switch takes no arguments.

--expired

Used to print entries based on expiration status

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'.

The switch takes an optional argument. The argument is single-valued.

--export

CSV File path + name to export data to.

A filename of 'stout' will export to display, format: customer, numberType, number, name1, name2, presentation-priority, presentation-restricted, blacklisted, blacklist-dest, blacklist-expiration-date, add-info<;...;><lf>

The switch requires an argument. The argument is single-valued.

--import

CSV File path + name to import data from.

Format: customer, numberType, number, name1, name2, presentation-priority, presentation-restricted, blacklisted, blacklist-dest, blacklist-expiration-date, add-info<;...;><lf>

The switch requires an argument. The argument is single-valued.

---name1

First part of the name.

Accepted argument length is 1 to 20 characters. The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string.

In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/> In unicode number mode the numbers are separated by space ' ', or by semicolon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name '?????-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued

--name2

Second part of the name.

Accepted argument length is 1 to 20 characters. The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string.

In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/> In unicode number mode the numbers are separated by space ' ', or by semicolon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name '?????-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued

--number

The number(s) to register in the directory.

Accepted argument length is 1 to 20 digits.

The switch requires an argument. The argument can be a range (first..last).

--number-type

The switch requires an argument. The argument is single-valued.

Only public number types are valid.

The number type of the entry:

0 = Unknown public number

1 = International number

2 = National number

3 = Network specific number

4 = Local public number

5 = Unknown private number

6 = Local private number

7 = Level 1 Regional number

10 = Internal directory number when sent to public network

11 = Internal directory number when sent to private network

12 = Internal directory number

Note: The table above reflects that only relevant public number types (0-4) are valid for this purpose.

--presentation-priority

Specify presentation priority.

If there is enough space to present complete name, then complete name will always be presented. If there is insufficient space to present complete name then:

1 = Complete name1 is presented followed by initial of name2,

2 = The initial of name1 is followed by complete name2.

If there is still insufficient space, the presentation of the name will be truncated.

Possible values are: '1', '2'.

The default value depends on the --name1 and --name2 parameters present on the command line. If --name2 is missing the default is '1'. If --name2 is present the default is '2'.

The switch requires an argument. The argument is single-valued.

--presentation-restricted

Name presentation is restricted. This switch is dependent on the number presentation restriction. If the number presentation is restricted the name presentation is also restricted.

The switch takes no arguments.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items.

The switch takes no arguments.

-v, --verbose

Turn on verbose output, that is, progress information, to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

78.4

EXAMPLES

Initiate an international directory entry for blacklisting for the entire system. The blacklist reroute destination is 09.

```
external_directory -i --number 46856867000 --number-type 1 --blacklisted  
--blacklist-destination 09
```

Initiate an international directory entry for blacklisting for customer 5, with an expiration date.

```
external_directory -i --customer 5 --number 46856812345 --number-type 1  
--blacklisted --blacklist-expiration-date 2020-12-31
```

Initiate an international directory entry for name display purposes valid for entire system. e

```
external_directory -i --number 46856867000 --number-type 1 --name1  
My-First-Name --name2 My-Last-Name
```

Initiate an international directory entry for name display purposes valid for customer 10.

```
external_directory -i --customer 10 --number 46856867000 --number-type 1  
--name1 My-First-Name --name2 My-Last-Name
```

Erase an international directory entry.

external_directory -e --number 46856867000 --number-type 1

Change an international directory entry to be blacklisted.

external_directory -c --number 46856812345 --number-type 1 --blacklisted

Remove blacklisting from an existing international directory entry.

external_directory -c --number 46856812345 --number-type 1 --blacklisted no

Export the external directory data to a CSV (comma separated) file.

external_directory --export /tmp/directory_data

Import the external directory data from a CSV (comma separated) file.

external_directory --import /tmp/directory_data

79 FUNCTION_TEST

Function test of specific hardware resources

79.1 FORMAT

function_test

[-v] [-V] --loop-back -E [--loop-back-type]

[-v] [-V] --loop-back -b [--loop-back-type]

[-v] [-V] --multi-party -l

[-v] [-V] --tone-device -l

79.2 FUNCTION

Command to manage function test of specific TDM devices, such as tone resources, multi-frequency tone, multi-party and trunk line resources.

79.3 PARAMETERS

-b, --board-position

Board position.

Syntax of argument is LG-M-B, where

L is lim number [1 - 124]

G is gateway [A - O]

M is magazine [0 - 3]

[4 - 6], MGU based media resources

[7], dynamic fictitious

B is board position[0 - 73]

Example of valid syntax: 124N-2-60, 1B-0-10, 1C-0-30

The switch requires an argument. The argument can be a single value, or a comma separated sequence.

-E, --equipment-position

Equipment position.

Syntax of argument is LG-M-B-I where

L is LIM number [range: 1 - 124]

G is gateway [range: A - O]

M is magazine [range: 0 - 3]

B is board position [range: 0 - 73]

I is individual [range: 0 - 31]

Example of valid syntax: 124A-0-10-3.

The switch requires an argument. The argument is single-valued.

-l, --lim

Lim number. Syntax of argument is L where L is lim number [range: 1 - 124].

Example of valid syntax: 2, or 1,3..5,124 or all

The switch requires an argument. The argument can be the special word 'all' or it can be a combination of comma separated sequence and ranges (first..last).

--loop-back

This command initiates the loop back test in the TLU board, which has this function, to test the integrity of the hardware.

NOTE: The test may lock the terminal for a significant time.

The switch takes no arguments.

--loop-back-type

Loop back test options.

Available options:

- 1 - Activate local loop back 1 (Default)
- 2 - Activate remote loop back 1
- 3 - Activate local loop back 2
- 4 - Activate remote loop back 2
- 5 - Deactivate any type of loop back test
- 6 - Activation of loop back on TLU76
- 7 - Deactivation of loop back on TLU76
- 8 - Execution of line test on TLU76
- 9 - Execution of continuity check test call (only for CCSS7)

The switch takes an optional argument. The argument is single-valued.

--multi-party

The command causes the initiation of a function test of multi-party devices (conference boards are used the test is executed on all TMU boards in the specified LIM. Three free inputs on the MPU board or the TMU board are seized. An internal test is then carried out with the aid of a tone code sender and tone code receiver.

NOTE: The test may lock the terminal for a significant time.

The switch takes no arguments.

--tone-device

This command causes the initiation of a function test of a tone device. The function test can be executed for TMU boards. The test is executed by connecting a tone code sender to a tone code receiver both on the same TMU board in the specified LIM. The test will be executed on all TMU boards in the specified LIM.

NOTE: The test may lock the terminal for a significant time.

The switch takes no arguments.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

79.4

EXAMPLE

Function test the multi-party devices in LIM 1.

```
function_test --multi-party -l 1
```


80

GLOBAL_TRAFFIC_DATA

Global traffic data

80.1

FORMAT

global_traffic_data

```
[ -v ] [ -V ] -c [--conference-release][--last-number-redial]
[--external-conference-lines][--multiple-paging][--paging-method]
[--transfer-before-answer][--system-exchange-identity]
[--operator-delay-time] [--paging-alarm-time][--paging-interval]
[--paging-max-time]
```

```
[ -v ] [ -V ] -p [--conference-release][--last-number-redial]
[--external-conference-lines][--multiple-paging][--paging-method]
[--transfer-before-answer][--system-exchange-identity]
[--operator-delay-time][--paging-alarm-time][--paging-interval]
[--paging-max-time]
```

80.2

FUNCTION

This is a command to manage miscellaneous global traffic data, i.e. general system level options, that do not fit in any other commands. The options are for functions like Conference, Transfer, Route optimization, Paging and Attendant traffic.

80.3

PARAMETERS

-c, --change

Change some settings. I.e. reconfiguration of an item (or several items).
The switch takes no arguments.

--conference-release

The parameter states how to treat disconnection in a conference, when the conference shall be ended, and become a two-party connection.

Valid options:

- 0 - Disconnect clearing party only (Default, initial setting)
- 1 - Disconnect all if only external lines remain
- 2 - Disconnect according to traffic matrix
- 3 - Disconnect all if any of the parties clears

The switch takes an optional argument. The argument is single-valued.

--external-conference-lines

The parameter states the maximum number of external lines that can be included in one conference call. This value can be (is initially) limited by an application system parameter.

Valid values: 0 - 8

The switch takes an optional argument. The argument is single-valued.

--last-number-redial

The parameter states how dialed numbers should be stored.

Valid options:

- 0 - Store all types of dialed public and private numbers (Default, initial setting)
- 1 - Store dialed public and non-intelligent (no network services) private network numbers
- 2 - Store dialed public network numbers
- 3 - Reserved and shall not be used

The switch takes an optional argument. The argument is single-valued.

--multiple-paging

The parameter states whether or not it is possible to perform several paging jobs at the same time. If the number of paging jobs is single, a short reply procedure in which the B-number is omitted can be used. The parameter also determines if the paging calls can be queued towards the search area in case a free channel is not available at the call. If set to single, no queuing is permitted.

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'.

The switch takes an optional argument. The argument is single-valued.

--operator-delay-time

The parameter states the limiting value for the queuing time (in seconds) for an incoming call in the PBX operator common queue. If the queuing time exceeds this stated limit, the call will be recorded as a delayed call in traffic measurement. Default is 30 seconds.

Valid values, 0 - 99 s

The switch takes an optional argument. The argument is single-valued.

--paging-alarm-time

The parameter states the alarm limit for mean queuing time. Before the sought party receives the searching signals, the search request can first be queued. In order to ensure that the paging equipment is not faulty dimensioned, the mean queuing time is fed to each paging area every 15 minutes. Alarm is generated if the mean queuing time exceeds the value stated by the parameter.

Valid values, 1 - 240

The switch takes an optional argument. The argument is single-valued.

--paging-interval

The parameter states the time between repetitions of paging calls in the exchange. The parameter is common to all search areas. Repetition of calls in the exchange can be used if the seizure time for the paging channels is short and if repetition does not take place in the external paging equipment. Repetition in the exchange makes it possible to utilize the channels more efficiently at the same time as the individual sought is reminded at regular intervals that the calling party is still waiting for a reply.

The time between the repetitions should be selected so that it is longer than the maximum seizure time and several times longer than the mean seizure time for the paging channels in the search areas which are to have repetition. A decision can be determined for each search area on whether a repetition is to take place or not. See the parameter REP in the parameter description for PAGING. If the repetition function is not used in the exchange, this parameter needs not be initiated.

Valid values: 5 - 150

The switch takes an optional argument. The argument is single-valued.

--paging-max-time

The parameter states the longest permitted time which a paging task can exist in the exchange. If the time is exceeded, the paging is terminated, the initiating party is given a termination message, and a meet-me reply is no longer possible.

Valid values: 30 - 300 s

The switch takes an optional argument. The argument is single-valued.

--paging-method

The parameter states how paging is to be performed in general in the exchange. The paging is performed according to standard if the procedure for standard paging has been entered when initiating the paging call or if the call was made by means of automatic call diversion. If any type of paging other than standard paging is desired, the initiation must be made with the aid of a specific procedure. When a value for standard paging is selected, paging units which can handle the type of paging in question must be available.

Meet me paging, parameter value 1:

The paged party answers a paging call from any optional extension by entering a procedure. The sought party and the initiating party(who has waited for a reply with the handset lifted) are connected in speech state. The paging call can be performed in different ways:

- Selective paging.
- A personal portable receiver is activated.
- General paging.

An optical or acoustic message is sent to several points where the sought party is expected to be. The sought party must recognize the generated code.

Voice paging, parameter value 2:

Speech path is set up via a radio circuit between the initiating party telephone and the sought party paging receiver. The initiating party can forward a message and can, if wanted, wait for a reply according to the meet-me principle. If the paging equipment has a facility for both-way speech, the sought party can also answer the call via the radio circuit. If voice paging is to be used as standard, all paging receivers and paging equipment should be provided with speech facility, see parameter PCAT in the parameter description for PAGING.

Directory number transmission, parameter value 3:

Is used in cases in which it is possible to identify the calling party. The A-number is presented on the paging receiver display when the display is activated and the sought individual can then answer the call by calling up the A-number presented. In this type of paging the initiating party can replace the handset after he has received a free or queue message. A reply according to the meet-me principle is also possible before the initiating party has replaced the handset. This principle should always be used in the case of external calls and extending calls when no directory number is transmitted. If directory number transmission is used as standard, all paging receivers should be provided with a display and the transmission categories must be selected so that the A-number (and the B- number, when applicable) are always transmitted, see parameter PCAT in the parameter description for PAGING.

Valid options:

- 1 - Meet me
- 2 - Voice paging
- 3 - Directory number transmission

The switch takes an optional argument. The argument is single-valued.

-p, --print

Print all or some settings. I.e. print reconfiguration of an item, several items, or all items.

The switch takes no arguments.

--system-exchange-identity

The parameter states the number as an exchange within a private network, which is used as own exchange number for route optimization and to generate generic call id's.

Valid values: 1 up to 5 digits.

Value to remove the data using the -c command: empty string, i.e. "" or "". To remove use an empty string "" as argument.

NOTE: System exchange identity is initiated in number analysis with number type EN, which is used for route optimization.

The switch takes an optional argument. The argument is single-valued.

--transfer-before-answer

The parameter states whether transfer before answer is permitted or not, when the system is day switched. In a night switched exchange transfer before answer is always permitted. Default is 'yes' (transfer permitted).

Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'.

The switch takes an optional argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

80.4

EXAMPLES

Set paging method to 'meet me'.

global_traffic_data -c --paging-method 1

Print all global traffic data parameters.

global_traffic_data -p

81

HW_MESSAGE_SEND

Compose and send a message to hardware

81.1

FORMAT

hw_message_send

```
-messageNumber -hex [-senderLim][-senderPu][-senderLevel] [-toLim] -equ
-messageNumber -hex [-senderLim][-senderPu][-senderLevel] [-toLim] -multno
```

81.2

FUNCTION

hw_message_send is used to compose and send a message to hardware. Only intended for use by skilled service personnel.

Note: You can send a message to the hardware, but you cannot receive a reply, as the reply message goes to the program unit that is the registered owner of the hardware.

If the command is entered without arguments, you will be prompted for the information (and the constructed command line will be echoed before it is executed).

81.3

PARAMETERS

-equ

Equipment position. The parameter has the format LLLG-Y-Z-I where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine, Z=position, and I=individual.

Example: 1A-0-10-3 (single value)
 1C-0-10-3...1C-0-10-7 (series)
 1A-0-10-9,1B-0-30-6 (multiple values)
 1K-0-10-3...1K-0-10-7,1M-0-50-6 (combination)

-hex

A hexadecimal string containing the data to send in the message. The following special codes are allowed:

L4 : The current LIM number as an integer (4 bytes)
 L2 : The current LIM number as a short integer (2 bytes)
 L1 : The current LIM number as tiny integer/char (1 byte)
 P4 : The current PU number as an integer (4 bytes)
 P2 : The current PU number as a short integer (2 bytes)
 P1 : The current PU number as tiny integer/char (1 byte).

If the string is enclosed in quotes ("), then space and comma might be inserted anywhere to improve readability.

-messageNumber

The number of the message to be sent

-multno

Multiple number that will receive the SW_HW message

-senderLevel

The sending thread level in the message header. Possible values are "A", "B", "X", "Y", and "SERVICE". The default value is "Y".

-senderLim

The LIM number of the sending LIM in the message header. If the parameter is omitted the default value is the LIM where the command is running.

-senderPu

A program unit number or name of the sending PU in the message header. If the parameter is omitted the default value is the virtual PU number of the command.

-toLim

The LIM number of the receiver of the message. If the parameter is omitted the default value is the LIM where the command is running.

81.4

EXAMPLE

Send a BORDID message to 1-0-0-1.

```
hw_message_send -toLim 1 -messageNumber BORDID -multno 1 -hex "16"
```

82

IGW_ROUTE

Manage inter gateway routes and destinations

82.1

FORMAT

igw_route

```
-c -b --route-number[--calling-number][--a-number-length]
-c -b -m [--called-number][--only-in-own-gateway][--reverse-call]
-e --location [--call-ids][-l][-m]
-e --location --called-numbers -l
-e -b [-m]
-i --location --called-numbers -l
-i --location [--call-ids][-l][-m]
-i -b -m --called-number [--only-in-own-gateway][--reverse-call]
-i -b -m --location [--only-in-own-gateway][--reverse-call]
-i -m --route-number --calling-number [-b] [--a-number-length]
-i -m --route-number --location [-b] [--a-number-length]
-p --location [-l]
-p [-b]
```

82.2

FUNCTION

The command is used to manage inter gateway connections via external routes.

A virtual board is created, containing originating media gateway, route, and a-number, then destinations are added to the virtual board. A destination contains terminating media gateway and a network number to dial to reach the destination

82.3

PARAMETERS

--a-number-length

Number of digits to be sent as A-number. Count starts from the end.

A value of 0 indicates full number.

The switch requires an argument. The argument is single-valued.

-b, --board-position

Board position. Syntax of argument is LG-M-B, where

L is lim number	[1 - 124]
G is gateway	[A - O]
M is magazine	[0 - 3]
	[4 - 6], MGU based media resources
	[7], dynamic fictitious

B is board position[0 - 73]

Example of valid syntax: 124N-2-60, 1B-0-10, 1C-0-30, all

The switch requires an argument. The argument is single-valued.

--call-ids

Call Id's are numbers that can be sent as A-numbers over the network. Used in location table based scenarios when UUI call id's are not possible. Accepted argument length is 1 to 20 digits.

The switch requires an argument. The argument can be a combination of comma separated sequences and ranges (first..last).

--called-number

This number is sent unprocessed to the network as B-number in the >SETUP> message. Used when it is possible to send UUI call id's over the network.

Accepted argument length is 1 to 20 digits.

The switch requires an argument. The argument is single-valued

--called-numbers

Numbers are sent unprocessed to the network as B-number in the >SETUP> message. Parameter when it is NOT possible to send UUI call id's over the network. Accepted argument length is 1 to 20 digits.

The switch requires an argument. The argument can be a combination of comma separated sequences and ranges (first..last).

--calling-number

This number is sent unprocessed to the network as A-number in the >SETUP> message.

Accepted argument length is 1 to 20 digits.

The switch requires an argument. The argument is single-valued

-c, --change

Change some settings, that is, reconfigure an item (or several items).

The switch takes no arguments.

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item (or several items).

The switch takes no arguments.

-l, --lim

Lim number. Syntax of argument is L where L is lim number [range: 1 - 124].

Example of valid syntax: 2, or all 1,5,124

The switch requires an argument. The argument can be the special word 'all' or a comma separated sequence.

--location

Name for location table. Location tables are used to manage call id's when it is not possible to send UUI over the network.

The switch requires an argument. The argument is single-valued.

-m, --media-gateway

Media gateway. Syntax of argument is LG, where

L is LIM number [1 - 124]

G is gateway [A - O]

Example: 1B (single value)

1A,5A (multiple values)

The switch requires an argument.

--only-in-own-gateway

If set to yes, this destination will not be used if no free trunks are available in the originating gateway.

Allowed values are: 'yes', 'no'.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

--reverse-call

If set to yes, the ISDN call will be made FROM the destination.

Allowed values are: 'yes', 'no'.

The switch requires an argument. The argument is single-valued.

--route-number

States the trunk route number. Range: 1 - 250.

States the route number that will become associated with the virtual board. The trunk selection for outgoing call will take place within this route.

The switch requires an argument. The argument is single-valued.

82.4

EXAMPLES

Initiate location Stockholm and call ids in LIM 1.

```
igw_route -i --location Stockholm -l 1 -call-ids 7400..7499
```

Initiate called numbers in location Goteborg in LIM 1.

```
igw_route -i --location Goteborg -l 1 -called-numbers 8324577400
```

Initiate a virtual board in media gateway 1A using called number.

```
igw_route -i --media-gateway 1A --route-number 20  
--calling-number 87501234
```

Initiate a virtual board in media gateway 1A using virtual board position 1A-7-40 and location Stockholm.

```
igw_route -i --media-gateway 1A --route-number 20  
--board-position 1A-7-40 --location Stockholm
```

Initiate a destination to gateway 1B using inter gateway route on virtual board position 1A-7-20.

```
igw_route -i --board-position 1A-7-20 --media-gateway 1B --called-number  
82132501
```

Same as above except use only an outgoing trunk line in the same gateway as the booking A-part.

```
igw_route -i --board-position 1A-7-20 --media-gateway 1B --called-number  
82132501 --only-in-own-gateway
```

Initiate a destination to gateway 1B using inter gateway route on virtual board position 1A-7-20, using parameter location.

```
igw_route -i --board-position 1A-7-20 --media-gateway 1B  
--location Goteborg
```

Change route number for a virtual board using board position 1A-7-20.

```
igw_route -c --board-position 1A-7-20 --route-number 21
```

Change length of a-number to 10 for a virtual board using board position 1A-7-20.

```
igw_route -c --board-position 1A-7-20 --a-number-length 10
```

Change called number in destination to gateway 1B using inter gateway route on virtual board position 1A-7-20.

```
igw_route -c --board-position 1A-7-20 --media-gateway 1B --called-number  
82132502
```

Print all virtual boards in the system.

```
igw_route -p
```

Print all locations in the system

```
igw_route -p --location all
```

Erase location Stockholm.

```
igw_route -e --location Stockholm
```

83

IP_DOMAIN

Initiate, change, erase, or print the data for a domain.

83.1

FORMAT

ip_domain

```
[-v][-V] --reread
[-v][-V] -c --domain-name [--ip-net][--server-ip-net]
[--codec-priority-list][--packetization-interval] [--bandwidth][--video-limit][--emedir]
[--area-code][--location-id]
[-v][-V] -e --domain-name
[-v][-V] -e --only --domain-name
[-v][-V] -i --domain-name --ip-net [--server-ip-net]
[--codec-priority-list][--packetization-interval][--bandwidth]
[--video-limit][--emedir][--area-code][--location-id]
[-v][-V] -p [--domain-name]
[-v][-V] -p [--ip-address]
```

83.2

FUNCTION

The command is used to initiate a domain for Call Admission Control, a domain used for registration distribution and/or Emergency calls from a registered IP telephone. The command can also be used to change, remove, and print the data for a domain or domains.

Note: When changing codecs the default priority list is used as reference.

83.3

PARAMETERS

--area-code

States the area code associated to the network domain. A regional code to a certain domain can be set. It can be used to prefix the dialed number before routing the call. Accepted argument length is 1 to 6 digits.

The switch requires an argument. The argument is single-valued.

--bandwidth

States the network bandwidth in bit/s. The argument must be scaled using k,M,G,T as suffix. (For this switch k means 1000.) If the parameter is omitted at initiation, unlimited bandwidth is assumed. If the value 0 (0k, 0M, 0G or 0T) is given the result will be unlimited bandwidth.

The switch requires an argument. The argument is single-valued.

For more information, see the operational directions for Call Admission Control.

-c, --change

Change some settings. That is, reconfigure an item (or several items).

The switch takes no arguments.

--codec-priority-list

Possible values are: 'G722', 'G729A', 'G729AB', 'PCMA', and 'PCMU'. States the codec priority list used in gateway calls from/to IP terminals and SIP trunks. Supported codes by gateways are as follows:

G722	G.722 high quality, 64 kbit/s
PCMA	G.711 A-law, 64 kbit/s
PCMU	G.711 u-law, 64 kbit/s
G729AB	G.729 Annex A, Annex B (silence suppression)
G729A	G.729 Annex A (no annex B = no silence suppression), 8 kbit/s

Default priority list: G722, PCMA, PCMU, G729AB, G729A, G.722 is the prioritized codec.

Example: change the codec priority list so it prioritizes in the following order: PCMU,PCMA,G.729A (no annex B = no comfort noise):

'--codec-priority-list G722, PCMU, PCMA, G729A'.

The list will be modified with the result: G722, PCMU,PCMA,G729A.

A codec can only appear once in the list.

The switch requires an argument. The argument can be a comma separated sequence.

--domain-name

States an identification label that defines a realm of administrative autonomy, authority, or control. Accepted argument length is 1 to 64 characters.

Data for Call Admission Control and Emergency call can be set for this domain.

The switch requires an argument. The argument is single valued.

--emedir

Directory numbers for dial back for emergency calls. --emedir is associated with a virtual extensions used to receive a dial back call from an emergency center in response to an emergency call from an IP extension. Accepted argument length is 2 to 10 digits.

The switch requires an argument. The argument can be comma separated values.

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item (or several items).

The switch takes no arguments.

--ip-address

States an IP address. No port number allowed.

The switch requires an argument. The argument is single-valued.

--ip-net

States an IP subnet as IP address (no port number allowed) plus the number of mask bits separated by a slash, /. Example: 203.168.25.0/24

The switch requires an argument. The argument can be a comma separated sequence.

--location-id

States the 'location identity', i.e. a building, room or radio cell reference, or similar information that can be useful for example in emergency calls. Accepted argument length is 0 to 25 characters.

The switch requires an argument. The argument is single-valued.

--only

Select to handle only this aspect or part. Possible values are: 'AREACODE', 'EMEDIR', 'LOCATIONID', 'areacode', 'emedir', 'locationid'.

The switch requires an argument. The argument is single-valued

--packetization-interval

States the packetization interval. This parameter is used to specify the preferred length of time in milliseconds represented by the media in a packet. See RFC3551 for more information regarding packetization interval.

The default preferred value is 20 ms of audio per RTP packet for any supported codec.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

--reread

Request to reread the configuration of an item (or several items).

The switch takes no arguments.

--server-ip-net

States an IP subnet as IP address (no port number allowed) / number of mask bits. Example: 192.168.25.0/32.

If two or more domains shall share the same server, this switch shall hold the address of the server.(server's IP address with mask 32, example: 203.0.113.0/32). Used at IP extension initiation and registration distribution. See OPERATIONAL DIRECTIONS IP Extension for details how and when to use.

The switch requires an argument. The argument can be a comma separated sequence.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

--video-limit

States allowed percentage of restricted bandwidth available for video. If the parameter is omitted at initiation, video is allowed to use 100% of the bandwidth.

The switch requires an argument. The argument is single-valued.

83.4

EXAMPLES

Initiate the domain with domain name head-office and the IPv4 subnet 203.0.113.0/25, bandwidth limitation 256 kb and at most 50% video.

ip_domain -i --domain-name head-office --ip-net 203.0.113.0/25 --bandwidth 256 --video-limit 50

Initiate the domain with domain name head-office and the IPv6 subnet 2001:0db8:85a3:0042:1000:8a2e:0370:xxxx, bandwidth limitation 1Mb and at most 50% video.

ip_domain -i --domain-name head-office --ip-net 2001:0db8:85a3:0042:1000:8a2e:0370:xxxx --bandwidth 1M --video-limit 50

Initiate the domain with domain name branch-office-3 and subnet 2001:DB8:3007::/64.

ip_domain -i --domain-name branch-office-3 --ip-net 2001:DB8:3007::/64

Print the domains.

ip_domain -p

Print the domain with domain name head-office.

ip_domain -p --domain-name head-office

Print the domain for the extension with IP address 203.0.113.38

ip_domain -p --ip-address 203.0.113.38

Erase the domain with domain name head-office.

ip_domain -e --domain-name head-office

84 IP_EXTENSION

Initiate, erase, or print data for an IP extension

84.1 FORMAT

ip_extension

```
[ -v ][ -V ] -e --only -d
[ -v ][ -V ] -e --terminal-identity -d
[ -v ][ -V ] -e -d [--customer]
[ -v ][ -V ] -i --terminal-identity --uri -d [--protocol]
[ -v ][ -V ] -i -d [--max-terminals][--protocol]
[ -v ][ -V ] -p [-d]
```

84.2 FUNCTION

The command is used to initiate a directory number as an IP extension. The directory number must be initiated as an extension. The command can also be used to erase and print data for IP extensions.

If an extension is forked, the switches `--terminal-identity` or `--only` have to be used to erase only one of the extensions. The switch `--terminal-identity` should be used when erasing an automatically registered terminal. The switch `--only` should be used to erase the "normal" terminal.

84.3 PARAMETERS

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument.

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item (or several items).

The switch takes no arguments.

--max-terminals

Maximum number of IP terminals that are allowed to be manually logged on simultaneously, using one directory number. The argument must be an integer in the range 1 to 4, but the value cannot exceed the value of `--max-terminals` given in command extension. Default is 1.

The switch requires an argument. The argument is single-valued

--only

Select to erase a 'normal' extension, i.e. one that has manual logon. The parameter is optional. Possible values are: 'MANUAL', 'manual'

The switch requires an argument. The argument is single-valued.

--protocol

Select which type of protocol used.

Possible values are: 'IP', 'SIP'.

SIP - Permits SIP clients.

IP - Permits both SIP and H323 clients.

If the protocol is not set, the protocol value IP is selected by default.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

--terminal-identity

States the terminal identity. States an RFC3261 compliant URI. An IPv6 host address must be enclosed in square brackets States the terminal identity.

Format: sip:user@host, where 'user' must be equal to the content of --dir. The 'host' part can be an IP address or a host name. There is no check if 'host' exists. The host is the contact address of the terminal (or the communication server) representing the directory number.

If --uri shall be set to virtual extension (VE), then use the format "sip:user@0.0.0.0"

Accepted argument length is 7 to 100 characters.

The switch requires an argument. The argument is single-valued.

--uri

States the URI sent to the directory number (--dir). URI shall have any valid format defined in RFC3261.

Automatic SIP Registration:

"sip|sips|tel:username@host[:port][;transport=udp|tcp|tls]\n[;multi-line-access=no|yes]", where username is the same as --dir, or an international number by which the other communication system represents --dir. host is a routable IP address or host name that can be resolved by DNS at the other communication server (for example the Mediation Server). Default transport is UDP. Default port is 5060 for TCP and UDP, and 5061 for TLS (over TCP).

Actual parameter multi-line-access=no indicates that remote end shall be treated as a single line access terminal. Default is multi-line-access=yes.

Virtual IP Extension(VIE):

"sip:username@0.0.0.0[;auto-park=yes|no]". A VIE acts as a normal extension except that it has no host(terminal). VIE can be monitored via MNS key for call pickup. Busy service, call pickup, also works towards a VIE.

Actual parameter auto-park=yes indicates that a call to a VIE automatically will be answered and parked. This may be used for members of GH in the feature, call parking pools. URI-parameter auto-clear=yes indicates that a call to a VIE automatically will be rejected with busy. This may be used for some deflection cases.

SIP remote extension, using route number:

"rou:<route number[&backup route number]>;remote-number=<phone number>\ [;multi-line-access=no|yes]", where <route number> (and backup route number, if used) must be a valid SIP route number (set by command 'sip_route'). Remote number value is replacing the ? in 'sip_route -uristring "sip:?.@host" -route <route number>'. Remote number can be any phone number by which the other communication system represents --dir. Actual parameter multi-line-access=yes can be added to indicate that remote end shall be treated as a multi line access terminal. Default is multi-line-access=no. For more information see Operational Directions for *MOBILE AND REMOTE EXTENSION OVER SIP*.

SIP remote extension, using destination number:

"dest:<destination number@0.0.0.0>;remote-number=<phone number>\ [;multi-line-access=no|yes]", where <destination number> must be a valid SIP-route destination number (set by command RODDI).

The A-number presentation is done as trunk number conversion for the destination (and route). Remote number value is replacing the ? in 'sip_route -uristring "sip:?.@host" -route <route number>'. Remote number can be any phone number by which the other communication system represents --dir. Actual parameter multi-line-access=yes can be added to indicate that remote end shall be treated as a multi line access terminal. Default is multi-line-access=no. For more information see Operational Directions for *MOBILE AND REMOTE EXTENSION OVER SIP*.

Accepted argument length is 7 to 125 characters.

The switch requires an argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (i.e.progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

84.4

EXAMPLES

Initiate the directory number 2773 as an IP extension. Initiate the directory number 2773 as an IP extension. As no -protocol is set the command will initiate protocol SIP or IP depending on available license or feature-level permission.

ip_extension -i -d 2773

Initiate the directory number 654 as a virtual IP extension (VIE). As a VIE can be monitored via MNS, it may serve as a group access number. If a VIE is added as member of an internal hunt group, calls to the VIE can be queued.

**ip_extension -i -d 654 --terminal-identity "sip:654@0.0.0.0"
--uri "sip:654@0.0.0.0"**

Initiate the directory number 501 as a forking number

**ip_extension -i -d 501 --terminal-identity "sip:501@roadrunner2" --uri
"sip:501@130.100.11.108;transport=tcp"**

Initiate the directory number 501 as a forking number using configuration of sip_route -route 4

**ip_extension -i -d 501 --terminal-identity "sip:501@130.100.11.108" --uri
"rou:4;remote-number=501"**

Initiate the directory number 2554 as a mobile extension over SIP trunk. A mobile phone can normally only be accessed as a single line access terminal, and if it is used as a MiContact Center agent device, it can only be controlled as a single line access terminal. These single line characteristics are defined by the parameter multi-line-access=no.

```
ip_extension -i -d 2554--terminal-identity "sip:2554@130.100.80.84"  
--uri "rou:8;remote-number=0101234562554;multi-line-access=no"
```

Erase the directory number 501 with terminal identity "sip:501@130.100.11.108".

```
ip_extension -e -d 501 --terminal-identity "sip:501@130.100.11.108"
```

85

IP_EXTENSION_INFO

Print registration data for an IP extension.

85.1

FORMAT

ip_extension_info

`[-v][-V] -p [-d [--customer]][-f][--domain-info]`

85.2

FUNCTION

The command is used to print information about logged on IP extension(s). Thus it prints dynamic registration data additional to the `ip_extension -p` command's data.

85.3

PARAMETERS

--customer

Customer number for the extension. Customer 0 is the default customer of the exchange. Argument must be an integer in the range 0 to 50000. For print operations the default implementation dependent, for all other operations the default is 0 (zero).

The switch requires an argument. The argument is single-valued

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument. The argument can be the special word 'all' or it can be a combination of comma separated sequences and ranges (first..last).

-f, --format

Select a format for the printout. The meaning of the possible values are:

ALL - registered and not registered IP extensions

REG - only registered IP extensions

UNREG - only unregistered IP extensions

Possible values are: 'ALL', 'REG', 'UNREG', 'all', 'reg', 'unreg'.

Default if switch is not given is 'ALL'.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

85.4

EXAMPLES

Print data for the IP extension with directory number 2773.

ip_extension_info -d 2773

Print login data for all IP extensions.

ip_extension_info

86 IP_GATEKEEPER

Change or print data for an IP gatekeeper

86.1 FORMAT

ip_gatekeeper

[-v][-V] -c -l --gatekeeper-id

[-v][-V] -p [-l]

86.2 FUNCTION

The command is used to change and print data for an IP gatekeeper.

86.3 PARAMETERS

-c, --change

Change some settings, that is, reconfigure an item or several items.

The switch takes no argument.

--gatekeeper-id

States a gatekeeper identifier of the MX-ONE Service Node in a LIM. Allowed characters: (0..9,a..z,A..Z) Accepted argument length is 1 to 10 characters.

The switch requires an argument. The argument is single-valued.

-l, --lim

Lim number [range: 1-124].

The switch requires an argument.

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items. The switch takes no arguments.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

86.4 EXAMPLES

Change the gatekeeper identity in LIM 2 to GK2.

ip_gatekeeper -c -l 2 --gatekeeper-id GK2

Print the gatekeeper data for LIM 2.

ip_gatekeeper -p -l 2

87

LANGUAGE

Print/change system language

87.1

FORMAT

language

```
language -c --language-code x
```

```
language [-p]
```

87.2

FUNCTION

The command is used to print or change default system language

Note: *start --system* must be run after final change to trigger fetch of changed default language.

87.3

PARAMETERS

-c, --change

Change some settings. I.e. reconfiguration of an item (or several items).

The switch take no arguments.

-language-code

States the language alternative. This parameter is used to overrule the exchange language for an extension user.

Possible values for the language code are:

Code	Name of language
cs	Czech
da	Danish
de	German
en	English
es	Spanish
es-MX	Latin American Spanish
et	Estonian
eu	Euskara/Basque
fi	Finnish
fr	French
fy	Frisian
it	Italian
nl	Dutch
no	Norwegian
pl	Polish

Code	Name of language
pt	Portuguese
pt-BR	Brazilian Portuguese
ro	Romanian
ru	Russian
sv	Swedish
zh	Chinese

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items.

The switch takes no arguments.

87.4

DESCRIPTION

The command is used to print available system languages, or to change the default system language.

Note: A start --system command must be run after changing the default system language to trigger the MX-ONE software to re-read the language information.

87.5

EXAMPLES

Change default system language to German

language -c -language --language-code de

Print system language.

language

88

LANGUAGE_STRINGS_OVERRIDE

Language strings override

88.1

FORMAT

language_strings_override

```
-c -language -language-code
-e
-p
```

For a description of the parameter arguments, see the command description for *Command Help Frame*.

88.2

FUNCTION

The command is used to overrides the default mapping between language codes and language numbers. Language numbers are used in language changing phone procedures.

Language number 0 through 4 cannot be mapped to another language. A language already among the 10 current languages cannot be mapped to another language number.

Note: start --system must be run after final change to trigger fetch of changed number mapping.

88.3

PARAMETERS

-c, --change

Change the mapping language number to language.

The switch take no arguments.

-e, --erase

Erase all customized mapping of language number to language.

The switch takes no arguments.

-language

States the language alternatives, i.e. which languages shall be represented by the digits 5 to 9 in telephone procedures. Possible values: 5-9.

The switch takes an argument. The argument shall be single value.

-language-code

Acronym for the language.

Possible values for the language code are:

Code	Name of language
cs	Czech
da	Danish
de	German
en	English
es	Spanish
es-MX	Latin American Spanish
et	Estonian
eu	Euskara/Basque
fi	Finnish
fr	French
fy	Frisian
it	Italian
nl	Dutch
no	Norwegian
pl	Polish
pt	Portuguese
pt-BR	Brazilian Portuguese
ro	Romanian
ru	Russian
sv	Swedish
zh	Chinese

The switch requires an argument. The argument shall be single value.

-p, --print

Print default and customized mapping language number to language.

The switch takes no arguments.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

88.4

EXAMPLE

Set Russian language as language number 9.

```
language_strings_override -c -language 9 -language-code ru
```

89

LANGUAGE_STRINGS_REREAD

Language strings reread

89.1

FORMAT

language_strings_reread
 [-v][-V][-force]

89.2

FUNCTION

The command is used to 're-read' the language string files valid for the used application system, like english.ini, where all the text strings are.

If the force switch is not used, then the texts strings that have been modified by the extension_text command, will remain, while all other text strings will be as in the language string files. If the force switch is used, then all text strings will be as in the language string files, i.e. all modifications done by command extension_text are lost/over-written.

89.3

PARAMETERS

-force

Change text string settings, that is, force a reset of all modified text strings. All extension text strings will be as in the default language string files, i.e. all modifications done by command extension_text are lost/over-written.

The switch takes no arguments.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

89.4

EXAMPLE

Go back to the original text strings of the language files, i.e. discard all text string changes done by the extension_text command.

language_strings_reread -force

90

LDAP_CONFIG_CREATE

Create LDAP configuration files

90.1

FORMAT

ldap_config_create

```
--lim-hosts --smallest-lim-ram --master-lim-ram --output-dir
[--admin-rdn][--ldap-master][--no-host-check][--ldap-root]
[--standby-hosts][--admin-password]

--lim-hosts s --smallest-lim-ram --master-lim-ram --output-dir
[--admin-rdn][--ldap-master][--no-host-check][--ldap-root]
[--standby-hosts][--prompt-for-password]

--print-config-version
```

90.2

FUNCTION

ldap_config_create is a command that creates LDAP configuration files. The command stores the configuration files in an output directory that it creates. The files shall be installed on the LIMs (and standby servers).

The user does very seldom have any need to manually run ldap_config_create. It is usually run indirectly from the installation scripts.

90.3

PARAMETERS

--admin-password

Administrator password. This switch allows you to write the password on the command line. Accepted argument length is 4 to 15 characters. Default value is: 'secret'. For security reasons you might want to use '--prompt-for-password' instead, to be prompted for the password.

The switch requires an argument. The argument is single-valued.

--admin-rdn

Administrator "login" on LDAP servers, as RDN relative to root DN. Default value is: 'cn=admin'.

The switch requires an argument. The argument is single-valued.

--ldap-master

Host name (fully qualified) of LDAP master. By default the LIM with the lowest LIM number is the LDAP master.

The switch requires an argument. The argument is single-valued.

--ldap-root

Root of the LDAP tree (in DN syntax). Default value is: 'dc=example,dc=com'.

The switch requires an argument. The argument is single-valued.

--lim-hosts

Comma separated list of LIMs. Each LIM is described by LIM number followed by colon (:) and host name. The host name must be a fully qualified host name.

The switch requires an argument. The argument can be a comma separated sequence.

--master-lim-ram

The amount of memory (RAM) available for the Service Node (including LDAP) on LDAP master. The argument can be scaled using k,M,G,T as suffix. (For this switch k means 1024.)

The switch requires an argument. The argument is single-valued.

--no-host-check

Do not check the host names. Normally the command checks that IP addresses can be found for all host names.

The switch takes no arguments.

--output-dir

Output directory to store created files in. Output directory must not exist, it will be created. Parent directory of output directory must exist. Accepted argument length is 4 to 256 characters.

The switch requires an argument. The argument is single-valued.

--print-config-version

Print the configuration version (only) and exit. The config version printed is the version of the configuration that will be created by running this version of the command. This is used during upgrade to test if command needs to be run to create a new configuration, or if the existing configuration is good enough.

The switch takes no arguments.

--prompt-for-password

Prompt (that is, ask interactively) for the password.

The switch takes no arguments.

--smallest-lim-ram

The amount of memory (RAM) available for the Service Node (including LDAP) on smallest LIM. The argument can be scaled using k,M,G,T as suffix. (For this switch k means 1024.)

The switch requires an argument. The argument is single-valued.

--standby-hosts

Host names of standby hosts/LIMs. The host names must be a fully qualified host names. Comma separated list of host names.

The switch requires an argument. The argument can be a comma separated sequence.

90.4

EXAMPLE

Create a default configuration for a two LIM system, where LIM 1 runs on a.example.com and LIM 2 runs on b.example.com. The configuration shall be stored in the directory /tmp/foo.

a.example.com has 4GB of RAM memory and b.example.com has 2 GB or RAM memory. The LDAP master is (as default) placed on LIM 1.

ldap_config_create --lim-hosts 1:a.example.com,2:b.example.com --output-dir /tmp/foo \ --smallest-lim-ram 2G --master-lim-ram 4G

91 LDAP_DB_DIFF

Shows difference of data in two LDAP servers

91.1 FORMAT

ldap_db_diff

```
[-verbose][-logverbose][-server1][-server2][-lag_time][-format] [-base][-dn_only]
[-verbose][-logverbose][-server1][-server2][-lag_time] [-format][-base][-dn_csn]
[-verbose][-logverbose][-server1][-server2][-lag_time duration]
[-format][-base][-all_data]
```

91.2 FUNCTION

ldap_db_diff checks if the data in two LDAP servers is identical.

Returns 0 (zero) to indicate success (no differences or only allowed differences) and non-zero to indicate failure.

Possible return values are:

0	No differences or only allowed differences
78	Differences found in DN's
79	differences found in entry CSN
80	Differences found in data (other than DN, CSN)
77	Other differences found
81	Server1 and server2 is the same computer

Other non-zero return codes indicate failure.

91.3 PARAMETERS

-all_data

Optional. Compare all data (all user attributes) when comparing the data in the 2 LDAP servers. Default is to compare DN's and entry CSN's.

-base

Optional. Base of LDAP tree to compare. If not given default is read from configuration of LDAP.

-dn_csn

Optional. Compare DN's and entry CSN's when comparing the data in the 2 LDAP servers. This is the default.

-dn_only

Optional. Compare only DN's when comparing the data in the 2 LDAP servers. Default is to compare DN's and entry CSN's.

-format

Optional. Specify the format of the printed report. The available formats are:

- **quiet** No printed report. (User checks return value.)
- **number** Print only the number of entries that differ.
- **dn** Print the DN's of the entries that differ.
- **delta** Print the attributes that differ, but if an entry is completely missing on one server, only that fact is printed. (This is the default.)
- **attr** Print all attributes that differ.

-lag_time

Optional. Ignore differences in entries that have changed during the specified last duration time prior to the command. This allows a comparison to be done while adding data and acknowledging that there is a latency before the added data is replicated. Durations can be given as seconds only, seconds, microseconds or in the format 1d02:03:04.000005 (that is, 1 day, 2 hours, 3 minutes, 4 seconds and 5 microseconds). The default is 0 seconds. (The default is to report all differences.)

-logverbose

Optional. Use verbose reporting to syslog. Gives progress information. These printouts are usually found in /var/log/messages (but the syslog configuration determines where they are output).

-server1

Optional. The first server (server 1) to use for comparing data on LDAP servers. The switch is optional, default is 'localhost'

-server2

Optional. The second server (server 2) to use for comparing data on LDAP servers. The switch is optional, default is the server configured as master in the data of server 1.

-verbose

Optional. Use verbose printouts to standard error. Gives progress information.

91.4

EXAMPLES

Check if the server on localhost has identical data to the configured master server. (This uses the fact that the default for server 1 is 'localhost' and the default for server 2 is the configured master read from server 1. Output in delta format.)

ldap_db_diff

Compare data in servers a.example.com and b.example.com. Ignore changes newer than 50 seconds. Print only the number of differences.

```
ldap_db_diff -server1 a.example.com -server2 b.example.com -lag_time 50  
-format number
```

Compare data in servers a.example.com and b.example.com. Print all differences (all attributes that differ).

```
ldap_db_diff -server1 a.example.com -server2 b.example.com \  
-format attr
```

92

LDAP_DBOVR_TEST

Test DBOVR status and functions

92.1

FORMAT

ldap_dbovr_test

```
-search filter -base base [-async]
-add dn -attr {name:value,name:value,...} [-async]
-delete dn [-async]
-modify dn -addattr {name:value,...} [-async]
-modify dn -changeattr {name:value,...} [-async]
-modify dn -deletevalue {name:value,...} [-async]
-modify dn -deleteattr {name,...} [-async]
```

92.2

FUNCTION

ldap_dbovr_test reports the DBOVR status and can be used to test DBOVR function.

When used without arguments this command prints the status of the database override in DBOVR.

ldap_dbovr_test can also be used to read data from the database override in DBOVR (using the **-search** switch). This is useful for testing the override function.

ldap_dbovr_test can also change data in LDAP or the database override in DBOVR or both. This is useful for testing the override function, but it is also very dangerous as such change operations are done without any consistency checks. Using the switches **-add**, **-delete** or **-modify** is dangerous and can totally corrupt the configuration data in LDAP. These switches should only be used by very skilled service engineers.

92.3

PARAMETERS

-add

Add an entry to LDAP/DBOVR. Argument is the DN. Must be used together with the **-attr** switch.

-addattr

Add attribute, or add to existing attribute. Argument is the attributes. Attributes are given as a comma separated list of attributes. Each attribute is the attribute name, a colon, and the attribute value. Only single-valued attributes are supported (for the moment).

-async

Do the operation using the asynchronous interface instead of the normal sync interface.

-attr

Attributes (names and values). Can only be used with the **-add** switch. Attributes are given as a comma separated list of attributes. Each attribute is the attribute

name, a colon, and the attribute value. Only single-valued attributes are supported (for the moment).

-base

The base for the search. Can only be used with the **-search** switch.

-changeattr

Change existing attribute(s). Argument is the attributes. Attributes are given as a comma separated list of attributes. Each attribute is the attribute name, a colon, and the attribute value. Only single-valued attributes are supported (for the moment).

-delete

Delete an entry from LDAP/DBOVR. Argument is the DN.

-deleteattr

Delete complete attributes. Argument is the attributes as a comma separated list of attribute names.

-deletevalue

Delete value from existing attribute(s). Only the given values are deleted. Argument is the attributes. Attributes are given as a comma separated list of attributes. Each attribute is the attribute name, a colon, and the attribute value. Only single-valued attributes are supported (for the moment).

-modify

Change an entry from LDAP/DBOVR. Argument is the DN. Requires one of the switches: **-addattr**, **-changeattr**, **-deletevalue**, or **-deleteattr**.

-search

Perform a search operation. The required argument is the filter. (Notice that DBOVR restricts the filters to only AND filters.) Must be used together with the **-base** switch.

92.4

EXAMPLE

Check and print DBOVR status

ldap_dbovr_test

93 LDAP_INIT

Initialize LDAP directory tree

93.1 FORMAT

```
ldap_init
    -master [-verbose]
```

93.2 FUNCTION

ldap_init is used to initialize the LDAP directory tree according to the information in the configuration files (ldap.conf and ldapLogin.conf).

Note: The command ldap_init is used in the installation scripts.

93.3 PARAMETERS

-master
Host name (fully qualified host name) of LDAP master server in master/replica setup of LDAP.

-verbose
Turn on verbose output to standard error.

93.4 EXAMPLES

Initialize an LDAP directory tree on foo.aastra.com

ldap_init -master foo.aastra.com

Initialize an LDAP directory tree on foo.aastra.com with verbose progress reporting

ldap_init -master foo.aastra.com -verbose

Note: There is normally no reason to enter ldap_init manually.

94 LDAP_NOTIFY

LDAP notify subscription

94.1 FORMAT

ldap_notify

`[-udp] -base -scope [-heartbeat] [-verbose]`

94.2 FUNCTION

ldap_notify is used to subscribe to LDAP notify subscriptions. An LDAP notify subscription is a request to be notified in case there is a change in the specified data in the LDAP server.

The command is mainly a debugging aid to verify that the NOTIFY program unit works. However, the command can be used by external scripts to get access to LDAP notify subscriptions.

94.3 PARAMETERS

-base

Base DN of search.

-heartbeat

Print heartbeat information.

-scope

Scope of search. Must be one of **base**, **onelevel** or **subtree**.

-udp

Server name/address and port number (in host:port notation) to connect to for LDAP notifications.

-verbose

Use verbose printouts.

94.4 EXAMPLE

Watch for changes under base DN **dc=my-domain,dc=com** with scope sub-tree, to any entries of any object class. Use UDP port 4500 on host server.aastra.com as server for information.

```
ldap_notify -udp server.aastra.com:4500
-base 'dc=my-domain,dc=com' -scope subtree
```

95 LDAP_NOTIFY_PRINT

Print LDAP notify subscriptions

95.1 FORMAT

```
ldap_notify_print  
-lim
```

95.2 FUNCTION

ldap_notify_print is used to print the registered LDAP notify subscriptions. An LDAP notify subscription is a request to be notified in case there is a change in the specified data in the LDAP server.

95.3 PARAMETERS

```
-lim
```

LIM number [range: all, 1-124]

Single value, multiple values (1,3,8), series (1...6), or a combination (1...10,12) are valid. Duplication of LIM number is not allowed. ('All' is not case sensitive.)

95.4 EXAMPLE

Ask for LDAP notify subscriptions in LIM 1

```
ldap_notify_print -lim 1
```

96

LDAP_PING

Check if local LDAP is alive

96.1

FORMAT

ldap_ping

`[-master][-verbose][-logverbose]`

96.2

FUNCTION

ldap_ping does a dummy query to the local LDAP server to check if it is alive. If switch '-master' is used the same check is done against master LDAP server. Returns 0 (zero) to indicate success (local server alive) and non-zero to indicate failure.

96.3

PARAMETERS

-logverbose

Use verbose reporting to syslog. Gives progress information. These printouts are usually found in /var/log/messages (but the syslog configuration determines where they are created).

-master

Check against master LDAP server as well as local.

-verbose

Use verbose printouts to standard error. Gives progress information.

96.4

EXAMPLE

Check if local LDAP server is operating

ldap_ping

97

LDAP_WAIT_UNTIL_REPLICATED

Wait until LDAP is replicated

97.1

FORMAT

ldap_wait_until_replicated

`[-verbose][-logverbose][-timeout][-report][-dn {-global}]`

`[-verbose][-logverbose][-timeout][-report][-dn {-local}]`

97.2

FUNCTION

`ldap_wait_until_replicated` polls and waits until replication to this LDAP replica is done. Before the command returns it has:

1. written a dummy entry to the LDAP master,
2. waited for the written entry to be replicated to this host,
3. changed the dummy entry on the LDAP master,
4. waited for the change to be replicated to this host,
5. deleted the dummy entry from the LDAP master.

97.3

PARAMETERS

-dn

A distinguished name (DN) of an entry. Wait only until this specified LDAP data entry is replicated. Requires either the switch '-local' or the switch '-global'.

-global

Wait until the LDAP data entry is replicated to all known replica servers. Requires the switch '-dn'.

-local

Wait only until the LDAP data entry is replicated to the local replica server. Requires the switch '-dn'.

-logverbose

Use verbose reporting to syslog. Gives progress information. These printouts are usually found in `/var/log/messages` (but the syslog configuration determines where they are created).

-report

Report interval for time left to timeout. Setting the report interval to 0 disables this reporting. (Default report interval, if switch is not given, is one hour.)

-timeout

Max time to wait before giving up. (Default timeout, if switch is not given, is one week.)

-verbose

Use verbose printouts to standard error. Gives progress information.

`ldap_wait_until_replicated` with the `'-dn'` switch polls and waits only for the specified DN to be replicated.

(When `ldap_wait_until_replicated` is run with the `'-dn'` switch the command does not write anything to the LDAP server, it only waits until earlier changes of the specified DN are replicated.)

97.4

EXAMPLES

Block until replication to this LDAP replica is done

`ldap_wait_until_replicated`

Block until DN `'cn=admin,dc=ex,dc=com'` is replicated to all known (configured) LDAP replica servers.

`ldap_wait_until_replicated -dn cn=admin,dc=ex,dc=com -global`

98 LICENSE_MIGRATION

License migration action.

98.1 FORMAT

```
license_migration
    [-migrate -count]
    -print
```

98.2 FUNCTION

The command `license_migration` is used to migrate licenses from one type to another. For this to be allowed, migration license types must be present. One for the migration itself, one for the migration count, one for the “migrated-from” object and one for the “migrated-to” object.

The command can also print the migration license status.

98.3 PARAMETERS

-count

Number of licenses to migrate. The values can be from 1 to the maximum number of migration licenses of a specific type, as stated in the license file for the target system. It can also be 0 in print.

The switch requires an argument. The argument is single valued.

-migrate

Migration tag containing both “from” and “to” licenses.

This parameter can only be given if your system’s license file contains migration licenses of the specified type, and matching old licenses to migrate from, and new licenses to migrate to. The values must match the available migration licenses. See the license file for relevant values. The switch requires an argument. The argument is single valued.

-print

Print licenses involved in migration. The switch takes no arguments.

98.4 EXAMPLE

Replace 10 analog telephones by 10 SIP telephones. In other words, migrate 10 ANALOGUE-EXTENSION licenses to SIP-EXTENSION-MIGRATION. ANALOGUE-EXTENSION-TO-SIP-EXTENSION, ANALOGUE-EXTENSION and SIP-EXTENSION must be present in the license file.

```
license_migration -migrate
ANALOGUE-EXTENSION-TO-SIP-EXTENSION -count 10
```

99 LICENSE_PRINT

Print a license file

99.1 FORMAT

license_print
-file

99.2 FUNCTION

license_print is used to print a license file. This is used to inspect a license file before starting to use it.

99.3 PARAMETERS

-file
File name (including full path) of license file to print.

99.4 EXAMPLE

Print a license with the file name /home/mduser/mdHome/etc/lic.dat.

license_print -file /home/mduser/mdHome/etc/lic.dat

100 LICENSE_PRINT_DEFINITION

Print feature level definitions

100.1 FORMAT

license_print_defininition

100.2 FUNCTION

The command is used to print the feature level definitions that is obtained from license file.

100.3 PARAMETERS

-

100.4 EXAMPLE

Print feature level definitions.

license_print_defininition

101

LICENSE_REPORT

License report action

101.1

FORMAT

license_report

```
[ -flush ][ -report-interval ][ -mail-address ][ -mail-interval ][ -time-to-live ]
[ -process ][ -report-interval ][ -mail-address ][ -mail-interval ] [ -time-to-live ]
[ -report ][ -report-interval ][ -mail-address ][ -mail-interval ][ -time-to-live ]
[ -sync ][ -report-interval ][ -mail-address ][ -mail-interval ][ -time-to-live ]
```

101.2

FUNCTION

The command is used to list and manage the license report status and parameters, and to manually generate snapshot reports.

If there are customer groups initiated in the system, there will also be a report for each customer.

Report format (without customer report):

Physical HW identity, date, time, sequence, tag, product number, allowed count, usage count, trial time, time left.

Report format for customer report:

Physical HW identity, date, time, customer, finance ID, tag, product number, usage count

101.3

PARAMETERS

-flush

Discard all processed mails from archive.

-mail-address

Email address to send usage reports to.

This parameter accepts several mail addresses separated with “,” (use “none” to remove).

-mail-interval

Interval between usage report mails (in days).

-process

Pack and mail all reports now.

-report

Generate a usage report now (immediately).

-report-interval

Interval between usage reports (in hours).

-sync

Synchronization data after a change.
Needed to make a change take effect before next timeout. A synchronization takes circa 10 minutes.

-time-to-live

Number of days before accumulated reports are discarded from archive (in days).

101.4

EXAMPLES

Check general license report status:

license_report

Set mail addresses, report interval to 2 hrs and mail interval to 14 days:

**license_report -mail-address \ someone@aastra.com,some-
one_else@aastra.com \ -report-interval 2 -mail-interval 14**

Stop reporting and remove mail addresses:

license_report -report-interval 0 -mail-address none

Pack and mail reports, reports immediately rather than waiting for timeout:

license_report -process

Discard all processed reports.

license_report -flush

102 LICENSE_REREAD

Read license file again

102.1 FORMAT

license_reread

102.2 FUNCTION

license_reread is used to request the license server to read the license file (/etc/opt/eri_sn/lic.dat) again.

The command will:

- request the license server to read the file
- run coordination start ('start --system')

102.3 PARAMETERS

-

102.4 EXAMPLE

Ask the license server to read the license file again.

license_reread

103 LICENSE_STATUS

List license status

103.1 FORMAT

license_status
[-s][-fal]

103.2 FUNCTION

license_status is used to list the license usage (that is, the license status).

103.3 PARAMETERS

-s
Short printout of only hardware ID.

-fal
Include FAL number in printout.

103.4 EXAMPLES

Get normal status printout of license usage and hardware ID.

license_status

Get printout of only hardware ID.

license_status -s

Get status printout of license usage including FAL numbers, and hardware ID.

license_status -fal

104

LS_CONFIG_ATTENUATION

Handle LSU attenuation tables.

104.1

FORMAT

ls_config_attenuation
 -lim [-attn][-law]

104.2

FUNCTION

The command changes the attenuation table of the LSU and sets the desired attenuation scale in the system. It is also possible to define an optional scale by entering new values. In this case a companding law has to be stated.

The command causes disturbances in the traffic handling.

104.3

PARAMETERS

-attn

Attenuation array The format is <arrayPos>{+/-}<attenuation> The range of arrayPos is 0-15 The range of attenuation is 0-99. Example: 1+4,2-2,7-15

-law

Companding law The method of encoding analog data to the digital PCM format. Example: a_law u_law

-lim

LIM number [range: 1-124].

104.4

EXAMPLE

Set attenuation in LIM 2. Position 0 is set to +6 dB, position 1 is set to +3 dB, and position 2 is set to -3 dB.

ls_config_attenuation -lim 2 -attn 0+6,1+3,2-3

105 LS_CONFIG_BLOCK

Block DSU board.

105.1 FORMAT

```
ls_config_block  
-dsu -mgw
```

105.2 FUNCTION

The command blocks a DSU in an MX-ONE Classic. Existing connections will not be cut off, but new calls are not possible. A printout gives notice that there may be existing connections.

The DSU board is only blocked for traffic, signalling to the board is still possible.

105.3 PARAMETERS

-dsu
DSU number [range: 0-3].

-mgw
Gateway has the format LLLG where LLL=lim number [range: 1-124],
G=gateway letter [range: A-O].

Example: 1B (single value)
 1B...1E (series)
 1A,1C (multiple values)
 1B...1D,1F (combination)

105.4 EXAMPLE

Block DSU number 2 in gateway 3A.

```
ls_config_block -dsu 2 -mgw 3A
```

106

LS_CONFIG_DEBLOCK

Deblock DSU board

106.1

FORMAT

```
ls_config_deblock  
-dsu -mgw
```

106.2

FUNCTION

The command deblocks a manually blocked DSU board in a MX-ONE Classic.

106.3

PARAMETERS

-dsu
DSU number [range: 0-3]

-mgw
Gateway has the format LLLG where LLL=lim number [range: 1-124],
G=gateway letter [range: A-O].

Example:

1B	(single value)
1B...1E	(series)
1A,1C	(multiple values)
1B...1D,1F	(combination)

106.4

EXAMPLE

Deblock DSU board number 2 in gateway 3A.

```
ls_config_deblock -dsu 2 -lim 3A
```


107 LS_CONFIG_INFO

View LSU/DSU configuration.

107.1 FORMAT

ls_config_info
[-mgw]

107.2 FUNCTION

View the state of DSU and LSU boards in a MX-ONE Classic.

107.3 PARAMETERS

-mgw

Gateway has the format LLLG where LLL=lim number [range: 1-124],
G=gateway letter [range: A-O].

Example: 1B (single value)
 1B...1E (series)
 1A,1C (multiple values)
 1B...1D,1F (combination)

107.4

PRINTOUT

ls_config_info -mgw 4A															
Mgw															
4A	LSU														
	DSU	0													
	DSU	1													
	DSU	2													
	DSU	3													
Attenuation table (a-law):															
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
-6	-3	0	+3	+6	+9	+12	+15	+18	+21	+24	+27	+30	+33	+36	+39

107.5

EXAMPLE

View information for all LSU LIMs.

ls_config_info

108 LS_CONFIG_TEST

Test LSU/DSU.

108.1 FORMAT

ls_config_test

-mgw [-full][-dsu]
-mgw [-full][-bpos]

108.2 FUNCTION

The command makes a function test of DSU and LSU boards in a MX-ONE Classic.

108.3 PARAMETERS

-bpos

Board position. The parameter has the format LLLG-Y-Z where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine and Z=position.

Example: 1A-0-10 (single value)
 1C-0-10...1C-0-30 (series)
 1A-0-10,1B-0-30 (multiple values)
 1K-0-10...1K-0-30,1M-0-50...1D-0-60 (combination)

-dsu

DSU number [range: 0-3].

-full

Make a full test of the LSU This will disturb the traffic.

-mgw

Gateway has the format LLLG where LLL=lim number [range: 1-124], G=gateway letter [range: A-O].

Example: 1B (single value)
 1B...1E (series)
 1A,1C (multiple values)
 1B...1D,1F (combination)

108.4 EXAMPLES

Make a full function test of the LSU and the DSU boards number 0 and 2 in gateway 1A.

ls_config_test -full -mgw 1A -dsu 0,2

Make a function test of LSU and DSU boards with board position 2-0-30 in gateway 2B.

ls_config_test -mgw 2B -bpos 2-0-30

109

MDSH

Shell for MX-ONE Service Node

109.1

FORMAT

mdsh

109.2

FUNCTION

It is possible to run different shells (i.e. command interpreters) on UNIX and Linux systems. It is normally possible to start another shell from inside a shell. The shell that is to be started when a person logs into the computer is called a “login shell”. The file `/etc/passwd` controls which shell is the login shell of which user.

mdsh can be started from another shell, or it can be used as login shell.

The login shell field in `/etc/passwd` is set by the system administrator when he/she creates the user account. The users can change the login shell themselves by the use of the `chsh` command. You do not usually edit `/etc/passwd` directly. (A skilled system administrator can edit `/etc/passwd` directly, but that requires great care to guarantee that no extra/erroneous characters are entered by mistake.)

It is intended that the users on the MX-ONE Service Node (i.e. the service personnel of the customer) should have mdsh as login shell. Different user accounts have different privileges in mdsh. These privileges are governed by the file `/etc/opt/eri_sn/mdsh.conf`.

Different privileges grant the rights to enter different commands. The command “help” in mdsh lists (only) the commands the current user is privileged to execute.

Users on the highest privilege level are allowed to start other shells from mdsh (thus bash is one of the allowed commands for this level).

There are 3 fundamentally different types of commands in mdsh:

MML commands

These commands are syntactically different from unix commands.

These commands are sent by mdsh to the program unit CIOR that looks up a registered command handler (like THH) to execute the command.

Built-in commands

These commands are executed by mdsh, as an integrated part functionality of mdsh. Examples of such commands are “cd” and “threads”. More help on these commands are available by typing “help <command name>” in mdsh. (It is possible for mdsh to provide help on these commands, as mdsh has total control over these commands.).

Linux commands

These commands are separate executable files in the unix environment outside mdsh. mdsh has no knowledge about how these commands work. Some of these commands are standard Linux/Unix tools like “less”. Other executable files are programs that belong to the MX-ONE Service Node software.

mdsh does not support flow control statements like loops, “if” statements “while” statements, pipes and redirection. Another shell should be used if these features are

needed. (bash is recommended.) (See “mdsh -c command” below.)mdsh command line switches:

-c command

Only execute command. The command is executed directly and mdsh is terminated. There is no prompt for commands.

-f

Turn off confirmation of dangerous commands..

-gdsxport

pAddress:portnum: Start mdsh, but wait for GDSX to connect to the ipAddress:port. Read commands from GDSX on the port instead of prompting for commands.

-genConf file

Generate an example configuration file.

--help, -help, -H, -h, -?

print this help text.

Script files

A command line argument that is not one of the above switches, should be the name of script file with mdsh commands. Further command line arguments are passed as arguments to the script file.

Initialization files

When mdsh is started it first reads the file /etc/opt/eri_sn/mdsh.rc (if it exists) and executes the commands in this file. After that mdsh reads the file \${HOME}/.mdshrc (if it exists) and executes the commands in this file. These files are intended for setting of environment variables, etc.

The command history is saved in the file \${HOME}/.mdsh.history

109.3

PARAMETERS

-

109.4

EXAMPLE

-

110

MEDIA_ENCRYPTION_DISABLE

Disable media encryption

110.1

FORMAT

media_encryption_disable

-type

110.2

FUNCTION

Disable VoIP media encryption for either IP extensions, trunks or inter media gateway connections.

110.3

PARAMETERS**-type**

The parameter states whether Media Encryption shall be disabled for IP extensions, IP trunks or inter media gateway connections in the system. Configuration mode of a specific IP interface. Possible values are: 'extension', 'intermgw' and 'route'.

For IP extensions disabling is only allowed if the security policy is OPEN.

110.4

EXAMPLES

Disable media encryption for the IP trunks.

media_encryption_disable -type route

Disable media encryption for the IP extensions.

media_encryption_disable -type extension

Disable media encryption for inter media gateway connections.

media_encryption_disable -type intermgw

111 MEDIA_ENCRYPTION_ENABLE

Enable media encryption

111.1 FORMAT

media_encryption_enable
-type

111.2 FUNCTION

Enable SRTP media encryption for Voice over IP (VoIP) traffic.

Note: Media encryption is enabled for IP extensions, routes and inter media gateway connections by default.

111.3 PARAMETERS

-type
The parameter states whether media encryption is enabled for IP extensions, routes or inter media gateway connection. Possible values are: 'extension', 'intermgw' and 'route'

111.4 EXAMPLES

Enable media encryption for the IP trunks.

media_encryption_enable -type route

Enable media encryption for the IP extensions.

media_encryption_enable -type extension

Enable media encryption for the inter media gateway connections.

media_encryption_enable -type intermgw

112

MEDIA_ENCRYPTION_PRINT

Print the state of the media encryption

112.1

FORMAT

media_encryption_print
-type

112.2

FUNCTION

Print the media encryption status in the system.

112.3

PARAMETERS

-type

The parameter states whether Media Encryption shall be printed for IP extensions, IP trunks or inter media gateway connections in the system. Possible values are: 'extension', 'intermgw' and 'route'

112.4

EXAMPLES

Print the media encryption status for the IP trunks.

media_encryption_print -type route

Print the media encryption status for the IP extensions.

media_encryption_print -type extension

Print the media encryption status for the inter media gateway connections.

media_encryption_print -type intermgw

113

MEDIA_GATEWAY_CONFIG

Media Gateway configuration.

113.1

FORMAT

media_gateway_config

```

[-v] -c -m [--ip-configuration-mode][--cidr [--default-gateway]]
[--symbolic-name][--link-mode]

[-v] -e -m [--cidr]

[-v] -i -m --mgw-type [--ip-configuration-mode]
[--cidr [--default-gateway]][--symbolic-name][--link-mode]

[-v] -p [--status][--l]

[-v] -p [--status][--m]

```

113.2

FUNCTION

The command will define a media gateway with stated type and control interface address.

The following rules apply when specifying media gateways:

- The first media gateway defined in a lim must be named "A".
- There are three types of media gateways supported: MS, MGU and LSU/DSU.
- When using LSU/DSU media gateway, only LSU/DSU is allowed in that LIM (Service Node).
- Media Server (MS) can be co-located with MGU(s) in a LIM (Service Node)
- Media Server (MS) can be separate, i.e. in a LIM (Service Node) of its own.

113.3

PARAMETERS

-c, --change

Change some settings. I.e. reconfiguration of an item (or several items).

The switch takes no arguments.

--cidr

Classless Inter-Domain Routing: states an address with a network prefix.

Example: 203.0.113.0/24

The switch requires an argument. The argument is single-valued.

--default-gateway

States a default gateway, no port number allowed.

The switch requires an argument. The argument is single-valued.

-e, --erase

Erase some settings. I.e. deconfiguration of an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings. I.e. make initial configuration of an item (or several items).

The switch takes no arguments.

--ip-configuration-mode

configuration mode of ip interface. Possible values are:

'static' - static configuration of network parameters.

'dhcp' - configuration of network parameters by DHCP.

'slaac' - auto configuration by Neighbor Discovery Protocol.

Default if switch is not given is 'static'.

The switch requires an argument. The argument is single-valued.

-l, --lim

LIM number. Range 1 - 124.

Example:

3 (single value)

1...4 (series)

The switch requires an argument. The argument can be a range (first..last).

--link-mode

Ethernet link mode. Possible values are: '10-FULL', '10-HALF', '10-full', '10-half', '100-FULL', '100-HALF', '100-full', '100-half', '1000', 'AUTO', 'auto'. Values:

auto -Auto negotiation, default value

10-half = Fixed to 10 Mbps half-duplex

10-full = Fixed to 10 Mbps full-duplex

100-half = Fixed to 100 Mbps half-duplex

100-full = Fixed to 100 Mbps full-duplex

1000 = Fixed to 1000 Mbps (full-duplex)

The switch requires an argument. The argument is single-valued.

-m, --media-gateway

Media gateway. Syntax of argument is LG, where

L is lim number [1 - 124]

G is gateway [A - O]

Example: 1B (single value)

1B...1E (series)

1A,1C (multiple values)

1B...1D,1F (combination)

The switch requires an argument. The argument is single-valued

--mgw-type

Media gateway type. Possible values are: 'LSU', 'MGU', 'MS', 'lsu', 'mgu' and 'ms'.

Explanation: lsu/LSU shall be used for LSU/DSU based media gateway.

mgu/MGU shall be used for Media Gateway Unit (MGU, MGU2).

ms/MS shall be used for Media Server.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items.

The switch takes no arguments.

-status

Print the MX-ONE Service Node supervision status of the control to the media gateway.

--symbolic-name

Symbolic name of the resource. Optional name of media gateway.

It is recommended to only use one word for symbolic name, but if the symbolic name contains more than one word, and the words are separated by space characters, quote characters ("...") MUST be used to surround the complete symbolic name. One reason is Regeneration functions.

Accepted argument length is 1 to 20 characters.

The switch requires an argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error. The switch takes no arguments

113.4

EXAMPLES

Print control interface information from all media gateways

```
media_gateway_config -p
```

Print control interface information from media gateway 1A

```
media_gateway_config -p --media-gateway 1a
```

Print control interface status

```
media_gateway_config -p --status
```

Set control interface for media gateway 2A, using IPv4

```
media_gateway_config -i -m 2a --mgw-type MGU --cidr 203.0.113.53/24  
--default-gateway 203.0.113.1
```

Set control interface for media gateway 1A, using IPv6

```
media_gateway_config -i -m 1a --mgw-type MGU \  
--cidr 2001:db8:2164:2006:6::63/64 --default-gateway 2001:db8:2164:2006::1
```

Change symbolic name of media gateway 3a

```
media_gateway_config -c -m 3a --symbolic-name GWxx
```

Ending media gateway 1A

```
media_gateway_config -e --media-gateway 1a
```

114

MEDIA_GATEWAY_INFO

Media Gateway information.

114.1

FORMAT

media_gateway_info

```
[-print][-mgw]
-get -mgw [-name [-attrib]]
-set -mgw -name -attrib -int [-reload]
-set -mgw -name -attrib -string [reload]
-set -mgw -name -attrib -bool [-reload]
-clear_reload -mgw -name -attrib
-commit [-mgw]
```

114.2

FUNCTION

Read or set media gateway information.

Data changes can be backed-up by giving the -reload flag.

114.3

PARAMETERS

See Descriptions for MGU, MGU2 and Media Server for explanations and ranges of the parameters below.

-attrib

Attribute name.

-bool

Boolean value <true | false>

-clear_reload

The reload marking will be removed.

-commit

The media gateway(s) will start using the new data.

-get

Get data from resource.

-int

Integer value.

-mgw

Gateway has the format LLLG where LLL=lim number [range: 1-124],
G=gateway letter [range: A-O].

Example: 1B (single value)
 1B...1E (series)

1A,1C (multiple values)
1B...1D,1F (combination)

- name**
Instance of a resource.
- print**
Read general media gateway information.
- reload**
The data will be backed up and restored.
- set**
Set data in the resource with the given name.
- string**
String value.

114.4

EXAMPLES

Read information for all media gateways.

media_gateway_info -print

Read information for media gateway 2A.

media_gateway_info -print -mgw 2A

Set/change VLAN id to 5 on media packets on media gateway 4A.

media_gateway_info -mgw 4A -set RTP -name RTP -attrib VLANTagValue -int 5 -reload

Confirm new attribute values on media gateway 4A.

media_gateway_info -mgw 4A -commit

Display VLAN id on media gateway 4A.

media_gateway_info -mgw 4A -get RTP -name RTP

The Diffserv setting in MGU or Media Server can be set on control and media signalling by setting the Type Of Service (TOS) value.

To convert from Diffserv value to TOS value divide Diffserv value by 4. Note that decimal values are used.

Read the current ToS (Type Of Service) values for control and media signalling in MGU or Media Server.

media_gateway_info -get QOS -mgw 1a

Change TypeOfServiceForControl from default, 152, on media gateway 1a.

media_gateway_info -set QOS -name QOS -attrib TypeOfServiceForControl -int 104 -reload -mgw 1a

media_gateway_info -mgw 1a -commit

115

MEDIA_GATEWAY_INTERFACE

Initiate, erase or print media interface data of a gateway.

115.1

FORMAT

media_gateway_interface

`[-v] -c -b --port-start --port-stop`

`[-v] -c -m --port-start --port-stop`

`[-v] -e -b`

`[-v] -e -m [--cidr]`

`[-v] -i -b --cidr [--default-gateway][--link-mode][--port-start] [--port-stop]`

`[-v] -i -m [--ip-configuration-mode][--default-gateway][--cidr]`
`[--link-mode][--port-start][--port-stop]`

`[-v] -p [-b]`

`[-v] -p [-l]`

`[-v] -p [-m]`

115.2

FUNCTION

Read or set media gateway interface information.

The commands handle for example port range, default gateway, board position, Ethernet link mode, interface configuration mode and CIDR address. The media port start range is 1024 to 65534, and the port stop range is 1225 to 65535, with a minimum of 200 ports. The number of media ports shall be twice the number of RTP resources supported by the gateway type.

115.3

PARAMETERS

-b, --board-position

Board position. Syntax of argument is LG-M-B, where

L is lim number [1 - 124]

G is gateway [A - O]

M is magazine [0 - 3]

[4 - 6], MGU based media resources

[7], dynamic fictitious

B is board position[0 - 73]

Example of valid syntax: 124N-2-60

The switch requires an argument. The argument is single-valued

-c, --change

Change some settings. I.e. reconfiguration of an item (or several items).

The switch takes no arguments.

--cidir

Classless Inter-Domain Routing: states an address with a network prefix.
Example: 203.0.113.0/24

The switch requires an argument. The argument is single-valued.

--default-gateway

States a default gateway, no port number allowed. The default value is subnet-address + 1.

The switch requires an argument. The argument is single-valued.

-e, --erase

Erase some settings. I.e. deconfiguration of an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings. I.e. make initial configuration of an item (or several items).

The switch takes no arguments.

--ip-configuration-mode

configuration mode of ip interface. Possible values are:

'static' - static configuration of network parameters.

'dhcp' - configuration of network parameters by DHCP.

'slaac' - auto configuration by Neighbor Discovery Protocol.

Default if switch is not given is 'static'.

The switch requires an argument. The argument is single-valued.

-l, --lim

LIM number. Range 1 - 124.

Example:

3 (single value)

1...4 (series)

The switch requires an argument. The argument can be a range (first..last).

--link-mode

Ethernet link mode. Possible values are: '10-FULL', '10-HALF', '10-full', '10-half', '100-FULL', '100-HALF', '100-full', '100-half', '1000', 'AUTO', 'auto'. Values:

auto -Auto negotiation, default value

10-half = Fixed to 10 Mbps half-duplex

10-full = Fixed to 10 Mbps full-duplex

100-half = Fixed to 100 Mbps half-duplex

100-full = Fixed to 100 Mbps full-duplex

1000 = Fixed to 1000 Mbps (full-duplex)

The switch requires an argument. The argument is single-valued.

-m, --media-gateway

Media gateway. Syntax of argument is LG, where

L is lim number [1 - 124]

G is gateway [A - O]

Example: 1B (single value)

1B...1E (series)

1A,1C (multiple values)

1B...1D,1F (combination)

The switch requires an argument. The argument is single-valued

--port-start

Port number.

The switch requires an argument. The argument is single-valued.

- port-stop**
Port number.
The switch requires an argument. The argument is single-valued.
- p, --print**
Print all or some settings. I.e. print configuration of an item, several items, or all items.
The switch takes no arguments.
- v, --verbose**
Turn on verbose output (i.e. progress information) to standard error. The switch takes no arguments

115.4

PRINTOUT

Table 21 Printout example of media_gateway_interface

LIM	...	Interface address:	...
		Subnet Mask:	...
		Network:	...
		Broadcast:	...
		Default gateway:	...
		Link capability:	...

115.5

EXAMPLES

Read the interface information from all media gateways.

media_gateway_interface -p

Read the interface information from all media gateways in LIM 1.

media_gateway_interface -p -lim 1

Read the interface information from media gateway 1A.

media_gateway_interface -p -mgw 1A

Read the interface information from board position 1B-0-40.

media_gateway_interface -p --board-position 1B-0-40

Set the media interface for media gateway 2A, with IPv4 addresses.

**media_gateway_interface -i -media-gateway 2A --cdir 192.168.2.23/24
--default-gateway 192.168.2.1**

Set the media interface for media gateway 2A, with IPv6 addresses.

**media_gateway_interface -i -media-gateway 2A \
--cdir 2001:db8:2164:2006:6::64/64 --default-gateway 2001:db8:2164:2006::1**

Set the media interface in a media gateway legacy LIM.

**media_gateway_interface -i --board-position 2C-0-40 -cdir 203.0.113.23/24
--default-gateway 203.0.113.1**

Ending media interface in gateway 1A

media_gateway_interface -e --media-gateway 1a

Changing port range in gateway 1A

**media_gateway_interface -c --media-gateway 1a --port-start 22222 --port-stop
33333**

Ending media interface for legacy board

media_gateway_interface -e --board-position 3a-0-40

116

MEDIA_GATEWAY_START

Media Gateway start.

116.1

FORMAT

media_gateway_start

```
-mgw -reboot
-mgw -restart -function [-name]
-mgw -shutdown
```

116.2

FUNCTION

Manually order a reboot, or a shutdown of a media gateway, or a restart of one or several functions. Only reboot is valid for the LSU.

116.3

PARAMETERS

-function

The resource type(s) to restart.

Format xx[,yy,zz]. Use the command `media_gateway_info` to see the resource types. See chapter 114 `media_gateway_info` on page 300 for the syntax.

all = restart all applications.

If **-name** is specified, only one resource type may be specified.

-mgw

Gateway has the format LLLG where LLL=lim number [range: 1-124], G=gateway letter [range: A-O].

Example: 1B (single value)
 1B...1E (series)
 1A,1C (multiple values)
 1B...1D,1F (combination)

-name

Optional name of individual(s)

Format xx[,yy,zz]. Use the command `media_gateway_info` to see the names. See chapter 114 `media_gateway_info` on page 300 for the syntax.

-reboot

Reboot the media gateway or the LSU board.

-restart

Restart of media gateway resources.

-shutdown

Shut down the media gateway.

116.4

EXAMPLES

Reboot media gateway B associated with LIM 3.

media_gateway_start -mgw 3B -reboot

Restart media gateway F for LIM 21.

media_gateway_start -mgw 21F -restart

117

MEDIA_SERVER

Media server streaming control interface configuration.

117.1

FORMAT

media_server

```
[ -v ] -c --name [ --host ] [ -l ] [ --port ] [ --symbolic-name ] [ --service-name [ ] ]
[ -v ] -e --name [ -l ]
[ -v ] -i --host [ --name ] [ -l ] [ --port ] [ --symbolic-name ] [ --service-name [ ] ]
[ -v ] -p
```

117.2

FUNCTION

The `media_server` command will define how to connect to a media server SIP control interface for streaming, and print the configuration.

The Media Server Control Markup Language (MSCML) and protocol according to RFC 5022 is used.

117.3

PARAMETERS

-c, --change

Change some settings. I.e. reconfiguration of an item (or several items)

The switch takes no arguments.

-e, --erase

Erase some settings. I.e. deconfiguration of an item (or several items).

The switch takes no arguments.

--host

States a computer name. Examples of valid syntaxes: 203.0.113.10, 2001:db8:2164:2006::10, mx-design.se.aastra.com.

The switch requires an argument. The argument is single-valued.

-i, --initiate

Initiate some settings. I.e. make initial configuration of an item (or several items).

The switch takes no arguments.

-l, --lim

LIM number (Service node server number). The LIM numbers that are allowed are 1-124.

Examples of valid syntax: 2 or 1,3..5,124

The switch requires an argument. The argument can be single, comma-separated list or sequence.

--name

Name or denomination of a Media server resource. Accepted argument length is 1 to 20 characters. If omitted, the default will be the identity set in the

--media-gateway parameter of the media_gateway_config command, e.g. 1A or 14B.

The switch requires an argument. The argument is single-valued.

--port

Port number. Default port number is 5090.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items. The switch takes no arguments.

--service-name

The parameter controls activation of a SIP/MSMML based interface to the Media Server, for a specific streaming audible message service. Service name of the service supported by the Media Server. Allowed values are SOI, RVA, MOH or TS.

SOI is Streaming On Idle,

RVA is Recorded Voice Announcement (and Music On Wait),

MOH is Music On Hold,

TS is Tone Sending, but is not supported (only for test).

Accepted argument length is 2 to 3 characters. The switch takes an optional argument. The argument can be a comma separated sequence.

--symbolic-name

Symbolic name of the resource. Optional description or identity of a media server.

It is recommended to only use one word for symbolic name, but if the symbolic name contains more than one word, and the words are separated by space characters, quote characters ("...") MUST be used to surround the complete symbolic name. One reason is Regeneration functions.

Accepted argument length is 1 to 20 characters.

The switch requires an argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error.

The switch takes no arguments.

117.4

EXAMPLES

Print out all configured media servers.

media_server -p

Specify media server for use in lim 1.

media_server -i -l 1 --host lim1.site.com --service-name SOI

Specify media server for use in lim 1.

media_server -i -l 1 --name ms_john --host 203.0.113.53 --service-name SOI

Specify a media server for use in lim 1, using the SIP/MSMML interface for the service Streaming On Idle service.

media_server -i -l 1 --name strms --host 203.0.113.53 --service-name soi

Specify media server for use in lim 1, 2 and 3 with the service Streaming On Idle.

media_server -i -l 1..3 --name ms_james --host 203.0.113.55 --service-name SOI

Specify media server for use in all lims, with services Music On Hold and RVA, i.e. the -l parameter shall be omitted. IPv4 addresses shall be used.

media_server -i --name ms_james --host 203.0.113.55 --service-name MOH,RVA

Specify media server (the same as in previous example) for use in all LIMs, with services Music On Hold and RVA, i.e. the -l parameter shall be omitted. IPv6 addresses shall be used.

**media_server -i --name ms_james --host 2001:db8:2164:2006::1 **
--service-name MOH,RVA

Specify media server for use in lim 2 with the service Streaming On Idle.

media_server -i -l 2--name ms_otto --host mediaserver.company.com --port 5090
--symbolic-name "MS Otto in Oslo" --service-name SOI

Change symbolic name of media server ms_john

media_server -c --name ms_john --symbolic-name Stockholm

End the media server ms_john

media_server -e --name ms_john

118

MEDIA_SERVER_MESSAGE

Media server streaming message conversion table

118.1

FORMAT

media_server_message

```

[-v] -c --message-number [--uri] [--volume] [--name ]
[-v] -c --message-number [--file] [--volume] [--name ]
[-v] -c --baseurl [--name ]
[-v] -e [--message-number] [--name ]
[-v] -i --message-number [--uri] [--volume] [--name ]
[-v] -i --message-number [--file] [--volume] [--name ]
[-v] -i --baseurl [--name ]
[-v] -p [--message-number] [--name ]

```

118.2

FUNCTION

The `media_server_message` command will define the conversion from service node internal message number to media server message file name. A message number `X` not defined in the conversion table will have default file name "messageXXX". A volume setting/change is also supported.

118.3

PARAMETERS

--baseurl

States an RFC3261 compliant URI. The parameter states the path or directory for the file(s) given in the `file/uri` parameter.

If `baseurl` is specified/used, it will be appended to (before) the message file name. In case `baseurl` is not specified, the function will address message files stored in the local host directory `/var/rva`, i.e. the same directory where the legacy RVA files are installed.

The `baseurl` will not be appended if the message is addressed with a full URI in the `--uri` parameter.

The `baseurl` can also be 'overridden' by entering `file:///xxx` in the `--uri` parameter.

An IPv6 host address must be enclosed in square brackets. Accepted argument length is 7 to 125 characters.

The switch requires an argument. The argument is single-valued.

-c, --change

Change some settings. I.e. reconfiguration of an item (or several items)

The switch takes no arguments.

-e, --erase

Erase some settings. I.e. deconfiguration of an item (or several items).

The switch takes no arguments.

--file

File name. Accepted argument length is 1 to 20 characters. The switch requires an argument. The argument is single-valued.

-i, --initiate

Initiate some settings. I.e. make initial configuration of an item (or several items).

The switch takes no arguments.

--message-number

Message number is the internally used number in service node for playing a message.

The switch requires an argument. The argument is single-valued.

--name

Name of the media server resource. Accepted argument length is 1 to 20 characters. If the value 'default' is entered, or if the --name parameter is omitted in the -i, -c or -e commands, the default data is managed. If the --name parameter is omitted in the -p command, it will print 'all', including 'default'.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items. The switch takes no arguments.

--uri

States an RFC3261 compliant URI. An IPv6 host address must be enclosed in square brackets. Accepted argument length is 7 to 125 characters.

The switch requires an argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error.

The switch takes no arguments.

--volume

Play back relative to stream volume. -12 +12 (dB), in steps of 1(dB). Default value is 0 dB.

The switch requires an argument. The argument is single-valued.

118.4

EXAMPLES

Print out message conversion table, for all media servers.

media_server_message -p

Print out message conversion table for media server 1A.

media_server_message -p --name 1A

Specify media server message conversion table for continuous streaming. Use --baseurl.

media_server_message -i --baseurl http://company.com/prompts

Then specify message file name which will be added to the baseurl.

media_server_message -i --message-number 252 --file company-moh2

Specify media server message conversion table for message 251. Use --file. Baseurl shall not be used, which means the file will be stored at local host directory /var/rva.

media_server_message -i --message-number 251 --file company-moh1

Specify media server message conversion table for message 252. Use --file.

media_server_message -i --message-number 252 --file company-moh2

Specify media server message conversion table for message 253. Use --uri.

media_server_message -i

--message-number 253 --uri http://company.com/prompts/company-moh3

Specify media server message conversion table for message 253. Use both IPv4 and IPv6 addresses.

media_server_message -i

--message-number 253 --uri http://203.0.64.11/rva/message253.wav

media_server_message -i

--message-number 253 --uri http://[2001:db8:2164:64::11]/rva/message253.wav

Remove the media server message conversion for message 1 for media server 1A.

media_server_message -e --message-number 1

Remove the media server message conversion default settings for message 1 for all media servers.

media_server_message -e --message-number 1

Change the volume settings for message 1 for all media servers. Attenuate by -3 dB.

media_server_message -c --message-number 1 --volume -3

119 MESSAGE_LIST

List messages known to program unit

119.1 FORMAT

message_list

-unit [-lim][-from][-to][-singleLine [separator]]

-unit [-lim][-num]

119.2 FUNCTION

The command lists messages known to a program unit, and simultaneously checks the consistency of the message name cache system. The default operation is to print each message on multiple lines for easier reading. If the output of this command is intended for further processing the -singleLine switch can be used.

119.3 PARAMETERS

-from

Lowest message number or name to be listed.

-lim

LIM number [range: 1-124].

Default value is current LIM (only single value allowed).

-num

Print all message numbers only.

-singleLine

Write each message on a single line. Optional argument to this switch is a separator string to write between columns. The default separator for single line output is “; “

-to

Highest message number or name to be listed.

-unit

The name of the program unit (PU)

119.4 EXAMPLES

List all messages in LLSP.

message_list -unit LLSP

List all messages in LLSP in a format suitable for further processing .

message_list -unit LLSP -singleLine

List all message numbers in LLSP.

message_list -unit LLSP -num

List messages in LLSP starting with PUNOREQ and stopping with RESAC.

message_list -unit LLSP -from PUNOREQ -to RESAC

120

MESSAGE_NAME

Translate between message name and number

120.1

FORMAT

message_name

-name [-long][-unit]
 -name -number [-long][-unit]
 -number [-long][-unit]

120.2

FUNCTION

message_name is used to translate between message names and numbers. One translation in each direction is possible in one command.

120.3

PARAMETERS

-long

Use long answer printout.

-name

Translate the given message name to a message number

-num

Synonym for "-number".

-number

Translate the given message number to a message name.

-unit

The name of the program unit (PU).

Program unit which might use the requested translation. Given as a hint for translation.

120.4

EXAMPLES

Translate the message name "REPRU" to a message number.

message_name -name REPRU

Translate the message name "REPRU" to a message number. On the same time translate the message number 7042 to a message name. Give a hint to the translation system that the program unit AL uses the messages and might know the translation. Use the long format.

message_name -name REPRU -number 7042 -unit AL -long

121 MESSAGE_NUMBER

Translate between message name and number

121.1 FORMAT

message_number

-name [-long][-unit]
 -name -number [-long][-unit]
 -number [-long][-unit]

121.2 FUNCTION

message_number is used to translate between message names and numbers. One translation in each direction is possible in one command.

121.3 PARAMETERS

-long

Use long answer printout.

-name

Translate the given message name to a message number.

-num

Synonym for "-number".

-number

Translate the given message number to a message name.

-unit

The name of the program unit (PU).

Program unit which might use the requested translation. Given as a hint for translation.

121.4 EXAMPLES

Translate the message name "REPRU" to a message number.

message_number -name REPRU

Translate the message name "REPRU" to a message number. On the same time translate the message number 7042 to a message name. Give hint to the translation system that the program unit AL uses the messages and might know the translation. Use the long format.

message_number -name REPRU -number 7042 -unit AL -long

122

MESSAGE_SEND

Compose and send a message to software

122.1

FORMAT

message_send

```
-messageNumber -hex -type -toPu -toLevel [-senderLim]
[-senderPu][-senderLevel][-toLim][-linkvalue] -nowait

-messageNumber -hex -type -toPu -toLevel [-senderLim]
[-senderPu][-senderLevel][-toLim][-linkvalue] -wait
```

122.2

FUNCTION

The command *message_send* is a signal generator that allows the user to compose an arbitrary message, and send it to any program unit in any LIM. If *message_send* is invoked without arguments, it will interactively help the user to compose the message. In this case the user is prompted for all information. Before sending the message the corresponding complete command line is printed, to help the user to send the message again non-interactively. Only intended for use by skilled service personnel.

Note: For sending messages to the hardware use the command 81 hw_message_send on page 245.

122.3

PARAMETERS

-hex

A hexadecimal string containing the data to send in the message. The following special codes are allowed:

- L4 : The current LIM number as an integer (4 bytes)
- L2 : The current LIM number as a short integer (2 bytes)
- L1 : The current LIM number as tiny integer/char (1 byte)
- P4 : The current PU number as an integer (4 bytes)
- P2 : The current PU number as a short integer (2 bytes)
- P1 : The current PU number as tiny integer/char (1 byte).

If the string is enclosed in quotes ("), then space and comma might be inserted anywhere to improve readability.

-linkvalue

The link value to use for timegap messages.

-messageNumber

The number of the message to be sent.

-nowait

Do not wait for a reply message.

-senderLevel

The sending thread level in the message header. Possible values are "A", "B", "X", "Y", and "SERVICE". The default value is "Y".

-senderLim

The LIM number of the sending LIM in the message header. If the parameter is omitted the default value is the LIM where the command is running.

-senderPu

A program unit number or name of the sending PU in the message header. If the parameter is omitted the default value is the virtual PU number of the command.

-toLevel

The level to which the message is sent. Possible values are "A", "B", "X", "Y", and "SERVICE".

-toLim

The LIM number of the receiver of the message. If the parameter is omitted the default value is the LIM where the command is running.

-toPu

The name or number of the program unit that will receive the message.

-type

The type of message to send. Possible values are "SW_SW", "HW_SW", "COMBINEDFORWARD_TIMEGAP", "COMBINEDBACKWARD_TIMEGAP", "COMBINEDBACKWARD", and "BROADCAST".

-wait

Wait for a reply message, but only as many seconds as specified in the argument. If no argument is given, the timeout is 10 seconds.

122.4

EXAMPLE

Send a TIMEREQUESTA message to LLSP, and wait for reply.

```
message_send -type SW_SW -messageNumber TIMEREQUESTA -toPu LLSP  
-wait -hex "000000P2L100" -toLevel A
```

123

MXONE_DATA

Print MX-ONE Service Node configuration data.

123.1

FORMAT

mxone_data

[-v][-V]

[-v][-V] -p [-f] [--extra]

123.2

FUNCTION

The command prints MX-ONE Service Node configuration, i.e. LDAP master, DNS master, LIM servers, cluster standby servers, standby servers (not in any cluster), media servers, management server and free servers.

123.3

PARAMETERS

--extra

Show additional data, i.e. cluster data.

The switch takes no arguments.

-f, --format

Select a format for the printout.

Possible values are:

SCRIPT	Script "friendly" format. Script formatted lines have the syntax: key:subkey:value
TABLE	Table format.

Key and value must exist. There can be several subkeys or the subkey can be missing. The value can be one item or several comma separated items. An item can be printed as a dash '-'. Default if switch is not given is 'TABLE'.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items.

The switch takes no arguments.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

123.4

EXAMPLE

Print configuration data.

```
mxone_data -p
```

124

NAME

Manage name information.

124.1

FORMAT

name**name**

```

[-v][-V] -e --customer --company-name-only
[-v][-V] -e --number-type [--dial-by-name-also]
[-v][-V] -e --number-type [--dial-by-name-only]
[-v][-V] -e --route-number
[-v][-V] -e -d --list
[-v][-V] -e -d [--dial-by-name-only][--number-type]
[-v][-V] -e [-d] --name1 [--name2] --dial-by-name-only
[-v][-V] -e [-d][--name1] --name2 --dial-by-name-only
[-v][-V] -i --customer --name1 [--name2][--presentation-priority] --company-name-only
[-v][-V] -i --customer [--name1] --name2 [--presentation-restricted]
--company-name-only
[-v][-V] -i --route-number --name1 [--name2] [--presentation-priority]
[-v][-V] -i --route-number [--name1 ] --name2 [--presentation-priority]
[-v][-V] -i -d --list --list-name
[-v][-V] -i -d --number-type --name1[--name2] [--dial-by-name-also]
[--aux-info][--info][--presentation-priority] [--presentation-restricted]
[-v][-V] -i -d --number-type [--name1] --name2 [--dial-by-name-also]
[--aux-info][--info][--presentation-priority] [--presentation-restricted]
[-v][-V] -i -d --number-type --name1[--name2] [--dial-by-name-only]
[--aux-info][--info][--presentation-priority] [--presentation-restricted]
[-v][-V] -i -d --number-type [--name1] --name2 [--dial-by-name-only]
[--aux-info][--info][--presentation-priority] [--presentation-restricted]
[-v][-V] -p -d --list
[-v][-V] -p --route-number
[-v][-V] -p -d [--dial-by-name-only][--number-type]
[-v][-V] -p [--customer] --company-name-only
[-v][-V] -p [--name1][--name2] --dial-by-name-only [--number-type]

```

124.2

FUNCTION

The command is used to erase, initiate or print name data.

This command is used to remove, print and initiate the name associated to an extension, DNIS number, individual PBX operator or group (PBX or ACD), personal number list or to remove, print and initiate its associated entry in the dial by name database. It

is also used to remove, initiate and print the company name information that might be transmitted over trunks when making an outgoing external call.

The initiate command also works as a change command, i.e. an old name is over-written if the command is entered again for the same entity.

Names are also stored in the dial by name database, which can also include names for external numbers. In this case, the lookup criteria will be composed of the name string (--name2 + space + --name1). During printing the lookup is required to match the beginning of such a name string. During erase the lookup is required to match the complete name string.

All name databases store the names as Unicode, which means that any name can be correctly stored. Digital extensions may have one name associated to its Own Directory Number (ODN) and another to the Additional Directory Number (ADN). Analog extensions may have one name associated to its primary and one to the secondary extension number.

The --info string is used for additional information, for example nationality of a hotel guest. When no Hospitality License is available, the --info switch is not accepted.

Note: Depending on the user's telephone set only 10 characters of the name might be displayed.

124.3

PARAMETERS

--aux-info

Auxiliary information string. Auxiliary information is only stored in the dial-by-name database. The other databases ignore the auxiliary information. Accepted argument length is 1 to 10 characters.

The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/>

In unicode number mode the numbers are separated by space ' ', or by semi-colon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name 'Üßü-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued.

--company-name-only

This operation will only be toward the company name database.

The switch takes no arguments.

--customer

Customer number for the extension. Customer 0 is the default customer of the exchange. Argument must be an integer in the range 0 to 50000.

For print operations the default implementation dependent, for all other operations the default is 0 (zero).

The switch requires an argument. The argument is single-value

--dial-by-name-also

Also in dial-by-name database.

The switch takes no arguments.

--dial-by-name-only

Only in dial-by-name database.

The switch takes no arguments.

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument.

-e, --erase

Erase some settings. That is, de-configure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate settings. That is, make the initial configuration of an item (or several items).

The switch takes no arguments.

--info

Information string. This is only applicable to extensions (--number-type dir) in systems that use "Hospitality". It is ignored for other number types and other systems. Accepted argument length is 1 to 20 characters.

The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/>

In unicode number mode the numbers are separated by space ' ', or by semi-colon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name 'Üßü-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued.

--list

Answering position list. The number corresponds to the Personal Number Profile number. One list contains one deflection list.

Value:

0 No active list (can only be set via `call_list --dir x --list 0` to inactivate personal number)

1..5 List 1 to 5

The switch requires an argument. The argument can be the special word 'all'.

--list-name

Name of call list. Accepted argument length is 1 to 10 characters. The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/>

In unicode number mode the numbers are separated by space ' ', or by semicolon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%.')

Example: To input the fictitious German company name 'Üßü-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued.

--name1

First part of the name. Accepted argument length is 1 to 20 characters. The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/>

In unicode number mode the numbers are separated by space ' ', or by semicolon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%.')

Example: To input the fictitious German company name 'Üßü-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued.

--name2

Second part of the name. Accepted argument length is 1 to 20 characters. The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/>

In unicode number mode the numbers are separated by space ' ', or by semicolon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.) The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the

unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%'.)

Example: To input the fictitious German company name 'Üßü-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The switch requires an argument. The argument is single-valued.

--number-type

Specify what kind of number (dir) it is. Possible values are: 'dir', 'dnis', 'external', 'grp', 'ope'.

The value 'dir' refers to all extension directory numbers. The value 'grp' refers to nightbell, common bell, PBX and ACD groups. The value 'ope' refers to individual operator numbers.

The switch requires an argument. The argument is single-valued.

--presentation-priority

Specify presentation priority. If there is enough space to present complete name, then complete name will always be presented. If there is insufficient space to present complete name then:

1 means that complete name1 is presented followed by initial of name2,

2 means that initial of name1 is followed by complete name2.

If there is still insufficient space, the presentation of the name will be truncated. Possible values are: '1', '2'.

Note: This parameter has no function for SIP and H.323 terminals, which truncate based on total number of pixels, instead of a number of characters.

The default value depends on the --name1 and --name2 parameters present on the command line. If --name2 is missing the default is '1'. If --name2 is present the default is '2'.

The switch requires an argument. The argument is single-valued.

--presentation-restricted

Name presentation is restricted.

The switch takes no arguments.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items.

The switch takes no arguments.

--route-number

States the trunk route number. For all calls over the given route, the specified name is provided. Range: 1 - 250.

The switch requires an argument

-v, --verbose

Turn on verbose output (that is, progress information) to standard error

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

124.4 EXAMPLES

124.4.1 EXAMPLE 1

Initiate a company name for customer 2, with Mitel as name1 and EXG A as name2. The company name might be transmitted over trunks when making external calls.

name -i --customer 2 --name1 "Mitel" --name2 "EXG A" --company-name-only

124.4.2 EXAMPLE 2

The name Paul Newman is to be associated to the extension with directory number 3100. As --presentation-priority is omitted, the default value 2 is set. If the display is shorter than the name length, the name will be displayed as: P Newman

name -i -d 3100 --name1 Paul --name2 Newman \ --number-type dir

124.4.3 EXAMPLE 3

The name Paul Newman is to be associated to the extension with directory number 3100 and the information string Swedish. The information string will be displayed on the displays of parties which are called by the directory number 3100 as well as the name. The called parties that display both the information string and the name are the Service Quarter extensions defined for the hospitality feature.

name -i -d 3100 --name1 Paul --name2 Newman --info \ Swedish --number-type dir

124.4.4 EXAMPLE 4

The name Stallone is to be initiated to extension 1000.

name -i -d 1000 --name1 Stallone --number-type dir

124.4.5 EXAMPLE 5

The name Edgar Allan Poe is to be initiated to extension 2000. As --presentation-priority is omitted, the default value prioToName2 is set. If the display is shorter than the name length, the name will be displayed as: E Poe

name -i -d 2000 --name1 "Edgar Allan" --name2 Poe \ --number-type dir

124.4.6 EXAMPLE 6

The name Paul Newman is to be associated to the extension with directory number 3100. As --presentation-priority is 1, the name will be displayed as "Paul N", if the display is shorter than the name length.

name -i -d 3100 --name1 Paul --name2 Newman \ --presentation-priority 1 --number-type dir

124.4.7

EXAMPLE 7

The name Sylvester Stallone is to be associated to the extension with directory number 3100. As --presentation-priority is 1, the name will be displayed as "Sylvester", if the display is shorter than 10 characters.

```
name -i -d 3100 --name1 Sylvester --name2 Stallone \  
--presentation-priority 1 --number-type dir
```

124.4.8

EXAMPLE 8

The name Sylvester Stallone is to be initiated to extension 1000. We do not want to show the name so we restrict it.

```
name -i -d 1000 --name1 Sylvester --name2 Stallone\  
--number-type dir --presentation-restricted
```

124.4.9

EXAMPLE 9

The name MX-ONE-DESIGN will be associated to the PBX group with directory number 2100. This name will only appear in the display when the group directory number is dialled.

```
name -i -d 2100 --name2 MX-ONE-DESIGN --number-type grp
```

124.4.10

EXAMPLE 10

The name Domestic will be associated to the DNIS number with directory number 11100. This name will only appear in the display when the DNIS directory number is dialled.

```
name -i -d 11100 --name1 Domestic --number-type dnis
```

124.4.11

EXAMPLE 11

The name Robert Redford is to be assigned to the individual PBX operator with directory number 5000.

```
name -i -d 5000 --name1 Robert --name2 Redford\  
--number-type ope
```

124.4.12

EXAMPLE 12

The name Sylvester Stallone is to be initiated to extension 1000. The name will be stored in the dial by name database, too.

```
name -i -d 1000 --name1 Sylvester --name2 Stallone\  
--number-type dir --dial-by-name-also
```

124.4.13

EXAMPLE 13

The name Sylvester Stallone is to be initiated to extension 1000. The name will be stored in the dial by name database, only (including the additional information "design").

```
name -i -d 1000 --name1 Sylvester --name2 Stallone\  
--number-type dir --dial-by-name-only --aux-info design
```


124.4.14

EXAMPLE 14

The profile name "In house" will be assigned to the directory number 1500 and the list position 1.

name -i -d 1500 --list-name "In house" --list 1

124.4.15

EXAMPLE 15

Print the company name for the customer 2.

name -p --customer 2 --company-name-only

124.4.16

EXAMPLE 16

Print the company name for all customers.

name -p --company-name-only

124.4.17

EXAMPLE 17

Print the names associated to all the extensions.

name -p -d all

124.4.18

EXAMPLE 18

Print the names associated to a personal number list for directory number 3200.

name -p -d 3200 --list all

124.4.19

EXAMPLE 19

Print the name associated to all the DNIS numbers.

name -p -d all --number-type dnis

124.4.20

EXAMPLE 20

Print the name associated to the group with directory number 1200.

name -p -d 1200

124.4.21

EXAMPLE 21

Print the name associated to the individual PBX operators with directory numbers 5000 and 7000.

name -p -d 5000,7000

124.4.22

EXAMPLE 22

Print the name associated to the individual PBX operators with directory numbers between 5000 and 7000. (Other number types will not be affected).

name -p -d 5000..7000 --number-type ope

124.4.23

EXAMPLE 23

Print the names associated to the Dial by name database entries whose first characters match with "SM".

name -p --name2 SM --dial-by-name-only

124.4.24

EXAMPLE 24

Print the names associated to the Dial by name database entries corresponding to directory numbers and whose first characters match with "SMO".

name -p --name2 SMO --number-type dir\ --dial-by-name-only

124.4.25

EXAMPLE 25

Erase the company name for the customer 2.

name -e --customer 2 --company-name-only

124.4.26

EXAMPLE 26

The name associated to the directory number 3200 and its dial by name database entry (if it exists) will be deleted.

name -e -d 3200

124.4.27

EXAMPLE 27

The dial by name database entry associated to the directory number 3300 will be deleted.

name -e -d 3300 --dial-by-name-only

124.4.28

EXAMPLE 28

The name associated to the Personal number list 1 for the extension with directory number 3100 will be deleted.

name -e -d 3100 --list 1

124.4.29

EXAMPLE 29

The name associated to the PBX group number 2100 and its dial by name database entry (if it exists) will be deleted.

name -e -d 2100

124.4.30

EXAMPLE 30

The name associated to the DNIS numbers 11000 and 12000 will be deleted.

name -e -d 11000,12000

124.4.31

EXAMPLE 31

The name associated to the DNIS numbers between 11000 and 12000 will be deleted. (Other number types will not be affected).

name -e -d 11000..12000 --number-type dnis

124.4.32

EXAMPLE 32

The names associated to all the individual PBX operators and their dial by name database entries (if they exist) will be deleted.

name -e --number-type ope

124.4.33

EXAMPLE 33

The dial by name database entry associated to the name John Smith and number 2773 will be deleted.

name -e -d 2773 --name1 John --name2 Smith --dial-by-name-only

124.4.34

EXAMPLE 34

All the dial by name database entries associated to Individual Operator Directory numbers will be deleted.

name -e --number-type ope --dial-by-name-only

124.4.35

EXAMPLE 35

The name Sweden India is to be associated to the route number 20. As --presentation-priority is omitted, the default value 2 is set.

name -i --route-number 20 --name1 Sweden --name2 India

124.4.36

EXAMPLE 36

The name Sweden is to be initiated to route number 30.

name -i --route-number 30 --name1 Sweden

124.4.37

EXAMPLE 37

The name Sweden India is to be associated to the route number 20. As --presentation-priority is 1, the name will be displayed as "Sweden I" if the display is shorter than the name length.

name -i --route-number 20 --name1 Sweden --name2 India --presentation-priority 1

124.4.38

EXAMPLE 38

Print the name associated to all the routes.

name -p --route-number all

124.4.39

EXAMPLE 39

Print the name associated to route number 20.

name -p --route-number 20

124.4.40

EXAMPLE 40

Erase the name associated to route number 20.

name -e --route-number 20

124.4.41

EXAMPLE 41

Erase the name associated to all routes.

name -e --route-number all

125

NUMBER_CONVERSION_END

Number Conversion End

125.1

FORMAT

number_conversion_end

[-conversiontype][-entry][-numbertype][-pre][-targetdest] [-route][-count]

125.2

FUNCTION

The command is used for removing data from the number conversion/Bearer Capability and High-Level Compatibility substitution tables.

The removal of number conversion data can be made depending on the following parameters:

- route number stated in parameter route
- target destination number stated in parameter targetdest
- traffic case stated in parameter conversiontype
- entry number stated in parameter entry
- prefix stated in parameter pre

It is possible to delete conversions of the following:

- the received B-number
- the sent connected number
- the sent A-number
- the received A-number
- the received connected number
- the internal dialed number
- the received A-number from a mobile extension or a fixed remote extension
- Bearer Capability
- High-Level Compatibility substitution

The parameter targetdest is only valid for a sent or connected A-Number (conversiontype 1).

The parameter numbertype is not valid for Bearer Capability or High-Level Compatibility substitution, the inbound conversion and the received A-number from a mobile extension or a fixed remote extension (conversiontype 3, 4 and 6).

The parameter pre is not valid for Bearer Capability or High-Level Compatibility (conversiontype 3).

The parameter route is not valid for inbound conversion and the received A-number from a mobile extension or a fixed remote extension (conversiontype 4 and 6).

If the removal is done based on the parameter entry, then route and targetdest have to be specified to remove route dependent and destination dependent data, respectively.

125.3

PARAMETERS

-conversiontype

Type of traffic case. Values: 0 - 7, or all

0 = Received B-number

1 = Sent A-number and sent connected number

2 = Received A-number and received connected number

3 = Bearer Capability and High-Level Compatibility substitution

4 = Inbound conversion

5 = Sent A-number and sent connected number to extension

Used for converting the number sent from a terminal that is capable of sending the plus sign.

6 = Received A-number for calls from mobile/fixed remote extensions or
Diverting number containing remote extension number

7 = Received public A-number is converted to international number format (but without + character). Used by the Blacklist and Public Name functions.

-count

Count the number of records to remove. Values: no

If the parameter is used, the program will not count the number of records, or give the user the chance to see a list of the records that will be removed.

-entry

Number to be converted. Values: 0 - 99999999999999999999
(1 - 20 digits) or all

-numbertype

Type of number. Values: 0 - 7, 10 - 12, or all

0 = Unknown public number

1 = International number

2 = National number

3 = Network specific number

4 = Local public number

5 = Unknown private number

6 = Local private number

7 = Level 1 Regional number

10 = Internal directory number when sent to public network

11 = Internal directory number when sent to private network

12 = Internal directory number (used when search continues)

-pre

Digits to insert at the beginning of the number.

Values: 0 - 9999999999 (1 - 10 digits) or all.

For conversion type sent A-number/sent connected number (conversiontype 1), the parameter pre takes the following format. Values: 0 - 9999999999999999999 (1 - 20 digits) or all

-route

Route number. Values: 1 - 250.

-targetdest

Target destination number. Values: 0 - 99999 (1 - 5 digits).

This parameter is only valid for sent A/connected number (conversiontype 1).

125.4

EXAMPLES

Remove all data from the database.

number_conversion_end

Remove the conversion of local private numbers 28XX to the internal 57XX.

number_conversion_end -conversiontype 0 -numbertype 6 -entry 28

Remove the conversion of the connected number with the internal number 5XX to the external number 1XX.

number_conversion_end -conversiontype 1 -entry 5

For sending the A-number over external destination number 6051, the conversion of the internal number 5XX has been made to the external number 1XX. Now this conversion will be removed.

number_conversion_end -conversiontype 1 -entry 5 -targetdest 6051

All the conversions made for local public type of number shall be removed.

number_conversion_end -numbertype 4

The substitution made for the received Bearer Capability and High-Level Compatibility for the number 2459 shall be removed.

number_conversion_end -conversiontype 3 -entry 2459

Delete all conversions for route 15.

number_conversion_end -route 15

The substitution made for the received A-number 656266500 from the mobile extension, fixed remote extension, or diverting number containing this number shall be removed.

number_conversion_end -conversiontype 6 -entry 656266500

126

NUMBER_CONVERSION_INITIATE

Number Conversion Initiate

126.1

FORMAT

number_conversion_initiate

```
-conversiontype -entry -numbertype [-truncate][-pre]
[-newtype][-cont][-route][-targetdest]
-conversiontype -entry [-bcap][-hlc][-route]
-conversiontype -entry [-truncate][-pre]
```

126.2

FUNCTION

`number_conversion_initiate` is used for initiating number conversion and Bearer Capability/High Level Compatibility substitution data. This command can also be used to change already initiated conversions.

Number conversion can be made per system or at route level. If the parameters `route` and `targetdest` are omitted, the number conversion will be made for the whole system. By stating the parameter `route` the number conversion will be route dependent. Similarly, by stating the parameter `targetdest` the number conversion will be destination dependent. The route- or destination-dependent number conversion will override number conversion per system.

It is possible to convert the following numbers in any combination:

- the received B-number
- the sent connected number
- the sent A-number
- the received A-number
- the received connected number
- the internal dialed number

It is also possible to change the type of number using parameter `newtype`.

See the parameter `numbertype` for the range of values for the public and private networks.

At received B-numbers, the conversion can be done in two steps:

Remove, add, or change the international, national, local public, level 1 regional prefixes, or the route access code. - Convert the internal directory number.

In the first step, parameter `cont` will indicate if conversion continues in the internal directory number table or not. If the conversion does not continue, the second step will not be done.

If `cont` is omitted, default value "not continue" is assumed.

For Bearer Capability and High-Level Compatibility substitution it is possible to substitute the Bearer Capability or the High-Level Compatibility, depending on the received B-number.

See the parameters bcap/hlc for the range of values supported for Bearer Capability and High-Level Compatibility, respectively.

In addition, it is possible to perform inbound conversion when requiring an internal numbering plan with extension numbers exceeding five digits. Internally, the system can handle up to five digits for an extension number, but the user may dial more than five.

This command is also used for a mobile extension number, a fixed remote extension number, or from a diverting number containing remote extension number. In this case the A-number should be associated to the external public or PLMN subscriber number, and command number conversion initiate is used with the following parameters:

entry = A-number

conversiontype = 6

truncate = total number of digits of the A-number

pre = external number

126.2.1

ADDITIONAL PARAMETER OPTIONALITY DESCRIPTION

The optionality of the parameters together with the mandatory -conversiontype parameter can need further explanation:

These are the checks done when receiving a specific number conversion request.

conversiontype 0:

numbertype, route and cont are the parameters to check.

numbertype is mandatory, the others are optional.

The following checks are done:

- A record has to have parameters -numbertype and -route equal to the input to give the result found.
If parameter -cont is 1 the result given will be to continue the search with number-type 12.
If the result above is not found, a last check is done:
- A record has to have parameter numbertype equal to the input and parameter route shall be empty to give the result found.
If parameter -cont is 1, the result given will be to continue the search with numbertype 12.

conversiontype 1:

Parameters -numbertype, -targetdest and -route are checked.

Parameter -numbertype is mandatory, the others are optional.

The following checks are done:

- If both -targetdest and -route exists in the input data, a record has to have all 3 parameters equal to the input to give the result found.
If the result above is not found, more checks are done:
- If -targetdest exists in the input data, a record has to have parameters -numbertype and -targetdest equal to the input and parameter route shall be empty to give the result found.

If the result above is not found, more checks are done:

- If -route exists in the input data, a record has to have parameters -numbertype and -route equal to the input and parameters -targetdest shall be empty to give the result found.

If the result above is not found, a last check is done:

- The last check is on -numbertype only, a record has to have parameter -numbertype equal to the input and parameters -route and -targetdest shall be empty to give the result found.

conversiontype 2:

Parameters -numbertype and -route are checked.

Parameter -numbertype is mandatory, the others are optional.

The following checks are done:

- A record has to have parameters -numbertype and -route equal to the input to give the result found.

If the result above is not found, a last check is done:

- A record has to have parameter -numbertype equal to the input and parameter -route shall be empty to give the result found.

conversiontype 3:

Parameter -route is checked. The following checks are done:

- A record has to have parameter -route equal to the input to give the result found.

If result above is not found, a last check is done:

- Parameter -route shall be empty to give the result found.

conversiontype 4:

Parameter -numbertype is checked. The following check is done:

A record has to have parameter -numbertype equal to the input to give the result found.

conversiontype 5 and 7:

Parameters -numbertype and -route are checked.

The following checks are done:

- A record has to have parameters -numbertype and -route equal to the input to give the result found.

If the result above is not found, more checks are done:

- A record has to have parameter -route equal to the input, and parameter -numbertype shall be empty to give the result found.

If the result above is not found, more checks are done:

- A record has to have parameter -numbertype equal to the input and parameter -route shall be empty to give the result found.

If the result above is not found, a last check is done:

- Parameters -numbertype and -route shall be empty to give the result found.

conversiontype 6:

No extra checks are done.

126.3

PARAMETERS

-bcap

Bearer Capability. Values: 1 - 6

1 = SPEECH

2 = 3.1-kHz Audio

3 = 64 kbps restricted

4 = 64 kbps unrestricted

5 = UDI-TA (7 kHz)

6 = 16 kbps unrestricted

This parameter is only valid for Bearer Capability and High-Level Compatibility substitution (conversiontype 3).

-cont

Search continue indication. Values: 0 - 1

0 = Conversion shall not continue

1 = Conversion continues in the internal directory number table

This parameter is only valid for received B-number (conversiontype 0).

-conversiontype

Type of traffic case. Values: 0 - 6

0 = Received B-number

1 = Sent A-number and sent connected number

2 = Received A-number and received connected number from trunk

Note: Use *-conversiontype* = 5 when converting the A-number sent to a SIP extension.

3 = Bearer Capability and High-Level Compatibility substitution

4 = Inbound conversion

5 = Sent A-number and sent connected number to a SIP extension.

Used for converting the sent A-number to a SIP extension into E.164 format (international format beginning with "+").

6 = Received A-number for calls from mobile/fixed remote extensions or Diverting number containing remote extension number

7 = Received public A-number is converted to international number format (but without + character). Used by the Blacklist and Public Name functions.

-entry

Number to be converted.

Values: 0 - 99999999999999999999 (1 - 20 digits)

-hlc

High Level Compatibility. Values: 0 - 8

0 = No teleservice

1 = Group 2/3 facsimile

- 2 = Teletex
- 3 = Videotex
- 4 = Group 4 facsimile
- 5 = Teletex 64
- 6 = Videotex 64
- 7 = Timelink
- 8 = 1/2 Video

This parameter is only valid for Bearer Capability/High Level Compatibility substitution (conversiontype 3).

-newtype

New type of number after the conversion. Values: 0 - 7

- 0 = Unknown public number
- 1 = International number
- 2 = National number
- 3 = Network specific number
- 4 = Local public number
- 5 = Unknown private number
- 6 = Local private number
- 7 = Level 1 Regional number

This parameter is not valid for Bearer Capability/High Level Compatibility substitution (conversiontype 3).

-numbertype

Type of number. Values: 0 - 7, 10 - 12

- 0 = Unknown public number
- 1 = International number
- 2 = National number
- 3 = Network specific number
- 4 = Local public number
- 5 = Unknown private number
- 6 = Local private number
- 7 = Level 1 Regional number
- 10 = Internal directory number when sent to public network
- 11 = Internal directory number when sent to private network
- 12 = Internal directory number (used when search continues)

-pre

Digits to insert at the beginning of the number.

Values: 0 - 9999999999 (1 - 10 digits).

For conversion type sent A-number/sent connected number (conversiontype 1), the parameter pre takes the following format. Values: 0 - 99999999999999999999 (1 - 20 digits).

-route

Route number. Values: 1 - 250

-targetdest

Target destination number. Values: 0 - 99999 (1 - 5 digits)

This parameter is only valid for sent A/connected number (conversiontype 1).

-truncate

Number of digits to truncate. For **-numbertype** 0-4 allows 20 digits truncating and 5-12 allows 10 digits truncating.

This parameter is not valid for Bearer Capability/High Level Compatibility substitution (conversiontype 3).

Parameters numbertype (NUMTYP in below tables), route (ROU), targetdest(TARDST), truncate (TRC), pre (PRE), cont (CONT), newtype (NEWTYP), bcap (BCAP) and hlc (HLC) are optional.

Parameters conversiontype (CNVTYP) and entry (ENTRY) are mandatory. This is shown in the following matrix.

CNVTYP	ENTRY	NUMTYP	ROU	TARDST	TRC	PRE	CONT	NEWTYP	BCAP	HLC
0	m	m	o	-	o	o	o	o	-	-
1	m	o	o	o	o	o	-	o	-	-
2	m	m	o	-	o	o	-	o	-	-
3	m	-	o	-	-	-	-	-	o	o
4	m	o	-	-	o	o	-	o	-	-
5	m	o	o	-	o	o	-	o	-	-
6	m	-	-	-	m	m	-	o	-	-
7	m	o	o	-	o	o	-	m	-	-

Depending on CNVTYP the following NUMTYPs are permitted:

	0	1	2	3	4	5	6	7	10	11	12
CNVTYP											
0	x	x	x	x	x	x	x	x			x
1	x	x	x	x	x	x	x	x	x	x	
2	x	x	x	x	x	x	x	x			
3											
4	x	x	x	x	x	x	x	x	x	x	x
5	x	x	x	x	x	x	x	x			
6											
7	x	x	x	x	x	x	x	x			

126.4

EXAMPLES

The MX-ONE Service Node receives a local private incoming call and the received B-number is 2803. The MX-ONE Service Node internal numbering plan has all the directory numbers beginning with 57XX. It is necessary to convert the two first digits of the received B-number. Digits 28 are to be replaced by 57.

number_conversion_initiate -conversiontype 0 -numbertype 6 -entry 28 -truncate 2 -pre 57

PBX A calls to the number 0-5441500 which is the public number of the extension 300 in the PBX B. PBX B sends the connected number (5441500) by changing the first digit of the directory number (3) to (5).

number_conversion_initiate -conversiontype 1 -numbertype 10 -entry 3 -truncate 1 -pre 5

PBX A calls to the number 0-5441500 which is the public number of the extension 300 in the PBX B and having the route access code as 6051. PBX A sends the A-number (5441500) by changing the first digit of the directory number (3) to (5).

number_conversion_initiate -conversiontype 1 -numbertype 10 -entry 3 -truncate 1 -pre 5 -targetdest 6051

In a terminating MX-ONE Service Node the received national A-number is 61-5347554. The national prefix will be removed (61), and the type of number will be changed to local public number (newtype).

number_conversion_initiate -conversiontype 2 -numbertype 2 -entry 61 -truncate 2 -newtype 4

In a terminating MX-ONE Service Node the received national A-number is 61-5347554. The called party is a SIP extension, and the sent A-number shall be converted to international format. The national prefix will be removed (61), the type of number will be changed to international (newtype), and an international prefix will be added.

Note: The parameters -route and -targetdest must NOT be entered

number_conversion_initiate -entry 8 -conversiontype 1 -numbertype 2 -newtype 1 -pre 468456

A Bearer Capability substitution shall be made for number 6101.

number_conversion_initiate -conversiontype 3 -bcap 2 -entry 6101

A Bearer Capability substitution and High Level Compatibility substitution shall be made for number 6110.

number_conversion_initiate -conversiontype 3 -bcap 4 -hlc 6 -entry 6110

Remove the two leading zeros from A numbers beginning with 00 received from route 2.

number_conversion_initiate -conversiontype 2 -entry 00 -truncate 2 -route 2

The internal extension numbering plan of a PABX is 62510000 to 62519999. The user must dial 8 digits to make an internal call.

number_conversion_initiate -conversiontype 4 -entry 6251 -truncate 4

An incoming call arrives to the MX-ONE Service Node, from a mobile extension, with the received A-number 656526501. The remote extension's number is 3000. Digits 656526501 must be converted into 3000.

number_conversion_initiate -conversiontype 6 -entry 656526501 -truncate 9 -pre 3000

Calls from internal numbers starting with 67 shall appear in international format (E.164) with a '+' on SIP extensions in order to match the contact list.

number_conversion_initiate -conversiontype 5 -newtype 1 -entry 67 -pre 468568

127

NUMBER_CONVERSION_PRINT

Number Conversion Print

127.1

FORMAT

number_conversion_print

`[-conversiontype][-entry][-numbertype][-pre][-targetdest]
[-route]`

127.2

FUNCTION

`number_conversion_print` is used for printing data from the number conversion and Bearer Capability and High-Level Compatibility substitution tables.

For number conversion, depending on the traffic case defined in parameter `conversiontype` and the type of number in parameter `numbertype` there are different tables. It is possible to print the conversions of the following numbers:

- the received B-number
- the sent connected number
- the sent A-number
- the received A-number
- the received connected number
- the internal dialed number
- the received A-number from a mobile extension or a fixed remote extension

For Bearer Capability and High-Level Compatibility, it is possible to print the substitutions of the Bearer Capability and the High-Level Compatibility, depending on the received B-number.

The command can be used without parameters, which means that all the conversion data will be printed. If a parameter is omitted, the default value "all" is assumed for this parameter. The parameter `route` can be stated for a specific route number, or be omitted. If the parameter `route` is omitted, all the conversion data will be printed (non route dependent and route dependent data). Similar is the case for the *targetdest* and *pre* parameter.

127.3

PARAMETERS

-conversiontype

Type of traffic case. Values: 0 - 7, or all

0 = Received B-number

1 = Sent A-number and sent connected number

2 = Received A-number and received connected number

3 = Bearer Capability/High Level Compatibility substitution

4 = Inbound conversion

5 = Sent A-number and sent connected number to extension

Used for converting the number sent from a terminal that is capable of sending the plus sign.

6 = Received A-number for calls from mobile/fixed remote extensions or Diverting number containing remote extension number

7 = Received public A-number is converted to international number format (but without + character). Used by the Blacklist and Public Name functions.

-entry

Number to be converted. Values: 0 - 9999999999999999999 (1 - 20 digits) or all

-numbertype

Type of number. Values: 0 - 7, 10 - 12, or all

0 = Unknown public number

1 = International number

2 = National number

3 = Network specific number

4 = Local public number

5 = Unknown private number

6 = Local private number

7 = Level 1 Regional number

10 = Internal directory number when sent to public network

11 = Internal directory number when sent to private network

12 = Internal directory number (used when search continues)

-pre

Digits to insert at the beginning of the number.

Values: 0 - 9999999999, (1 - 10 digits) or all

For conversion type sent A-number/sent connected number (conversiontype 1), the parameter pre takes the following format. Values: 0 - 99999999999999999999, (1 - 20 digits) or all

-route

Route number. Values: 1 - 250

-targetdest

Target destination number. Values: 0 - 99999 (1 - 5 digits)

This parameter is only valid for sent A/connected number (conversiontype 1).

127.4

EXAMPLES

List all number conversion data.

number_conversion_print

Print all the conversions for all the local public type of numbers (numbertype = 4).

number_conversion_print -numbertype 4

Print all the conversions for all Bearer Capability and High-Level Compatibility substitutions.

number_conversion_print -conversiontype 3

Print all the conversions for all received A-numbers from mobile extensions, fixed remote extensions, or Diverting number containing remote extension number.

number_conversion_print -conversiontype 6

Print all the conversions for all the local public type of numbers (numbertype = 10).

number_conversion_print -numbertype 10

Print all the conversions for target destination 6051.

number_conversion_print -targetdest 6051

128

NUMBER_DATA_END

Remove number analysis call discrimination data, external number length data or proceed to send signal data.

128.1

FORMAT

number_data_end

- externalnumber -lengthdata
- externalnumber -ptsdata
- number -discrimination [-customer]

128.2

FUNCTION

The command is used in three cases.

- It is used to remove external or internal numbers which are no longer desired, or to remove TCD categories which are linked to one or more external or internal numbers. For an external number, the route access code shall also be specified.
- It is used to erase obsolete digit position data. The data specifies after how many digits in the external number the second dial tone is to be expected. The information tells the system when it can release the tone receiver.
- It is used to erase number length data for external numbers. Number length data is used by the system to obtain shorter seizure times of tone code receiving and digit sending units and faster through-connection of the speech path regardless of B-answer.

128.3

PARAMETERS

-customer

Customer number.

The customer is specified as a customer number between 1 and 50000. Is used together with number type CD.

-discrimination

Call discrimination category data.

TCD category which is to be linked to an external/internal number.

As argument use a single category, a sequence (,) of categories, or a range (..) of categories.

-externalnumber

Number for external analysis.

Allowed values are 0 - 9 999 999 999. The parameter states an external number or a part of an external number that is used either for proceed-to-send analysis or for number length analysis.

As argument use a single number or a sequence (,) of numbers.

-lengthdata

Remove length data. No arguments.

-number

External or internal number for TCD category analysis.

Allowed values are 0 - 9 999 999 999. The parameter states the leading digits of an external number, including route access code, or those digits in an internal number required by the system to differentiate one internal or external number from an other internal or external number.

As argument use a single number, or a sequence (,) of numbers.

-ptsdata

Remove Proceed To Send (PTS) data. No arguments.

128.4

EXAMPLES

128.4.1

EXAMPLE 1

Erase the TCD categories 1 to 3 which are linked to the external numbers beginning with the digits 05 and 06 and which have 00 as route access code. The external numbers beginning with the digits 05 and 06, and which can be reached with route access code 00 are assumed to have previously been assigned categories 1 to 3.

number_data_end -number 0005,0006 -discrimination 1..3

128.4.2

EXAMPLE 2

Remove the TCD categories of internal numbers beginning with the digits 20 and 25.

number_data_end -customer 0 -number 20,25

The external numbers, including their route access code and the internal numbers, will have the following categories before and after the command in the two examples.

128.4.3

Before the commands		After the commands	
NUMBER	TCD CATEGORIES	NUMBER	TCD CATEGORIES
0005	1 - 3,10,13	0005	10,13
0006	1 - 3,10,13	0006	10,13
20	1 - 3,6,9		
25	1 - 3,6,9		

128.4.4

EXAMPLE 3

Erase number length data for those external numbers with 00 as route access code and which begin with the digits 07.

number_data_end -externalnumber 0007 -lengthdata

128.4.5

EXAMPLE 4

Erase digit position data specifying the position of the second dial tone for the external numbers with 00 as route access code and which begin with the digits 94.

number_data_end -customer 0 -externalnumber 0094 -ptsdata

129

NUMBER_DATA_INITIATE

Number Analysis Call Discrimination Data or external number length data or proceed to send signal data set.

129.1

FORMAT

number_data_initiate

- externalnumber –position
- externalnumber –minlength [-maxlength]
- number -discrimination [-customer]

129.2

FUNCTION

The command is used to open the specified number with associated TCD categories or for assigning new TCD categories to numbers that already exist.

On calling, the TCD categories of the A-party are tested against the TCD categories of the dialed number. If the TCD category of the A-party coincides with one of the TCD categories of the dialed number, the A-party is allowed to complete the call.

If a number is not initiated with associated TCD categories, only A-parties with TCD category 15 are permitted to complete the call. For external numbers, the route access code must also be specified.

The command is used to tell the system after how many digits in the external number PTS signals are to be expected.

The command is used to initiate number length data which helps to reduce seizure time of tone code receiving and digit sending units and faster through-connection of the speech path regardless of B-answer.

MIN specifies when B-answer can be expected at the earliest in an external number. If a B-answer is detected before the MIN number of digits has been sent, digit sending is marked as incorrect.

MAX specifies when through-connection of the speech path is to be performed and that no more digits can be sent.

If the number length of an external number consists of a fixed number of digits, MIN and MAX are set to the same value. If the number length is unknown MAX is omitted, switch through-connection will ensue on timeout, end of selection, or B-answer.

129.3

PARAMETERS

-customer

Customer number. The customer is specified as a customer number between 1 and 50000. Is used together with number type CD.

-discrimination

Call discrimination category data.

TCD category which is to be linked to an external/internal number.

As argument use a single category, a sequence (,) of categories, or a range (..) of categories.

-externalnumber

External number for external analysis.

The initial digits in an external number, including the route access code which the system needs to distinguish the external number from other external numbers.

Allowed values are 0 - 9 999 999 999.

As argument use a single number or a sequence (,) of numbers.

-maxlength

Maximum external number length.

The maximum number of digits the external number may have.

Allowed values are 0 - 20 (maximum number of digits in an external number) or 99 (direct through connection after the minimum length for the stated digits). The parameter states the maximum length of the external number, including the route access code. It is also stated for a manual outgoing route where no external digits are to be sent. In this case maxlength is equal to the number of digits in the route access code.

If maxlength is set to 99, the direct-through connection of the dialed number takes place as per the minimum number length, irrespective of the existing route category.

-minlength

Minimum external number length.

Minimum number of digits in the external number before B-answer can be expected. Allowed values are 0 - 20. This is the minimum number of digits in an external number, including the route access code. The parameter must also be stated for a manual outgoing route where no external digits are to be sent. It should then be set to zero.

-number

External or internal number for TCD category analysis.

Allowed values are 0 - 9 999 999 999. The parameter states the leading digits of an external number, including route access code, or those digits in an internal number required by the system to differentiate one internal or external number from another internal or external number.

As argument use a single number or a sequence (,) of numbers.

-position

Position of proceed-to-send signals.

Indication for after how many digits in the external number the proceed-to-send signals of which type is to be expected.

Allowed values are **xx-y**, where xx can be 0 - 20 and y can be C, D, E, or F.

The parameter states the position in an external number, including route access code, at which proceed-to-send signals [C, D, E, or F) are to be awaited before more digits are transmitted.

- C Normal PTS. After time out the digit sending is continued with the same type of register signalling as before time out.
- D PTS followed by DTMF sending of digits. After time out the digit sending is continued with DTMF register signalling.
- E PTS followed by DTMF sending of digits. After time out no more digit sending is done and the external line is disconnected.

- F 600 Hz International Dial tone PTS. After time out the digit sending is continued with the same type of register signalling as before time out. Tone is received after dialling of international prefix. (Only for Spain.)

Maximum six positions can be stated.

129.4

EXAMPLES

Assign TCD categories 1 to 3 to internal numbers beginning with the digits 20 and 25.

**number_data_initiate -customer 0 -number 20,25
-discrimination 1..3**

Assume that the external numbers beginning with the digits 07 are open for users with TCD categories 1 to 3. The external numbers beginning with the digits 08 are open for users with TCD categories 1 to 3 and 10.

Initiate the TCD categories 5 to 7 and 13 to the external numbers beginning with the digits 06. Increase the categories for the external numbers beginning with the digits 07 and 08 so that they also include TCD categories 5 to 7 and 13.

All external numbers have 00 as route access code.

**number_data_initiate -customer 0 -number 0006,0007,0008
-discrimination 5..7,13**

The external numbers, including their route access codes and the internal numbers will have the following categories before and after the commands in the two examples:

Before the commands		After the commands	
NUMBER	TCD CATEGORIES	NUMBER	TCD CATEGORIES
		0006	5..7, 13
		0007	1..3, 5..7, 13
		0008	1..3, 5..7, 10, 13
0007	1..3	20	1..3
0008	1..3,10	25	1..3

All external numbers with 00 as route access code beginning with the digits 07 consist of between four and nine digits.

**number_data_initiate -customer 0 -externalnumber 0007 -minlength 4
-maxlength 9**

Specify for the system that for external numbers with 00 as route access code beginning with the digits 94 a normal PTS signal shall be expected after 5 digits.

**number_data_initiate -customer 0 -externalnumber 0094
-position 05-C**

130

NUMBER_END

Number Analysis Number Series End

130.1

FORMAT

number_end

-customer [-finance-id][-range][-name][-domain][-exception]
-number -numbertype

130.2

FUNCTION

The command removes number series of the stated type or ends data in a customer group or the entire customer group.

130.3

PARAMETERS

-customer

Customer group.

The customer is specified as a customer number between 0 and 50000. The value 0 is the special 'default customer' used if exchange is not shared by several customers.

-domain

The domain is used for log on and registering purposes for SIP extensions. "," and "." are allowed for this parameter. If the IP address of the registering part can be name matched with a domain under command "ip_domain" the user may log on using the short internal number within the range

-exception

The exception is used for dialling numbers that shall not be expanded or range checked. "," and "." are allowed for this parameter.

-finance-id

Finance ID is presented in the customer report, as part of the license usage reports. This information can be used for charging purposes in multi-customer/tenant systems. The switch takes no argument.

-name

The name is used on SIP extension's idle display. The name is inserted before the internal part of a number if the SIP extension is registered with a short number within a range.

-number

Number or number series.

As argument use a single number, a sequence (,), or a range (..) of numbers.

Allowed values are 0 - 9 999 999 999, except for the number types **SC**, **EN**, **LC**, and **PD**. For number types EN, LC, and PD the allowed range for the number is 0 - 99 999. For number type SC, the argument should be a single number that generally starts with A or B, followed by numeric digits [0 - 999] and ends with A

or B. For example, A11A. For number type CP (Common Public directory number) the series (..) is not allowed.

-numbertype

Type of number - Valid number types are EX, ED, EN, AC, CP, DI, DN, EC LC, OC, OD, OE, OI, PD, PG, R1, R2, RD, GR and SC.

For SC (Service Code) number type, a service code identity should always be included. Format for number type SC is SC-<Service Code Identity>. For example, SC-101 where 101 is service code identity for "activate Free seating log-on"

-range

Selects the number range for a customer group. The range is used together with parameter depth. the full number shall be matching the internal number series. "," and ".." are allowed for this parameter. The range digits up to depth can be considered a prefix, and the rest the extension number. The start and stop of the range must be equal up to depth digits. There may be several ranges within a customer group but The short number part must not be conflicting between ranges. The short number is used for dialling and display purposes. When dialling a short number it will expand to the full number.

130.4

EXAMPLES

Common Abbreviated number series 0300-0326 and 040-050 are to be removed.

number_end -number 0300..0326,040..050 -numbertype ac

Remove Extension Number 100 from the number series for customer 0.

number_end -customer 0 -number 100 -numbertype ex

Remove A89B in number type Service Code for a particular service answer common bell.

number_end -number A89B -numbertype sc-005

Remove range 85681234 -85681250 from customer data for customer 1000.

number_end -customer 1000 -range 85681234..85681250

131

NUMBER_INITIATE

Number Analysis Number Series initiate

131.1

FORMAT

number_initiate

```
-number -numbertype
-customer [-finance-id][-range -depth [-digit]][-bar-foreign][-domain][-domain-owner]
[-exception][-name][-open-dialling][-short-user]
```

131.2

FUNCTION

The command indicates to the system which numbers and number series that should belong to the stated number type.

The numbers for the stated number type may either be independent or form a running series. In the latter case, the number of digits forming the start value of the series shall be equal to the number of digits that represent the end value of the series.

The command is also used to create customer group data for multi tenant purposes.

131.3

PARAMETERS

-bar-foreign

This parameter decides whether the group allows registration from other than own IP domains. If this parameter is set to yes, registration of IP extension is only allowed if the registered IP address is within a domain belonging to this group.

Permitted values are yes or no, default is no.

-customer

Selects the customer group. The customer is specified as a customer number between 1 and 50000.

-depth

The depth or prefix depth defines the boundary between prefix and internal (short) number within a range.

-digit

The digit may be used to make short numbers that are conflicting between ranges unique. The digit(s) will be wedged in between the prefix part and the internal part of the range.

-domain

The domain is used for log on and registering purposes for SIP extensions. "," and ".." are allowed for this parameter. If the IP address of the registering part can be name matched with a domain under command "ip_domain" the user may log on using the short internal number within the range.

-domain-owner

To be a domain owner means a registering terminal cannot register to a customer outside the domain of the terminal, regardless if the target customer permits this or not. Permitted values are yes and no. Default is no.

-exception

The exception is used for dialling numbers that shall not be expanded or range checked. ", " and ".." are allowed for this parameter.

-finance-id

Finance ID is presented in the customer report, as part of the license usage reports. This information can be used for charging purposes in multi-customer/tenant systems. The switch requires an argument. The argument can be any alphanumerical characters, including white space.

-name

The name is used on SIP extension's idle display. The name is inserted before the internal part of a number if the SIP extension is registered with a short number within a range.

-number

Number or number series.

As argument use a single number, a sequence (,), or a range (..) of numbers.

Allowed values are 0 - 9 999 999 999, except for the number types SC, EN, LC, and PD. For number types EN, LC, and PD the allowed range for the number is 0 - 99 999.

For number type SC, the argument should be a single number that usually starts with A or B, followed by numeric digits [0 - 999] and ends with A or B. For example, A11A. It can also for example have the format 8 (one digit) or 1234, without any A or B.

For number type CP (Common Public directory number) the series (..) is not allowed.

-numbertype

Number type

ac	Common abbreviated number
cd	Number to be TCD-checked
cp	Common public directory number
di	Direct inward system access, DISA
dn	Dialed number information service, DNIS
ec	External destination code with coordinated numbering plan
ed	Route access code
en	Own PBX number within private network
gr	Gateway routing number
ex	Extension number of voice extension, including internal directory number of group hunting group
lc	Least cost routing access code
nl	Number length data
oc	Common PBX operator number
od	Common PBX operator number for direct in-dialing
oe	Emergency number to PBX operator
oi	Individual PBX operator number
pd	Public destination access via least cost routing, when certain numbers shall be barred
pg	Common or extra paging number
pt	Proceed-to-send data (second dial tone data)

- r1** Access number for a mobile extension or a fixed remote extension when the A-number is received in the PBX
- r2** Access number for a mobile extension when the calling party number is not received in the PBX
- rd** Route directory number
- sc** Service code. Format sc-xxx is also allowed.

The specified number **xxx**, in sc-xxx, is a consecutive number of one to three digits, which represents a particular service, but has nothing to do with the actual service code used in a specific application system. Not all services are used in all application systems.

- 0 Activate Direct call diversion or Follow-me
- 1 Cancel Direct call diversion or Follow-me
- 2 Answer Group call pickup
- 3 Answer night bell
- 4 Take own call on another multiple terminal, Answer Common bell, Group call pickup, or Night bell (common procedure)
- 5 Answer Common bell
- 6 Cancel Callback for specified directory number
- 7 Cancel all Callback missions
- 8 Cancel Diversion on no answer for the specified number (remote)
- 9 Activate Diversion on no answer for the specified number (remote)
- 10 Start of parameter (character * default)
- 11 Cancel direct call diversion and Follow-me for the specified number (remote)
- 12 Activate (own) Call Diversion on no answer
- 13 Cancel (own) Call Diversion on no answer
- 14 Activate (own) Call Diversion on busy
- 15 Cancel (own) Call Diversion on busy
- 16 Activate Call Diversion on no answer for specified number, from OPI (remote)
- 17 Cancel Call Diversion on no answer for specified number, from OPI (remote)
- 18 Activate Call Diversion on busy for specified number from OPI (remote)
- 19 Cancel Call Diversion on busy for specified number from OPI (remote)
- 20 Last number redial or repetition
- 21 Individual abbreviated dialling
- 22 Cancel individual abbreviated dialling
- 23 Cancel all abbreviated numbers
- 24 End of parameter (character # default)
- 25 Activate page alarm
- 26 Activate follow-me to Paging for the specified number
- 27 Activate follow-me to Paging number
- 28 Activate night switching for specified number (remote)
- 29 Cancel all night switching
- 30 Cancel night switching for specified number (remote)
- 31 Cancel all for specified number (remote)
- 32 Cancel all
- --
- 40 Activate Emergency switching for the system
- 41 Cancel Emergency switching for the system
- 42 Answer to Paging alarm
- 43 Paging call, key telephones
- 44 Paging answer, key telephones
- 45 Activate Message Diversion (Interception)

46	Interrogate Message Diversion (Interception) status
47	Cancel Message Diversion (Interception)
48	Cancel Message Diversion (Interception) and specify I/O output port for printout
49	Activate Message Diversion (Interception) from answer position or secondary
50	Cancel Message Diversion (Interception) from answer position or secondary
51	Cancel Message Waiting
52	Activate Common Authority Code (lock)
53	Cancel Common Authority Code (unlock)
54	Change Common Authority Code
55	Authority Dialling, use highest Call Discrimination category
56	Call to individual external line, with intrusion and 'break-down' possibility
57	Activate (individual) Do not disturb
58	Activate Do not disturb for specified number (remote)
59	Cancel Do not disturb
60	Cancel do not disturb for specified number (remote)
62	Initiate Account code as abbreviated number
63	Initiate Authority code as abbreviated number
64	Reply to Message Waiting or Manual Message Waiting indication
65	Activate Manual Message waiting
66	Cancel Manual Message waiting for specified number (remote)
67	Cancel Manual Message waiting (own)
68	Account code use (dialling)
69	Activate External Follow-me (own)
70	Activate External Follow-me for specified number (remote)
71	Cancel External Follow-me (own)
72	Cancel External Follow-me for specified number (remote)
73	Request Malicious Call Tracking
74	Day/ night switch the system
75	Activate Group Do not disturb for specified number (remote)
76	Cancel Group Do not disturb for specified number (remote)
77	Activate Follow-me for hunt group
78	Cancel Follow-me for hunt group
79	Activate Follow-me for specified hunt group number (remote)
80	Cancel Follow-me for specified hunt group number (remote)
81	Interrogate / verify the Diversion position
82	Individual Authority Code dialling
83	Locking the terminal with individual Authority Code
84	Unlocking the terminal with individual Authority Code
85	Changing individual Authority Code
86	Activate User-User signalling, service 3 (ISDN)
87	Initiate individual Authority Code as individual Abbreviated number
88	Enter Customer Identity
--	--
92	Cancel Follow-me to Paging number
93	Cancel Follow-me to Paging number for specified number
94	Choice of language. Change of language
95	Activate default Personal Number / IRD list (own)
96	Cancel Personal Number / IRD service (own)
97	Activate specified Personal Number / IRD list (own)
98	Cancel Personal Number / IRD service for specified number (remote)
99	Cancel Free seating (log off)
100	Cancel Free seating for specified number (log off, remote)

- 101 Activate Free seating (log on)
- 102 Activate temporary answer position for Remote extension
- 103 Cancel temporary answer position for Remote extension
- 104 Activate Calling Line Identity Restriction on per call basis
- 105 Set/activate group number and name, to be used as CLI when a PBX member does an outgoing call (representing the group)
- 106 Remove/deactivate group number and name, earlier used as CLI for a PBX member
- 107 Logout procedure for a hunt group member to logout from a particular group (or all groups)
- 108 Login procedure for a hunt group member to login to a particular group
- --
- 201 Individual abbreviated number 0
- 202 Individual abbreviated number 1
- 203 Individual abbreviated number 2
- 204 Individual abbreviated number 3
- 205 Individual abbreviated number 4
- 206 Individual abbreviated number 5
- 207 Individual abbreviated number 6
- 208 Individual abbreviated number 7
- 209 Individual abbreviated number 8
- 210 Individual abbreviated number 9

--open-dialling

This parameter decides whether the group uses open or closed dialling scheme. If the scheme is open it is allowed to dial numbers which can not be range checked. If the scheme is closed numbers that can not be range checked will be barred from dialling. If the customer groups are belonging to a single company and want connectivity between them, the scheme open is preferred. If the customer groups are belonging to different companies and do not want connectivity between them, the closed scheme is preferred.

Note: Mixing open and closed schemes in the same may yield undesired results, such as that open groups may dial closed groups

-range

Selects the number range for a customer group. The range is used together with parameter depth. the full number shall be matching the internal number series. "," and ".." are allowed for this parameter.

The range digits up to depth can be considered a prefix, and the rest the extension number. The start and stop of the range must be equal up to depth digits. There may be several ranges within a customer group but The short number part must not be conflicting between ranges. The short number is used for dialling and display purposes. When dialling a short number it will expand to the full number.

-short-user

This parameter forces SIP terminals that are logging on, to use short user ID format regardless of the user ID format used otherwise in the system. Permitted values are yes and no. Default is no.

131.4

EXAMPLES

0300-0326 and 040-050 are to be included in the number type Common abbreviated numbers.

number_initiate -numbertype ac -number 0300..0326,040..050

A89B is to be included in number type Service Code for the service Answer Common Bell.

number_initiate -number A89B -numbertype sc-5

Initiate abbreviated dialling number type 1# as position 1. Individual abbreviated number type is initiated as a service code where the service identity is position + 201.

number_initiate -number 1B -numbertype sc-202

Create a n customer group 1000 with number range 85681230 - 85681239, prefix depth 4 and company name Universal tires. The MX-ONE internal IP domain name Universal is used. For exception dialling numbers 0 and 9 are used.

number:initiate -customer 1000 -name Universal_tires_ -range 85681230..85681239 -depth 4 -domain Universal -exception 0,9

132

NUMBER_PRINT

Number Analysis Data Print

132.1

FORMAT

number_print

-customer [-numbertype]

132.2

FUNCTION

The command is used to print all information about initiated number analysis data and customer groups in the system.

Note: In the MX-ONE Service Node some of the data which the command prints is not relevant, such as PTS signal data and service codes for rotary dialing telephones, but headers for such data can still be printed.

132.3

PARAMETERS

-customer

Customer number. The customer is specified as a customer number between 1 and 50000.

-numbertype

Type of number

If this parameter is omitted, all the numbers of all the number types will be printed. Valid number types are EX, ED, EN, AC, CP, DI, DN, ECLC, OC, OD, OE, OI, PD, PG, R1, R2, RD, NL, PT, CD, GR and SC. SC (Service Code) can be given with/with-out service code identity. If service code identity is ignored, then all numbers of SC type will be printed. Format for number type SC with service code identity is SC-<Service Code Identity>. Example: SC-101

For value, see 131 number_initiate on page 354.

132.4

PRINTOUT

NUMBER ANALYSIS DATA	
TYPE OF SERIES	NUMBER SERIES
EXTENSION NUMBER SERIES	.....
EXTERNAL DESTINATION CODE	.....
DNIS NUMBER SERIES	.....
LEAST COST ROUTING ACCESS CODE NUMBER SERIES	.....
PUBLIC DESTINATION ACCESS CODE NUMBER SERIES	.....
OPERATOR INDIV. NUMBER SERIES	.....
OPERATOR COMMON NUMBER SERIES	.....
OPERATOR COM.DID.NUM SERIES	.....
OPERATOR EMERGENCY NUM. SERIES	.....
ABBREVIATED INDIV. NUMBER SERIES	.....
ABBREVIATED COMMON NUMBER SERIES	.....
PAGING NUMBER SERIES	.....
OWN EXCHANGE NUMBER SERIES	.....
ROUTE DIRECTORY NUMBER SERIES	.....
COMMON PUBLIC DIRECTORY NUMBER	.....
DIRECT INWARD SERVICE ACCESS	.....
EXTERNAL DESTINATION CODE WITH COORDINATED NUMBERING PLAN	.....
GATEWAY ROUTING NUMBER SERIES	.....
EXTERNAL NUMBER LENGTH DATA	
EXTERNAL NUMBER	NUMBER LENGTH
...
PROCEED TO SEND SIGNAL DATA	
EXTERNAL NUMBER	POS. TYPE
...
CALL DISCRIMINATION DATA	
EXTERNAL/INTERNAL NUMBER	CAT
...
REMOTE TYPE 1	..
REMOTE TYPE 2	..
END	

The command can also be used to print information about the service code procedure if you give numbertype as a service code (for example, sc-102).

Brief explanation of printout where this is not self-explanatory:
EXTENSION NUMBER SERIES
EXTERNAL DESTINATION CODE

DNIS NUMBER SERIES	Directory number of Dialed Number Information Service
LEAST COST ROUTING ACCESS CODE NUMBER SERIES	External destination codes which include complete LCR analysis
PUBLIC DESTINATION ACCESS CODE NUMBER SERIES	External destination codes which include a part of LCR analysis.
OPERATOR INDIV. NUMBER SERIES	
OPERATOR COMMON NUMBER SERIES	
OPERATOR COM. DID. NUM. SERIES	Direct indialling to PBX operator
OPERATOR EMERGENCY NUM. SERIES	
ABBREVIATED INDIV. NUMBER SERIES	
ABBREVIATED COMMON NUMBER SERIES	
PAGING NUMBER SERIES	
OWN EXCHANGE NUMBER SERIES	
ROUTE DIRECTORY NUMBER SERIES	
COMMON PUBLIC DIRECTORY NUMBER	
DIRECT INWARD SERVICE ACCESS	Number series for DISA.
EXTERNAL DESTINATION CODE WITH COORDINATED NUMBERING PLAN	External destination code number series use for Coordinated Numbering Plan.
GATEWAY ROUTING NUMBER SERIES	Number series for incoming call for inter gateway routing.
EXTERNAL NUMBER LENGTH DATA EXTERNAL NUMBER	External number including route access code.
NUMBER LENGTH	Number length for external numbers, that is, the minimum number of digits and maximum number of digits in the number
PROCEED TO SEND SIGNAL DATA EXTERNAL NUMBER	External numbers including route access code, that demand PTS signals.
POS. TYPE	Position of proceed-to-send signal, that is, after how many digits the PTS signal is to be expected and what type of PTS that is expected.
CALL DISCRIMINATION DATA EXTERNAL/INTERNAL NUMBER	Call numbers with external call number to be checked with aid of TCD categories.
CAT	TCD category for external numbers.
REMOTE TYPE 1	Direct indialing number used by Mobile extensions and Fixed remote extensions to access the MX-ONE Service Node when the A-number is available.
REMOTE TYPE 2	Direct indialing number used by Mobile extensions to access the MX-ONE Service Node when the A-number is not available.

132.5

EXAMPLES

Print all number analysis information in the system.

number_print

Print the number series for the number type common abbreviated dialing numbers.

number_print -numbertype ac

Print the Service Code procedure for the given Service Code.

number_print -numbertype sc-51

Print data for all customer groups in the system.

number_print -customer

Print data for all customer group 2536.

number_print -customer 2536

133

NUMBER_VACANT_CONVERSION_END

Erase number vacant conversion data

133.1

FORMAT

number_vacant_conversion_end

-number

133.2

FUNCTION

The command is used to erase number vacant conversion data, i.e. for removal of temporary extension and extension group number data used at migration/move of extensions between systems, where the move has to be done in stages, for example per department, and may take some time. When the move is finished, the number vacant conversion data (or the entire old system) should be removed.

133.3

PARAMETERS

-number

Number vacant conversion numbers to erase. The numbers are extension numbers (including extension groups).

Single values, “,” and “..” are allowed for this parameter. Allowed values are 0 - 9 999 999 999.

133.4

EXAMPLE

Remove the vacant numbers 40000 to 40030.

number_vacant_conversion_end -number 40000..40030

134 NUMBER_VACANT_CONVERSION_INITIATE

Initiate number vacant conversion data.

134.1 FORMAT

number_vacant_conversion_initiate

-number -numbertype -newnumbertype

134.2 FUNCTION

The command is used to initiate number vacant conversion data, i.e. for initiation of temporary extension and extension group number data used at migration/move extensions between systems, where the move has to be done in stages, for example per department, and may take some time. Both the old and the new system can then co-exist for a certain time period, and the extension/group number series can exist in both systems, even though the number series is vacant but still initiated in the old system. Up to 100 entries are possible.

134.3 PARAMETERS

-newnumbertype

Type of number to convert to.

Valid number type is: ED, external destination.

-number

Internal number or number series to initiate. The numbers are of the type extension numbers (including extension groups).

Single values, “,” and “..” are allowed for this parameter. Allowed values are 0 - 9 999 999 999.

-numbertype

Type of number to convert from.

Valid number type is: EX, extension (including extension group).

134.4

EXAMPLE

Convert the numbers 40000 to 40030 from type EX to ED if they are vacant.

**number_vacant_conversion_initiate -number 40000..40030 -numbertype EX
-newnumbertype ED**

In a system with a number series split up, that is, 1000-1010 and 9000-9010 are EX and 2000-2010, 3000-3010...8000-8010 are other numbertypes, convert all EX to ED if they are vacant.

**number_vacant_conversion_initiate -number 1000...9010 -numbertype EX
-newnumbertype ED**

135 NUMBER_VACANT_CONVERSION_PRINT

Print the number vacant conversion data.

135.1 FORMAT

number_vacant_conversion_print

135.2 FUNCTION

The command is used for print of number vacant conversion data. The vacant numbers are temporary extension and extension group number data used at migration/move of extensions between systems, where the move has to be done in stages, for example per department, and may take some time. Both the old and the new system can then coexist for a certain time period, and the extension/group number series can exist in both systems, even though the number series is vacant but still initiated in the old system.

135.3 PARAMETERS

-

135.4 EXAMPLE

Print all number vacant conversion data.

number_vacant_conversion_print

136

OPERATOR_COMMON_QUEUE

Manage operator common queue LIM priority

136.1

FORMAT

operator_common_queue

[-v][-V] -c -l

[-v][-V] -p

For a description of the parameter arguments, see the command description for *Command Help Frame*.

136.2

FUNCTION

The command is used to print and change the priority list of LIM's where the operators common queue is located. The list is the priorityorder where the common queue will be located. In a system where all LIM are ok the common queue will be located in the first valid LIM in the list. When the first LIM in the list is faulty the next ok LIM will be selected as the LIM where the common operator queue is located.

When a faulty LIM has recovered and it has higher priority than the current active LIM, the common operator queue will be moved to this LIM.

Changing the priority list can disturb operator traffic in the system and should only be done during low traffic

136.3

PARAMETERS

-c, --change

Change some settings, that is, reconfigure an item (or several items).

The switch takes no arguments.

-l, --lim

LIM number [range: 1-124].

The switch requires an argument. The argument can be a comma separated sequence.

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

136.4

EXAMPLES

Print the priority list for common queue LIM.

operator_common_queue -p

Change the LIM priority list.

operator_common_queue -c -l 3,4,5

137

PARALLEL_RINGING

Manage a parallel ringing list

137.1

FORMAT

parallel_ringing

`[-v][-V] -c -d --delay-seizure-list-number`

`[-v][-V] -e -d`

`[-v][-V] -i -d [--secondary-dir][--delay-seizure-list-number]`

`[-v][-V] -p [-d]`

137.2

FUNCTION

The command is used to erase, initiate, change or print data for a parallel ringing list with multiple answering positions. In a parallel ringing list, the maximum number of answering positions is three (one main extension and two secondary extensions) and the minimum number of answering positions are two (one main extension and one secondary extension).

When forking is used, the main directory number is associated with two to four terminals, maximum one of each type (DECT, H.323, Remote extension), or, if SIP terminals are used, all four can be of the same type. If the forking is combined with parallel ringing, two additional terminals can be added as secondary numbers.

Parallel ringing can be initiated with extension types that allow the functionality. These are, digital extension, digital POTS extension, analog extension, CAS extension, IP (SIP and H.323) extension, cordless extension, and remote extension. Any combination of these extension types may be used to define a list.

However, it is possible to define only one remote extension per list at any position. Parallel ringing cannot be initiated on an extension which is already part of a parallel ringing list.

Note: It is recommended to use delay seizure list with a delay of 2-3 seconds if a Remote/mobile extension is involved in the list (and the cooperating PLMN/PSTN network is slow).

There should not be any diversion service active on an extension while initiating it as Secondary Directory number in a parallel ringing list.

See the Multiple Terminal Service description for more details on the forking and parallel ringing features.

137.3

PARAMETERS

-c, --change

Change some settings, that is, reconfigure an item (or several items).

The switch takes no arguments.

--delay-seizure-list-number

Delay seizure list number.

Value:

- | | |
|--------|--|
| 0 | No active delay seizure list number (can only be set via <code>call_list</code> and <code>parallel_ringing</code> .
Use <code>--delay-seizure-list-number 0</code> to deactivate sequential ringing |
| 1..999 | Valid numbers. |

The switch requires an argument. The argument is single valued.

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument.

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item (or several items).

The switch takes no arguments.

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

--secondary-dir

States the secondary directory number or numbers of a parallel ringing list. Accepted argument length is 2 to 10 digits.

The switch requires an argument. The argument can be a comma separated sequence.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to `/var/log/messages`).

137.4

EXAMPLES

End the parallel ringing list associated to directory number 2000.

parallel_ringing -e -d 2000

End the parallel ringing lists associated to directory number range 2000 to 3000.

parallel_ringing -e -d 2000..3000

Initiate a parallel ringing list with directory number 2000 and secondary directory numbers 2001 and 2002.

parallel_ringing -i -d 2000 --secondary-dir 2001,2002

Initiate a parallel ringing list for customer number 7 with directory number 3000 and secondary directory number 3001.

parallel_ringing -i -d 3000 --customer 7 --secondary-dir 3001

Initiate a parallel ringing list for the forked extension with directory number 4500. There is no secondary extension.

parallel_ringing -i -d 4500

Print the parallel ringing list associated to directory number 2000.

parallel_ringing -p -d 2000

Print the parallel ringing list associated to directory numbers 2000 and 3000.

parallel_ringing -p -d 2000,3000

Print the parallel ringing list associated to directory numbers from 2000 to 2010.

parallel_ringing -p -d 2000..2010

Print all the parallel ringing lists.

parallel_ringing -p -d all

138 PCM_CONFIG

Configuration of pcm resources

138.1 FORMAT

pcm_config

```
-add -bpos -gsmult [-timeslots]
-add -bpos -rbpos [-timeslots]
-bpos -timeslots
-dup
-equ -transparent
-print [-bpos]
-print [-lim]
-reg -bpos
-remove -bpos
-remove -gsmult
-scan
```

138.2 FUNCTION

The `pcm_config` command handles the configuration of all PCM resources.

In an existing system, the command "`pcm_config -scan`" can be used to find all new hardware.

It is possible to prepare installation of PCM lines, without having access to the hardware.

138.3 PARAMETERS

-add

Add a specified item, for example, a PCM line.

A group switch module is initiated, when the first pcm line is added to it.

-bpos

Board position. The parameter has the format LLLG-Y-Z where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine and Z=position.

Example: 1A-0-10 (single value)
 1C-0-10...1C-0-30 (series)
 1A-0-10,1B-0-30 (multiple values)
 1K-0-10...1K-0-30,1M-0-50...1D-0-60 (combination)

-dup

Duplicated = yes/no

Specify single or duplicated group switch.

-equ

Equipment position. The parameter has the format LLLG-Y-Z-I where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine, Z=position, and I=individual.

Example: 1A-0-10-3 (single value)
 1C-0-10-3...1C-0-10-7 (series)
 1A-0-10-9,1B-0-30-6 (multiple values)
 1K-0-10-3...1K-0-10-7,1M-0-50-6 (combination)

-gsmult

Group switch position has the format X-Y where X=group switch module number (0-7), and Y=PCM line number (0-30).

Example:
 0-0 (single value)
 0-0...0-30 (series)
 0-0, 0-30 (multiple values)
 0-0...0-30, 1-0...1-30 (combination)

-lim

LIM number. Range: 1–124

Example:
 3 (single value)
 all (all lims)
 1...4 (series)
 1, 5, 8 (multiple values)
 1, 3...5, 7 (combination)

-print

Print the group switch or device configuration.

Values: **gjul**, **gs**, or **conn**.

-rbpos

Remote side of the pcm line connected directly to another lim.

Board position has the format LLLG-Y-Z where LLL=LIM number, G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine and Y=position.

Example:1C-0-10

-reg

Register a non GJUL board to be used as a media node. Possible board types are TLU76/1, TLU76/11 and MGU PRI interfaces

-remove

Remove a specified item, for example, a PCM line.

A group switch module is removed, when the last pcm line has been removed from it.

-scan

Find PCM lines and group switch configuration.

The switch takes no arguments.

-timeslots

Number of active timeslots on the PCM line = 3-32, where 2 timeslots are used for synchronization and signalling.

-transparent

Transparent = yes/no

Specify type of transmission quality for channels or timeslots on a PCM line.
 It can be transparent and non transparent.
 With transparent means that the bit pattern in the transmission is guaranteed to be consistent.

138.4

EXAMPLES

Print the group switch configuration.

pcm_config -print

Find new PCM lines connected to the group switch.

pcm_config -scan

Specify a PCM line between a group switch and a LIM.

pcm_config -add -gsmult 2-23 -bpos 1a-2-20

Specify a PCM line between two different LIMs.

pcm_config -add -bpos 1a-2-20 -rbpos 2a-2-30

Remove a PCM line.

pcm_config -remove -bpos 1c-2-20

Define the number of timeslots allowed for a pcm line.

pcm_config -bpos 1a-2-20 -timeslots 8

Define the type of each timeslot on a pcm line.

pcm_config -equ 1a-2-20-01, 1a-2-20-05 -transparent no

Define that the group switch is duplicated.

pcm_config -dup yes

139

PCM_ORDER

Manage the group switch connection traffic

139.1

FORMAT

pcm_order

```
-active -side
-block -gsm
-block -gsmult
-block -side
-clear -side [-gsm]
-deblock -gsm
-deblock -gsmult
-deblock -side
-print [-bpos][lim]
-update -side
```

139.2

FUNCTION

The pcm_order manages the group switch connection traffic.

139.3

PARAMETERS

-active

Choose the active side of the group switch.

The switch takes no arguments.

-block

Block the group switch side/module/group switch position for traffic.

The switch takes no arguments.

-bpos

Board position. The parameter has the format LLLG-Y-Z where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine and Z=position.

Example: 1A-0-10 (single value)
 1C-0-10...1C-0-30 (series)
 1A-0-10,1B-0-30 (multiple values)
 1K-0-10...1K-0-30,1M-0-50...1D-0-60 (combination)

-clear

Clear the control memory in the group switch, for a specific item.

-deblock

Deblock the group switch side/module/group switch position for traffic.

The switch takes no arguments.

-gsm

Group switch module number (0-7).

-gsmult

Group switch position has the format X-Y where X=group switch module number (0-7), and Y=PCM line number (0-30).

Example:

0-0 (single value)

0-0...0-30 (series)

0-0, 0-30 (multiple values)

0-0...0-30, 1-0...1-30 (combination)

-lim

LIM number. Range: 1–124

Example:

3 (single value)

all (all lims)

1...4 (series)

1, 5, 8 (multiple values)

1, 3...5, 7 (combination)

-print

Print the configuration for the pcm lines and the group switch.

format can have the values **gjul**, **gs**, or **conn**.

-side

Group switch side 0/1.

Choose the active group switch side.

-update

Update the control memory in the group switch.

The switch takes no arguments.

139.4

EXAMPLES

Block group switch side 0 for traffic:

pcm_order -block -side 0

Block group switch module 5 for traffic:

pcm_order -block -gsm 5

Block a PCM line for traffic:

pcm_order -block -gsmult 1-30

Update the control memory in group switch side 1:

pcm_order -update -side 1

Choose side 1 as active group switch side:

pcm_order -side 1

140 PCM_STATUS

Print status of PCM resources.

140.1 FORMAT

pcm_status

-bpos
-lim [-alarm]

140.2 FUNCTION

The command prints the status of PCM resources located in the system.
This command can also be used to print and clear PCM alarms.

140.3 PARAMETERS

-alarm

Print the group switch alarms.

If the argument 'clear' is used, the alarm will be cleared.

-bpos

Board position. The parameter has the format LLLG-Y-Z where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine and Z=position.

Example: 1A-0-10 (single value)
 1C-0-10...1C-0-30 (series)
 1A-0-10,1B-0-30 (multiple values)
 1K-0-10...1K-0-30,1M-0-50...1D-0-60 (combination)

-lim

LIM number. Range: 1–124

Example:

3 (single value)
all (all lims)
1...4 (series)
1, 5, 8 (multiple values)
1, 3...5, 7 (combination)

140.4 EXAMPLES

Print the group switch status.

pcm_status

Print the busy channels and registered connection media in all lims.

pcm_status -lim all

Print the busy channels, registered connection media and alarms in lim 4.

pcm_status -lim 4 -alarm

Clear the pcm alarms in lim 4.

pcm_status -lim 4 -alarm clear

Print the status of PCM resources for bpos 1c-2-00.

pcm_status -bpos 1c-2-00

Print the status for bpos 2d-0-40

pcm_status -bpos 2d-0-40

Equ	State	Blocked	Service	Transparent	Connected to
---	----	-----	-----	-----	-----
2d-0-40-0		Auto	Sync.	-	
2d-0-40-1	free	Auto	Connection	Yes	
2d-0-40-2	free	Auto	Connection	Yes	
2d-0-40-3	free	Auto	Connection	Yes	
2d-0-40-4	free	Auto	Connection	Yes	
2d-0-40-5	free	Auto	Connection	Yes	
2d-0-40-6	free	Auto	Connection	Yes	
2d-0-40-7	free	Auto	Connection	Yes	
2d-0-40-8	free	Auto	Connection	Yes	
2d-0-40-9	free	Auto	Connection	Yes	
2d-0-40-10	free	Auto	Connection	Yes	
2d-0-40-11	free	Auto	Connection	Yes	
2d-0-40-12	free	Auto	Connection	Yes	
2d-0-40-13	free	Auto	Connection	Yes	
2d-0-40-14	free	Auto	Connection	Yes	
2d-0-40-15	free	Auto	Connection	Yes	
2d-0-40-16		Auto	Signalling	-	
2d-0-40-17	free	Auto	Connection	Yes	
2d-0-40-18	free	Auto	Connection	Yes	
2d-0-40-19	free	Auto	Connection	Yes	
2d-0-40-20	free	Auto	Connection	Yes	
2d-0-40-21	free	Auto	Connection	Yes	
2d-0-40-22	free	Auto	Connection	Yes	
2d-0-40-23	free	Auto	Connection	Yes	
2d-0-40-24	free	Auto	Connection	Yes	
2d-0-40-25	free	Auto	Connection	Yes	

2d-0-40-26	free	Auto	Connection	Yes
2d-0-40-27	free	Auto	Connection	Yes
2d-0-40-28	free	Auto	Connection	Yes
2d-0-40-29	free	Auto	Connection	Yes
2d-0-40-30	free	Auto	Connection	Yes
2d-0-40-31	free	Auto	Connection	Yes
No Channels are registered.				
END				

141

PCM_SYNCHRONIZATION

Set the synchronization configuration of the group switch

141.1

FORMAT

pcm_synchronization

[-mlim [-rlim [-alim]]]

-remove

-resync

141.2

FUNCTION

This command sets or prints the clock controlling LIMs and orders resynchronization.

To print the current configuration, enter the command without any parameter.

Abbreviations:

CC Clock Controlling

CCL Clock Controlling LIM

To set any of the CCLs, at least one GSM with PCM lines to all CCLs must exist.

To be able to set a reserve CCL, a master CCL must also be defined. A master CCL and a reserve CCL must be defined, to be able to set an additional CCL.

For example, to be able to set an additional CCL, a master and a reserve CCL must also be set, and a GSM with PCM lines to all three CCLs must exist.

When CCL data has been set, the system will choose the optimal synchronization configuration, based on defined CCLs and hardware configuration. As soon as it exists at least one PCM line to the master CCL, the system will dedicate the GSM with PCM lines to all CCLs and with most PCM lines to the master CCL, as the master CC GSM. It will handle the master, reserve and additional CC PCM lines.

If possible, the system will dedicate a spare master CC GSM. It will handle the spare master, spare reserve and spare additional CC PCM lines.

Note: Only GSMs with PCM lines to all CCLs can become CC GSMs. If two GSMs have the same number of PCM lines to the master CCL, when the master CC GSM or the spare master GSM shall be chosen, the GSM with the lowest number will be selected.

When CCL data has been set, the synchronization configuration will be printed, and requested to be confirmed. After confirmation, resynchronization of the group switch is ordered.

Removal of a CCL can be done by using the parameter *-remove*, and an argument indicating the function that shall be removed. It can also be done by using the commands overwriting function. For example, if the additional CCL shall be removed, enter the command with only the master and the reserve CCLs. If the reserve and the additional CCLs shall be removed, enter the command with only the master CCL.

Resynchronization of the group switch can be ordered with parameter *-resync*. This will not change the CCLs or the synchronization configuration.

Note: It is essential to have the right hardware configuration in place before CCLs are added or removed.

141.3

PARAMETERS

-alim

Additional ccl. LIM number range = 1-124

Example: -alim 1

-mlim

Master ccl. LIM number range = 1-124

Example: -mlim 3

-remove

Remove ccl all/rlim/alim. Removal of rlim will also remove the existing alim.

Example: remove all

-resync

Resynchronization.

Order the group switch to make resynchronization on current data.

-rlim

Reserve clock controlling LIM. LIM number range = 1-124

Example: - rlim 5

141.4

EXAMPLES

Set master CCL:

pcm_synchronization -mlim 1

Remove all CCLs:

pcm_synchronization -remove all

Print the current CCL configuration:

pcm_synchronization

Change the master CCL to LIM 2 and the reserve CCL to LIM 3 and remove the CCL. Current configuration, master = LIM 1, reserve = LIM 2 and additional = LIM 3.

pcm_synchronization -mlim 2 -rlim 3

Find the pcm lines for the master CCL=1, the reserve CCL=22 and the additional CCL=73:

pcm_synchronization -mlim 1 -rlim 22 -alim 73

Order the group switch to resynchronize:

pcm_synchronization -resync

142

PHONE_SW

Handle (change and print) phone software

142.1

FORMAT

phone_sw

```
[-v] [-V] -c -E --file
[-v] [-V] -c -b --file
[-v] [-V] -c -d --file
[-v] [-V] -c -d [--terminal-identity ]
[-v] [-V] -c -l M --file
[-v] [-V] -p -E
[-v] [-V] -p -b
[-v] [-V] -p -d [--terminal-identity ]
[-v] [-V] -p -l M
```

142.2

FUNCTION

The phone_sw command is used to administrate software on Digital and SIP Telephone Sets. Digital Telephone Sets can be loaded with new fontfiles or new software and the present software status can be printed.

SIP terminals that support the functionality, including Mitel SIP deskphones, will be ordered to check for new firmware and configuration.

142.3

PARAMETERS

-b, --board-position

Board position. The syntax of the argument is LG-M-B, where

L is line number	[1 - 124]
G is gateway	[A - O]
M is magazine	[0 - 3]
	[4 - 6], for MGU based media resources
	[7], for dynamic fictitious magazine

B is board position[0 - 73]

Example of valid syntax: 124N-2-60

The switch requires an argument. The argument is single-valued

-c, --change

Change some settings. I.e. reconfiguration of an item (or several items).

The switch takes no arguments.

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument. The argument is single-valued.

-E, --equipment-position

Equipment position.

Syntax of argument is LG-M-B-I where

L is LIM number	[range: 1 - 124]
G is gateway	[range: A - O]
M is magazine	[range: 0 - 3]
B is board position	[range: 0 - 73]
I is individual	[range: 0 - 31]

Example of valid syntax: 124A-0-10-3.

The switch requires an argument. The argument is single-valued.

--file

The argument shall be the name (path) of a file. Read access needed. The argument shall be a valid UNIX/Linux path name. Use US-ASCII characters only. The argument must be absolute path.

The switch requires an argument. The argument is single-valued.

-l, --lim

LIM number. The syntax of the argument is L where L is lim number [range: 1 - 124].

Examples of valid syntax: 2, or all, or 1,3..5,124

The switch requires an argument. The argument can be the special word 'all' or a comma separated sequence (first..last).

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items.

The switch takes no arguments.

--terminal-identity

Terminal identity. States an RFC3261 compliant URI. An IPv6 host address must be enclosed in square brackets states the terminal identity.

Accepted argument length is 7 to 100 characters.

Format:

"xxx:user@host", where xxx is: 'sip'.

'user' must be equal to --dir.

'host' host can be an IP address or host name. 'host' can be any characters, there is no check if 'host' is valid. The host is the contact address of the terminal (or the communication server) representing the directory number.

To find terminal identity for a registered terminal, use command *resource_status*.

The switch requires an argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

For more complete help type 'phone_sw --help-complete'.

142.4

EXAMPLES

1) Investigate the software status of all telephones for one board.

phone_sw -p -board-position 1c-0-60

Start loading of new software file for one board.

phone_sw -c -board-position 1c-0-60 -file "/usr/firmware/dts00031_r7a"

Note: To be able to load a Digital Telephone Set or a SIP terminal, the device must be idle and unblocked. Telephones that are not in the right state will not be loaded with the new software.

2) Order the directory number 405 with terminal identity "sip:501@203.0.113.108" to check for new firmware and configuration.

phone_sw -c -d 405 --terminal-identity "sip:501@203.0.113.108"

Order all terminals for directory number 405 to check for new firmware and configuration.

phone_sw -c -d 405

143 POWER_FAILURE

Initiate, end or print power failure connections.

143.1 FORMAT

power_failure

```
[-v][-V] -e --extension-equ
[-v][-V] -i --extension-equ --trunk-equ
[-v][-V] -p -l
```

143.2 FUNCTION

The command is used to initiate, end or print power failure connections.

If an extension has been allocated to the service and it is in speech connection when the power failure arises, this speech connection will be broken and the extension is connected directly to the specified external line.

When the LIM begins to function again the speech pathways between extension and external line is reconnected within the system (through the switch).

The extension and the external line must each be connected to the power failure board with separate cables.

The extension and trunk equipment positions must be in the same media gateway.

Only analogue extensions and analogue external lines can use the facility.

143.3 PARAMETERS

-e, --erase

Erase some settings. I.e. deconfiguration of an item (or several items).

The switch takes no arguments.

--extension-equ

Extension equipment position. The parameter has the format LLLG-Y-Z-I where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine [range: 0 - 3], Z=position [range: 0 - 73, and I=individual [range: 0 - 31].

Example: 124A-0-10-3 (single value)

The switch requires an argument. The argument is single-valued.

-i, --initiate

Initiate some settings. I.e. make initial configuration of an item (or several items).

The switch takes no arguments.

-l, --lim

LIM (Line Interface Module) number. The syntax of the argument is L where L is lim number [range: 1 - 124].

Examples of valid syntax: 2, or all, or 1,3..5,124

The switch requires an argument. The argument can be the special word 'all' or a comma separated sequence (first..last).

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items.

The switch takes no arguments.

--trunk-equ

Extension equipment position. The parameter has the format LLLG-Y-Z-I where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine [range: 0 - 3], Z=position [range: 0 - 73, and I=individual [range: 0 - 31].

Example: 124A-0-10-3 (single value)

The switch requires an argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

143.4

EXAMPLES

Remove data for the inter connection of an extension and an external line in the event of a power failure.

power_failure -e --extension-equ 1A-0-40-04

Initiate data for the inter connection of an extension and an external line in the event of a power failure.

**power_failure -i --extension-equ 1A-0-40-04 **
--trunk-equ 1A-1-30-5

Print data permitting connection of an extension and an external line in the event of a power failure.

power_failure -p --lim 1

144 PU_ADD

Addition of program unit

144.1 FORMAT

pu_add

-unit [-lim]

-unit [-fill]

144.2 FUNCTION

A program unit can be added to the system. The program unit will be loaded and necessary start phases in the system will be executed. The program unit must not exist in the LIM where the program unit shall be added.

Make sure that the program executable is available in the "sbin" directory.

After the program unit is loaded the following start phases are executed:

- Start phase 1 in the added program unit
- Start phase 1.3 and 1.5 in the entire system
- Start phase 2 in the added program unit

If the procedure failed, remove the program unit from the LIM where it was loaded and try to add again. If the addition of program unit was successful, save the system configuration changes by ordering a backup of exchange data.

144.3 PARAMETERS

-fill

Add program unit to all LIMs where it does not already exist.

-lim

LIM number where the program unit will be added.

-unit

Name of program unit to be added. Up to 10 program units can be specified. Use a comma (,) to separate names.

144.4 EXAMPLES

Add program unit XAMPLE in LIM 1: **pu_add -unit XAMPLE -lim 1**

Add program unit XAMPLE in all LIMs: **pu_add -unit XAMPLE**

Add program units XAMPL1 and XAMPL2 in LIM 1:

pu_add -unit XAMPL1,XAMPL2 -lim 1

145

PU_INFO

Program unit information

145.1

FORMAT

pu_info

-unit [-lim]

145.2

FUNCTION

Display information about program unit. Following information is displayed:

- unit name and unit identity
- program version
- program code version
- reload data version
- dynamic data version
- function change update type
- type and typeext

Displaying information for a program unit in a specified LIM will also show:

- process Id
- executable file

145.3

PARAMETERS

-lim

LIM number [range: 1-124].

-unit

The name of the program unit (PU).

Parameter value "all" is permitted when parameter "lim" specified.

145.4

EXAMPLES

Display information of program unit XAMPL1 in LIM 1.

pu_info -unit XAMPL1 -lim 1

Display information of program unit XAMPL1 in all LIMs.

pu_info -unit XAMPL1

Display information for all program units in LIM 1.

pu_info -unit all -lim 1

146 **PU_NAME**

Translate between program unit name and number

146.1 **FORMAT**

pu_name
 [-number][-name][-long]

146.2 **FUNCTION**

pu_name is used to translate between program unit name and numbers. One translation in each direction is possible in one command. You must specify "-number" or "-name" or both.

146.3 **PARAMETERS**

-long
 Use long answer printout.

-name
 Translate the given program unit name to a program unit number.

-num, -number
 Translate the given program unit number to a program unit name.

146.4 **EXAMPLES**

Translate program unit name "DER" to program unit number.

pu_name -name DER

Translate program unit name "DAREC" to program unit number, and translate program unit number 22 to program unit name. Use long format.

pu_name -name DAREC -number 22 -long

147

PU_NUMBER

Translate between program unit number and name

147.1

FORMAT

pu_number

[-number][-name][-long]

147.2

FUNCTION

pu_number is used to translate between program unit name and numbers. One translation in each direction is possible in one command. You must specify "-number" or "-name" or both.

147.3

PARAMETERS

-long

Use long answer printout.

-name

Translate the given program unit name to a program unit number.

-num

Synonym for "-number".

-num, -number

Translate the given program unit number to a program unit name.

147.4

EXAMPLES

Translate program unit name "DER" to program unit number.

pu_number -name DER

Translate program unit name "DAREC" to program unit number, and translate program unit number 22 to program unit name. Use long format.

pu_number -name DAREC -number 22 -long

148 PU_PING

Ping program units

148.1 FORMAT

pu_ping

-to [-hop][-flush][-timeout]

148.2 FUNCTION

pu_ping is used to check messaging performance and message round trip delays on a running system. It should only be used by experienced service personnel. The command sends a message through some program units and retrieves a response from the system.

The times are recorded before sending, at every hop and after the response. From the recorded times, delta times (delays) are calculated and printed out. The system has two independent clocks, an UTC clock and a monotonic clock that keeps the time since the last boot of the computer.

Note: The monotonic time is different on every LIM, and cannot be compared over LIM boundaries. This command prints delta times from both the monotonic clock and the UTC clock.

The message performance is affected by both CPU load and input queue lengths of unprocessed messages at the involved program units.

Before recording the time and sending the message, the pu_ping command initializes the I/O streams system and the program unit name lookup system. These initialization times do not affect the measured performance/delay.

148.3 PARAMETERS

-flush

Flush the printout buffer. (Make printout appear at terminal directly.) Used to see where the message stops. Note that when using this parameter, it makes the printout slower and disturbs the time measurement.

-hop

Send back a reply from every hop. Used to debug the system if a message gets lost at some program unit.

-timeout

Maximum time to wait for a reply message in seconds.

(Notice that this is the maximum time to wait for ONE message, the total execution time might be greater.) This parameter is optional. The default time-out is 10 seconds..

-to

A list of entities to ping. The list is a comma (,) separated list of entities. Each entity is built up from: LIM number, colon (:), program unit name, colon (:), thread name. Possible values for the thread name part are "A", "B", "X", "Y" and "Service".

Note: Most program units only have a few threads.).

148.4

EXAMPLES

Send a ping through AL level B to SYSSAM level A in LIM 1.

pu_ping -to 1:AL:B,1:SYSSAM:A

Send a ping in LIM 1 through LOGGER level B, SYSSAM level A, AMP level Service to ALDP level B. Report for every hop (to get some reports even if message is lost). Change time-out to 5 minutes (300 seconds). Do flushing of printout buffers, to make each printout appear at once on terminal.

pu_ping -to 1:LOGGER:B,1:SYSSAM:A,1:AMP:service,1:ALDP:B -hop -timeout 300 -flush

149 **PU_REMOVE**

Remove of program unit

149.1 **FORMAT**

pu_remove

-unit [-lim]

149.2 **FUNCTION**

A program unit can be removed from the system or a certain LIM. The program unit will be unloaded and necessary start phases in the system will be executed. Make sure that:

- no assignments are shared between remaining program units and the program unit to be removed
- no assignments between the program unit to be removed and hardware exist
- no remaining program unit after the removal will try to interact with the program unit to be removed

The start phases 1.3 and 1.5 are executed in the entire system after the program unit is unloaded. After the removal is completed, save the system configuration changes by ordering a backup of exchange data.

149.3 **PARAMETERS**

-lim

LIM number where the program unit will be removed.

-unit

Name of program unit to be removed. Up to 10 program units can be specified. Use comma (",") to separate the names.

149.4

EXAMPLES

Remove program unit XAMPLE from LIM 1:

```
pu_remove -unit XAMPLE -lim 1
```

Remove program unit XAMPLE from all LIMs:

```
pu_remove -unit XAMPLE
```

Remove program units XAMPL1 and XAMPL2 from LIM 1:

```
pu_remove -unit XAMPL1,XAMPL2 -lim 1
```

150

RECORDED_ANNOUNCEMENT_PROMPT

Handle recorded announcements on the MGU board or MS.

150.1

FORMAT

recorded_announcement_prompt

```

--activate [--mgw-type] [--file]
--activate [-m] [--file]
--erase [--mgw-type][--file]
--erase [-m][--file]
--load --host [--port] [--mgw-type] --file --path [--protocol]
--load --host [--port] [-m] --file --path [--protocol]
--print [--mgw-type][--file]
--print [-m][--file]

```

150.2

FUNCTION

The command is used to load, activate, print and erase recorded announcement prompts stored on MGU or Media Server (MS). The announcement prompt must be stored on a web server to be able to download them onto the MGU or MS.

Note: During activation all active announcements are also reactivated. This will disconnect/disturb ongoing announcement on specified MGU or MS. This command supports --mgw-type MS and MGU. If file paths differ for specific recorded announcements, you cannot use the 'load all' or 'activate all' option, but must enter the command several times with different paths.

150.3

PARAMETERS

--activate

Set data active.

The switch takes no arguments.

-e, --erase

Erase some settings. That is, de-configure an item (or several items).

The switch takes no arguments.

--file

The argument shall be a valid UNIX/Linux path name, which shows a **relative** path. Read access is needed. Use US-ASCII characters only.

The switch requires an argument. The argument is single-valued.

--host

States an computer name or IP address of the host where the file reside. Host must be a web-server.

Syntax is either in "dotted quad decimal notation" or as a web address. Example: 192.168.1.10 or design.company.com

The switch requires an argument. The argument is single-valued.

--load

Load data to memory but do not set it active. The data must be activated before it is used.

The switch takes no arguments.

-m, --media-gateway

Media gateway. Syntax of argument is LG, where
 L is lim number [range: 1 - 124]
 G is gateway [range: A - O]
 Example of valid syntax: 2A

The switch requires an argument. The argument is single-valued

--mgw-type

Media gateway type. Will address all media gateways of the specified type. Possible values are: 'MGU', 'mgu', 'MS' and 'ms'.

Explanation: mgu/MGU shall be used for Media Gateway Unit (MGU, MGU2).
 ms/MS shall be used for Media Server.

The switch requires an argument. The argument is single-valued.

--path

Argument shall be the name (path) of a directory. Read access needed. Argument shall be a valid UNIX/Linux path name. Use US-ASCII characters only. Argument must be relative path.

The switch requires an argument. The argument is single-valued.

--port

Port to use when fetching a file from the host, if it is other than the default port (for example, http: default 80).

The switch requires an argument. The argument is single-valued.

-p, --print

Print the configuration of an item or several items.

The switch takes no arguments.

--protocol

Select the type of protocol used. Default value is HTTP. Possible values are: 'HTTP', 'SHTTP', 'http', or 'shttp'.

The switch requires an argument. The argument is single-valued.

150.4

EXAMPLES

List all recorded announcements on the MGUs or MSs.

recorded_announcement_prompt -p

Load a recorded announcements on the MGUs or MSs. The file is located on a web server with the address 192.168.1.10, in a directory called rva. The file name is message002.wav, and the protocol shall be http, and port 80 shall be used.

**recorded_announcement_prompt --load --host 192.168.1.10
 --port 80 --file message002.wav --path rva --protocol http**

Activate specified announcement file on all MGUs and MSs.

recorded_announcement_prompt --activate --file message002.wav

Erase all announcement file from all MGUs and MSs in the system.

recorded_announcement_prompt -e

151

RECOVERYMODE

Fault recovery mode

151.1

FORMAT

recoverymode

- system [-d]
- manual [-d]
- reset [-d]
- clear [-d]
- display [-d]

151.2

FUNCTION

Change and display system fault recovery mode. By putting the system in manual fault recovery mode, it is possible to disable system requested fault recovery measures. No action will then be taken on these measures.

Note: Putting the system in manual recovery mode is very dangerous and shall only be used by experienced users. Faulty usage may result in a system with inconsistent data.

System recovery mode

The normal fault recovery mode where the system will take proper action on requested measures. Change fault recovery mode to system mode (default mode). Use option "-system"

Manual recovery mode

No action will be taken on system requested measures. When changing system fault recovery mode to manual, will the current running measure (if any) be completed. Queued measures will be moved to an information list of not executed measures (the "Not Executed Measures" list). New system requested measures will be put directly in the list of not executed measures without any action taken. An alarm is raised to during manual recovery mode.

The system will automatically go back into system recovery mode after a predefined time (15 hours) if the mode isn't changed to system recovery mode by command.

Change fault recovery mode to manual mode. Use option "-manual".

The list of not executed measures can be cleared (only allowed in system recovery mode). Use option by "-clear".

Pending data restore request

Indicates if a data restore request is awaiting to be executed. The pending data restore request can be reset. Use option "-reset".

Display fault recovery mode

Display fault recovery mode and not executed measures for the system. Use option "-display". The detailed printout option will give more information about each measure. Use option "-d".

151.3

PARAMETERS

-clear

Clear list of not executed measures.

-d

Detailed printout format.

-display

Display fault recovery mode.

-manual

Manual fault recovery mode.

-reset

Reset pending data restore request.

-system

System fault recovery mode.

151.4

EXAMPLES

Set fault recovery mode to system mode.

recoverymode -system

Set fault recovery mode to manual mode.

recoverymode -manual

Reset pending data restore request.

recoverymode -reset

Display system fault recovery mode.

recoverymode -display

Display system fault recovery mode, detailed printout format.

recoverymode -display -d

Clear list of not executed measures.

recoverymode -clear

152

RELOAD

Reload

152.1

FORMAT

reload

--unit [--lim]

--lim

--system

152.2

FUNCTION

Reloading is the process of loading programs and restoring data from backup back into the system. Make sure that a valid backup is available before reloading. Use the command `data_info` to check backups .

152.2.1

RELOAD OF PROGRAM UNIT

Specified program will be unloaded from the LIM/system, loaded again, data restored from the backup and necessary start phases will be executed. The following phases are executed:

- Restart phase 1 in reloaded program unit
- Start phase 1.5 in the entire system
- Restart phase 2 in reloaded program unit

Restore of data in the entire system and start after data restore follows. Reload the program unit. Use the option "--unit".

If a program unit in a certain LIM is to be reloaded then use the option "--lim" to specify the LIM.

If the "--lim" option is not used, the program unit will be reloaded in all LIMs where it is loaded.

152.2.2

RELOAD OF LIM

All program units will be unloaded from the LIM, loaded again, data restored from the backup and necessary start phases will be executed. The following phases are executed:

- Restart phase 1 in all program units in the reloaded LIM
- Start phase 1.5 in the entire system
- Restart phase 2 in all program units in the reloaded LIM

In a multi-LIM configuration, restore of data in the entire system and start after data restore follows.

Manually block the LIM and wait for the traffic cease. Manual blocking prevents new traffic. Reload the LIM. Use the option "--lim".

152.2.3

RELOAD OF SYSTEM

All program units will be unloaded from the system, loaded again, data restored from the backup and necessary start phases will be executed. The following phases are executed:

- Restart phase 1 in all program units in the entire system
- Start phase 1.5 in the entire system
- Restart phase 2 in all program units in the entire system

Reload the system. Use the option "--system".

152.3

PARAMETERS

-l, --lim

LIM number where the LIM reload or program unit reload is to take place.
[range: 1-124].

The switch requires an argument.

--system

Reload of entire system is to take place.

-u, --unit

Name of program unit to be reloaded.

152.4

EXAMPLES

Reload program unit XAMPLE in all LIMs **reload --unit XAMPLE**

Reload program unit XAMPLE in LIM 1 **reload --unit XAMPLE --lim 1**

Reload LIM 1 **reload --lim 1**

Reload the entire system **reload --system**

153

REMOTE_EXTENSION

Manage a remote extension

153.1

FORMAT

remote_extension

```
[-v][-V] -e -d [--customer]
[-v][-V] -i -d [--customer] --remote-number
[--remote-number-type]
[-v][-V] -p [-d [--customer]][--active-answering-position-info] [±s]
```

For a description of the parameter arguments, see the command description for *Command Help Frame*.

153.2

FUNCTION

The command is used to erase, initiate, or to print the data for a remote extension. Use command *resource_status* if you want to know the active position.

153.3

PARAMETERS

--active-answering-position-info

If this switch is present the active answering position number will be printed.

The switch takes no arguments

--customer

Customer number for the extension. Customer 0 is the default customer of the exchange. Argument must be an integer in the range 0 to 50000. For print operations the default implementation dependent, for all other operations the default is 0 (zero).

The switch requires an argument. The argument is single-valued.

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument.

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item (or several items).

The switch takes no arguments.

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

--remote-number

States the default public number associated to the remote extension. The external destination code must be included in the number. Accepted argument length is 2 to 20 digits.

The switch requires an argument. The argument is single-valued.

--remote-number-type

Possible values are: 'FIX', 'MOB'. Remote number type to be associated with --remote-number. Values:

MOB	Mobile Remote Extension
FIX	Fixed Remote Extension

If switch is omitted, the default value is FIX.

The switch requires an argument. The argument is single-valued.

-s, +s, --sort, ++sort

Possible values are: 'dir', 'rxndefaultnumber', and 'rxntypemobile'.

Specify sorting criteria for printout. If no sorting is specified, the printout is unsorted. If sort switch is given without arguments, the printout will be sorted on directory numbers.

-s and --sort specify ascending sort order. +s and ++sort specify descending sort order.

The switch takes an optional argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

153.4

EXAMPLES

Erase the remote extension 7661.

remote_extension -e -d 7661

Initiate a directory number 7661 as a remote extension, with 00916721220 as the public number (where 00 is the external destination code) and mobile type.

**remote_extension -i -d 7661 --remote-number 00916721220
--remote-number-type MOB**

Print data for the remote extension 7661.

remote_extension -p -d 7661

154

RESOURCE_STATUS

Resource status print

154.1

FORMAT

resource_status

```

[-v] [-V] --equipment -E [--output-format] [--vacant] [--list]
[-v] [-V] --equipment -b [--output-format] [--vacant] [--list]
[-v] [-V] --equipment -l [--output-format] [--equipment-type] [--vacant] [--list]
[-v] [-V] --equipment -m [--output-format] [--equipment-type] [--vacant]
[--list]
[-v] [-V] --extensions [--output-format] [-d] [-l] [--user-type] [--customer]
[--high-detail] [--traffic-status]
[-v] [-V] --externals [--output-format] --route-number [--trunk-number]
[--customer] [--traffic-status]
[-v] [-V] --summary --attendant [--output-format] [-l] [--customer]
[-v] [-V] --summary --external [--external-type] [--line-type]
[--output-format] [-l] [--customer] [--list]
[-v] [-V] --summary --terminal [--terminal-type] [--active] [--output-format]
[-l] [--customer]
[-v] [-V] --summary --user [--user-type] [--output-format][-l] [--customer]
[-v] [-V] --summary [--output-format] [-l] [--customer]

```

154.2

FUNCTION

Command to retrieve data about various MX-ONE resources, that is, devices (line types) in the system.

154.3

PARAMETERS

--active

Get active terminals, used together with --terminal.

The switch takes no arguments.

--attendant

Get only attendant data.

The switch takes no arguments.

-b, --board-position

Board position.

Syntax of argument is LG-M-B where

L is line number	[range: 1 - 124]
G is gateway	[range: A - O]

M is magazine [range: 0 - 3]
 [range: 4 - 6], MGU based media resources
 [range: 7], dynamic fictitious
 B is board position [range: 0 - 73]

Example of valid syntax: 124N-2-60

1B-0-10,1C-0-30

1A-0-10..1A-0-30

1B-0-10..1B-0-30,1C-0-50

The switch requires an argument. The argument can be a combination of comma separated sequences and ranges (first..last).

-customer

Customer number for the extensions or other resource. Customer 0 is the default customer of the exchange. Argument must be an integer in the range 0 to 50000. For print operations the default is function dependent, for all other operations the default is 0 (zero).

The switch requires an argument. The argument is single-valued.

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 1 to 10 digits.

The switch requires an argument. The argument can be the special word 'all' or it can be a combination of comma separated sequences and ranges (first..last).

--equipment

Use this switch to get resource data for particular equipment types.

The switch takes no argument.

-E, --equipment-position

Equipment position.

The switch takes no argument.

--equipment-type

Specifies type of equipment. Format: EL6, SIPL, TL11...

The switch requires an argument. The argument is single-valued.

--extensions

Use this switch to get resource data for extensions. Used to get resource data for extension user objects, referred to as <UserObject> in xml format.

If the switch --dir is present, extensions are printed in numerical order, and data for groups is included.

If the switch --dir is not present, extensions are printed in unspecified order and data for groups is excluded. This is the most efficient print for bulk data.

The switch takes no argument.

Note: For the digital extension keys (`resource_status`), the 0 key will always be TNS key and can be changed as per requirement.

--external

Get only external lines.

The switch takes no argument.

--external-type

Get external lines of a certain type.

Allowed types are:

public - public external lines
 private - private external lines (tie-lines)
 The switch takes no argument.

--externals

Used to get resource data for external user objects, referred to as <UserObject> in xml format.

The switch takes no argument.

--high-detail

Use this switch to get extra high level of detail.

Note: This option will slow down bulk data collection.

The switch takes no argument.

-l, --lim

LIM number (Service node server number). The LIM numbers that are allowed are 1-124.

Example of a valid syntax: 2 or 1,3..5,124

The switch requires an argument.

--line-type

Get external lines of a specific line type (signaling protocol).

Allowed types are:

analog - analog trunk lines
 digital - unspecified digital trunk lines
 primary - ISDN primary rate 30B+D or 23B+D lines
 dass - DASS trunk lines
 dpnss - DPNSS1 tie-lines
 ccss7 - signaling system 7 trunk lines
 h323 - H.323 tie-lines
 sip - SIP trunk lines

The switch takes no argument.

--list

Present the printed result as a list.

The switch takes no argument.

-m, --media-gateway

Media gateway identity.

Syntax of argument is LG where

L is lim number	[range: 1 - 124]
G is gateway	[range: A - O]

Example of valid syntax: 2A

1A, 5A, 124A
 1A..1D
 1A,3B..3C,7O

The switch requires an argument. The argument can be a combination of comma separated sequences and ranges (first..last).

--output-format

Specifies output format. The formats are:

text, output format is text (default)

xml, output format is xml

The xml format is described in the IWD System Resource Data Collection Interface. The switch requires an argument. The argument is single-valued.

--route-number

States the route number for a trunk. Format: EL6, SIPL, TL11...

The switch requires an argument. The argument is single-valued.

--summary

Get a resource summary.

The switch takes no argument.

--terminal

Get only terminals

The switch takes no argument.

--terminal-type

Get currently registered terminals of a specific type.

Allowed types are:

dect - DECT cordless terminals

edn - EDN only terminals (SIP terminals with EDN key)

h323 - H.323/IP terminals

sip - SIP terminals

virtual - virtual terminals (generic extension number with specific setting)

analog - analog terminals

digital - digital terminals (DTS)

isdn - ISDN S0 terminals

generic - all generic extensions

tdm - all legacy TDM terminals

undefined - undefined extensions (generic dir. number without any terminal)

The switch takes no argument.

--traffic-status

Use this switch to include traffic state without using the high-detail parameter.

Note: This option will slow down bulk data collection.

The switch takes no argument.

--trunk-number

States the individual trunk number. The format is lim-line number: e.g. 1-1.

Range: 1-1 to 124-9999.

The switch requires an argument. The argument can be the special word 'all' or it can be a combination of comma separated sequences and ranges (first..last).

--user

Get only users.

The switch takes no arguments.

--user-type

Get users of a specific type.

Allowed types are:

generic - generic extension users

legacy - legacy TDM users

pilot - pilot numbers for groups

The switch requires an argument. The argument can be the special word 'all' or a comma separated sequence.

--vacant

Get vacant equipment positions.

The switch takes no arguments.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

154.4

EXAMPLES

Get equipment resource data for lim 1 in text format.

resource_status --equipment -l 1

Get vacant equipment resource data for mgw 1A in xml format.

resource_status --equipment -m 1A --vacant --output-format xml

Get equipment resource data of type EL6 for mgw 1B in xml format.

resource_status --equipment --equipment-type EL6 -m 1B --output-format xml

Get vacant equipment resource data of type KL1 for lim 3.

resource_status --equipment --equipment-type KL1 -l 3 --vacant

Get extensions resource data.

resource_status --extensions

Get extensions resource data in lim 1 in xml format.

resource_status --extensions -l 1 --output-format xml

Get extensions resource data for dir 1000 to 2000.

resource_status --extensions -d 1000..2000

Get extensions resource data for external trunks in route 10.

resource_status --externals --route-number 10

Get a generic system summary summary.

resource_status --summary

Get a summary of users broken up on user types in the system.

resource_status --summary --user --user-type all

Get a summary of generic users in the system.

resource_status --summary --user --user-type generic

Get a summary of legacy users in lim 1.

resource_status --summary --user --user-type legacy -l 1

Get a summary broken up on terminal types in the system.

resource_status --summary --terminal --terminal-type all

155

RESTART

Restart

155.1

FORMAT

restart

```
--system
-unit [--lim]
--lim
```

155.2

FUNCTION

By ordering a restart three phases will be executed:

- Restart phase 1, where dynamic data is being initiated
- Start phase 1.5, where dynamic data is being updated
- Restart phase 2, program units are prepared for traffic

155.2.1

RESTART OF PROGRAM UNIT

The program unit will be restarted and the following phases are executed:

- Restart phase 1 in the program unit
- Start phase 1.5 in the entire system
- Restart phase 2 in the program unit

Restart a program unit located in a certain LIM. Use the options *-u* (or *--unit*) and *-l* (or *--lim*).

155.2.2

RESTART OF LIM

At a LIM restart all program units in specified LIM will be restarted and the following phases will be executed:

- Restart phase 1 in all program units in the restarting LIM
- Start phase 1.5 in the entire system
- Restart phase 2 in all program units in the restarting LIM

Manually block the LIM and wait for the traffic cease. Manual blocking prevents new traffic. Restart the LIM.

Restart the LIM. Use the option *-l* (or *--lim*).

Manually unblock the LIM to allow traffic within the LIM. Traffic to the LIM from other LIMs is permitted.

155.2.3

RESTART SYSTEM

All program units in all LIMs will be restarted and the following phases are executed:

- Restart phase 1 in all program units in the entire system
- Start phase 1.5 in the entire system
- Restart phase 2 in all program units in the entire system

Restart the system. Use the option *--system*.

155.3

PARAMETERS

-l, --lim

LIM number. The LIM numbers that are allowed are 1-124.

The switch requires an argument. The argument can be the special word 'all' or it can be a combination of comma separated sequences and ranges (first..last).

Missing switch *--lim* in combination with *--unit* switch means all LIMs where the unit exists.

--system

Action shall be done on complete system

The switch takes no arguments.

-u, --unit

Unit number or unit name (for instance SIPLP).

The switch requires an argument. The argument can be a comma separated sequence

155.4

EXAMPLES

Restart program units XAMPL1 and XAMPL2 in LIM 1.

restart --unit XAMPL1,XAMPL2 --lim 1

Restart the entire system.

restart --system

156 RING_CADENCE

Manage ring cadence for analog extension.

156.1 FORMAT

ring_cadence

`[-v][-V] -c --cadence --values`

`[-v][-V] -p`

156.2 FUNCTION

The command is used to change or print the stored ring cadence of analog extensions. Restart of all ELUxx boards is required to enable the new ring cadence. The default cadences are determined by the application system (market), but the cadences can be modified by this command.

156.3 PARAMETERS

--cadence

The parameter points to which cadence to change, with an integer value 1 to 4. The switch requires an argument. The argument is single-valued.

-c, --change

Change some settings. That is, modify the configuration an item (or several items). The switch takes no arguments.

-p, --print

Print all or some settings. That is, print the configuration of an item, several items or all items. The switch takes no arguments.

--values

List of 6 comma-separated integers, values 0-255, in 100 ms steps. (E.g. 1 = 100 ms, 15 = 1.5 s, 250 = 25 s). The sequence is on-off-on-off-on-off. The value 0 may be used at an "on"-position, meaning skip to the end.

The switch requires an argument. The argument must be a comma separated sequence.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

156.4 EXAMPLES

Print the data of the analog extension ring cadence.

ring_cadence -p

Change the data of the analog extension's ring cadence 1. The cadence shall be: 1 second on, 2,5 s off, 1 s on, 2.5 seconds off.

ring_cadence -c --cadence 1 --values 10,25,10,50,0,0

board_restart -bpos 1A-0-30

For more details, see the on-line help for *ring_cadence --help-complete*.

157 RING_SIGNAL

Manage ring signal information of an extension, i.e. type of ringing (internal, external, callback).

157.1 FORMAT

ring_signal

ring_signal

```
[-v][-V] -e -d [--calling-number]
[-v][-V] -e -d [--route-number]
[-v][-V] -i -d --ring-type --calling-number
[-v][-V] -i -d --ring-type --route-number
[-v][-V] -p -d [±s [x]]
```

157.2 FUNCTION

The command is used to erase, initiate or print ring signal information of an extension.

157.3 PARAMETERS

--calling-number

States the internal calling number.

Accepted argument length is 2 to 10 digits.

The switch requires an argument. The argument is single-valued.

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument. The argument can be a combination of comma separated sequences and ranges (first..last).

-e, --erase

Erase some settings. That is, de-configure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings. That is, make the initial configuration of an item (or several items).

The switch takes no arguments.

-p, --print

Print the configuration of an item or several items.

The switch takes no arguments.

--ring-type

Alternative ring tone.

0 - Internal ring signal

- 1 - External ring signal
- 2 - Call back ring signal

The switch requires an argument. The argument is single-valued.

--route-number

States the trunk route number. For all incoming calls from this route to the specified extensions (**--dir**), the specified ring tone (**--ring-type**) is provided. Range: 1 - 250.

The switch requires an argument. The argument is single-valued

-s, +s, --sort, ++sort

Specify the sorting criteria for a printout. If no sorting is specified, the printout is unsorted. If a sort switch is given without arguments, the printout will be sorted on DIR.

-s and --sort specify ascending sort order.

+s and ++sort specify descending sort order.

Possible values are: callingnumber, dir, ringtype, or routenumber.

The switch takes an optional argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

157.4

EXAMPLES

Initiate a ring signal for directory number 7661, with 7662 as calling number and call back ring as ring type.

ring_signal -i -d 7661 --calling-number 7662 --ring-type 2

Initiate a ring signal for directory numbers from 7661 to 7664, with 76 as the incoming route number and internal ringing as ring type.

**ring_signal -i -d 7661..7664 --route-number 76 **
--ring-type 0

Print the ring signal information for directory number 7661.

ring_signal -p -d 7661

Print the ring signal information of 7661, sorted on route number.

ring_signal -p -d 7661 -s routenumber

Erase the ring signal initiated for 7661 with the calling number 7662.

ring_signal -e -d 7661 --calling-number 7662

158 ROUTE_DATA_COMMON

Manage data common to all routes

158.1 FORMAT

route_data_common

```
[ -v ] [ -V ] --public-directory-number -e [ -l ]
[ -v ] [ -V ] --public-directory-number -i --public-number [ -l ]
[ -v ] [ -V ] --public-directory-number -p [ -l ]
[ -v ] [ -V ] --route-exchange-number -e -l [--type-of-number ]
[ -v ] [ -V ] --route-exchange-number -i -l --exchange-number --type-of-number
[ -v ] [ -V ] --route-exchange-number -p [ -l ]
```

158.2 FUNCTION

Commands to manage route exchange numbers and common public numbers.

158.3 PARAMETERS

-e, --erase

Erase some settings, that is, deconfigure an item (or several items).

The switch takes no arguments.

--exchange-number

Exchange number. Accepted argument length is 1 to 5 digits.

The switch requires an argument. The argument is single-valued.

-i, --initiate

Initiate some settings, i.e. make initial configuration of an item (or several items).

The switch takes no arguments.

-l, --lim

LIM number. Syntax of argument is L where L is lim number [range: 1 - 124].

Examples of valid syntax: 2
 1,3..5,124

The switch requires an argument. The argument can be the special word 'all' or a range (first..last).

-p, --print

Print all or some settings, i.e. print configuration of an item, several items, or all items.

The switch takes no arguments.

--public-directory-number

Used to initiate the common public directory number.

The common public directory number is used when an extension number is not allowed to be transmitted to the public exchange, and when charging is to be carried out on a common number. The number must exist in number analyses with type common public.

This number can be system wide or LIM specific. This is determined by the presence of the parameter `--lim`.

The switch takes no arguments.

--public-number

Number to use as common public number.

Accepted argument length is 1 to 10 digits.

The switch requires an argument. The argument is single-valued.

--route-exchange-number

Used to initiate public exchange numbers per LIM.

The exchange numbers are used to prefix the directory number with, in order to compose a complete calling/connected number to send to the superior exchange.

Exchange numbers per LIM shall be used when a remote LIM is located in another numbering area than the main part of the exchange. If a call to PSTN originating in the remote LIM is routed via the main part of the exchange that is in a different numbering area, the public exchange numbers per LIM that are initiated for the remote LIM will be used, that is, they override any public exchange numbers per route (command RNDI) that might be initiated for the route to the PSTN.

The public exchange numbers per LIM override any public exchange numbers per route that might be initiated for the route to the PSTN. The prerequisite is that the call originates in a different LIM than the LIM where the route to the PSTN is situated. If the call originates in the same LIM as the LIM where the route to the PSTN is situated, the public exchange numbers per route, initiated for the route to the PSTN, will be used. In this case the public exchange numbers per LIM will not override the public exchange numbers per route initiated for the route to the PSTN.

The switch takes no arguments.

--type-of-number

Available types of numbers:

0	unknown public
1	international
2	national
3	network specific
4	local public

Omitting this parameter when erasing will result in erasure for ALL types.

The switch requires an argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to `/var/log/messages`).

The switch takes no arguments.

158.4

EXAMPLES

Initiate a system wide common public directory number 67000.

```
route_data_common --public-directory-number -i --public-number 67000
```

Initiate a lim specific common public directory number 67000 in lim 1.

```
route_data_common --public-directory-number -i --public-number 67000 -l 1
```

Erase the system wide common public directory number.

```
route_data_common --public-directory-number -e
```

Erase the lim specific common public directory number in lim 1.

```
route_data_common --public-directory-number -e -l 1
```

Print the system wide common public directory number.

```
route_data_common --public-directory-number -p
```

Print the lim specific common public directory number in lim 1.

```
route_data_common --public-directory-number -p -l 1
```

Initiate route exchange number 46 of type international in lim 1.

```
route_data_common --route-exchange-number -i -l 1 --type-of-number 1  
--exchange-number 46
```

Erase route exchange number of type national in all lims.

```
route_data_common --route-exchange-number -e -l all --type-of-number 2
```

Print route exchange numbers in all lims.

```
route_data_common --public-directory-number -p -l all
```

159

RTP_RESOURCE

Print or change RTP information

159.1

FORMAT

rtp_resource

[-v] -c --board-position --echo-cancellation

[-v] -c --board-position --jitter-buffer-size

[-v] -c --lim --max-rtp_channels

[-v] -c --media-gateway --echo-cancellation

[-v] -c --media-gateway --jitter-buffer-size

[-v] -p [--equipment-position][--format]

[-v] -p [--board-position][--format]

[-v] -p [--lim][--format]

[-v] -p [--media-gateway][--format]

159.2

FUNCTION

Print or change inform about RTP resources located in the system.

159.3

PARAMETERS

-b, --board-position

The parameter has the format LG-M-B where

L is LIM number [range: 1-124]

G is gateway [range: A to O. Default value: A]

M is magazine [range: 0 - 3]

[range: 4 - 6. MGU based media resources]

[range: 7. Dynamic fictitious]

B is board position [range: 0 - 73].

Example of valid syntax: 124N-2-60

The switch requires an argument. The argument is single-valued.

-c, --change

Change some settings, that is, reconfigure an item (or several items).

The switch takes no arguments.

--echo-cancellation

Echo cancellation mode. Only valid for IPLU. Possible values are: 'DFE', 'OFF', 'ON', 'dfe', 'off', 'on'. Values:

on = echo cancellation on, default value

off = echo cancellation off

dfe = Decision Feedback Equalization

The switch requires an argument. The argument is single-valued.

-E, --equipment-position

Equipment position.

Syntax of argument is LG-M-B-I where

L is lim number	[range: 1 - 124]
G is gateway	[range: A - O]
M is magazine	[range: 0 - 3]
B is board position	[range: 0 - 73]
I is individual	[range: 0 - 31]

Example of valid syntax: 124A-0-10-3.

The switch requires an argument. The argument is single-valued.

-f, --format

Select a format for the printout. Possible values are: 'BUSY', 'CONN', 'INFO'. Default if switch is not given is 'BUSY'.

The switch requires an argument. The argument is single-valued

--jitter-buffer-size

Note: Only valid for IPLU. Possible values are: adaptive=0 or fixed(ms)=30-240 in step of 10

The switch requires an argument. The argument is single-valued.

-l, --lim

LIM number. Syntax of argument is L where L is lim number [range: 1 - 124].

Example of valid syntax:

3
all
1...4

The switch requires an argument. The argument can be the special word 'all' or a range (first..last).

--max-rtp_channels

-m, --media-gateway

Media gateway.

Syntax of argument is LG where

L is lim number	[range: 1 - 124]
G is gateway	[range: A - O]

Example of valid syntax: 2A

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items.

The switch takes no arguments.

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error.

The switch takes no arguments.

159.4

EXAMPLES

Print the RTP resources media in LIM numbers 1 and 4:

rtp_resource -lim 1,4

Print all busy RTP resources media in LIM number 4:

rtp_resource -lim 4 -print

Print specific information about the RTP resource:

rtp_resource --equipment-position 4a-1-00-8

Print codec information for the RTP resource:

rtp_resource -p --board-position 4c-1-00 --format INFO

160 SEC_POLICY

IP Security Policy

160.1 FORMAT

sec_policy

-print
-remove
-set [-verbose]

160.2 FUNCTION

The command handles the IP security policy of the MX-ONE Service Node. By default the system is Open for all types of registrations. All terminals can use the system.

Note: Whenever the security policy is changed from OPEN to any of the Secure policies, 1, 2, or 3, SRTP media encryption will automatically be enabled.

The security policy level can have the following values:

ALL SECURE

Only extensions with support for security functions (Transport Layer Security (TLS) and Secure Real-Time Transport Protocol (SRTP)) are allowed to register.

ALL SECURE + EXC_EXT

Extension numbers with a security exception are allowed to logon insecurely. If an extension number that is not allowed to have a security exception tries to logon insecurely the registration will be rejected.

ALL SECURE + EXC_TYPE (Only H.323)

Terminals with a security exception are allowed to logon insecurely. This applies to:

- DBC42201 and DBC42501
- All third party H.323-compatible telephones
- All H.323-compatible soft clients

If a terminal type that is not allowed to have a security exception, for example, a DBC42x02, tries to logon insecurely the registration will be rejected

160.3 PARAMETERS

-print

Print the current IP security policy.

-remove

Remove the IP security policy from the system. Any terminal may use the system.

-set

Set the IP security policy level. Level can be any Integer Value or String Value as below:

- 1 ALL_SECURE
- 2 ALL_SECURE+EXC_EXT
- 3 ALL_SECURE+EXC_TYPE

-verbose

If used when setting the security policy to ALL_SECURE it will output additional information, should there be directory-numbers with security-exception they will be printed

160.4

EXAMPLE

Print the IP security policy level.

sec_policy -print

Set the IP security policy level to ALL SECURE.

sec_policy -set 1

Remove the IP Security Policy.

sec_policy -remove

161 SIP_DOMAIN

Manage sip domain names

161.1 FORMAT

sip_domain

`[-v][-V] -e [--local-domain-name][--remote-domain-name]`

`[-v][-V] -i [--local-domain-name][--remote-domain-name]`

`[-v][-V] -p`

161.2 FUNCTION

The command is used to erase, initiate and print sip domains.

Local domain names

Domain shall match the domain in an inbound REQUEST URI.

Remote domain names

An incoming call from a remote domain is treated as if a local SIP extension had made the call. It is possible to have number matching on the domains, so that only a specified number series is allowed. As an example, a remote domain could be a domain where extensions can have a dual registration.

161.3 PARAMETERS

-e, --erase

Erase some settings. I.e. deconfigure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings. I.e. make initial configuration of an item or several items).

The switch takes no arguments.

--local-domain-name

Domain name to be added or removed to the set of local domains. Domain shall match the domain in an inbound REQUEST URI.

Accepted argument length is 1 to 40 characters.

The switch requires an argument. The argument can be a comma separated sequence.

-p, --print

Print all or some settings, that is, print configuration of an item, several items, or all items.

The switch takes no arguments.

--remote-domain-name

Domain name to be added to or removed from the set of remote domains.

Domain shall match the domain in an inbound INVITE {from:<extension

number>@<domain>}. Optional number matching is possible using the format xyz?@example.com.

If a calling number from domain example.com starts with xyz the rest of the number, that matches the question mark, is treated as an internal number.

Accepted argument length is 1 to 40 characters.

The switch requires an argument. The argument can be a comma separated sequence.

-v, --verbose

Turn on verbose output, that is, progress information, to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

161.4

EXAMPLES

Add local domain name 'example.com'

sip_domain -i --local-domain-name example.com

Add remote domain name 'extra.com'.

sip_domain -i --remote-domain-name extra.com

Add local domain name 'internal.com' and remote domain name 'external.com'.

**sip_domain -i --local-domain-name internal.com
--remote-domain-name external.com**

Remove local domain name 'example.com'.

sip_domain -e --local-domain-name example.com

Remove remote domain name 'extra.com'.

sip_domain -e --remote-domain-name extra.com

Remove local domain name 'internal.com' and remote domain name 'external.com'.

**sip_domain -e --local-domain-name internal.com --remote-domain-name
external.com**

All sip domains shall be erased.

sip_domain -e

Print all sip domains.

sip_domain -p

162

SIP_ROUTE

Handles sip route interface data.

162.1

FORMAT

sip_route

```

-print profile
-print -profile -all-markets
-print -profile a
-print -route [-short]
-remove -route

```

Outgoing traffic:

sip_route

```

-set -route [-profile a][ -service s]\
[-addheader] [-remoteport y][ -protocol z][ -proxyip x]\
  [-proxyport u][ -routeset v] [-addheader a] \
  [-uristring0 "s"][-uristring1 "s"] \
  [-uristring2 "s"][-uristring3 "s"] \
  [-uristring4 "s"][-uristring5 "s"] \
  [-uristring6 "s"][-uristring7 "s"] \
  [-fromuri0 "f"][-fromuri1 "f"]\
  [-fromuri2 "f"][-fromuri3 "f"]\
  [-fromuri4 "f"][-fromuri5 "f"]\
  [-fromuri6 "f"][-fromuri7 "f"]\
  [-remotetelip "r"]\
  [-rexfromuri "e"]\
  [-rexstring "e"]

```

Incoming traffic:

sip_route

```

-set -route [-profile a][ -service s]\
  [-accept x][ -match x][ -priority p]\
  [-contextb0 "p"][-contextb1 "p"] \
  [-contextb2 "p"][-contextb3 "p"] \
  [-contextb4 "p"][-contextb5 "p"] \
  [-contextb6 "p"][-contextb7 "p"] \
  [-contexta0 "p"][-contexta1 "p"] \
  [-contexta2 "p"][-contexta3 "p"] \
  [-contexta4 "p"][-contexta5 "p"] \
  [-contexta6 "p"][-contexta7 "p"] \
  [-mwinumber "n"][-handleasexn "h"] \
  [-challenge "c"]

```


Emergency call data:

sip_route

```
-set -route -accept EMERGENCY -match "x" \
    -sosanumber "d" \
    -uristring0 "sip:?"@" \
    [ -priority pp]
```

Third party registration:

sip_route

```
-set -route [ -register l][ -timer t] \
    [ -numbers 123...321][ -registerstring "s"] \
    [ -registerport p]\
    [ -proxyip] [ -proxyport u]\
    [ -routeset v] [ -addheader a]\
    [ -supervise s][ -supervisetime t]\
    [ -localdomain "l"]
```

Set Digest Credential:

sip_route

```
-set -route \
    [ -realm "r" -authname "a" -password "w" ]\
```

Set Trusted network interop:

sip_route

```
-set -route -trusted t
```

Set Codec filtering:

sip_route

```
-set -route -codecs c
```

162.2

FUNCTION

The sip_route command is used to administrate route data specific to SIP trunks. The data is in addition to the traditional route data. When initiating a SIP trunk, you need to use sip_route and then *ROCAI*, *RODAI* and *ROEQI*. Changes to sip_route data can be made without removing RO-data.

Execution:

- 1) sip_route -set [-profile <trunk profile name>] -route Y -uristring0 "sip:?"@<SIPreqURI>",[other sip_route parameters needed or required]
- 2) *ROCAI:ROU=Y, SIG={D11=A for SIP route}*, other service parameters.
- 3) *RODAI:ROU=Y,TYPE=TL66,VARI=00000000,VARC=00000000,VARO=00000000;*

If sip_route -profile is set then *VARI*, *VARC*, *VARO* must have zeroes. Instead, this configuration is set in the profile listed as -Profile line protocol parameters-.

Note: The sip route command has to be executed before "*ROEQI*" which ties equipment to the route.

- 4) *ROEQI:ROU=Y,TRU=<lim>->-<first sequence number>&&<lim>-<lastsequence number>*

The TRU parameter defines the LIMs and capacity used for SIP signaling for this route.

Example: Set route which limits the route to signal via lim 3 with maximum 60 concurrent calls.*ROEQI:ROU=Y,TRU=3-1&&3-60;*

- 5) Define access code which direct outbound calls to this route
RODDI:ROU=Y,DEST=<dest-number>

162.3

PARAMETERS

-accept

The type of matching to perform when handling calls.

Values: NOT_USED, CONTACT_DOMAIN, FROM_DOMAIN, REMOTE_IP, EMERGENCY, TRUNK_INFO, TRUNK_USER, PPI_INFO, PAI_INFO and ALL. (ALL must have priority = 255).

Note: To get appropriate matching priorities for the values of the -accept parameter, you have to consider your naming and priorities for each specific customer case, for example change the settings by:

- Adding more characters in you name string, since the matching is done on the entire string.
- Selecting name strings with the same length to get a certain behavior.
- Changing the order the matching is done, by modifying the -priority parameter for a specific name string compared to other strings.

-addheader

The parameter states a comma separated list of additional heades used in INVITES, REGISTER, and so on.

Allowed headers are: P-Preferred-Identity, P-Asserted-Identity, Organization or propetary headers not used by SIP-stack.

Format: 'Header: sip:string@mysite.com' or 'Header: name<sip:string@mysite.com>;para' or 'Header: data=value'.

-all-markets

The switch controls if ALL trunk profiles or only the ones valid for the market (application system) configured in the system shall be printed. The switch takes no arguments.

-authname

This parameter is used in REGISTER or INVITE as part of Authentication, as response to 401 Unauthorized (see RFC3310). 'authname' is sent in SIP header, Authentication: Digest Username=<authname>

Ref: "Set Digest Credential" in the synopsis.

-challenge

Challenge incoming INVITE on this trunk. (NOT for EMERGENCY trunks.) "yes" or "no".

-codecs

Comma-separated list of codecs to offer to the remote side.

The following codecs are supported: PCMA, PCMU, G723, G729A, G729AB.

-contexta0

Matching string to determine if *Unknown public number* type should be used for the A-number, primarily for incoming "tel" invite.

See chapter 162.5 Notes on page 441.

-contexta1

Matching string to determine if *International number* type should be used for the A-number, primarily for incoming "tel" invite.

See chapter 162.5 Notes on page 441.

-contexta2

Matching string to determine if *National number* type should be used for the A-number, primarily for incoming "tel" invite.

See chapter 162.5 Notes on page 441.

-contexta3

Matching string to determine if *Network specific number* type should be used for the A-number, primarily for incoming "tel" invite.

See chapter 162.5 Notes on page 441.

-contexta4

Matching string to determine if *Local public number* type should be used for the A-number, primarily for incoming "tel" invite.

See chapter 162.5 Notes on page 441.

-contexta5

Matching string to determine if *Unknown private number* type should be used for the A-number, primarily for incoming "tel" invite.

See 162.5 Notes on page 441.

-contexta6

Matching string to determine if *Local private number* type should be used for the A-number, primarily for incoming "tel" invite.

See chapter 162.5 Notes on page 441.

-contexta7

Matching string to determine if *Level 1 regional number* type should be used for the A-number, primarily for incoming "tel" invite.

See chapter 162.5 Notes on page 441.

-contextb0

Matching string to determine if *Unknown public number* type should be used for the B-number, primarily for incoming "tel" invite.

See chapter 162.5 Notes on page 441.

-contextb1

Matching string to determine if *International number* type should be used for the B-number, primarily for incoming "tel" invite.

See chapter 162.5 Notes on page 441.

-contextb2

Matching string to determine if *National number* type should be used for the B-number, primarily for incoming "tel" invite.

See 162.5 Notes on page 441.

-contextb3

Matching string to determine if *Network specific number* type should be used for the B-number, primarily for incoming "tel" invite.

See chapter 162.5 Notes on page 441.

-contextb4

Matching string to determine if *Local public number* type should be used for the B-number, primarily for incoming "tel" invite.

See 162.5 Notes on page 441.

-contextb5

Matching string to determine if *Unknown private number* type should be used for the B-number, primarily for incoming "tel" invite.

See chapter 162.5 Notes on page 441.

-contextb6

Matching string to determine if *Local private number* type should be used for the B-number, primarily for incoming "tel" invite.

See chapter 162.5 Notes on page 441.

-contextb7

Matching string to determine if *Level 1 regional number* type should be used for the B-number, primarily for incoming "tel" invite.

See chapter 162.5 Notes on page 441.

-fromuri0

String used to create the "from" field in the invite message for number type *Unknown public number*.

If no fromuri data is present "uristring0" is used.

The A-number is inserted at the "?" position, A rexstring may be inserted at a "!" position, format is "sip:??@company.com"

The format is **sip:??@company.com**.

-fromuri1

String used to create the "from" field in the invite message for number type *International number*.

If no fromuri data is present "uristring0" is used.

The A-number is inserted at "?" position. A rexstring may be inserted at a "!" position.

The format is **sip:??@company.com**.

-fromuri2

String used to create the "from" field in the invite message for number type *National number*.

If no fromuri data is present "uristring0" is used.

The A-number is inserted at "?" position. A rexstring may be inserted at a "!" position.

The format is **sip:??@company.com**.

-fromuri3

String used to create the "from" field in the invite message for number type *Network specific number*.

If no fromuri data is present "uristring0" is used.

The A-number is inserted at "?" position. A rexstring may be inserted at a "!" position.

The format is **sip:??@company.com**.

-fromuri4

String used to create the "from" field in the invite message for number type *Local public number*.

If no fromuri data is present "uristring0" is used.

The A-number is inserted at "?" position. A rexstring may be inserted at a "!" position.

The format is **sip:?*@company.com***.

-fromuri5

String used to create the "from" field in the invite message for number type *Unknown private number*.

If no fromuri data is present "uristring0" is used.

The A-number is inserted at "?" position. A rexstring may be inserted at a "!" position.

The format is **sip:?*@company.com***.

-fromuri6

String used to create the "from" field in the invite message for number type *Local private number*.

If no fromuri data is present "uristring0" is used.

The A-number is inserted at "?" position. A rexstring may be inserted at a "!" position.

The format is **sip:?*@company.com***.

-fromuri7

String used to create the "from" fields in the invite message for number type *Level 1 regional number*.

If no fromuri data is present "uristring0" is used.

The A-number is inserted at "?" position. A rexstring may be inserted at a "!" position.

The format is **sip:?*@company.com***.

-handleasexn

This setting is used to enable usage of trunk data for incoming extension calls. From field number still needs to match a (pre-) registered extension.

The values are "yes" or "no".

-localdomain

String used to create the "contact" field in the registration message.

The format is **my_company.com**

-match

The IP address, the list of URL addresses, or the emergency numbers to match in the incoming call.

The "from" domain must match when FROM_DOMAIN is used.

Match the sender of the SIP message when REMOTE_IP is used (can be proxy or remote system).

TRUNK_INFO matches a string in the request header, typically "tgrp=...".

When EMERGENCY is used, the B-number is tested.

-mwinumber

Number to use as message waiting system number when a route is used for incoming NOTIFY from voice mail.

-numbers

The number range to handle for a registered trunk.

Value ranges: see '-register'.

-parse

Parsable format using colon notation for easier parsing.

Using print, all sip_route parameters are listed. Only active parameters have values (the same as for normal print).

-password

The password switch is used in REGISTER or INVITE as part of Authentication, as response to 401 Unauthorized (see RFC3310) in a registered trunk (see -register). password is input to SIP header, Authentication: response=<MD5 hashed password>.

Ref: "Set Digest Credential" in the synopsis.

-print

Print data route or profile.

-priority

Priority when matching incoming call data to route data.

Values: Integer 0-255, lowest priority = 255.

Default = 255.

-profile

- List/print the trunk profiles, "-print -profile" offered in your market.

- List/print all trunk profiles, "-print -profile -all-markets".

- List a profile's parameters, "-print -profile <trunk profile name>".

The profiles are market dependent and parsed from files stored in the server at /etc/opt/eri_sn/sip_trunk_profiles.

Set a route based on trunk profile, "-set -profile <trunk profile name> -route <route number>...".

List a profile's parameters, "-print -profile <trunk profile name>".

The heading, -Profile includes parameters-, shows required parameters in -set.

The heading, -Profile exclude parameters-, shows excluded parameters in -set; may be fixed parameter value (<sip_route_param>=<param_value>) or blocked parameter (<sip_route_param>). "-register" and "-trusted" are listed as blocked as these are replaced by line protocol parameters (see below).

The heading -Profile line protocol parameters-. These parameters extend and replace RODAI parameters.

Each profile file may contain a number of profiles.

SIPLP must be restarted (using the command 'start --system') to trigger parsing of new or changed profile files. Each profile file may contain a number of profiles.

Read the following documents for guidance on profile parameters and the impact on the SIP protocol:

/etc/opt/eri_sn/sip_trunk_profiles/trunk_profiles.template

/etc/opt/eri_sn/sip_trunk_profiles/SIP_interop_readme.txt

See also the OPERATIONAL DIRECTIONS for how to initiate a route.

-protocol

Protocol to use for SIP signalling (call setup).

Restart of SIPLP is required if protocol is changed to/from tls in an active route.

Values: udp, tcp or tls. Default: udp

-proxyip

IP address or FQDN (DNS name) for outbound proxy.
If set, SIP messages are sent to 'proxyip' and 'proxyport'.

The proxy will receive a request URI according to the content of 'uristringX'. If registered trunk (set by '-register') is used, the proxy receives REGISTER with request URI by the host portion of the registerstring.

-proxyport

Proxy host port. Range: 0..65535

Default value is displayed as 'default' when using '-print' and can be set by "0".
Default port may be 5060 (tcp/udp) or 5061 (tls).

Default port is also a trigger to do SRV Record query.

- If '-proxyip' is an IP address, the default port or 'proxyport' value is used.
- If '-proxyip' is a DNS name, the sipstack will make DNS queries in the following order:
 - If proxyport=0:
 - 1.DNS SRV Query. If the response is positive, the SRV list contains a list. Each item has A Record or IP address with a port.
 - 2.DNS A Record Query. The default port is used.
 - If proxyport=1..65535:

Messages are sent to the IP address matching the DNS A Record and 'remoteport'.

See 'remoteport' for a more verbose explanation on DNS lookup. The same rules apply.

-realm

The parameter is used in Authentication as response to 401 Unauthorized (see RFC3310) in a registered trunk (see '-register'). The realm is sent in the SIP header, Authentication: realm=<realm>.

Ref: "Set Digest Credential" in the synopsis.

-register

Register the *-numbers* to the remote system. The switch is only used for "-profile Default".

NO_REG	Do nothing.
ALL_NUMBERS	All in -numbers. Normally run in LIM 1.
ALL_EXT	All extensions in -numbers. Normally run in LIM 1.
LIM_EXT	LIM extensions in -numbers. Run in all the LIMs in parallel.
TISPAN_BT	Register PBX as TISPAN Business Trunk (No: TS 182 025). Parameter numbers is not required. Parameter -registerstring is used to assert PBX identity in calls. (Includes -trusted ID_ASSERT).
Broadworks	Register PBX as Broadworks trunk. Parameter -numbers is not required. Parameter -registerstring is used to assert the PBX identity in calls. (Includes -trusted ID_ASSERT).

SIP_DDI	Register the PBX as a SIP-DDI 1.0 trunk. Parameter -numbers is not required. Parameter -registerstring is used to assert PBX identity in calls. (Includes -trusted ID_ASSERT).
SIP_EBT	Register PBX as Enhanced Business Trunking Parameter numbers is not required. Parameter -registerstring is used to assert PBX identity in calls. (Includes -trusted ID_ASSERT).
RFC6140	Register PBX according to RFC6140, chapter 5,6,8,9.1,9.2.1. Parameter numbers is not required. Parameter -registerstring is used to assert PBX identity in calls. (trusted network is not part of RFC6140. For SIPConnect 1.1, use -trusted ID_ASSERT).

See also TL66 Parameter description, INDDAT parameter.

-registerport

Registration host port. Range: 0..65535 (0 being 'default'). registerport is disregarded if -register NO_REG (default), or if proxyip and proxyport is used.

See the -remoteport description on how to interpret 'default', except that the term hostport in this context refers to -registerstring "sip:?<hostport>"

-registerstring

registerstring is sent in the To-header of a SIP REGISTER. The host portion is also used in the request URI.

The destination of SIP REGISTER is resolved (according to methods described in proxyport) from registerstring unless '-proxyip' is used.

Format for '-register' [ALL_NUMBERS,ALL_EXT,LIM_EXT], where '-numbers' is inserted at the "?" position, is "sip:?@company.com". In this case, the PBX represents all numbers individually.

Format for the other '-register' options, which assumes one registered PBX identity, is "sip:pbxid@company.com".

registerstring is disregarded if "-register NO_REG(default)".

-remoteport

Remote host port. Range:0..65535

Default value is displayed as 'default' when using -print and can be set by "0". default port may be 5060 (tcp/udp) or 5061(tls). Default port is also a trigger to do SRV Record query.

If proxyip and proxyport is set, the remoteport value is disregarded.

Terminology: hostport, in this text refers to -uristringX "sip:?@<hostport>".

- If hostport is an IP address, the defaultport or remoteport value is used.
- If hostport is a DNS name, the sipstack will make DNS queries in the following order.

–If remoteport=0:

–DNS SRV Query. If the response is positive, the SRV list contains a list of entries. Each entry has A Record or IP address with a port. If the entry is an A Record, then the stack will attempt to resolve each A Records as well. In traffic MX-ONE will send INVITE to all the list of entries until the call is successful. No answer or 503 'Service Unavailable' will trigger MX-ONE to try next entry.

–DNS A Record query. The respons can be one or several A Records. For multiple A Record see below. The default port is used.

- If remoteport=1..65535, only DNS A Record query is made. For multiple A Record see below. Messages are sent to the IP address matching the DNS A Record and remoteport.

MX-ONE supports Multiple A Records in the DNS. The same A Record (hostport) is given more than one IP address. The order of the list is the priority by which MX-ONE will attempt to send INVITE until the call is successful. No answer or 503 Service Unavailable will trigger MX-ONE to try the next entry.

-remotetelip

Remote host address. Used when uristrings start with "tel:".

If address is in the form of "enum:e164_search_suffix", then ENUM lookup will be enabled.

-remove

Remove data for this route.

-rexfromuri

String used to create the "from", "diverted" and "history" fields in the invite when internal users call to the remote extension. If no rexfromuri data is present "from-stringx" or "uristring0" is used.

The A-number is inserted at the "?" position, A rexstring may be inserted at a "!" position, format is "sip:!?@company.com".

-rexstring

String used to extend or prepend the "fromstringx" used, so that the provider will accept the A-number to be presented at the remote extension.

The format is "079999" or any context string manually agreed upon.

-route

Route number. Set/remove: single value integer. Print: single value integer or "all".

-routeset

routeset is a comma separated list of URI:s used to route the outgoing messages after the outgoing proxy. The setting will populate the "Route:" header in outgoing requests if proxyip is used. Syntax: List of URI (only host part is used).

-service

Service/protocol level (License level).

PUBLIC	Public trunk.
PRIVATE	Tie-line.
PRIVATE_SERVICES	Enhanced tie-line.

-set

Set or change data for this route.

-short

Print short format, by omitting data that is not set.

-sosanumber

Numbers to be presented at the emergency center as the a number when a SIP phone makes an emergency call, and no domain data for emergency calls are found.

The sosanumber should be the same as the destination number for the emergency route.

-supervise

Type of supervision used for this route.

NO_SUPERVISION	No supervision used.
ACTIVE_SUPERVISION	Sends OPTIONS waits for 200OK.

RELAXED_SUPERVISION	Sends OPTIONS and waits for "any" response.
PASSIVE_SUPERVISION	Expects OPTIONS from other side.

-supervisetime

Time between tests if remote side is answering/sending heart beat signal.

Default = 30 s.

-timer

The default time before re-registering in seconds.

Range 300-86400 (5 minutes to 24 h).

Default = 3600 (1 h).

-trusted

"-trusted" is only used for "-profile Default". sip route to a trusted network, trusts the route destination with restricted originating party information.

Originating Identification Presentation/Restriction (OIP,OIR)

(IMS reference 3GPP TS 24.229):

NO_TRUSTED	For OIR, from:"Anonymous" <anonymous@anonymous.invalid> restricts the originating party(RFC3261)
USER	OIR is indicated by Privacy:user. from: and contact: show originating party for OIR and OIP(RFC3323) [Ericsson IMT + VPN-BT 1.0]
ID_ASSERT	OIR is indicated by Privacy:id. from:"Anonymous" <anonymous@anonymous.invalid>. P-Asserted-Identity shows originating party for OIR and OIP(RFC3325)
ID_PREFERRED	OIR is indicated by Privacy:id. from:"Anonymous"<anonymous@anonymous.invalid>. P-Preferred-Identity shows originating party for OIR and OIP(RFC3325)

Default=NO_TRUSTED

-uristring0

Request uri string in SIP requests (ex SIP INVITE).

The destination of the request is resolved from the uristring and remoteport (see 'remoteport' description).

The "?" position substitutes B-number *Unknown public number* type.

Format is **sip:??@company.com** or **tel:??**

See chapter 162.5 Notes on page 441.

-uristring1

See 'uristring0' for basic description.

The "?" position substitutes B-number *International number* type.

Format is **sip:+??@company.com** or **tel:+??**

See chapter 162.5 Notes on page 441.

-uristring2

See 'uristring0' for basic description.

The "?" position substitutes B-number *National number* type.

Format is **tel:??;phone-context=sub.company.com** or **tel:??;phone-context=+1-1234-555-1000**

See chapter 162.5 Notes on page 441.

-uristring3

See 'uristring0' for basic description.

The "?" position substitutes B-number *Network specific number* type.

Format is **tel:?:phone-context=sub.company.com** or
tel:?:phone-context=+1-1234-555-2000

See chapter 162.5 Notes on page 441.

-uristring4

See 'uristring0' for basic description.

The "?" position substitutes B-number *Local public number* type.

Format is **tel:?:phone-context=sub.company.com** or
tel:?:phone-context=+1-1234-555-2000

See chapter 162.5 Notes on page 441.

-uristring5

See 'uristring0' for basic description.

The "?" position substitutes B-number *Unknown private number* type.

Format is **tel:?:phone-context=sub.company.com** or
tel:?:phone-context=+1-1234-555-2000

See chapter 162.5 Notes on page 441.

-uristring6

See 'uristring0' for basic description.

The "?" position substitutes B-number *Local private number* type.

Format is **tel:?:phone-context=sub.company.com** or
tel:?:phone-context=+1-1234-555-2000

See chapter 162.5 Notes on page 441.

-uristring7

See 'uristring0' for basic description.

The "?" position substitutes B-number *Level 1 regional number* type.

Format is **tel:?:phone-context=sub.company.com** or
tel:?:phone-context=+1-1234-555-2000

See chapter 162.5 Notes on page 441.

162.4 EXAMPLES

162.4.1 EXAMPLE 1

Print data for route 1 only showing active parameters.

```
sip_route -print -route 1 -short
```

162.4.2 EXAMPLE 2

End route 1.

```
sip_route -remove -route 1
```

162.4.3 EXAMPLE 3

Initiate route 1 for outgoing calls only.

```
sip_route -set -route 1 -protocol udp -realm company.com \  
-uristring0 "sip:?@company.com" \
```

162.4.4 EXAMPLE 4

Initiate route 1 for incoming calls from a remote end and check the originators "from" domain address. For registration of numbers in the own LIM to the remote system, add prefix "23" as this is our own exchange number.

```
sip_route -set -route 1 -password secret \  
-realm company.com \ -match company.com  
-accept FROM_DOMAIN -priority 1 \  
-register LIM_EXT -numbers 322...399 \  
-registerstring "sip:23?company.com"
```

162.4.5 EXAMPLE 5

Initiate route 5, using the tel protocol with three number types.

```
sip_route -set -route 5 -protocol tcp \  
-remotetelip remote.company.com \  
-uristring0 "tel:?" \ -uristring1 "tel:+?" \  
-uristring2 "tel:?:phone-context=remote.company.com"  
sip_route -set -route 5 -accept REMOTE_IP \  
-match 10.0.1.10,10.0.1.11,10.0.1.12 \  
-contextb2 "phone-context=local.company.com"
```

Note: Additional commands are needed in *LCR* and in *number_conversion*.

162.4.6 EXAMPLE 6

Initiate route 6, using the sip protocol and trunk groups, outgoing hk123, and incoming site321.

```
sip_route -set -route 6 \  
-uristring0  
"sip:?:tgrp=hk123;trunk-context=hk.company.com@hk.company.com" \
```



```
-uristring1
"sip:+?;tgrp=hk123;trunk-context=company.com@hk.company.com" \
sip_route -set -route 6 -accept TRUNK_INFO \
-match "tgrp=site321" \
-contextb2 "trunk-context=site.company.com"
```

Note: Additional commands are needed in *LCR* and in *number_conversion*.

162.4.7

EXAMPLE 7

Initiate route 7, using sip protocol and identification, of trunk with PPI, in both directions.

```
% sip_route -set -route 7 \
-uristring0 "sip:?@hk.company.com"\
-uristring1 "sip:+?@hk.company.com"\
sip_route -set -route 7 -accept PPI_INFO \
-match sip:stockholm@site1.maxcompany.com>\
-addheader 'P-Preferred-Identity: sip:stockholm@site1.maxcompany.com'
```

162.4.8

EXAMPLE 8

Initiate route 8, using public sip trunk via an outbound proxy (corporate Session Border Controller (SBC)).

```
% sip_route set -route 8\  
-profile <profile>  
-proxyip <sbcsiptrunkservice.com>  
-uristring0 "sip:~@siptrunkservice.com"\  
-uristring1 "sip:+~@siptrunkservice.com"\  
-accept FROM_DOMAIN  
-match "siptrunkservice.com" \  
-route 8
```

Note: MX-ONE sends SIP request to -proxyip with the SIP reqURI equal to -uristringX.

162.4.9

EXAMPLE 9

Print what profiles are available

```
% sip_route -print -profile
```

162.4.10

EXAMPLE 10

Print a specific profile

```
% sip_route -print -profile Lync_TLS
```

162.5

NOTES

Sip routes can be configured just to register subscribers in remote system without traffic configuration.

For information how to use type of number conversion: see commands "RODDI:ADC=..", "LCDDI:BTON..." and "number_conversion_initiate".

context:

ContextaX and contextbX is normally used to match "phone-context=..." or "trunk-context=...".

ContextaX and contextbX is setting type of number (TON) to "International number" if "+" is found, or if the contextX1 is matched. "Unknown public number" is set if string contextX0 is matching or if no other contextxX string is matching.

fromuri:

If no fromuri data is present for the used type of number, then "fromuri0" is used if configured. If "fromuri0" is empty, then "uristring0" is used.

When "uristring0" is used and registration is not used then the host portion is replaced with the server FQDN.

The A-number is inserted at the "?" position, or a rexstring (see 'rexstring' description) may be inserted at a "!" position. Format is "sip:??@company.com".

The default type of number for an internal party making an outgoing call is "Unknown private number" but this can be changed depending on other configuration in system (e.g. number conversion).

uristring:

Request uri in SIP requests (that is, INVITE).

The destination of the request is resolved from the uristring and remoteport (see 'remoteport' description). The "?" position is substituted with the B-number. If no uristring data is present for the used type of number, then "uristring0" will be used.

Format is "sip:??@company.com" "tel:?" "tel:??;phone-context=sub.company.com" "tel:??;phone-context=+1-1234-555-1000"

163 SIPGREP

Filter SIP messages from a SIPLP trace.

163.1 FORMAT

sipgrep

```
-sortcalls [dir]
-sortips [dir]
-twopartyfilter a_party_ip b_party_ip
```

163.2 FUNCTION

The command is used as a filter in a **trace -print** command to extract SIP information on a Local Area Network.

Usage: read from stdin, filter SIP messages and print to stdout.

163.3 PARAMETERS

-sortcalls

Sort on calls.

Read from stdin and write to files. One file is created per call-ID. Optionally create the files in directory **dir**.

-sortips

Sort on IP addresses.

Read from stdin and write to files. One file is created per endpoint-IP. Optionally create the files in directory **dir**.

-twopartyfilter

Sort on messages.

Read from stdin and write the SIP messages to and from the IP addresses set as a_party_address and b_party_address.

163.4 EXAMPLES

Filter directly from trace -print.

```
trace -print 1 | sipgrep
```

Filter a trace done in the file SIPLP_trace.txt and sort on calls. Write to directory sortdir.

```
cat SIPLP_trace.txt | sipgrep -sortcalls sortdir
```

Filter messages from two parties.

```
cat SIPLP_trace.txt | sipgrep -twopartyfilter 192.168.0.101 192.168.0.102
```

164 SMS_CLIENT_END

SMS Client End

164.1 FORMAT

```
sms_client_end  
-ip [-port][-lim]
```

164.2 FUNCTION

The command is used for terminating SMS Center clients.

The parameter -lim is optional. When it is not entered the clients are terminated in all LIMs.

164.3 PARAMETERS

-ip
IP address of the SMS Center client.
Use dotted decimal format.

-lim
LIM number [range: all, 1-124].
Default value is **all**.

-port
Port number of the SMS Center client.

164.4 EXAMPLES

Terminate the SMS Center client with IP address 192.168.25.223.

```
sms_client_end -ip 192.168.25.223
```

Terminate the SMS Center client with IP address 192.168.25.225 and port number 1815.

```
sms_client_end -ip 192.168.25.223 -port 1815
```

Terminate the SMS Center client in LIM 1 with IP address 192.168.25.224.

```
sms_client_end -ip 192.168.25.224 -lim 1
```

165 SMS_CLIENT_INITIATE

SMS Client Initiate

165.1 FORMAT

```
sms_client_initiate  
-ip [-port][-lim]
```

165.2 FUNCTION

The command is used for initiating SMS Center clients.

The parameter -lim is optional. When it is not entered the clients will be initiated in all LIMs.

165.3 PARAMETERS

-ip
IP address of the SMS Center client.
Use dotted decimal format.

-lim
LIM number [range: all, 1-124].
Default value is **all**.

-port
Port number of the SMS Center client.

165.4 EXAMPLES

Initiate an SMS Center client with IP address 192.168.25.223.

```
sms_client_initiate -ip 192.168.25.223
```

Initiate an SMS Center client with IP address 192.168.25.225 on port number 1815.

```
sms_client_initiate -ip 192.168.25.223 -port 1815
```

Initiate an SMS Center client in LIM 1 with IP address 192.168.25.224.

```
sms_client_initiate -ip 192.168.25.224 -lim 1
```

166

SMS_CLIENT_PRINT

SMS Client Print

166.1

FORMAT

```
sms_client_print  
-lim
```

166.2

FUNCTION

The command is used for printing SMS Center client data.

166.3

PARAMETERS

-lim

LIM number [range: all, 1-124].

Single value, series (1...6) and all are valid. Duplication of LIM number is not allowed. ('All' is not case sensitive.)

Default value is all.

166.4

EXAMPLE

List all SMS Center clients initiated in LIM 1.

```
sms_client_print -lim 1
```

SMS Center - Client Information

LIM Number	IP Address	Port Number	Port Status
1	192.168.24.22	1815	Port Open
1	192.168.24.24	1815	Port Open

167 SMS_SERVER_END

SMS Server End

167.1 FORMAT

```
sms_server_end  
-dir
```

167.2 FUNCTION

The command is used to end a short Message Service connection. The Service Node will stop listening for new SMS messages on the IP-address/port.

167.3 PARAMETERS

-dir
Directory number of the SMS Center server [range: 00 - 9 999 999 999].

167.4 EXAMPLE

Terminate the SMS Center server with the extension number 50000.

```
sms_server_end -dir 50000
```

168

SMS_SERVER_INITIATE

SMS Server Initiate

168.1

FORMAT

```
sms_server_initiate  
-dir][-ip][-port]
```

168.2

FUNCTION

The command is used for initiating the Short Message Service Center server.

168.3

PARAMETERS

-dir

The parameter states an extension number. [range: 00 - 9 999 999 999].

The extension number has to be defined as a generic extension. This number is defined in a Service Node (LIM). It is highly recommended to use that Service Node IP address as the IP address SMS-SC sends the SMS to.

-ip

IP address to reach the SMS Center server.

Default value is the IP-address of the Service Node where the extension number is defined.

-port

Port number of the SMS Center server [range: 1024 and 65535].

168.4

EXAMPLES

Initiate an SMS Center server with extension number 50000.

```
sms_server_initiate -dir 50000
```

Initiate an SMS Center server with extension number 60000 along with the IP address.

```
sms_server_initiate -dir 60000 -ip 192.168.25.71
```

Initiate the SMS Center server with extension number 70000 along with IP address and Port number.

```
sms_server_initiate -dir 70000 -ip 192.168.25.247 -port 1814
```


169 SMS_SERVER_PRINT

SMS Server Print

169.1 FORMAT

```
sms_server_print
      -dir [-lim]
```

169.2 FUNCTION

The command is used for printing SMS Center server data.

169.3 PARAMETERS

-dir
Directory number of the SMS Center server [range: all, 00 - 9 999 999 999].

-lim
LIM number [range: all, 1-124].

169.4 EXAMPLES

Print SMS Center server details for the extension 70000.

```
sms_server_print -dir 70000
```

SMS Center - Server Information

Dir	Cust	Lim	IP Address	Port Number
70000	0	1	192.168.25.247	1814

Print SMS Center server details for the extensions from 40000 to 50000.

```
sms_server_print -dir 40000..50000
```

SMS Center - Server information

Dir	Cust	Lim	IP Address	Port Number
40000	0	1	192.168.25.247	1814
45000	0	2	192.168.25.246	1814
50000	0	3	192.168.25.245	1814

Print SMS Center server details for 40000, 50000, and 60000.

```
sms_server_print -dir 40000,50000,60000
```

SMS Center - Server information

Dir	Cust	Lim	IP Address	Port Number
40000	0	1	192.168.25.247	1814
50000	0	2	192.168.25.246	1814

SMS Center - Server information

60000	0	3	192.168.25.245	1814
-------	---	---	----------------	------

sms_server_print -dir all

SMS Center - Server information

Dir	Cust	Lim	IP Address	Port Number
40000	0	1	192.168.25.247	1814
50000	0	2	192.168.25.246	1814
60000	0	3	192.168.25.245	1814

170

START

Coordination start

170.1

FORMAT

start

--system

170.2

FUNCTION

By ordering a start, two phases will be executed:

- Start phase 1.3, where reload data is being updated
- Start phase 1.5, where dynamic data is being updated

Start phase 1.3 will be executed in the entire system followed by start phase 1.5 in the entire system.

170.3

PARAMETERS

--system

Action shall be done on complete system.

The switch takes no arguments

170.4

EXAMPLE

Start the entire system.

start --system

171

STATUS

Display Service Node status

171.1

FORMAT

```
status
    -system [-d][-r]
    -lim [-d]
    -unit [-lim]
    -comfunc [-lim]
    -interlim [-lim][clear][-d]
```

171.2

FUNCTION

171.2.1

SYSTEM STATUS, -SYSTEM

Display current status and event history for system, LIM or program unit.
Following information can be displayed:

- Current master LIM and number of LIMs in the system
- Fault recovery mode
- Current start order
- Start time for current start order
- Pending data restore request
- Measure queue
- Measure execution history, short and detailed format

To include the measure execution history in detailed format, add option **-d**.

Master LIM	The LIM that is responsible for execution of measures (such as restart, reload) and election of active-/passive- common functions.	
Fault Recovery Mode	States if the system is in system or manual fault recovery mode.	
Current Start Order	Current executing start order.	
Start Order Time	Start time for current executing start order.	
Pending Data Restore	Indicates if a data restore request is waiting to be executed.	
Measure Queue	Queued measures, which are executing or waiting to be executed.	
Measure Execution History, short format	A history list of executing/executed measures in the system.	
	Measure	Type of measure.
	Result	Result of completed measure or status of running measure.
	Order Time	Start time of measure execution.
	Completed Time	End time of measure execution.

	Id	Measure Id The measure Id can be used to identify the measures when printing the measure history list in detailed format.
Measure Execution History, detailed format		The history list of executing/executed measures in the system in detailed format. More information about each measure is displayed.
	Id	Measure Id.
	Requested Measure	Result of completed measure or status of running measure.
	Result	Result of completed measure or status of running measure.
	Order Time	Start time of measure execution.
	Completed Time	End time of measure execution.
	Requesting LIM	LIM which requested the measure.
	Requesting Unit	Unit which requested the measure.
	Ordered By	Measure ordered by command or system.
	Reason	Reason for measure.
	Requested Lims	LIMs to perform the measure in.
	Requesting Unit	Units to perform the measure on.
	Successful Lims	LIMs where the measure was successful.
	Failed Lims	LIMs where the measure failed.
	Action Order Key	Used as reference to identify which action orders in a LIM status printout (see below) that belongs to this measure.

171.2.2

LIM STATUS, -LIM

Display status and action order history for a LIM. Following information can be displayed:

- LIM status
- Current executing start phase
- Previous executed start phase and result
- LIM status history
- Action order history

To include the action order history in the printout, add option **-d**.

LIM Number	LIM number for which the LIM status is displayed.
LIM Status	Current status of the LIM. Following states are possible:
	OK LIM is successfully started.
	Isolated LIM is isolated.
	HalfStarted Start/restart of LIM is going on.
	PreReload Reload of LIM is going on, reload and restart phase 1 is not ready.
	Reloaded Reload of LIM is going on, reload and restart phase 1 is ready.
	Initial start Initial start is going on.
Current Start Phase	The start phase which is currently executing in the LIM.
Previous Start Phase	The previous executed start phase in the LIM.
LIM Status History	History of LIM status changes.
Action Order History	History of executing/executed action orders in the LIM.
	Action order Type of action order.

Result	Result of completed measure or status of running measure.
Key	Reference to the measure which caused the action order (see measure history, detailed format).
Start time	Start time of action order execution
End time	End time of action order execution.
Start type	Type of start.
Start scope	Start of whole LIM or start of separate unit/units.
Units	Units take action if start of separate units.
Failed units	Units for which the action have failed. Only valid if start scope is start of separate units .
Start phase	Start phases with result, start and end time which the action order will generate.

171.2.3

PROGRAM UNIT STATUS, -UNIT

Display status of program unit.

Following information is displayed

- unit name and unit identity
- status of unit
- completed start phases in the unit
- status of reload data
- common function information

Status	Status of the program unit
Not loaded	Not loaded
Terminated on purpose	The unit is terminated by purpose.
Terminated	The unit is terminated by the system.
Alive	The unit is loaded but not started.
Half started	All start phases are not completed and/or reload data are not ok.
Started	All start phases completed and reload data is ok.
Start/Restart Phase	States which start phases that have been completed in the unit.
Reload Data	States if reload data is ok (restore of exchange data and start after data restore successfully completed in the unit).
Common Function Status	Only valid for common function units. States if the common function unit is ok/faulty and if it's active/passive in the requested LIM.

Note: All units needs to be in status Started to be able to make a data backup of the system.

171.2.4

COMMON FUNCTION UNIT STATUS, -COMFUNC

Following information is displayed:

- unit name and unit identity
- which LIM(s) the unit is loaded in
- location of active and passive common function

- state of the common function unit (ok/fault marked)

The information is fetched from the LIM where the user is logged on.

Use option **-lim** to fetch the information from a specific LIM. The status of the common function units shall be identical in each LIM in the system.

171.2.5

INTERLIM STATUS, -INTERLIM

Display status for current interlim communication. Connection used for interlim messages.

Following information is displayed:

- Lims with no connections to other Lims
- Lims with connections established to other Lims
- Lims current connection status

If **-interlim** is used without the parameter **-d**, a list of the connections that are down, is displayed.

If **-interlim** is used with the parameter **-d**, a list of established connections as well as a list per LIM showing each connection per LIM, will be presented.

Parameter **-clear** will clear the up and down counters.

If a LIM is not reachable when data is collected the state is printed as **down**.

171.3

PARAMETERS

-

171.4

EXAMPLES

Display status of the entire system.

status -system

Display status of the entire system, detailed printout format.

status -system -d

Display status of LIM 2.

status -lim 2

Display status of LIM 2, detailed printout format.

status -lim 2 -d

Display status of unit AL in system.

status -unit AL

Display status of unit AL in LIM 1.

status -unit AL -lim 1

Display status of all units in LIM 1.

status -unit ALL -lim 1

Display common function unit configuration.

status -comfunc

Display list of connections that are down.

status -interlim

Display list of connections that are down, up and list for each LIM.

status -interlim -d -lim 4...8

172 STATUS_VIEW

Show status changes in MX-ONE Service Node

172.1 FORMAT

```
status_view  
[-lim][-system]
```

172.2 FUNCTION

The command is used to show the status changes that happen in the MX-ONE Service Node. The command will ask the MX-ONE Service Node for information about status changes and continue to show changes.

Default behavior is to only show start phases in own LIM.

Note: The command is aborted with control-C.

172.3 PARAMETERS

```
--lim  
    Include complete LIM information.  
--system  
    Include complete system information.
```

172.4 EXAMPLES

Show start phases in own LIM.

```
status_view
```

Show all status changes in own LIM.

```
status_view -lim
```

Show status changes in system.

```
status_view -system
```

173

STREAMING_DATA

Manages streaming data.

173.1

FORMAT

streaming_data

```

[-v] [-V] -c --channel [--description ][--execution-uri ][--media-server-input-uri ]
    [--media-server-address ] [--port-limit] [--volume] [--synchronous]
[-v] [-V] -e --channel
[-v] [-V] -e --conference-id
[-v] [-V] -i --channel --description --execution-uri [--media-server-input-uri]
    [--media-server-output-uri] [--port-limit] [--volume] [--synchronous]
[-v] [-V] -i --conference-id --lim --media-server-address --media-server-input-uri
    --media-server-output-uri
[-v] [-V] -p --channel
[-v] [-V] -p --conference-id

```

173.2

FUNCTION

This command is used to configure data for Mitel 68xx/69xx terminals to request streaming. The configuration is both for terminals and media server. The 68xx/69xx phones limit the number of channels that can be initiated and presented per key to 30.

173.3

PARAMETERS

-c, --change

Change some settings that is reconfiguration of an item (or several items).

The switch takes no arguments.

--channel

The internal name of the channel used for identification.

This parameter is used when programming dynamic channels. A dynamic channel is connected upon a request from a user. Use "all" to print all channels.

The switch requires an argument. The argument is single-valued.

--conference-id

The conference identity or conference key. This parameter is used when programming static channels. A static channel is setup during start phase 1.5. Use "all" to print all conference identities.

The switch requires an argument. The argument is single-valued.

--description

Text presented on the terminal as a menu item. The 'narrow' string will be converted to ISO 10646-UCS-4 (Unicode) 'wide' string. In this conversion the 'narrow' string can hold 'quoted' unicode numbers of unicode characters. A quote

character is used to switch between narrow text mode and unicode number mode in the input 'narrow' string. In unicode number mode the numbers are according to ISO 10646-UCS-4 see for instance <http://std.dkuug.dk/JTC1/SC2/WG2/>.

In unicode number mode the numbers are separated by space ' ', or by semi-colon ';'. The numbers in unicode number mode are decimal or hexadecimal. (Hexadecimal numbers must begin with 0x.). The default quote character is the percent sign '%', but that can be changed using the environment variable `$_MD_UNICODE_QUOTE_CHAR`. To input the quote character itself, the unicode number for the quote character must be given in unicode number mode. (To input '%' if '%' is quote character, insert '%37%.')

Example: To input the fictitious German company name 'Üßü-GmbH' (transcribed as Uessue-GmbH), with correct German characters, without a German keyboard, the input would be '%0xdc 0xdf 0xfc%-GmbH'.

The argument is single-valued. Text presented on the terminal as a menu item.

-e, --erase

Erase some settings. That is, deconfiguration of an item (or several items). The switch takes no arguments.

--execution-uri

The execution uri string is an order sent to the terminal. It contains information about what to listen to. The system handles 2 types of execute items RTP streams and WAV files. This parameter is directly found in XML API for Mitel SIP phones section RTP streaming. For unicast RTP only the listening port is of significance. If the stream is ordered from an external server and is unicast we do not know the address.

Then this item must contain a null uri, i.e "RTPRx:0.0.0.0:60000". This item may contain several execute items which then are separated with ";;"

For instance: "RTPRx:Stop;Wav.Stop:"

Syntax for file type execution uri's "Wav.Play:[tftp://|http://[user:[password]@]<host>(:port)[/<path>]/file" "Wav.Stop"

Syntax for RTP type execution uri's

"RTPRx/RTPRMx:i:p:" "RTPRx:Stop (stops both unicast and multicast)

where

- i is IP address to receive stream from.
- p is base port to receive stream from.
- RTPRx - is uni-cast RTP.
- RTPRMx - is multi-cast RTP.

The switch requires an argument. The argument is single-valued.

-i, --initiate

Initiate some settings. That is, make initial configuration of an item (or several items). The switch takes no arguments.

-l, --lim

Lim number. Server where conference resides. Syntax of argument is L where L is lim number [range: 1 - 124]. Example of valid syntax: 2

The switch requires an argument. The argument is single-valued.

--media-server-address

The server IP address where the channel/conference shall reside. This address is programmed for Class-less Inter-Domain Routing (CIDR), and will be matched to the closest media server address. If the parameter is omitted, the system will use the ordering terminal's data and domain data to find a media server. When a static channel is programmed, use a complete address (e.g. 10.20.30.40).

The switch requires an argument. The argument is single-valued.

--media-server-input-uri

The input to media server, this may be an IP address + port or a path to a file.

This parameter in conjunction with --media-server-output-uri is used when selection of this channel shall result in a media server connection.

The switch requires an argument. The argument is single-valued.

--media-server-output-uri

Used for static channels only. The uri the media server shall send the output to.

The switch requires an argument. The argument is single-valued.

--port-limit

Port limit from which ports for RTP to the terminal is selected. The port value in the execution-uri is the lower limit, the port-limit value added to the execution-uri port is the upper limit. The port is then randomly selected between these two numbers. If this parameter is omitted the port from execution-uri is always selected. Care must be taken so ports do not match other RTP ports used by terminals. See description for terminals. The number of ports must be less than or equal to 1000. See documentation for terminals for more information.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. That is, print configuration of an item, several items, or all items. The switch takes no arguments.

--synchronous

Synchronous refers to the media server connection. A synchronous connection will if a file is played always start from the beginning. The connection will be one to one. A non synchronous connection will connect as a sunfan, and if it is already playing a new part will be added at the current playing position. Allowed values are: '1', 't', 'true', 'y', 'yes', '0', 'f', 'false', 'n', 'no'. Default value is 0/false.

The switch requires an argument. The argument is single-valued.

-v--verbose

Turn on verbose output (that is, progress information) to standard error. The switch takes no arguments.

-v--verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages). The switch takes no arguments.

--volume

Play back relative to stream volume. -12 +12 (dB), in steps of 1(dB). Default value is -6 dB.

The switch requires an argument. The argument is single-valued.

173.4 EXAMPLES

173.4.1 EXAMPLE 1

Initiate a multicast channel for terminals to stream from. No new connection in media server is required. Multicast IP address and port is 232.0.0.1 and 60000. RTPMRx means a multicast address.

```
streaming_data -i --channel Radio11 --description "Radio channel 1" --execution-uri "RTPMRx:232.0.0.1:60000"
```

173.4.2 EXAMPLE 2

Initiate a channel for listening to a file example.wav from uri 10.30.101.26 port 8080 using http. No new connection in media server is required.

```
streaming_data -i --channel file_channel --description "File channel 1" --execution-uri "Wav.Play:http://10.30.101.26:8080/example.wav"
```

173.4.3 EXAMPLE 3

Initiate a unicast channel on the media server to play at -6db. Address to media server is an exact match to 10.12.101.2/32. Address where media server is taking the stream from is http://192.123.44.2:60000.

The stream is sending to the requesting terminal, and therefore the execution uri shall be 0.0.0.0. The selected ports shall be 60000-61000. The playing shall not be synchronized.

```
streaming_data -i --channel Radio4 --description "Radio channel 4" --execution-uri "RTPRx:0.0.0.0:60000" --media-server-input-uri "http://192.123.44.2:60000" --media-server-address "10.12.101.2/32" --port-limit 1000 --volume -6
```

173.4.4 EXAMPLE 4

Initiate a file on the media server to play synchronously. Address to media server is an exact match to 10.12.101.2/32. Address where media server is taking the stream from is "http://10.30.101.26:8080/welcomeMsg.wav". The stream is sending to the requesting terminal and the execution uri shall therefore be 0.0.0.0.

```
streaming_data -i --channel Radio1 --description "Radio channel 1" --execution-uri "RTPRx:0.0.0.0:60000" --media-server-input-uri "http://10.30.101.26:8080/welcomeMsg.wav" --media-server-address "10.12.101.2/32" --synchronous true
```

173.4.5 EXAMPLE 5

Initiate a channel with two items to stop both RTP and Wav streaming.

```
streaming_data -i --channel stop --description "Stop streaming" --execution-uri "RTPRx:Stop;Wav.Stop:"
```

173.4.6

EXAMPLE 6

Initiate a static multicast channel for continuous output. Use MX-ONE resource in LIM 1. Conference id is "multicast_radio_1". Address to media server is 192.168.26.60.

The address where media server is taking the stream from shall be "rtp://10.30.101.26:8080"

Address where media server is sending multicast to shall be "rtp://232.0.0.2:60000".

```
streaming_data -i -l 1 --conference-id "multicast_radio_1"
--media-server-address 192.168.26.60 --media-server-input-uri
"rtp://10.30.101.26:8080"--media-server-output-uri "rtp://232.0.0.2:60000"
```

173.4.7

EXAMPLE 7

Change the description on media channel Radio1.

```
streaming_data -c --channel Radio1 --description "Radio channel 1"
```

173.4.8

EXAMPLE 8

Erase channel Radio2.

```
streaming_data -e --channel "Radio2"
```

173.4.9

EXAMPLE 9

Erase conference identity multicast_radio_1.

```
streaming_data -i -l 1 --conference-id "multicast_radio_1"
```

174 SWITCH_CONNECTION_END

Manually ends switch connections.

174.1 FORMAT

```
switch_connection_end
    [-equa]<equ_position>
    [-equb] <equ_position>
    [-ctype] <conn_type>
```

174.2 FUNCTION

This command is used to end switch connections manually.

174.3 PARAMETERS

-ctype

Connection type:

- 0: Reserved two-way
- 1: One-way connection A->B, reserved B->A
- 2: One-way connection B->A, reserved A->B
- 3: Two-way connection A<->B
- 4: Auxiliary connection A->B
- 5: Auxiliary connection B->A

-equa

Equ position has the format X-Y-Z-I

where X=lim number+gateway, Y=magazine, Z=position
and I=individ

example: 1A-0-10-3

-equb

Equ position has the format X-Y-Z-I

where X=lim number+gateway, Y=magazine, Z=position
and I=individ

example: 1A-0-10-3

174.4 EXAMPLE

Clear a two-way connection.

```
switch_connection_end -equa 1-0-30-6 -equb 1-0-50-0 -ctype 3
```

175

SWITCH_CONNECTION_INITIATE

Manually sets up switch connections.

175.1

FORMAT

switch_connection_initiate

[-equa]<equ_position>

[-equb] <equ_position>

[-attn] <attn_value>

[-ctype] <conn_type>

175.2

FUNCTION

This command is used to set up switch connections manually.

175.3

PARAMETERS

-attn

Attenuation table index

range 0-7

-ctype

Connection type:

0: Reserved two-way

1: One-way connection A->B, reserved B->A

2: One-way connection B->A, reserved A->B

3: Two-way connection A<->B

4: Auxiliary connection A->B

5: Auxiliary connection B->A

-equa

Equ position has the format X-Y-Z-I

where X=lim number+gateway, Y=magazine, Z=position
and I=indivd

example: 1A-0-10-3

-equb

Equ position has the format X-Y-Z-I

where X=lim number+gateway, Y=magazine, Z=position
and I=indivd

example: 1A-0-10-3

175.4

EXAMPLE

Set up a two-way connection with attenuation 1

```
switch_connection_initiate -equa 1-0-30-6 -equb 1-0-50-0 -ctype 3 -attn 1
```

176

SWITCH_CONNECTION_LIST

Print switch connections.

176.1

FORMAT

switch_connection_list

[-mgw]<gateway_identity>

[-lim] <lim_number>

[-equ] <equ_position>

176.2

FUNCTION

This command is used to list switch connections.

176.3

PARAMETERS

-equa

Equ position has the format X-Y-Z-I

where X=lim number+gateway, Y=magazine, Z=position
and I=individ

example:

1A-0-10-3 (single value)

1A-0-10-3...1A-0-10-7 (series)

1B-0-10-9,1C-0-30-6 (multiple values)

1B-0-10-3...1B-0-10-7,1C-0-50-6 (combination)

-lim

Lim number has the range 1 - 124

example:

3 (single value)

all (all lims)

1...4 (series)

1,5,8 (multiple values)

-mgw

Media gateway has the format LLLG

where LLL = lim number [range: 1 - 124]

G = gateway [range: A - O]

example: 1B (single value)

1B...1E (series)

1A,1C (multiple values)

1B...1D,1F (combination)

176.4

EXAMPLE

List connections in lim 2

switch_connection_list -lim 2

177

TRACE

Handling trace functionality.

177.1

FORMAT

trace

```

-attach [-lim][-signo][-show][-nodecode]
-bpos [-mask] -equ
-clear [-decode]
-dir
-display [-lim]
-equ
-lim -unit
-lim -unit -signam [-byte]
-lim -unit -signo [-byte]
-mgw [-mask]
-modify -fcode [-flim -funit [-fsig]]
-modify -info
-modify -rotate
-modify -size
-modify -textlevel
-modify {-sortin {off|1,2..20}}-sortout {off|1,2..20}}
-modify {-ssigno |-ssignam} -sunit
-modify -sendalarm
-print [-lim][-signo][-show][-from][-to][-fromtime][-totime][-nodecode]
-remove
-start
-stop

```

177.2

FUNCTION

Trace can be initiated in different ways. Trace on unit, trace on signal sequence, or trace on directory number.

To start a trace the first command shall contain a directory number or a LIM and unit number and it may have additional parameters.

The printout returned will show the **trace individual** (tri) number assigned to your trace session.

If only LIM and unit parameters are stated, **a unit trace** is started. If message number is added to LIM and unit, **a sequence trace** is started. If a directory number is used, **a sequence trace** is started for the next call.

Note: "trace -print 0" prints a diagnostic history log.

In most parameters, different notations for input can be used.

Decadic notation starts with a digit, octal with "0" and hexadecimal values with "0x"

"trace -attach" prints data as signals arrive from the traced object. This can create lots of signals in the system, so be careful when selecting targets.

Attach or print when trace is started on LOGGER should not be done as it will give circular printouts, i.e. the printout will start to print the printsignals.

Trace "all" can be cleared, stopped and (re)started by adding service codes: SC-190 to clear, SX-191 to stop and SC-192 to re/start.

177.3

PARAMETERS

-attach

The stated trace individual is printed in real time. Attach 0 will print the history log. Attach is done on a started trace.

-bpos

Board position.

The hardware signalling position to trace on. For signal tracing to and from hardware boards.

The parameter has the format LLLG-Y-Z where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine and Z=position.

Example: 1A-0-10 (single value)
 1C-0-10...1C-0-30 (series)
 1A-0-10,1B-0-30 (multiple values)
 1K-0-10...1K-0-30,1M-0-50...1D-0-60 (combination)

-byte

The data in the signal requires byte X with value Y to start the sequence. Five possible values can be stated.

-clear

The stored messages in the stated trace individual(s) are removed.

"all" removes trace individuals 1 to 15.

-decode

Print signal data also in decoded (human readable) form.

- dir**
Directory number of a subscriber where a signal sequence trace is started.
- display**
Print trace setup for the stated trace individual.
- equ**
Equipment position. The parameter has the format LLLG-Y-Z-I where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine, Z=position, and I=individual.
Example: 1A-0-10-3 (single value)
 1C-0-10-3...1C-0-10-7 (series)
 1A-0-10-9,1B-0-30-6 (multiple values)
 1K-0-10-3...1K-0-10-7,1M-0-50-6 (combination)
- fcode**
Stop the trace if this type of fault is found in a lost signal. Values: 0-45 and "all" and "off".
- flim**
The LIM where a lost signal is received to stop a trace. Integer or all.
- from**
Sequence number in trace from where the print will start.
- fromtime**
The Date and Time from where the print will start.
- fsig**
Stop the trace if this signal is lost in the stated LIM and unit. Values: 1-65535 and "all". Default is "all".
- funit**
The unit where a lost signal is received to stop a trace.
- info**
Free text to inform why a trace is started (70 characters).
- lim**
LIM number where trace is initiated. Range 1 - 124. A unit trace can be made on "all".
- mask**
Specifies what equipment positions within a 32-group that should be included in the trace.
- mgw**
Media gateway
Range, letter A to O. Trace will be done on internal switch signals to fictive multiple numbers on LSU/DSU.
- modify**
The stated trace individual is modified regarding sort and rotate.
- print**
The stated trace individual is printed. Print 0 will print the history log. Print can also be done on a started trace.
- remove**
The stated trace individual is removed. "all" removes trace individuals 1 to 15 (not number 0).
- rotate**
States if the trace shall stop when buffer is full or overwrite the first entries.

-sendalarm

States if the trace shall stop when buffer is full or overwrite the first entries.

-show

What type of information is printed for the signals.

Values: full (f), small(s), head(h), compact(c), or a digit(*).

-signam

Send alarm when trace hits stop by fault, servicecode or trigsignal. Alarm 1:51 (Trace stopped.) is used to inform user.

Values: yes/no or empty data. Empty data = yes.

-signo

Message number that will start a sequence trace, when entering in the stated LIM and unit.

-size

The number of traced messages that can be stored (1 to 10000).

-sortin

Signal numbers that shall be stored. "off" clears the list.

-sortout

Signal numbers that are not stored. "off" clears the list.

-ssignam

Stop the trace if this signal name is received in the stated unit.

-ssigno

Stop the trace if this signal number is received in the stated unit. Values: signal number or "off".

-start

The stated trace individual(s) are started.

"all" starts trace individuals 1 to 15.

-stop

The stated trace individual(s) are ended.

"all" stops trace individuals 1 to 15.

-sunit

Stop the trace if a stated signal is received in this unit.

-textlevel

What text information types should be collected in the trace. Values: all(a)=0x7f, basic(b)=0x01, extra(e)=0x03, normal(n)=0x0b, verbose(v)=0x1b, or a digit(*) bit0=basic, bit1=extended, bit2=events, bit3=state, bit4=diagnose, bit5=verbose, bit6=even more.

Default is normal (n) = 0x0b.

*) To be used by experts.

Note: The text information in the trace is an enhancement to the signal trace. The designer can provide extra information in information trace elements, but depending on the design of the program traced at the moment, extra information elements may not be present.

-to

Sequence number in trace to where the print will continue.

-totime

The Date and Time where the print will stop.

-unit

Unit name (PU-name) where the trace is started.

177.4

EXAMPLES

Note: "trace -print 0" prints a diagnostic history log.

In most parameters, different notations for input can be used.

Decadic notation starts with a digit, octal with "0" and hexadecimal values with "0x"

"trace -attach" prints data as signals arrive from the traced object. This can create lots of signals in the system, so be careful when selecting targets.

Attach or print when trace is started on LOGGER should not be done as it will give circular printouts, i.e. the printout will start to print the printsignals.

"Trace all can be cleared, stopped and (re)started by adding service codes: SC-190 to clear, SX-191 to stop and SC-192 to re/start..

Directory trace

trace -dir 2000

Unit trace

trace -lim 66 -unit CMP

Sequence trace

trace -lim 1 -unit CMP -signo 33

Start trace

trace -start 2

Stop trace

trace -stop 2

Print trace

trace -print 2

Remove trace

trace -remove 2

177.4.1

EXAMPLE 1: PROBLEMS WITH SCANNING OF BOARDS

Trace on DCP.

```

MDSH> trace -lim 1 -unit DCP
Trace Individual = 1 ready

MDSH> trace -start 1
Trace Individual = started
MDSH>

//Wait for the scanning to proceed

MDSH> trace stop 1
Trace Individual = 1 stopped

MDSH> trace -display 1
Trace ind: 1, State:stopped, Stored: 01, Size per lim: 500
Type: unit-trace, Rotating: off, textlevel: normal
Lim no: 1, Unit no: 0029, Unit name: DCP
Time mark: 2004-02-04 13:25:43 (MET), by user: mduser

MDSH>trace -print 1
Trace ind: 1, State: stopped, Stored: 1, Size per lim: 500
Type: unit-trace, Rotating: off, textlevel: normal
Lim no: 1, Unit no: 0029, Unit name: DCP
Time mark: 2004-02-04 13:25:43 (MET), by user: ebchrg

<<Sending: 1, 2004-02-04 13:25:21.712700 (MET)
Message type 0x01=001 SW_HW Message head type 0x01=001 HARDWARE
From 0x001d=00029 DCP LIM 0x01=001 level 0x02=002 B
Trace:0x12,0x00,0 Hardware address:0x0000=00000 = 1a-0-00-00
Message 0x1884=06276@(#)(MDL)BORDID v1.0
0x000: 16
MDSH>

```

177.4.2

EXAMPLE 2: WHAT HAPPENS IN UNIT RMP BEFORE AN ERROR SIGNAL IS GENERATED

```
MDSH> trace -lim 1 -unit RMP
Trace Individual = 1 ready

MDSH> trace -modify 1 -fcode all -rotate on
Trace Individual = 1 modified

MDSH> trace -start 1
Trace Individual = 1 started
MDSH>

//Wait for error signals to be generated by checking error trace individual.

MDSH> trace -display 0
Trace ind: 1, State: started, Stored: 1, Size per lim: 500

MDSH> trace -stop 1
Trace Individual = 1 stopped

MDSH> trace -print 1
Trace ind: 1, State: stopped, Stored: 500, Size per lim: 500
Type: unit-trace, Rotating: on, Textlevel: normal
Lim no: 1, Unit no: 0216, Unit name: RMP
Time mark: 2004-02-05 15:25:43 (MET), by user: mduser
<<Sending: 1, 2004-02-05 14:26:21.312700 (MET)
.
.
MDSH>
```

177.4.3

EXAMPLE 3: A USER COMPLAINS THAT HE REACHES WRONG NUMBER

A simple filter to check basic signals, recording using offhook, onhook, digits, reaching destination and clearing.

Signals filtered in order to see what is happening, are: OFFHOOK, ONHOOK, ANSWER, CLEAR, ENTBSYMESSTA, ENTCALORGSTA, ENTNOPSTA, KEYDIGREC, RELEASE.

You can find out the numbers by doing an initial trace and then modify the trace individual later or by use the command *message_number*.

Printing in short mode gives a very condensed printout.

```

MDSH> trace -dir 302
Number 302 is a directory number
Trace Individual = 1 ready

MDSH> trace -modify 1 -sortin 1,2,1193,1698,2143,2144,2158,3370,3870
Trace Individual = 1 modified

MDSH> trace -modify 1 -info "Digits are missing user claims"
Trace Individual = 1 modified

MDSH> trace -start 1
Trace Individual = 1 started
MDSH>

//Tell user to dial number on the telephone

MDSH> trace -stop 1
Trace Individual = 1 stopped

MDSH> trace -print 1 -show s
Trace ind: 1, State: stopped, Stored: 9, Size per lim: 500
Type: directory-trace, Rotating: off, Textlevel: normal
Number: 302, Lim: 1, Unit: ELP6, Pointer: 0x027f
Sort in: 1 2 1193 1698 2143 2144 2158 3370 3870
Time mark: 2004-02-04 18:29:54 (MET), by user: mduser
Info: Digits are missing user claims

>>Enter: 1, 2004-02-04 18:29:26.666500 (MET)
To 0x0065=00101 ELP6                      LIM 0x01=001 level 0x01=001 A
Hardware address:0x0070=00112 = 1a-0-32-00
Message 0x0001=00001 @(#)(MDL) OFFHOOK v1.0

0x000: 02 7f 00 00                      ...

>>Enter: 2, 2004-02-04 18:29:28.419637 (MET)
From 0x00ae=00174 ADP                      LIM 0x01=001 level 0x01=001 A
To 0x0065=00101 ELP6                      LIM 0x01=001 level 0x01=001 A
Message 0x0d2a=03370 @(#)(MDL) KEYDIGREC v1.0

0x000: 02 7f 0f 03                      ...

>>Enter: 3, 2004-02-04 18:29:29.328788 (MET)
From 0x00ae=00174 ADP                      LIM 0x01=001 level 0x01=001 A
To 0x0065=00101 ELP6                      LIM 0x01=001 level 0x01=001 A
Message 0x0d2a=03370 @(#)(MDL) KEYDIGREC v1.0

0x000: 02 7f 0f 03                      ...

```

```

>>Enter: 4, 2004-02-04 18:29:29.625160 (MET)
From 0x00ae=00174 ADP                LIM 0x01=001 level 0x01=001 A
To 0x0065=00101 ELP6                LIM 0x01=001 level 0x01=001 A
Message 0x0d2a=03370 @(#)(MDL) KEYDIGREC v1.0
0x000: 02 7f 0f 00                ....
>>Enter: 5, 2004-02-04 18:29:30.268531 (MET)
From 0x00ce=00206 CMP                LIM 0x01=001 level 0x01=001 A
To 0x0065=00101 ELP6                LIM 0x01=001 level 0x01=001 A
Message 0x0860=02144 @(#)(MDL) ENTCALORGSTA v1.0
0x000: 02 7f 0f 01 00 00 01 01 01 00 ff 00 0f 00 00 00 .....
0x010: 00 00 10                ....
>>Enter: 6, 2004-02-04 18:29:41.667896 (MET)
To 0x0065=00101 ELP6                LIM 0x01=001 level 0x01 =001 A
Hardware address:0x0070=00112 = 1a-0-32-00
Message 0x0002=00002 @(#)(MDL) ONHOOK v1.0
0x000: 02 7f 00 00                ....
>>Enter: 7, 2004-02-04 18:29:41.673528 (MET)
From 0x0065=00101 ELP6                LIM 0x01=001 level 0x01=001 A
To 0x00ce=00206 CMP                LIM 0x01=001 level 0x01=001 A
Message 0x06a2=01698 @(#)(MDL) CLEAR v1.0
0x000: 05 0d 02 7f 00 65 01                ....
>>Enter: 8, 2004-02-04 18:29:41.766277 (MET)
From 0x00ce=00206 CMP                LIM 0x01=001 level 0x01=001 A
To 0x007c=00124 KLP1T                LIM 0x01=001 level 0x01=001 A
Message 0x086e=02158 @(#)(MDL) ENTNOPSTA v1.0
0x000: 00 00 0d 0b ff ff ff 00                ....
>>Enter: 9, 2004-02-04 18:29:41.854513 (MET)
From 0x00ce=00206 CMP                LIM 0x01=001 level 0x01=001 A
To 0x0065=00101 ELP6                LIM 0x01=001 level 0x01=001 A
Message 0x0f1e=03870 @(#)(MDL) RELEASE v1.0
0x000: 02 7f 0f                ...
MDSH>

```

177.4.4

EXAMPLE 4: WHAT IS REALLY HAPPENING ON THE HW IN POSITION 1A-0-30

Set text level filter to omit raw format of signals.

```
MDSH> trace -bpos 1a-0-30
Trace Individual = 1 ready

MDSH> trace -modify 1 -textlevel 0
Trace Individual = 1 modified

MDSH> trace -start 1
Trace Individual = 1 started

//Wait for a while to get the information.

MDSH> trace -stop 1
Trace Individual = 1 stopped

MDSH> trace -print 1
Trace ind: 1, State: stopped, Stored: 15, Size per lim: 500
Type: bpos-trace, Rotating: off, Textlevel: 0
Bpos: 001a-0-30, mask: 0xffffffff
Time mark: 2004-02-04 18:12:13 (MET), by user: mduser

>>Enter: 1, 2004-02-04 18:11:20.787349 (MET)

Message type 0x02=002 HW_SW                Message head type 0x00=000 SOFTWARE
To 0x0065=00101 ELP6                      LIM 0x01=001=001 A

Trace: 0x01,0x00,0 Hardware address: 0x0070=00112 = 1a-0-32-00

Message 0x0001=00001 @(#) (MDL) OFFHOOK v1.0

0x000: 02 7f 00 00                      ....

<<Sending: 2, 2004-02-04 18:11:20.849010 (MET)

Message type 0x01=001 SW_HW                Message head type 0x01=001 HARDWARE
From 0x0065=00101 ELP6                    LIM 0x01=001 A

Trace:0x11,0x00,0 Hardware address: 0x0070=00112 = 1a-0-32-00

Message 0x1907=06407 @(#) (MDL) PREPLSMESREQ v1.0

0x000: 98                               .

<<Sending: 3, 2004-02-04 18:11:20.933497 (MET)

Message type 0x01=001 SW_HW                Message head type 0x01=001 HARDWARE
From 0x0065=00101 ELP6                    LIM 0x01=001 A

Trace:0x11,0x00,0 Hardware address: 0x0070=00112 = 1a-0-32-00

Message 0x189f=06303 @(#) (MDL) CODPUPEXN v1.0

0x000: 87                               .
```

>>Enter: 4, 2004-02-04 18:11:27.752474 (MET)

Message type 0x02=002 HW_SW
To 0x0065=00101 ELP6

Message head type 0x00=000 SOFTWARE
LIM 0x01 = 001 level 0x01=001 A

Trace:0x01,0x00,0 hardware address:0x0070=00112 = 1a-0-32-00

Message 0x0006=00006 @(#)(MDL) PREDIG v1.0

0x000: 02 7f 00 00

....

>>Enter: 5, 2004-02-04 18:11(MET)

Message type 0x02=002 HW_SW
To 0x0065=00101 ELP6

Message head type 0x00=000 SOFTWARE
LIM 0x01 = 001 level 0x01=001 A

Trace:0x01,0x00,0 hardware address:0x0070=00112 = 1a-0-32-00

Message 0x0002=00002 @(#)(MDL) ONHOOK v1.0

0x000: 02 7f 00 00

....

<<Sending: 6, 2004-02-04 18:11:48.163769(MET)

Message type 0x01=001 SW_HW
From 0x001d=00029 DCP

Message head type 0x01=001 HARDWARE
LIM 0x01 = 001 level 0x02=002 B

Trace:0x11,0x00,0 Hardware address:0x0060=00096 = 1a-0-30-00

Message 0x1884=06276 @(#)(MDL) BRDID v1.0

0x000: 16

.

>>Enter: 7, 2004-02-04 18:11:48.279108(MET)

Message type 0x02=002 HW_SW
To 0x007c=00124 KLP1T

Message head type 0x00=000 SOFTWARE
LIM 0x01 = 001 level 0x02 =002 B

Trace:0x01,0x00,0 Hardware address:0x0060=00096 = 1a-0-30-00

Message 0x0016=00022 @(#)(MDL) IDENTITY v1.0

0x000: 02 7f 4d cf

..M.

<<Sending: 8, 2004-02-04 18:11:50.290881(MET)

Message type 0x01=001 SW_HW
From 0x001d=00029 DCP

Message head type 0x01=001 HARDWARE
LIM 0x01 = 001 level 0x02=002 B

Trace:0x11,0x00,0 Hardware address:0x0070=00112 = 1a-0-32-00

Message 0x1884=06276 @(#)(MDL) BRDID v1.0

0x000: 16

.

>>Enter: 9, 2004-02-04 18:11:50.411571(MET)

Message type 0x02=002 HW_SW Message head type 0x00=000 SOFTWARE
To 0x0065=00101 ELP6 LIM 0x01 = 001 level 0x02=002 B

Trace:0x01,0x00,0 Hardware address:0x0070=00112 = 1a-0-32-00

Message 0x0016=00022 @(#)(MDL) IDENTITY v1.0

0x000: 02 7f 57 cf ..W.

<<Sending: 10, 2004-02-04 18:12:04.823306 (MET)

Message type 0x01=001 SW_HW Message head type 0x01=001 HARDWARE
From 0x001d=00029 DCP LIM 0x01 = 001 level 0x02=002 B

Trace:0x11,0x00,0 Hardware address:0x0060=00096 = 1a-0-30-00

Message 0x1884=06276 @(#)(MDL) BRDID v1.0

0x000: 16 .

>>Enter: 11, 2004-02-04 18:12:04.941926 (MET)

Message type 0x02=002 HW_SW Message head type 0x00=000 SOFTWARE
To 0x007c=00124 KLP1T LIM 0x01 = 001 level 0x02 =002 B

Trace:0x01,0x00,0 Hardware address:0x0060=00096 = 1a-0-30-00

Message 0x0016=00022 @(#)(MDL) IDENTITY v1.0

0x000: 02 7f 4d cf ..M.

<<Sending: 12, 2004-02-04 18:12:06.963019 (MET)

Message type 0x01=001 SW_HW Message head type 0x01=001 HARDWARE
From 0x001d=00029 DCP LIM 0x01 = 001 level 0x02=002 B

Trace:0x11,0x00,0 Hardware address:0x0070=00112 = 1a-0-32-00

Message 0x1884=06276 @(#)(MDL) BRDID v1.0

0x000: 16 .

>>Enter: 13, 2004-02-04 18:12:07.913270 (MET)

Message type 0x02=002 HW_SW Message head type 0x00=000 SOFTWARE
To 0x0065=00101 ELP6 LIM 0x01 = 001 level 0x02 =002 B

Trace:0x01,0x00,0 Hardware address:0x0070=00112 = 1a-0-32-00

Message 0x0016=00022 @(#)(MDL) IDENTITY v1.0

0x000: 02 7f 57 cf ..W.

<<Sending: 14, 2004-02-04 18:12:09.835451 (MET)

Message type 0x01=001 SW_HW	Message head type 0x01=001 HARDWARE
To 0x0065=00101 ELP6	LIM 0x01 = 001 level 0x02=002 B

Trace:0x11,0x00,0 Hardware address:0x0070=00112 = 1a-0-32-00

Message 0x18d2=06354 @(#) (MDL) INDSTS v1.0

0x000: 17

>>Enter: 15, 2004-02-04 18:12:09.954780 (MET)

Message type 0x02=002 HW_SW	Message head type 0x00=000 SOFTWARE
To 0x0065=00101 ELP6	LIM 0x01 = 001 level 0x02 =002 B

Trace:0x01,0x00,0 Hardware address:0x0070=00112 = 1a-0-32-00

Message 0x0017=00023 @(#) (MDL) ISTAT v1.0

0x000: 02 7f 00

...

MDSH>

Note: It is possible to see signals from all kinds of programs going to and from the bpos 1a-0-30 and 1a-0-32. The board owner send signals to the board and DCP. A possible interference could be spotted here.

178 TRAFFIC_MATRIX

Traffic connection matrix

178.1 FORMAT

traffic_matrix

`[-v] [-V] -e --type--traffic-group-a --traffic-group-b`

`[-v] [-V] -i --type --traffic-group-a --traffic-group-b`

`[-v] [-V] -p [--type] [-l]`

178.2 FUNCTION

Commands to manage traffic matrix data. This data specifies if connection(s) are allowed between user A and user B (in difference traffic groups).

178.3 PARAMETERS

-e, --erase

Erase some settings. I.e. deconfiguration of an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings. I.e. make initial configuration of an item (or several items).

The switch takes no arguments.

-l, --lim

LIM number. The syntax of the argument is L where L is lim number [range: 1 - 124].

Example of valid syntax: 2

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings. I.e. print reconfiguration of an item, several items, or all items.

The switch takes no arguments.

--traffic-group-a

Traffic group for a-party (0-14).

States the line in the traffic matrix.

Used address elements in a traffic group matrix. It is possible to either state an individual element or a line and column respectively of elements.

Parameter value 15 (fully open, i.e. allowed to connect to all traffic groups) is predefined and cannot be influenced.

The switch requires an argument. The argument can be the special word 'all' or it can be a combination of comma separated sequences and ranges (first..last).

--traffic-group-b

Traffic group for b-party (0-14).

States the column in the matrix.

Used address elements in a traffic group matrix. It is possible to either state an individual element or a line and column respectively of elements.

Parameter value 15 (fully open) is predefined and cannot be influenced.

The switch requires an argument. The argument can be the special word 'all' or it can be a combination of comma separated sequences and ranges (first..last).

--type

Specifies the type of traffic group matrix that is to be handled, available connection types:

two - standard two party connection

multi - multi-party connection

all - both types (Default).

Note: The value *multi* is actually only valid for the Conference service. The other multi-party services (for example Intrusion, Emergency extension conference and Route optimization) do not check the traffic matrix.

The switch requires an argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

178.4

EXAMPLES

Allow two-party connection between traffic group a-2 (line) and traffic group b-5 (column).

```
traffic_matrix -i --type dual --traffic-group-a 2 --traffic-group-b 5
```

Allow multi-party connection between traffic group a-8 (line) and traffic group b-11 (column).

```
traffic_matrix -i --type multi --traffic-group-a 8 --traffic-group-b 11
```

Allow multi-party connection between traffic groups a-5,6,7 and 8 (lines) and traffic group b-11 and 12 (columns).

```
traffic_matrix -i --type multi --traffic-group-a 5,6,7,8 --traffic-group-b 11,12
```

Prevent two-party connection between traffic group a-7 (line) and traffic group b-9 (column).

```
traffic_matrix -e --type dual --traffic-group-a 7 --traffic-group-b 9
```

Print both two-party and multi-party connection matrices.

```
traffic_matrix -p
```

179 TRANSMISSION_MATRIX_DATA

Manage transmission matrix data.

179.1 FORMAT

transmission_matrix_data

`[-v] [-V] -c --column s --row s --value`

`[-v] [-V] -p`

179.2 FUNCTION

The command is used to change and print the stored transmission matrix data.

179.3 PARAMETERS

-c, --change

Change some settings. That is, reconfiguration of an item (or several items).

The switch takes no arguments.

--column

A column number. Accepted argument is 0 to 23.

The switch requires an argument. The argument can be a comma separated sequence.

-p, --print

Print all or some settings. print configuration of an item, several items, or all items.

The switch takes no arguments.

--row

A row number.

Accepted argument is 0 to 23.

The switch requires an argument. The argument can be a comma separated sequence.

--value

A value.

Accepted argument is 0 to 7.

The switch requires an argument. The argument is single-valued.

-v, --verbose

Turn on verbose output (that is, progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

179.4

EXAMPLES

Change transmission matrix data value in column 1 and row 3 to value 5.

transmission_matrix_data -c --column 1 --row 3 --value 5

Change transmission matrix data values in column 1 and rows 3 and 5 to value 7.

transmission_matrix_data -c --column 1 --row 3, 5 --value 7

Print transmission matrix data.

transmission_matrix_data -p

180

TRSP_CONNECTION

Transport media connections

180.1

FORMAT

trsp_connection

```
[
  -mgw <m> |
  -bpos <b> -class <c> -prio <p> -rmgw <l> |
  -mgw <m> -ip <i> -class <c> -prio <p> -rmgw <m> |
  -print [ -mgw <m> ]
]
```

180.2

FUNCTION

Every media gateway has different ways to set up media connections to other media gateways. All these connections are defined with class and priority for choosing of the best media connection between media gateways.

Note: To set up a media connection to a media gateway the media with the best class on the logical link is chosen first. If two logical links with same class exists the logical link with the best priority is chosen.

180.3

PARAMETERS

-bpos

Board position. The parameter has the format LLLG-Y-Z where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine and Z=position.

Example: 1A-0-10 (single value)
 1C-0-10...1C-0-30 (series)
 1A-0-10,1B-0-30 (multiple values)
 1K-0-10...1K-0-30,1M-0-50...1D-0-60 (combination)

-class

Quality class = no/a/b/c/d

Class "a" represent the best quality (first choice) and "d" represent the lowest quality (last choice).

Class equal to no (no_class) is never used/choosen.

At printout the quality class value is showed as no_class/A/B/C/D.

-ip

IP address of the interface.

-mgw

Gateway has the format LLLG where LLL=lim number [range: 1-124], G=gateway letter [range: A-O].

Example: 1B (single value)
 1B...1E (series)

1A,1C (multiple values)
 1B...1D,1F (combination)

-print

Print the inter media gateway connections. No argument

-prio

Priority = no/1/2/3

Priority "1" is chosen first and "3" is chosen last.

At printout the priority value will be shown as no_prio/one/two/three.

-rmgw

Logical link to a remote media gateway. The parameter has the format LLLG where LLL=lim number, G=gateway.

Example:

1B (single value)

1B...1E (series)

1A,1C (multiple values)

1B...1D,1F (combination)

180.4

EXAMPLES

Display registered connection medias for all media gateways in the system.

trsp_connection

Display registered connection medias for media gateway 22C.

trsp_connection -mgw 22C

Set class and priority for a logical link:

trsp_connection -bpos 1A-0-00 -class b -prio 2 -rmgw 22C

Set class and priority for a logical link:

trsp_connection -mgw 1A -ip 192.168.24.4 -class b -prio 2 -rmgw 22C

181 TRSP_INFO

Display transport media

181.1 FORMAT

trsp_info

```
[
  -lim <l> |
  -sync [ -mgw <m> ] |
  -conn [ -mgw <m> ] |
  -print [ -mgw <m> ]
]
```

181.2 FUNCTION

The command gives information about transport media located in the system.

181.3 PARAMETERS

-conn

Show connection data.

-conn gives information set by the trsp_connection command.

-lim

LIM number [range: 1-124].

Example:

```
3      (single value)
all    (all lims)
1...4  (series)
1,5,8  (multiple values)
1,3...5,7 (combination)
```

If the -lim parameter is omitted information for all LIMs will be given.

-mgw

Gateway has the format LLLG where LLL=lim number [range: 1-124],
G=gateway letter [range: A-O].

```
Example:  1B      (single value)
          1B...1E  (series)
          1A,1C    (multiple values)
          1B...1D,1F (combination)
```

-print

Prints the interlim media connections.

The switch takes no arguments.

-sync

Show synchronization data.

-sync gives information set by the trsp_synchronization command.

The switch takes no arguments.

181.4

EXAMPLES

Display all transport medias in the system:

trsp_info

Display all transport medias in LIM 4:

trsp_info -lim 4

Display synchronization data.

trsp_info -sync -mgw 11A

Display connection data.

trsp_info -conn

Display seized media connections.

trsp_info -print -mgw 1B

182 TRSP_SYNCHRONIZATION

Define and display the rules for synchronization

182.1 FORMAT

trsp_synchronization

```
[
  -mgw <mgw_id> |
  -resync -mgw <mgw_id> |
  -bpos <b> -class <c> -prio <p> |
]
```

182.2 FUNCTION

All synchronization sources can be ranked with class and priority. With help from these values a quality value is decided.

The mgw uses the source with the best quality value to receive synchronization from.

182.3 PARAMETERS

-bpos

Board position. The parameter has the format LLLG-Y-Z where LLL=LIM number [range: 1-124], G=gateway [range: A to O. If the gateway letter is omitted the default value is used. Default value: A], Y=magazine and Z=position.

Example: 1A-0-10 (single value)
 1C-0-10...1C-0-30 (series)
 1A-0-10,1B-0-30 (multiple values)
 1K-0-10...1K-0-30,1M-0-50...1D-0-60 (combination)

-class

Quality class = no/a/b/c/d

Class "a" represent the highest quality on a synchronization source and class "d" the lowest quality.

At printout the quality class value is showed as no_class/A/B/C/D.

Synchronization is never received from a synchronization source defined with no_class

-mgw

Gateway has the format LLLG where LLL=lim number [range: 1-124], G=gateway letter [range: A-O].

Example: 1B (single value)
 1B...1E (series)
 1A,1C (multiple values)
 1B...1D,1F (combination)

-prio

Priority = no/1/2/3

Priority "1" is choosed first and "3" last.

At printout the priority value is showed as no_prio/one/two/three.

-resync

Order a specific mgw to find out the best synchronization source.

Only a single value on the -mgw parameter is allowed.

182.4

EXAMPLES

Display synchronization data for all media gateways:

trsp_synchronization

Display synchronization data for media gateway 22B: **trsp_synchronization -mgw 22B**

Set quality and priority for a synchronization source: **trsp_synchronization -bpos 22b-0-30 -class b -prio 2**

Order media gateway 22b to do resynchronization: **trsp_synchronization -resync -mgw 22b**

183 TRUSTED_AMP_HOSTS

Manage trusted AMP hosts

183.1 FORMAT

trusted_amp_hosts

```
-e [-lim][--ip-address]
-i [-lim] --ip-address
-p
```

183.2 FUNCTION

183.2.1 GENERAL

AMP (Application Message Proxy) is a program unit that allows mdsh, UNIX style commands and WBM (web base management, MX-ONE Provisioning Manager, and MX-ONE Service Node Manager) to communicate with program units using messages (send and receive). The command (or mdsh, or WBM) sets up a TCP connection using the AMP protocol to the AMP program unit. The AMP program unit forwards the messages, and handles the addressing using virtual program unit numbers.

trusted_amp_hosts is a command that is used to specify trusted hosts from which connections using the AMP protocol are allowed. It can also remove hosts from the list of trusted hosts, and it can print the list of trusted hosts. The hosts are identified by their IP address, but on the command line the host name can be used.

Notice that by trusting remote hosts a potential security hole is opened. Only trust hosts that you have complete control over, and that are inside the firewalls on a trusted network.

Connections from localhost using the AMP protocol are always allowed, regardless of the configuration. There is no need to explicitly allow localhost.

Clients using the AMP protocol can be directed to connect to a remote host by setting the environment variable `$_MD_REMOTE_AMP_LDAP_SERVER` to the host name or IP address of the remote AMP server. That remote server must then have the remote client in the trusted host list configured by the command `trusted_amp_hosts`.

The environment variable `$_MD_REMOTE_AMP_LDAP_SERVER` is used to specify that the AMP connection and the LDAP read connection shall be to the host specified in the variable value and not to localhost. Notice that usually localhost is the desired server for both AMP connection and LDAP read connections. In other words, normally `$_MD_REMOTE_AMP_LDAP_SERVER` shall not be set.

Note: AMP has a cache function for trusted hosts. Changes will only take effect when any old cache entry is timed out, which might take up to 30 seconds. (The cache is needed to mitigate denial of service attacks on the AMP port.)

For more complete help, on the command line, type `trusted_amp_hosts --help-complete`

183.3

PARAMETERS

-e, --erase

Erase some settings, that is deconfigure an item (or several items).

The switch takes no arguments.

-i, --initiate

Initiate some settings, that is, make initial configuration of an item or several items).

The switch takes no arguments.

--ip-address

States an IP address (IPv4, no port number allowed). IP address or host name of a trusted host for AMP connections.

The switch requires an argument. The argument is single-valued.

-l, --lim

Lim number

Range: 1-124.

If the switch is omitted the setting will be for the system, not for a specific LIM.

The switch requires an argument. The argument is single-valued.

-p, --print

Print all or some settings, that is, print the configuration of an item, several items, or all items.

The switch takes no arguments.

183.4

EXAMPLES

List the trusted hosts for AMP connections.

trusted_amp_hosts -p

Add wbm.example.com as trusted host for connection to LIM 2.

trusted_amp_hosts -i -l 2 --ip-address wbm.example.com

Add wbm.example.com as a trusted host for connection to the system (to any LIM).

trusted_amp_hosts -i --ip-address wbm.example.com

Erase all trusted hosts.

trusted_amp_hosts -e

184 TS_ABOUT

Telephony System Version Info

184.1 FORMAT

ts_about

184.2 FUNCTION

The command will list the version of the MX-ONE and of the RPM packages that are part of the system.

184.3 EXAMPLE

Print the current build status.

ts_about

185

VACANT_NUMBER

Vacant number data print

185.1

FORMAT

vacant_number [--number-type][--number-range][--output-format][--list][--customer]

185.2

FUNCTION

Command to retrieve data about vacant numbers. Vacant numbers are unused numbers assigned in number analysis. Works for extension numbers, operator numbers, abbreviated numbers, external destination numbers and DNIS numbers.

185.3

PARAMETERS

--customer

Customer number for an extension (or other resource). Customer 0 is the default customer of the exchange. Argument must be an integer in the range 0 to 50000.

For print operations, the default is function dependent, for all other operations the default is 0 (zero).

The switch requires an argument. The argument is single-valued.

--list

Present the result as a list of single numbers instead of ranges.

The switch takes no argument.

--number-range

Specifies a range to search for vacant numbers. If omitted it will be 'all'.

The switch requires an argument. The argument can be a range (first..last).

--number-type

Specifies type of vacant number.

The following types are permitted:

- AC - Abbreviated common numbers
- DN - DNIS numbers
- EC - External coordinated numbers
- ED - External destination numbers
- EX - Extension numbers
- OC - Operator common numbers
- OD - Operator DID numbers
- OI - Operator individual numbers
- PG - Paging group numbers
- PD - Public destination numbers

The switch requires an argument. The argument is single-valued.

--output-format

Specifies output format.

Allowed values:

text - output format is text (default)

xml - output format is xml

The xml format is described in the IWD System Resource Data Collection Interface.

The switch requires an argument. The argument is single-valued.

185.4

EXAMPLES

Print all vacant extension numbers in text format.

vacant_number --number-type EX

Print all vacant extension numbers in xml format.

vacant_number --number-type --output-format xml

186

VDP_DATA

Manage Visitor Desk Phone (VDP) data

186.1

FORMAT

vdp_data [-v] [-V] -e -d

vdp_data [-v] [-V] -p -d

186.2

FUNCTION

The command is used to erase or print user configuration data uploaded by Mitel 6x00 SIP phones when using Visitor Desk Phone functionality.

186.3

PARAMETERS

-d, --dir

Directory number for an extension. The number must belong to a number series for extensions. Accepted argument length is 2 to 10 digits.

The switch requires an argument. The argument is single-valued.

-e, --erase

Erase some settings. I.e. de-configuration of an item (or several items).

The switch takes no arguments.

-p, --print

Print all or some settings. I.e. print configuration of an item, several items, or all items. The switch takes no arguments.

-v, --verbose

Turn on verbose output (i.e. progress information) to standard error.

The switch takes no arguments.

-V, --verbose-to-syslog

Turn on verbose logging to syslog (usually to /var/log/messages).

The switch takes no arguments.

186.4

EXAMPLES

Print the user configuration regarding VDP for extension 4491.

vdp_data -p -d 4491

Delete the user configuration for VDP for extension 4491.

vdp_data -e -d 4491