

# MiVoice MX-ONE Traffic Measurement

Release 7.8

OPERATIONAL DIRECTIONS

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## 1

## GENERAL

Traffic measurement of a number of different measurement objects, e.g., voice extension or route, can be initiated.

The maximum number of ongoing measurements in parallel is 250. For each measurement a measurement result is obtained that is stored in the program memory and also on a storage unit. The collection of measurement data from the measurement objects is initiated automatically at each quarter of an hour.

## 1.1

## CAPACITY AND LIMITATIONS

Measurement cannot be initiated on a subset of a previously initiated measurement.

A measurement object, for which the LIM parameter is specified upon measurement initiation, may be included in several simultaneous measurements. This is provided that the same LIM does not occur in more than one measurement. For example, if a measurement has been initiated on a number of voice extensions located in LIM 1 and LIM 2, then a new measurement on a voice extension can be initiated, provided that LIM 1 and LIM 2 are not included in the new measurement.

When initiating a measurement in which the DIR (directory number) parameter is indicated, a maximum of 255 DIR values can be stated in one and the same command. If a series of DIR values is given, a maximum of 255 series can be stated in each command.

When initiating a measurement specifying the BPOS (board position) or TRU (trunk line identity) parameter, a maximum of 8 BPOS values (or 32 TRU values) can be stated in one and the same command.

An additional recommended measure is to delete the oldest traffic data files on a regular basis. Refer to section "Removal of outdated traffic measurement files" for more information.

The measurement for IP traffic is limited to the following:

- Only gateway traffic is measured.
- Only traffic on MGU-based gateways is measured, not on media server-based gateways.

## 1.2

## DATA COLLECTION

The following table describes the traffic measurement data collection scenarios for the older format of data collection and the new format of data collection.

**Older format of data collection:**

The data volume per measurement is 50 bytes per 15-minute period.

Therefore, for example, for five measurements the data volume is seized at the following rate:

$5 \text{ (measurements)} \times 4 \text{ (quarters per hour)} \times 50 \text{ (bytes)} = 1000 \text{ bytes/hour}$

A path to the local/network file system of the MX-ONE Service Node must be defined to indicate where to store data.

See installation instructions for *TRAFFIC MEASUREMENT*.

Similarly, the maximum storage space needed for 250 measurements for one month can be estimated as follows:

$250 \text{ (measurements)} \times 4 \text{ (quarters per hour)} \times 24 \text{ (hours per day)} \times 31 \text{ (days)} \times 50 \text{ (bytes)} = 36 \text{ Mbytes (approximately)}$ .

**New format of data collection:**

Traffic measurement objects data are stored in predefined structure format.

The data volume per measurement is approximately 160 bytes per 15-minute period.

For example, the data volume is seized at the following rate for five measurements:

$5 \text{ (measurements)} \times 4 \text{ (quarters per hour)} \times 160 \text{ (bytes)} = 3200 \text{ bytes/hour}$

A path to the local/network file system of the MX-ONE Service Node must be defined to indicate where to store data. See installation instructions for *TRAFFIC MEASUREMENT*.

Similarly, the maximum storage space needed for 250 measurements for one month can be estimated as follows:

$250 \text{ (measurements)} \times 4 \text{ (quarters per hour)} \times 24 \text{ (hours per day)} \times 31 \text{ (days)} \times 160 \text{ (bytes)} = 116 \text{ Mbytes (approximately)}$ .

**Note:** The dumping process will fail if the file system capacity or user quota is exceeded. In this case, the data stored in the TM block internal memory will be lost. To prevent this situation from happening, it is recommended that the file system status and user quota usage be monitored periodically.

## 2 MEASUREMENT OBJECTS

250 separate measurement operations can be active simultaneously. The objects to be measured are specified in advance, including defining the objects, the individuals within each object, and the start and stop dates and times. These specifications can be entered using commands from an I/O terminal.

The traffic measurement operation includes the following measurement objects:

- Voice Extensions (including IP extensions)
- Groups (ACD, CTI, and PBX)
- Routes
- External Lines (including IP networking lines)
- PBX-Operators
- Dial Tone Delay
- IP DOMAIN

### 2.1 INITIATION OF MEASUREMENT FOR IP DOMAIN

When you initiate the traffic measurement for a given domain, all the devices using RTP resources are measured. If traffic measurement is initiated for the DEFAULT domain, then bandwidth settings must be changed to something other than unlimited.

## 3 PREREQUISITES

The object under measure must be operational, and a path in the local/network file system must have been defined for storage purposes due to the finite storage capacity of the internal program memory. Finally the specific measurement(s) desired must be initiated. Do note that, should a valid path not be defined, then the traffic measurement function will be inactive and it will not be possible to initiate any of the desired measurements. Refer to section "Capacity and limitations" for more information.

Dumping of measurement data to the desired location in the local/network file system takes place every time the internal memory is full, and also within 15 minutes past midnight.

The rate at which the internal memory gets filled up will depend on the number of simultaneous ongoing measurements initiated in the system. For instance, if only 12 parallel measurements are ongoing for 12 hours in a 24-hour period, then no dump will take place until the end of that 24-hour period. Do note that it is possible to order a printout of the traffic measurement data at any moment via the TRREP I/O command.

When an attempt to dump traffic data takes place, the internal TM program memory will always be erased whether the dump attempt succeeds or not. If the file system space or user quota gets exhausted, the attempt will fail and an alarm will be issued.

When the system is reloaded, the measurement data in the internal memory is erased, while the data already dumped to the local/network file system remain intact.

## 4 AIDS

I/O terminal.

## 5 PROCEDURE

The procedure is described as follows:

- Define the path for storing the traffic data files and initiate the desired traffic measurement(s).
- Wait for the traffic data to be collected and order presentation of results.

## 6 EXECUTION

### 6.1 TRAFFIC MEASUREMENT

#### 6.1.1 INITIATION OF TRAFFIC MEASUREMENT

##### **General**

The initiation command used depends on which measurement object traffic measurement is to be initiated.

#### Prerequisites

The maximum number of concurrently ongoing measurements is 250.

A valid file system path to store the traffic data files must have been initiated via command *traffic\_measurement*. For more information refer to the section *TRAFFIC\_MEASUREMENT* in *Technical Reference Guide, Unix Commands*.

#### Execution

Key in the appropriate command to initiate traffic measurement on one, or some, of the following measurement objects using command *traffic\_measurement\_object*. For more information refer to the section *TRAFFIC\_MEASUREMENT\_OBJECT* in *Technical Reference Guide, Unix Commands*:

To check which measurements are initiated enter:

**TRDIP** or **traffic\_measurement\_object -p** List and verify initiated measurements

### 6.1.2

## ENDING TRAFFIC MEASUREMENT

#### General

The data in the directory for each measurement object are used to form unique search keys when printout of the measurement data of a measurement object is requested. When traffic measurement is ended the directory data of the ended measurement will be erased, which means that the measurement data collected for this measurement will become inaccessible.

#### Prerequisites

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#### Execution

Key the command **traffic\_measurement\_object -e**.

Key the command **TRDIP** or **traffic\_measurement\_object -p** to verify that the measurement has been removed from the directory.

### 6.1.3

## ACTIVATE/DEACTIVATE TRAFFIC MEASUREMENT

#### General

Traffic measurement operations can be deactivated and reactivated by entering a command. Prior to a deactivation request all measurements must be ended. After the deactivation command, all traffic measurement commands except the request to activate traffic measurement will be rejected. They will not be accepted until the command to activate traffic measurement is entered.

If a valid path for traffic measurement data exists in the system, then activation requests without path will be accepted. Should the activation request contain a new valid path, the existing one will be overwritten and the request accepted as well.

If no valid path exists yet, then the activation request must include such a valid path.

#### Prerequisites

See Ending traffic measurement before a deactivate request. All measurements must be ended.

#### Execution

Key the command as appropriate:

***traffic\_measurement -e*** Traffic measurement data processing end  
***traffic\_measurement -i*** Traffic measurement data processing initiate

## 6.1.4

## PRINTOUT OF THE INITIATED TRAFFIC MEASUREMENT PATH

**General**

It is possible to get the current value of the path for storage of the traffic data files via I/O command. The resulting printout will also show whether the traffic measurement function is active or not.

**Prerequisites**

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**Execution**

Key the ***traffic\_measurement -p*** command.

## 6.1.5

## PRINTOUT OF THE TRAFFIC MEASUREMENT DIRECTORY

**General**

Information on the directory data of a traffic measurement can be printed out. Data that are printed out include the type of measurement object, time and date when the measurement commences and ends. The format depends on the type of measurement object as well as the period requested when the command is entered.

**Prerequisites**

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**Execution**

Key the command ***TRDIP*** or ***traffic\_measurement\_object -p***.

## 6.1.6

## PRINTOUT OF TRAFFIC MEASUREMENT RESULT

**General**

Results of a traffic measurement data collection can be obtained. Depending on the type of measurement object different measurement data are printed out. For example, the traffic intensity in Erlangs, the total number of calls, etc., are printed for the voice extension measurement object.

**Prerequisites**

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**Execution**

Key the command ***TRREP*** or ***traffic\_measurement\_object -p***.

## 6.1.7

## PRINT OUT AND ERASE TRAFFIC MEASUREMENT RESULT

**General**

The following sequence is mainly used when an application on a PC is utilized to automatically pull data from the system using command TRREP. In this case the PC application will generate the required commands: they should not be entered manually. The PC application, in this case, can be used for data collection, storage, post processing, and/or presentation of traffic measurement data.



Other external applications (e.g. performance manager software, like the Mitel Performance Analytics platform) can optionally be connected.

#### Prerequisites

The internal clocks of all the MX-ONE elements, including the external application, must be synchronized using the Network Time Protocol (NTP).

#### Execution

**TRDIP** Read in directory to PC

**TRREP:MENO=X;** Read all traffic measurement data for measure number x

**Note:** Commands not to be entered manually, and only to be used by an external device which automatically extracts traffic measurement data from the exchange.

## 6.2

## REMOVAL OF OUTDATED TRAFFIC MEASUREMENT FILES

#### General

The data stored in the internal memory of the TM block will be lost if dumping fails because the local/network file system has no space left, or the user quota has been exceeded. To avoid losing the newly-collected traffic data, it is recommended to delete the old traffic data files on a regular basis.

The format of the data file names as follows,

Old file format:

The format of the data files name is DXYZZZ

where X=dump number, Y=year number and ZZZ=day number of the year. For example, the name of the second dump file of October 17, 2024 is D04291

New file format:

The format of the data files name is NDXYZZZ.D

where N=New file format, X=dump number, Y=year number and ZZZ=day number of the year. For example, the name of the second dump file of October 17, 2024 is ND04291.D.

**Note:** The first dump number is 0.

To remove any outdated traffic measurement files, it is recommended that the corresponding traffic measurement function should be ended.

#### Prerequisites

The current user must have write permission on the traffic measurement directory.

#### Execution

List the stored traffic files and remove the outdated ones using the usual file system commands such as **ls** and **rm**, or tools such as explorer and file manager.

## 6.3

## SYSTEM TIME

#### General

The system time can never be changed by command. The Network Time Protocol is always active and guarantees that all the elements part of the MX-ONE solution have the same correct time.

**Prerequisites**

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**Execution**

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## 7 TERMINATION

If traffic measurement has been initiated, removed or altered, then a new dump should be executed in order to retain the altered directory data if the system is reloaded.

If a system reload takes place, the measurement data in the internal TM memory will be lost, but the data already stored in the file system will remain intact.