MiVoice MX-ONE Traffic Manager 1.4

TECHNICAL GUIDE

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CONTENTS

1 KEY INFORMATION 1
1.1 MX-ONE TRAFFIC MANAGER 1
1.1.1 COMPATIBILITY 1
1.1.2 TM SERVER 1
1.2 WHAT YOU WILL FIND IN THIS HELP GUIDE 1
1.2.1 RELATED PUBLICATIONS 2
1.2.2 CONVENTIONS USED IN THIS GUIDE 2
1.3 GLOSSARY 2

2 GETTING STARTED 4
2.1 MX-ONE CONFIGURATION 4
2.1.1 TRAFFIC MEASUREMENT DATA PATH 4
2.2 USER CONFIGURATION 4
2.3 MX-ONE SUPPORT: CONFIGURATION 7
2.3.1 STEPS INVOLVED IN MX-ONE SERVICE NODE DATA EXTRACTION 7
2.3.2 DATA MANAGER: CONFIGURATION 12

3 APPLICATIONS 20
3.1 DESCRIPTION OF APPLICATIONS 20
3.2 LIMITATIONS 20
3.2.1 ADD COMPONENT, ADD LOCALE, DATABASE UPSIZE, REINSTALLATION 20
3.2.2 SQL SERVER 2008 AND SQL SERVER 2012 SECURITY MODE 20
3.2.3 SQL SERVER 2008 AND SQL SERVER 2012 INSTANCES 20
3.3 LICENSES 21

4 LICENSEADMINISTRATION 22
4.1 LICENSE HANDLING WITH TM 1.4 22
4.2 THE ORDER AND INFORMATION FLOW 22
4.3 GENERATING FINGERPRINT FILE 22
4.4 THE WEB APPLICATION 22
4.5 PROVIDING ACCESS TO THE APPLICATION 23
4.6 ENTERPRISE LICENSE MANAGER ON WINDOWS 2008 AND WINDOWS 2008 R2 23
4.7 TO ADD 32-BIT SUPPORT ON X64 SERVERS IN IIS 24
4.8 SUPPORT 24

5 PRE-INSTALLATION 25
5.1 ABOUT PRE-INSTALLATION 25
5.1.1 PRE-INSTALLATION MEETING 25
5.2 MX-ONE SERVICE NODE HARDWARE REQUIREMENTS 25
5.3 CONFIGURATION OPTIONS 25
5.3.1 STAND ALONE 26
5.3.2 SINGLE SERVER WITH CLIENTS 26
5.4 PC HARDWARE REQUIREMENTS 27
5.4.1 SERVER 27
5.4.2 CLIENT PC 27
5.4.3 SERVER PC – WINDOWS SERVER 2008 OR WINDOWS SERVER 2012 27
5.4.4 CLIENT PC – WINDOWS VISTA BUSINESS OR WINDOWS 7 OR WINDOWS 8 28
5.5 HARD DISK REQUIREMENTS 28
5.5.1 RECOMMENDATION 28
5.6 SERVER DISK SPACE REQUIREMENTS 29
5.7 CLIENT DISK SPACE REQUIREMENTS 29
5.8 SOFTWARE REQUIREMENTS 30
5.8.1 WINDOWS 30
5.8.2 SQL SERVER 30
5.8.3 EXCEL 30
5.8.4 .NET FRAMEWORK 30
5.9 CONFIGURATION MANAGEMENT HARDWARE CONNECTIONS 30

6 SQL INSTALLATION 32
6.1 SQL SERVER 2008 32

6.1.1 TO INSTALL SQL SERVER 2008 ... 32
6.1.2 UPGRADING TO SQL SERVER 2008 ... 33
6.1.3 SECURITY ... 33
6.1.4 MEMORY ... 34
6.2 DEPENDENT PACKAGES FOR SQL 2008 ... 34
6.3 CHANGE SQL SA PASSWORD ... 34
6.4 INSTALL SQL SERVER SERVICE PACK ... 34

7 TM INSTALLATION ... 35
7.1 ABOUT INSTALLATION ... 35
7.1.1 HARDWARE CONNECTIONS ... 35
7.1.2 SOFTWARE INSTALLATION ... 35
7.2 INSTALLATION CHECKLISTS ... 35
7.2.1 USING THE CHECKLISTS ... 35
7.3 APPLICATION SUITE INSTALLATION ... 36
7.3.1 PRE-CONFIGURED SYSTEM ... 37
7.3.2 TRANSFERRING TM FROM ONE COMPUTER TO ANOTHER ... 38
7.3.3 INSTALLING ENTERPRISE LICENSE SERVER ... 38
7.4 SERVER INSTALLATION ... 39
7.4.1 AUTO-RUN INSTALLATION ... 39
7.4.2 TASKBAR INSTALLATION ... 39
7.4.3 INSTALLATION OPTIONS ... 41
7.4.4 ADD COMPONENTS ... 41
7.4.5 RESIZE DATABASE ... 42
7.5 CLIENT INSTALLATION ... 42
7.5.1 AUTO-RUN INSTALLATION ... 42
7.5.2 TASKBAR INSTALLATION ... 42
7.5.3 NEW CLIENT INSTALLATION ... 43
7.5.4 CLIENT INSTALLATION OPTIONS ... 43
7.5.5 MODIFYING THE SETUP (MTMSUITE.INI) FILE ... 44
7.5.6 INSTALLATION PROCEDURE ... 44
7.5.7 USING THE SETUP COMMAND ... 44
7.5.8 INSTALLING WITH AUTO-RUN ... 45
7.5.9 INSTALLING WITH AUTO-RUN ... 45
7.6 M.T.M CLIENT INSTALLATION ON WINDOWS XP ... 45

8 TM SERVER ... 47
8.1 FACILITIES AND SERVICES ... 47
8.2 ADMINISTRATIVE TOOLS ... 47
8.3 CHANGING USERS, SERVERS, AND PASSWORDS ... 48
8.3.1 TO CHANGE LOGGED USERS ... 48
8.4 REGISTRY ... 49
8.4.1 REGISTRY SETTINGS ... 49
8.4.2 SERVER IDENTIFICATION ... 49
8.5 MAINTENANCE ... 50
8.5.1 SQL DATABASE ... 50
8.5.2 LOGGING FACILITIES SERVER ... 50

9 MAINTENANCE ... 51
9.1 ARCHIVAL BACKUP ... 51
9.1.1 TEMPORARY WORKSPACE ... 51
9.2 AUTOMATIC EXTRACTION ... 51
9.2.1 DATA MANAGER OPERATIONS ... 51
9.2.2 TWO WAYS TO START THE EXTRACTION PROCESS ... 51
9.2.3 CLOCK SYNCHRONIZATION ... 52
9.2.4 EXTRACTION PROCESS ... 52
9.2.5 EXTEND POLLING TIME ... 52
9.3 PRESENTATION MANAGER ... 52
9.3.1 TRAFFIC MEASUREMENT REPORTS ... 52
9.3.2 PRESERVING EDITED REPORTS ... 53

10 TROUBLESHOOTING ... 54
10.1 LOG FILES ... 54
10.1.1 TM SERVER INSTALLATION LOGS ... 54

10.1.2 TM CLIENT INSTALLATION LOGS 54
10.2 EVENT LOG MESSAGES 54
10.3 TECHNICAL SUPPORT 60
10.3.1 BEFORE CONTACTING TECHNICAL SUPPORT 60
10.4 REPORTING YOUR PROBLEM 61
10.4.1 PROBLEM DESCRIPTION 61
10.4.2 MX-ONE SERVICE NODE 61
10.4.3 OPERATING SYSTEM INFORMATION (MARK ALL THAT APPLY) 61
10.4.4 CONFIGURATION 62
10.4.5 NETWORK PROTOCOL (MARK ALL THAT APPLY) 62
10.4.6 PC 62
10.4.7 TM APPLICATIONS 62
10.5 DATA MANAGER 63
10.6 PRESENTATION MANAGER 64
10.6.1 ESSENTIAL REQUIREMENTS 64
10.6.2 REPORT LIMITATIONS 64
10.6.3 GENERAL PM PROBLEMS 64
10.7 REMOTE DATA SERVER 65

11 APPLICATION DATA 66
11.1 REPORT GENERATION 66
11.2 DM DATABASE ORGANIZATION 66

12 MML and unix COMMANDS 68
12.1 MX-ONE SUPPORT UTILITY 68
12.2 DATA MANAGER 68
12.3 MX-ONE SUPPORT COMMAND LINE SYNCHRONIZATION 69
12.3.1 COMMAND LINE SYNTAX 69

13 FREQUENTLY ASKED QUESTIONS 71
13.1 TM SERVER 71
13.2 INSTALLATION 71
13.3 REMOTE DATA SERVER 72
13.4 DATA MANAGER 73
13.4.1 TO SELECT A NODE TO POLL 73
13.5 TM APPLICATION SUITE 74
13.5.1 CLOCKSYNC 74

14 SECURITY 75
14.1 DIRECTORY SECURITY 75
14.1.1 TM SERVER 75
14.1.2 TM CLIENT 75
14.2 SERVICES AND ACCOUNTS/RIGHTS 76
14.2.1 TM SERVER 76
14.2.2 TM CLIENT 76
14.3 ODBC CONNECTION 76
14.4 FILES COPIED TO OTHER DIRECTORIES 77
14.4.1 WINDOWS 2008, OR WINDOWS XP 77
14.5 DATABASES 77
14.6 REGISTRY 78
14.6.1 LOCATION 78
14.6.2 PERMISSIONS 78

1 KEY INFORMATION

1.1 MX-ONE TRAFFIC MANAGER

Congratulations on your selection of MiVoice MX-ONE Traffic Manager (TM) application suite as your MiVoice MX-ONE Service Node performance management system. The TM Application Suite is a comprehensive family of graphical PC-based programs and utilities supporting MX-ONE Service Node operation and administration. TM provides MX-ONE Service Node operational support in the following major areas:

- High-level Telecommunications Network Supervision
- Traffic Measurement and Reporting

1.1.1 COMPATIBILITY

This release of the TM Application Suite is compatible with:

- Windows Server 2008 Service Pack 2 TM 1.4 does *not* support Core systems.
- Windows Server 2012 TM 1.4 does *not* support Core systems.

Note! It is assumed that both the TM server and TM clients are in the same domain. If TM clients exist in other domains, then domain trust relationships must be established. Please refer to your Windows documentation for more details.

Windows XP Professional with Service Pack 3 and Windows Vista Business with Service Pack 2 and Windows 7 Service Pack 1 (64-bit & 32-bit) and Windows 8 (64-bit & 32-bit)

MiVoice MX-ONE Service Node 6.x (or 5.x)

Microsoft SQL Server 2008 (64-bit & 32-bit)

Microsoft SQL Server 2008 Express Edition (64-bit & 32-bit)

Microsoft SQL Server 2012 (64-bit & 32-bit)

Microsoft SQL Server 2012 Express Edition (64-bit & 32-bit)

Office 2007 Service Pack 2

Office 2010 Service Pack 2

Microsoft Internet Explorer

1.1.2 TM SERVER

The TM Server lets you administrate the TM Application Suite users. It also contains different utilities to set up the connection with MX-ONE Service Nodes. The central component of a TM Installation is the Remote Data Server (RDS). RDS maintains network database synchronization among all MX-ONE Service Nodes, the TM SQL Server, and TM Local Databases. Some of the most important database support functions are:

- Application-to-Application Interactive Updates.
- Security and Licensing Support.
- TM Distributed Database Synchronization.
- Administrative Task Scheduling.

1.2 WHAT YOU WILL FIND IN THIS HELP GUIDE

This guide is written for technicians responsible for installing and maintaining MX-ONE Traffic Manager (TM) applications. The TM Application Suite is a family of PC-based telephony applications

for management and control of MiVoice MX-ONE Service Node operations. This guide includes the following help books.

Getting started- This section gives a detailed description of the Various components in the M.T.M Application suite (user configuration, MX-ONE Support, Data manager) and MX-ONE and how to connect with the service node from our TM applications.

Applications - Provides a basic description of the applications.

Pre Installation - Describes the main types of installations, PC hardware requirements, software which must be installed on the PC, and requirements for the MX-ONE Service Node.

SQL Installation - Describes SQL Server installation information, including SQL Server 2008 and 2012 installation, change password, apply SQL Server service pack.

TM Installation - Describes first-time installation of the TM applications, including hardware connections between the MX-ONE Service Node and PC, and installation of the application software on the PC.

Performance - Describes basic steps to improve TM performance following installation.

Installation problem - Describes where to find log files and event log error messages, to troubleshoot installation problem.

TM Server - Describes the components that form the TM server, including the security and support platform for MX-ONE Traffic Manager (TM) applications.

Maintenance - Describes tasks that should be performed periodically to ensure proper operation of your applications.

Troubleshooting - Describes how to resolve problems that may occur.

Application Data - Report generation, data organization, and populating databases.

Frequently Asked Questions - Provides answers to some basic questions regarding TM

Security - Describes TM Directory security, Service and Accounts/Rights, ODBC connection, Files copied to other directories, Database permissions, Registry location and permissions.

1.2.1 RELATED PUBLICATIONS

In addition to the "TM Technical Guide," getting started guides are available for the following products.

- Performance Manager

1.2.2 CONVENTIONS USED IN THIS GUIDE

The TM server PC may be part of a larger network that uses another computer as a server for that network. Throughout this help guide, however, "server" refers to the PC set up as the server for the TM application suite, and "network" refers to the Windows LAN that is hosting the TM server PC.

1.3 GLOSSARY

Refer to the descriptions in this section for help with understanding terms used in this guide.

Client - A PC in a network installation that is connected to a server PC and accesses data on the server when running applications. In a TM network installation, the SQL database and the **TM Server** reside on a server PC, and one or more client PCs run applications that access the data on the server. For a stand-alone installation, the server and the client are the same PC.

TM Server - TM platform services and utilities that reside on the server and act as the intermediary between all TM applications and databases.

Graphical User Interface (GUI) - The user interface presented by TM applications and management utilities.

Hardware Compatibility List (HCL) - A list of hardware tested and verified to work with Windows. The list is available at http://www.microsoft.com/hcl.

Local Area Network (LAN) **-** A computer network based on one or more centralized server PCs and one or more locally or remotely connected client PCs.

MiVoice MX-ONE - The Mitel MX-ONE Service Node.

MiVoice MX-ONE Support (MDS) - A TM administrative utility that synchronizes MiVoice MX-ONE Service Node configuration data with TM application databases. Additional capabilities include synchronization connections for SSH, also called *MX-ONE Support*.

Windows File System (NTFS) – The Windows file system.

Data Manager (DM) - *See* **Performance Manager**.

Performance Manager - The TM application that is used to collect traffic data and generate reports. Performance Manager actually consists of two applications: Data Manager (DM), and Presentation Manager (PM). DM is used to extract traffic measurement data from one or more MX-ONE Service Nodes, and PM is used to generate reports based on data extracted by DM.

Presentation Manager (PM) –Graphical user interface to represent the traffic data.

Remote Data Server (RDS) - TM Server Utility that allows you to configure the Remote Data Server for TM database and application support roles, including network database synchronization between MX-ONE Service Nodes, the TM SQL Server, and TM Local Databases (LDBs).

Server - The central PC for a *TM* network installation. In a network installation, the SQL database and the **TM Server** software reside on a server. One or more client PCs may run TM applications that access the data on the server. The server acts as a database "referee," providing data security, centralized file access, management services, and controlling ID master files and external subscriber directories. For a stand-alone installation, the server and the client is the same physical PC.

Stand-alone - An installation of TM applications on a single PC instead of a network of PCs. In a network installation, the SQL database and the **TM Server** reside on a server PC, and one or more client PCs run TM applications that access the data on the server. In a stand-alone installation, all of these elements (SQL database, **TM Server**, and TM applications) are installed on a single PC.

Wide Area Network (WAN) - Inter-office private communication network.

2 GETTING STARTED

2.1 MX-ONE CONFIGURATION

The main objective of M.T.M Application suite to extract the data in MX-ONE and enabling the users to initiate Traffic measurements in MX-ONE, hence to record the traffic generated and representing the traffic in a graphical user interface which can be used to generate reports. In MX-ONE following needs to be configured:

- A User in LIM 1 with MDSH as default login shell and group belong to minimum snlev4 (use the *mxone_maintenance* script).
- Data Path for Traffic measurement data files.

2.1.1 TRAFFIC MEASUREMENT DATA PATH

Before going to initiate the Traffic measurements, Data path needs to be created in LIM 1 of the MX-ONE Service node by using the TRDPI Command.

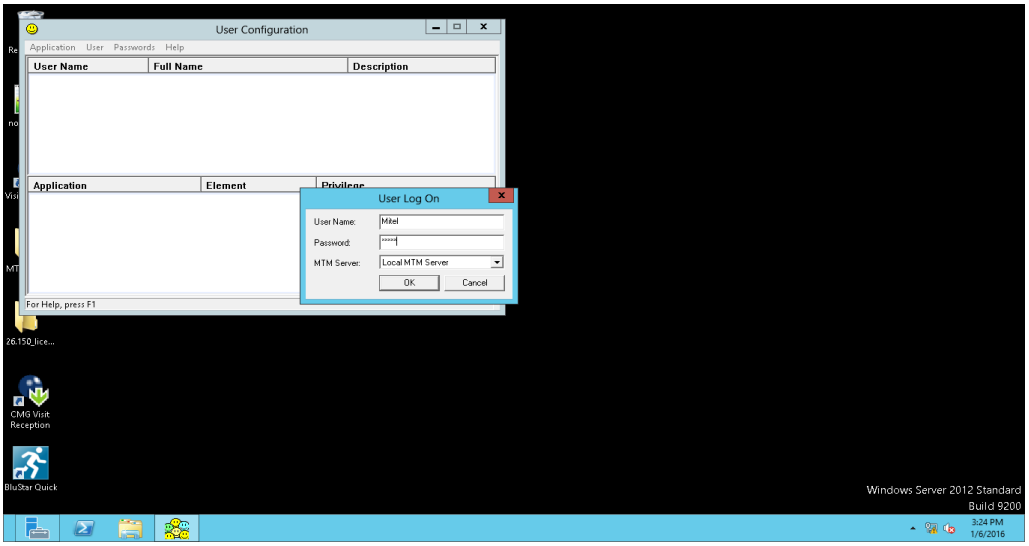
TRDPI:PATH="/var/opt/eri_sn/traffic_recording/";

2.2 USER CONFIGURATION

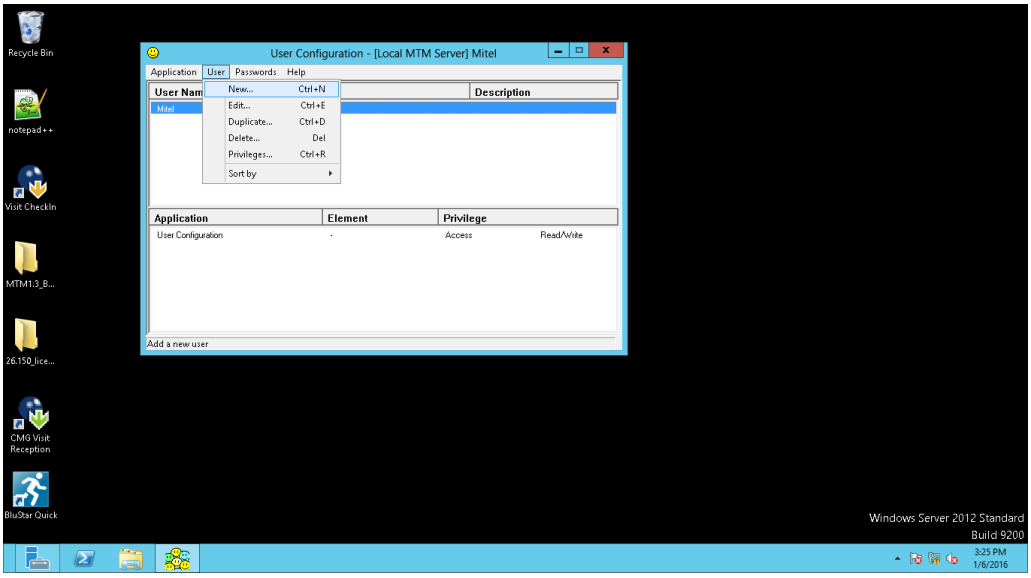
After successful installation of TM Server with the all pre-requisites, please follow the below steps to have a smooth flow of work environment

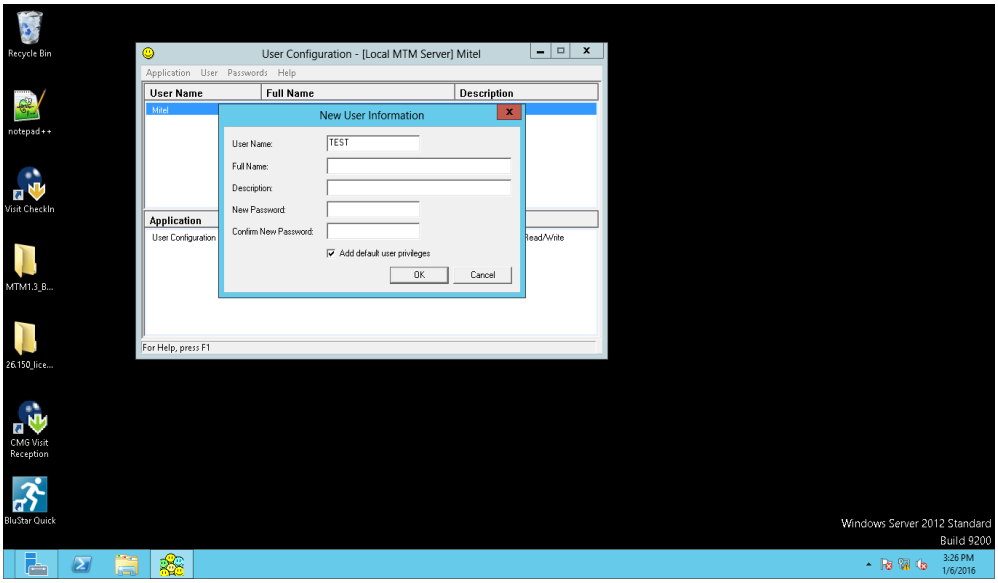
A New Program ***MX-ONE Traffic Manager*** will appear in the ***Programs*** List of the System.

- Corresponding to ***MX-ONE Traffic Manager*****,** there are core components of the product like *Administrative Tools*, *Data Manager* and *Presentation Manager*.
- Under the *Administrative Tools* section, there are applications required to configure various settings required for TM. Use **User Configuration** application for creating new TM users.
- *User Configuration* Application will be launched and requires *User Name* and *Password*. Select 'Local M.T.M Server' in M.T.M Server drop down.
- Use default TM user credentials **Mitel, Mitel** as Username and Password.



- With the correct Login credentials you will be able to see the menu bar of User Configuration utility.
- Under the **User** Menu, create a new user with the privileges required to run TM applications. Select the checkbox for “Add default user privileges”.





- Use the newly created user credentials to run any TM application.
- Launch *'MX-ONE Support'* under **Programs→MX-ONE Traffic Manager→Administrative Tools →MX-ONE Support** to configure & synchronize the data between MX-ONE and TM server.
- Launch '*Data Manager'* application under **Programs→MX-ONE Traffic Manager** to initiate traffic measurements in configured nodes.

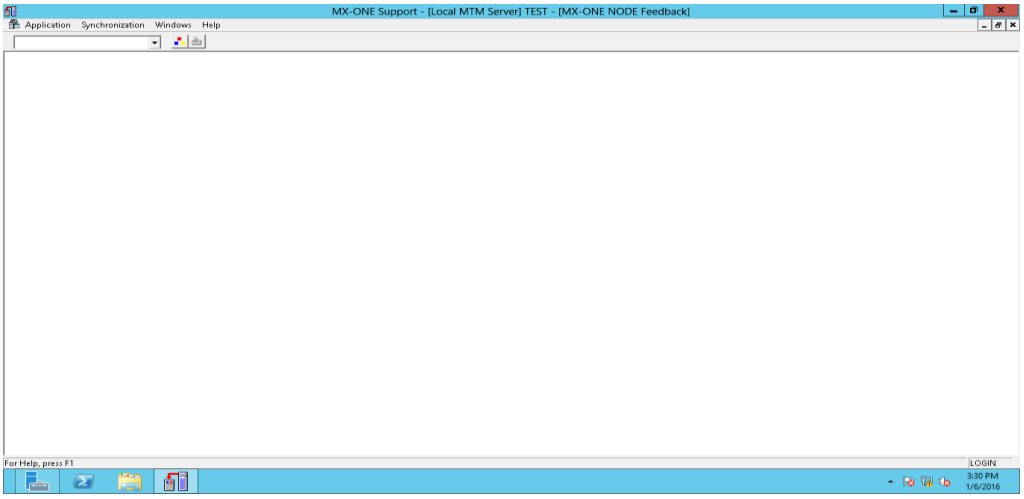
After the traffic recording data is retrieved and stored in TM server, use 'Presentation Manager' application under **Programs→MX-ONE Traffic Manager** to generate reports/charts.

2.3 MX-ONE SUPPORT: CONFIGURATION

The main purpose of the MX-ONE Support Application is:

- Set up and Configure MX-ONE Service Nodes
- Synchronize the MX-ONE Nodes and , stores data in the database ,
- This data will be further used by Data Manager (DM) and Presentation Manager(PM)

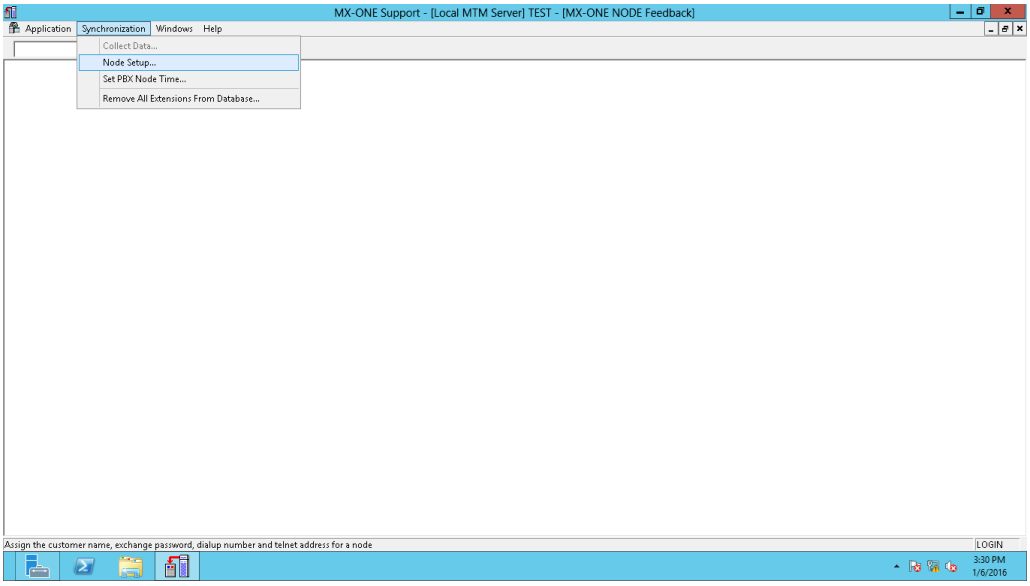
Launch Start →Programs→MX-ONE Traffic Manager→Administrative Tools→MX-ONE Support. MX-ONE Support application will be launched.



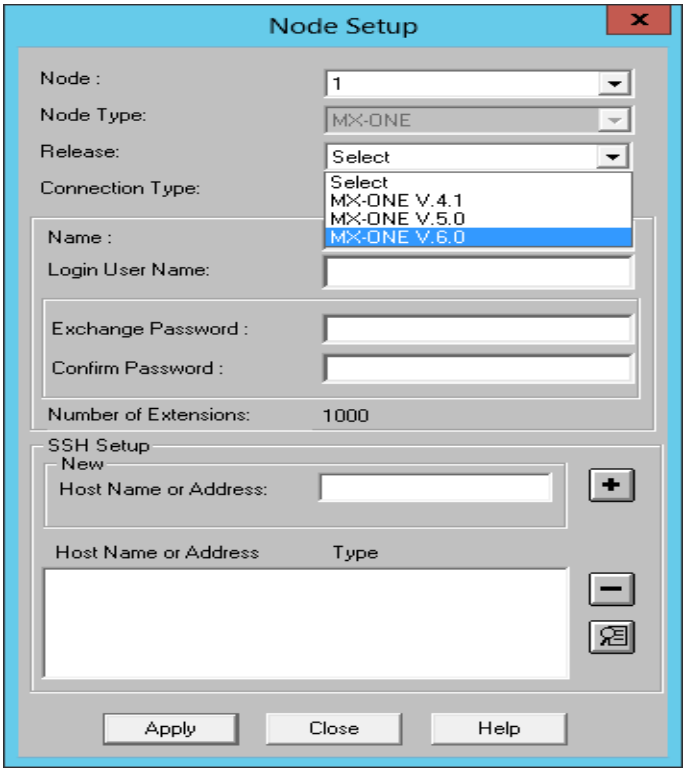
2.3.1 STEPS INVOLVED IN MX-ONE SERVICE NODE DATA EXTRACTION

First we need to configure the node:

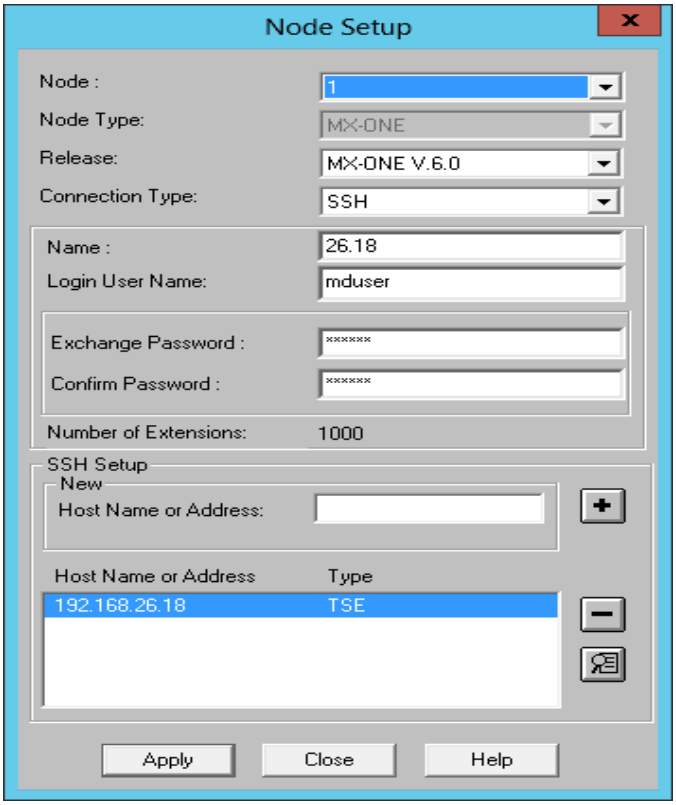
1. Under Synchronization Menu Click on **Node Setup.** The Node Setup dialog box appears.



2. Select values Like Release either 4.1 or 5.0 or 6.0(MX-ONE that we need to synchronize).

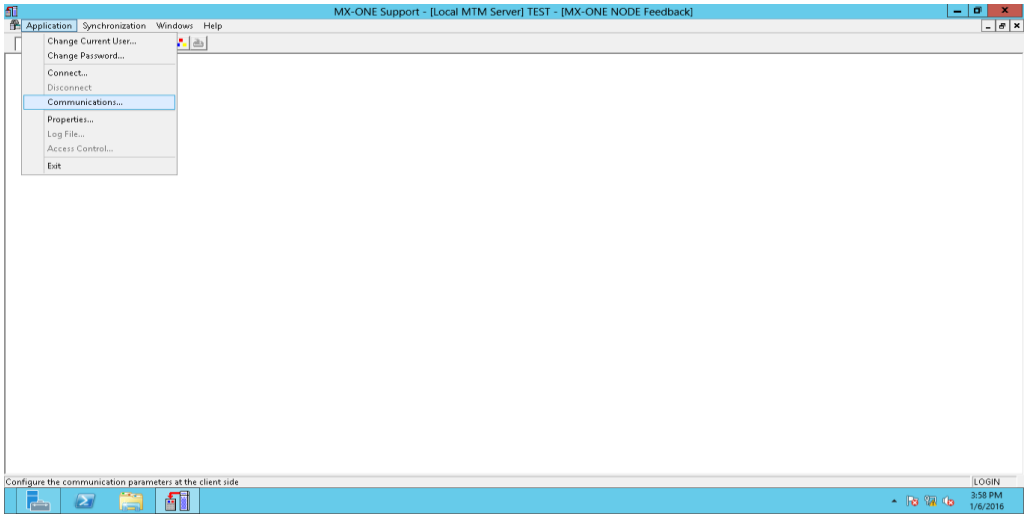


3. TM Supports the only one connection type (i.e. SSH)
4. Fill the remaining columns Like Login name, Exchange password, Host name (IP Address)

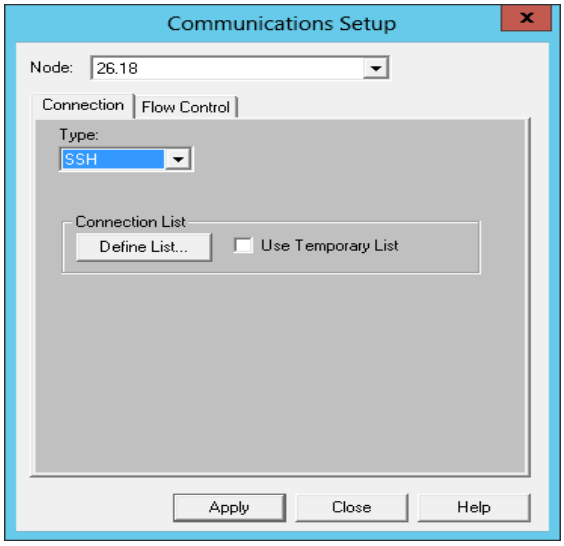


5. After configuring the node details we need to set Communication paths for this node as below.

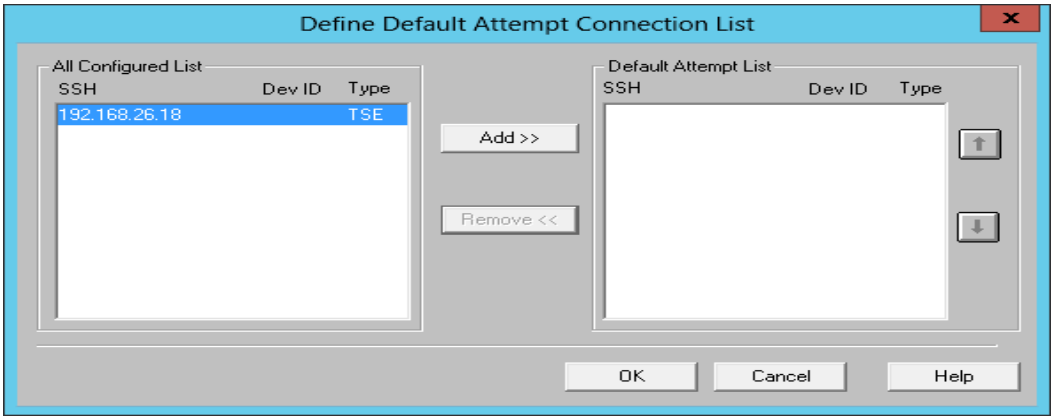
6. Select Communications from *Application* menu.

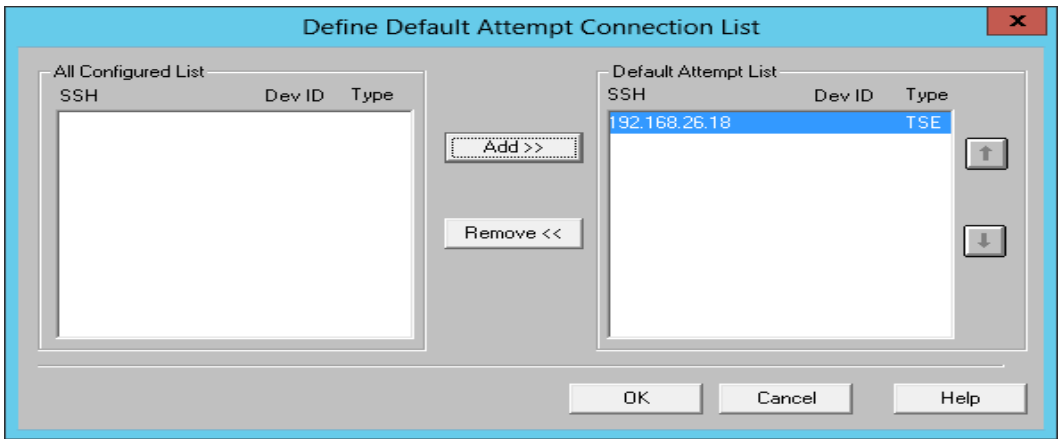


7. From the **Node** Dropdown List select the just configured Node and
8. **Type** Drop List should contain SSH and Click on *Define List*



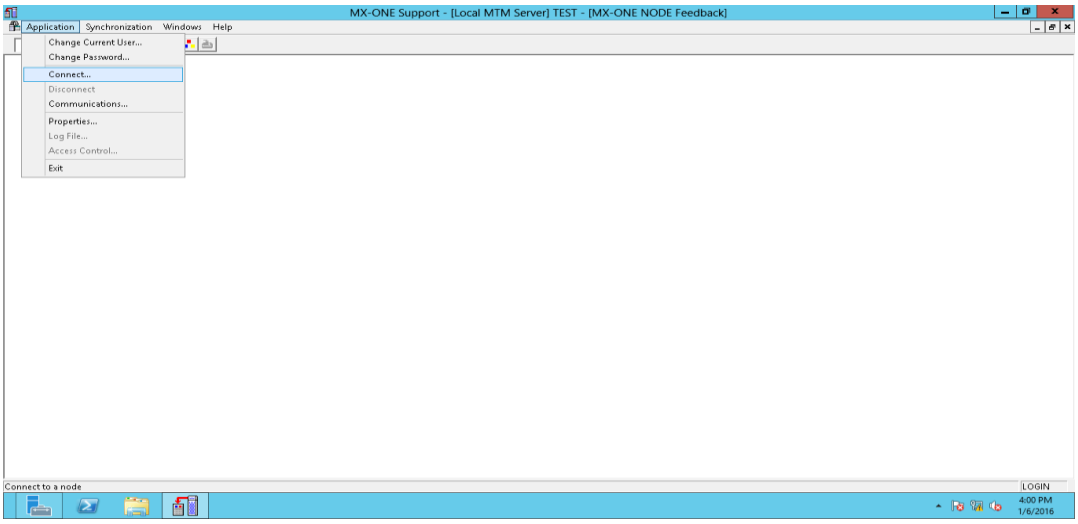
9. Click On *Add* and Node details will be populated in Default Attempt List

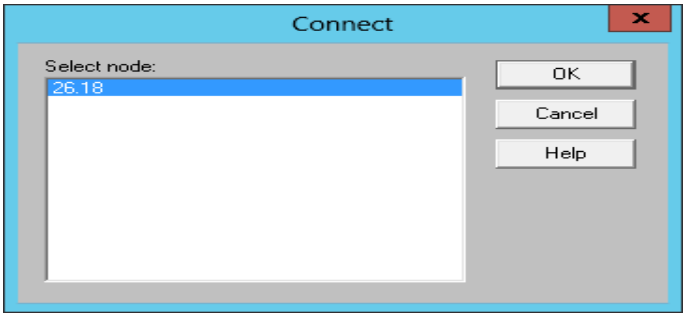


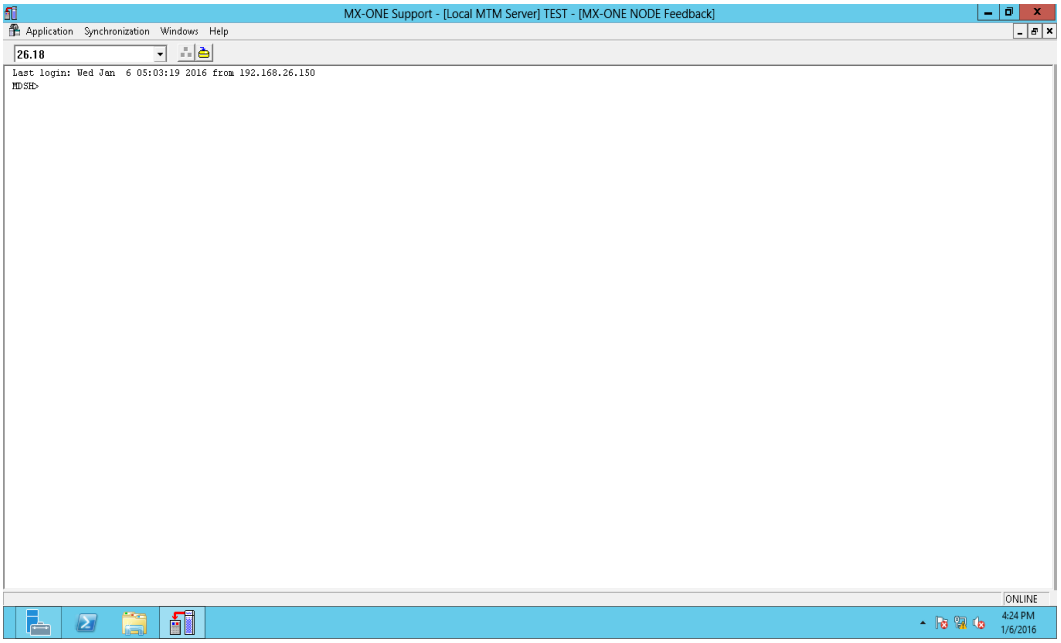


Now we can connect to the newly configured node in two ways.

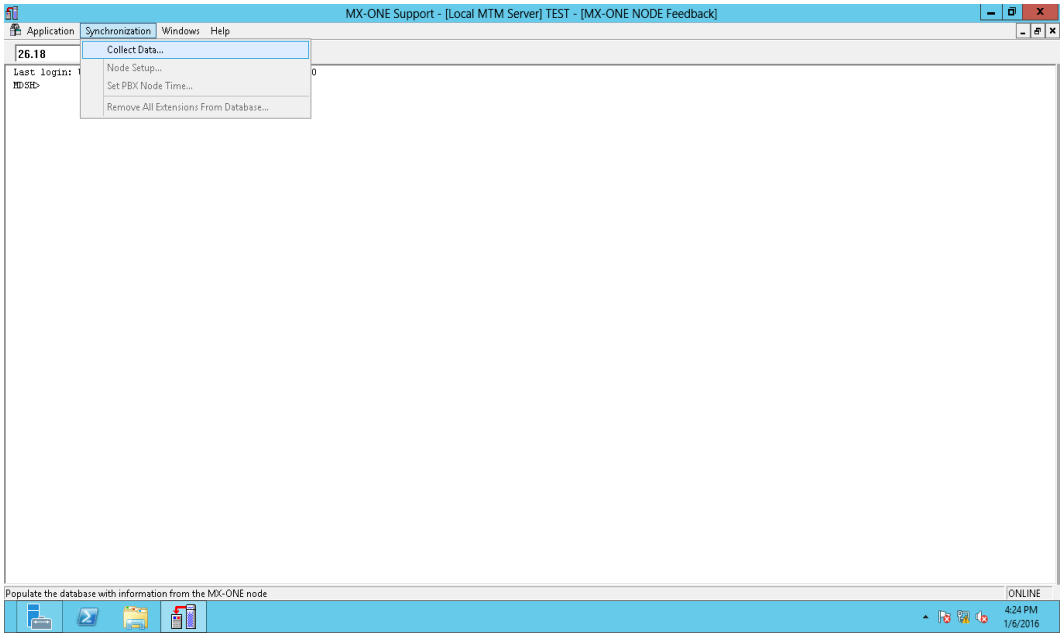
- Through Application →Connect
- Drop Down list on Tool bar



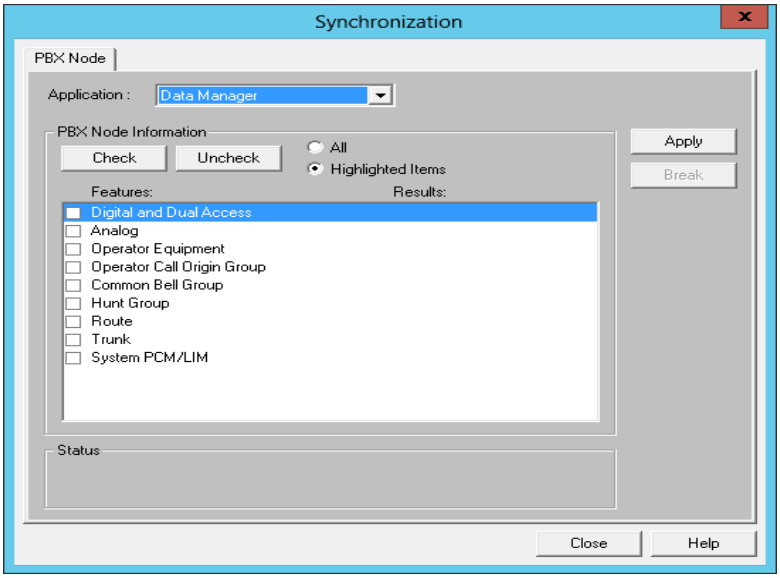




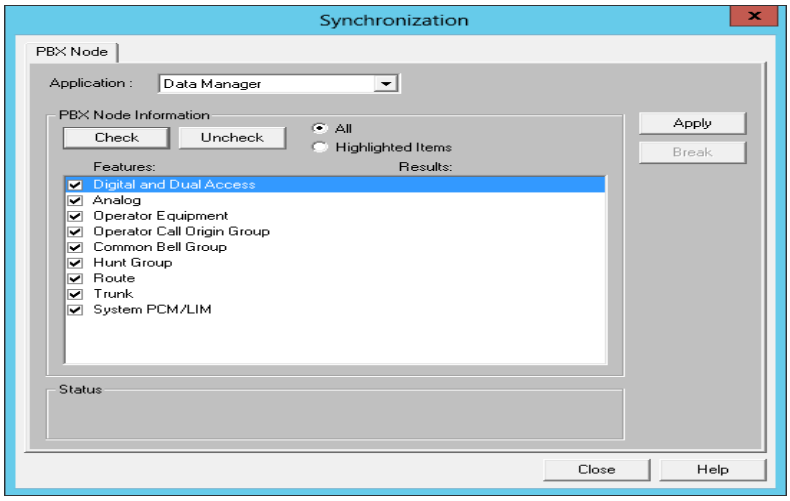
10. After Successfully connecting with configured Node ,Click on Synchronization →Collect Data



11. Synchronization window appears as below.



12. Depending upon the requirement, check all or some selected items and click on Apply

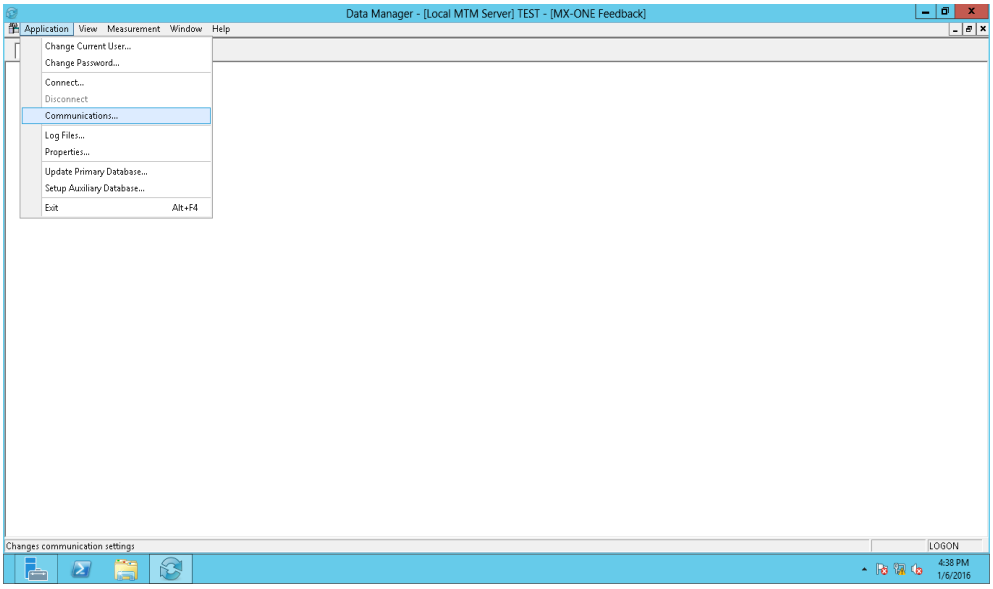


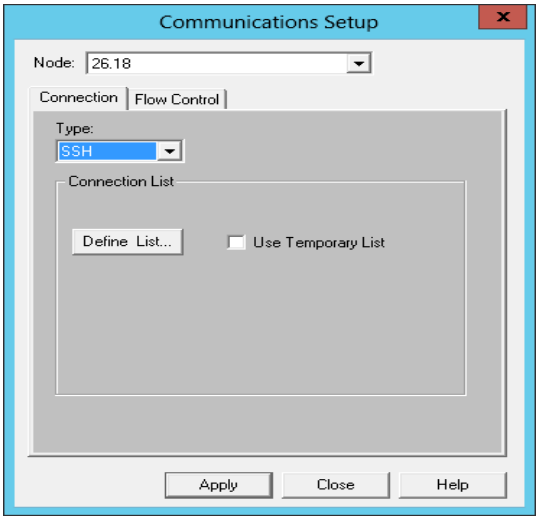
2.3.2 DATA MANAGER: CONFIGURATION

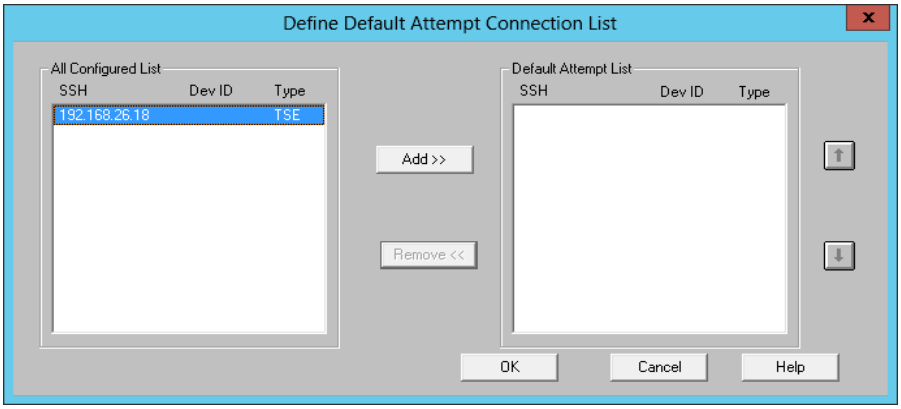
Another main component in TM Application suite is Data Manager (DM).

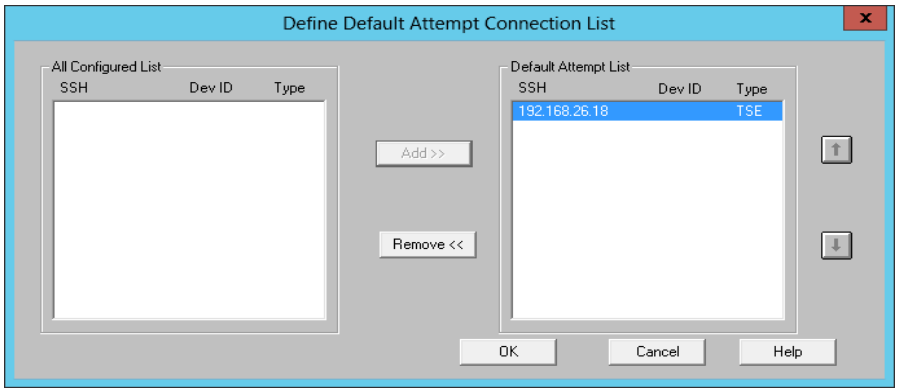
Data manager Allows to you to initiate the Traffic measurements in MX-ONE Service Node and stores the Traffic data in the Primary and auxiliary databases as well.

1. Start → Program files → MX-ONE Traffic Manager→Data Manager
2. Under Application→Communications, Map the Appropriate Node with Connection Type (SSH) and Add it in Default Attempt List as in the case of MX-ONE Support


Data Manager - [Local MTM Server] TEST - [MX-ONE Feedback]
Application
View
Measurement
Window
Help
Change Current User...
Change Password...
Connect...
Disconnect
Communications...
Log Files...
Properties...
Update Primary Database...
Setup Auxiliary Database...
Exit
Alt+F4
Changes communication settings
LOGON
4:38 PM
1/6/2016

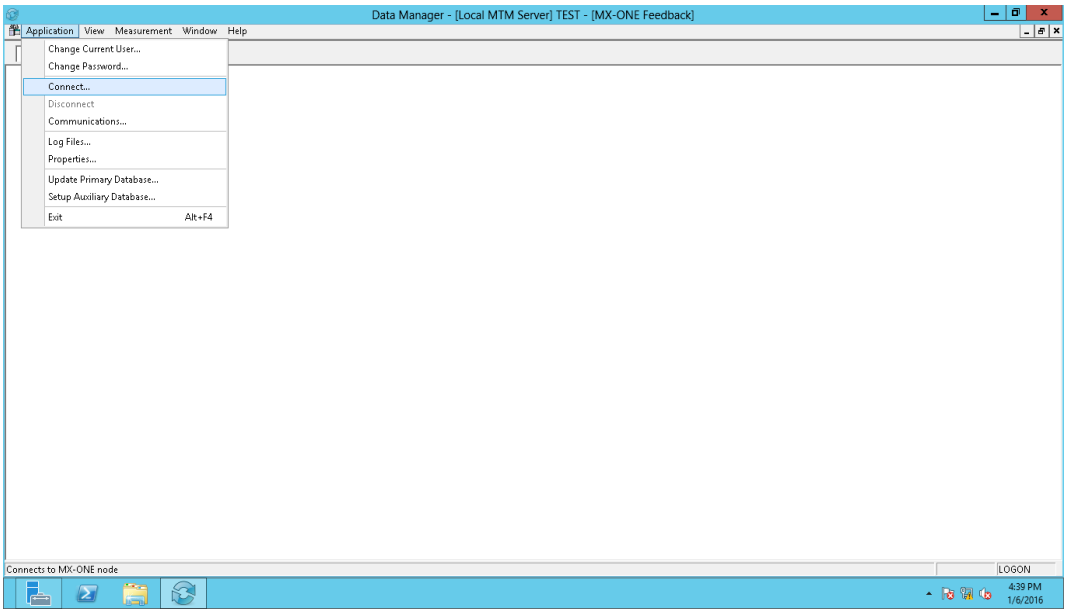

Communications Setup
Node:
26.18
Connection
Flow Control
Type:
SSH
Connection List
Define List...
Use Temporary List
Apply
Close
Help

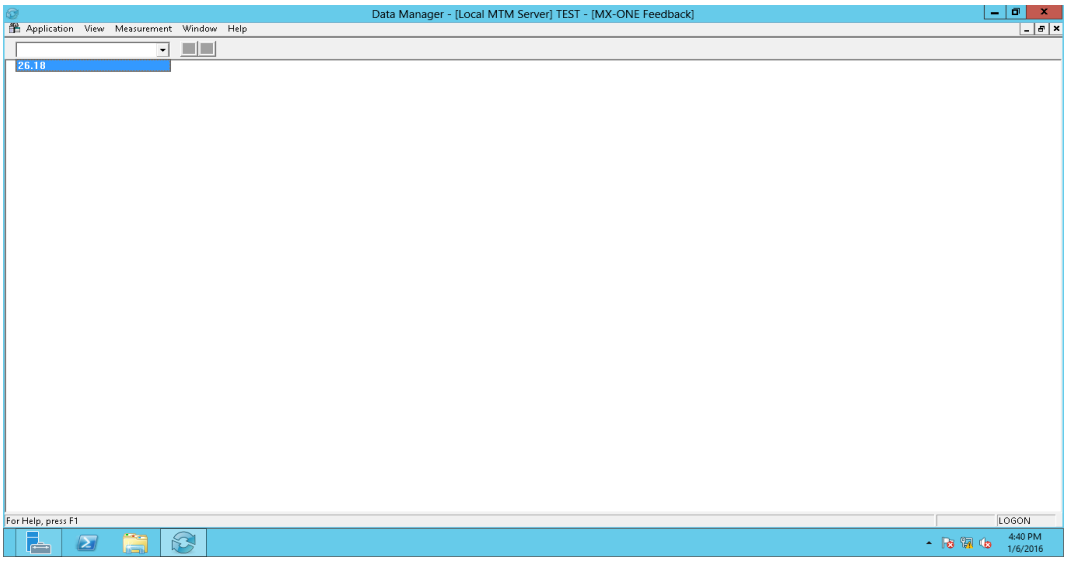




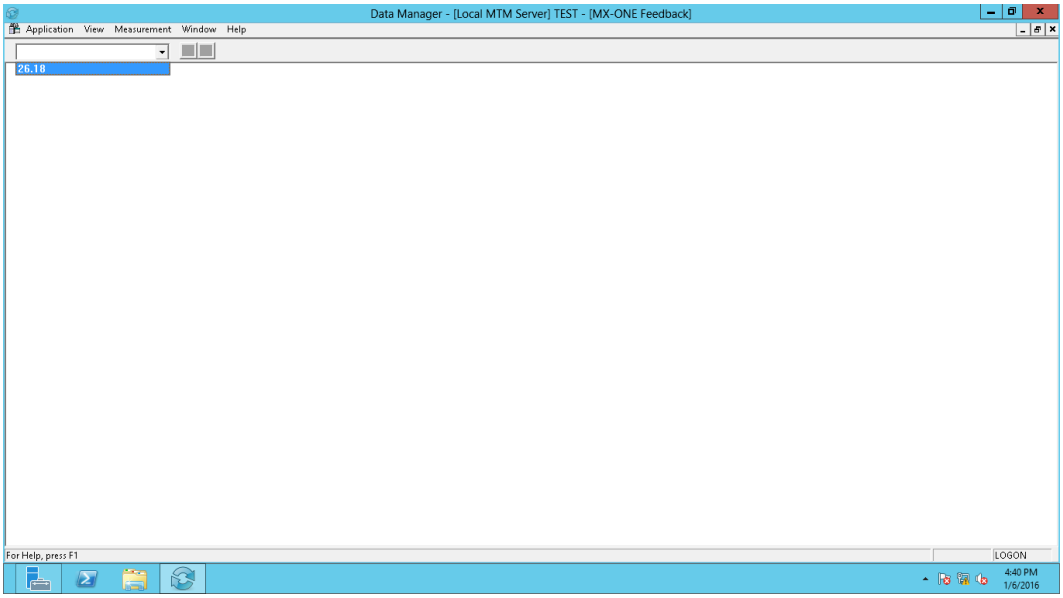
3. Connect to the Node that was configured in MX-ONE Node support previously in both the ways.

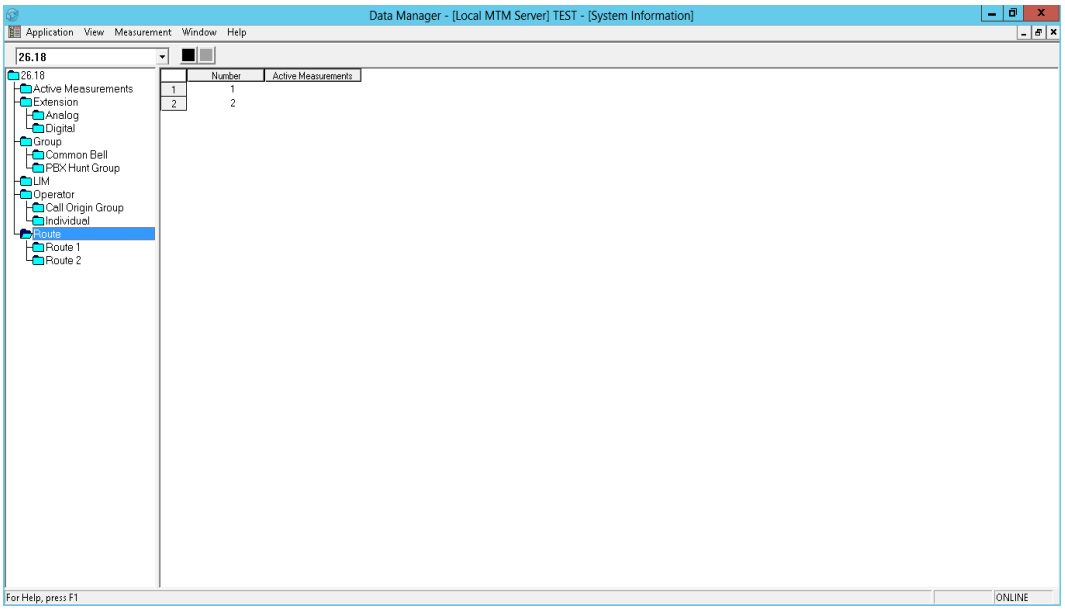
- Application Menu →Connect
- Tool bar Drop down List





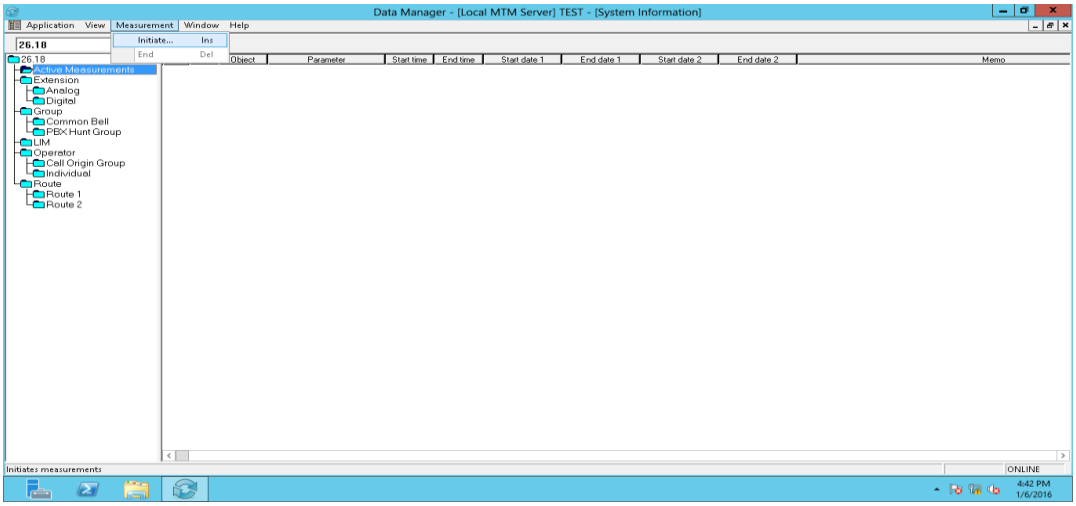
Data Manager Appears as below with System Volume Information tree on Left side of the window.



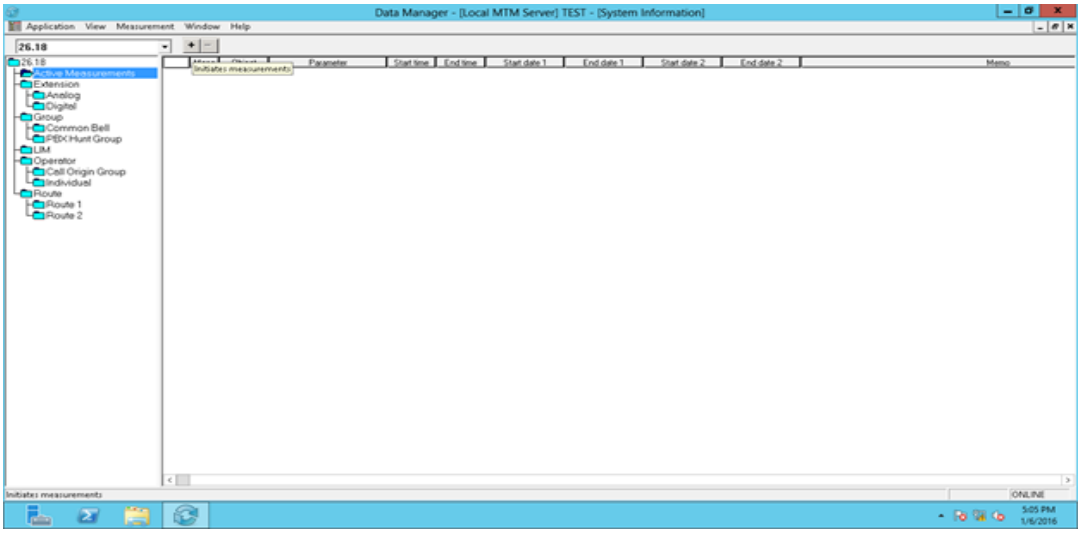


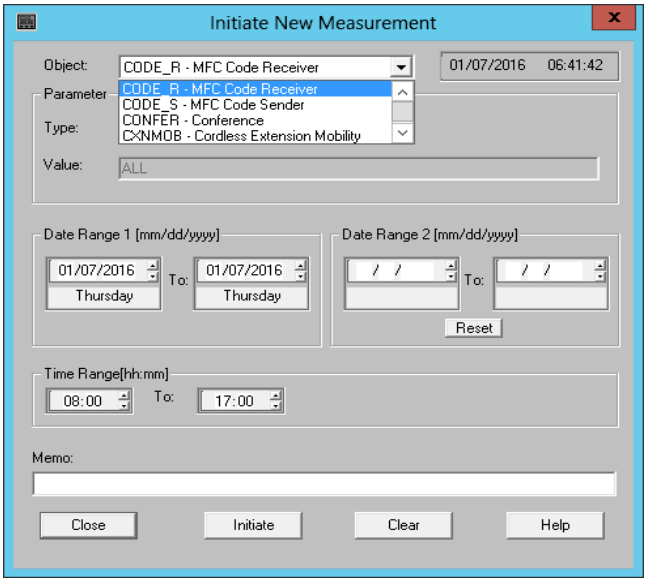
To Initiate the Traffic measurements, please follow the below steps:

1. Click On Measurements→Initiate

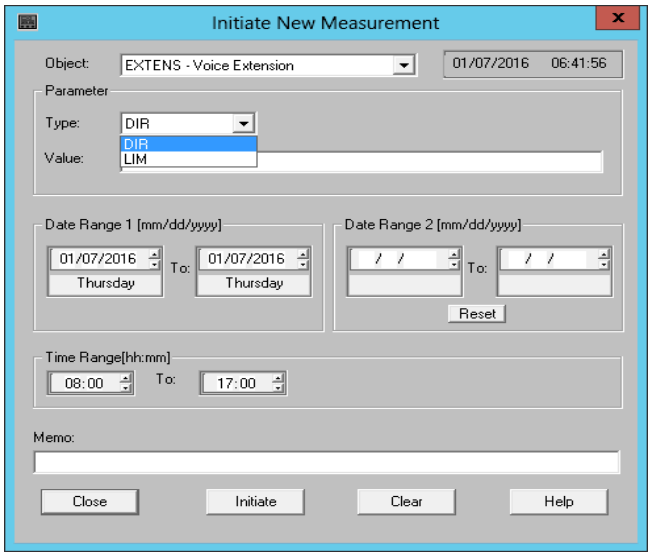


2. Click on the button ,it also will launch the **Initiate New measurement** window





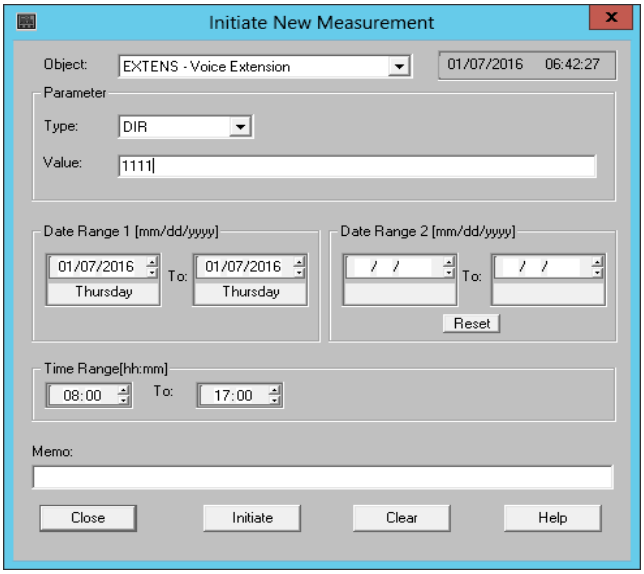
3. Select the appropriate object from **Object** Drop down List on the type of measurement that we want to Initiate.



4. Drag and Drop the values from the Tree to the Value Text boxes and select the correct Date/Time range and Click on Initiate.

Note! Before going to initiate the Traffic measurements in MX-ONE Service Node, Data path needs to be created in the Service node by using the TRDPI Command.

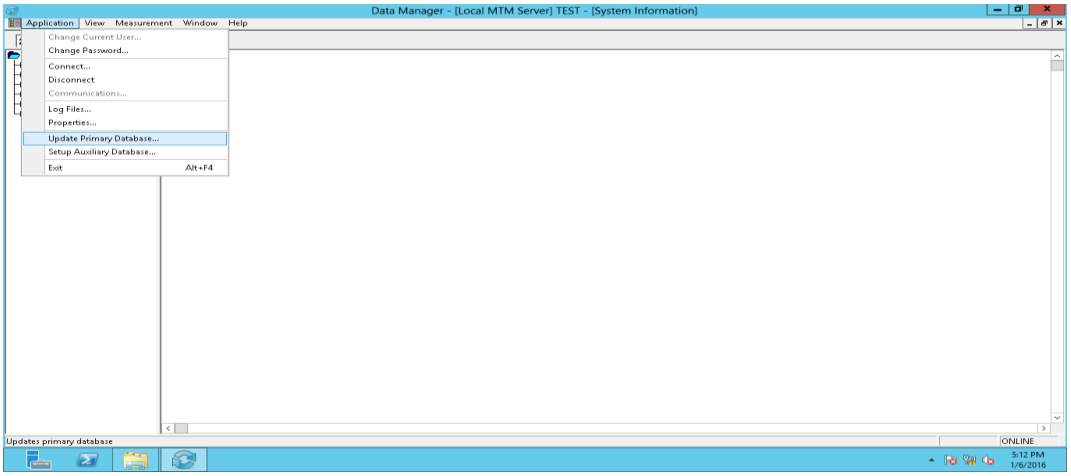
TRDPI:PATH="/var/opt/eri_sn/traffic_**recording/";**



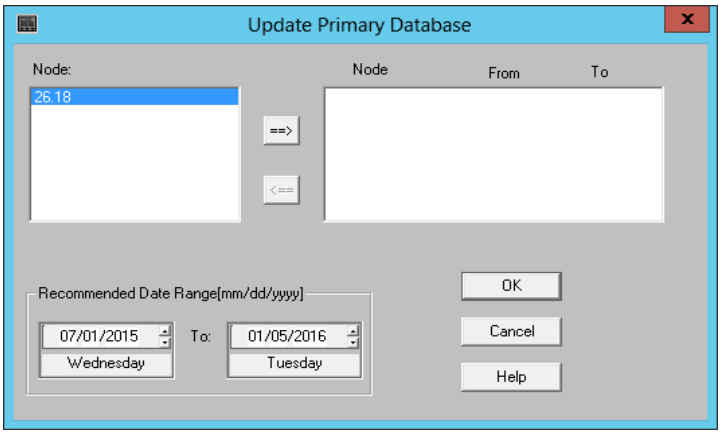
After the traffic measurements were initiated, we can update the traffic data as below.

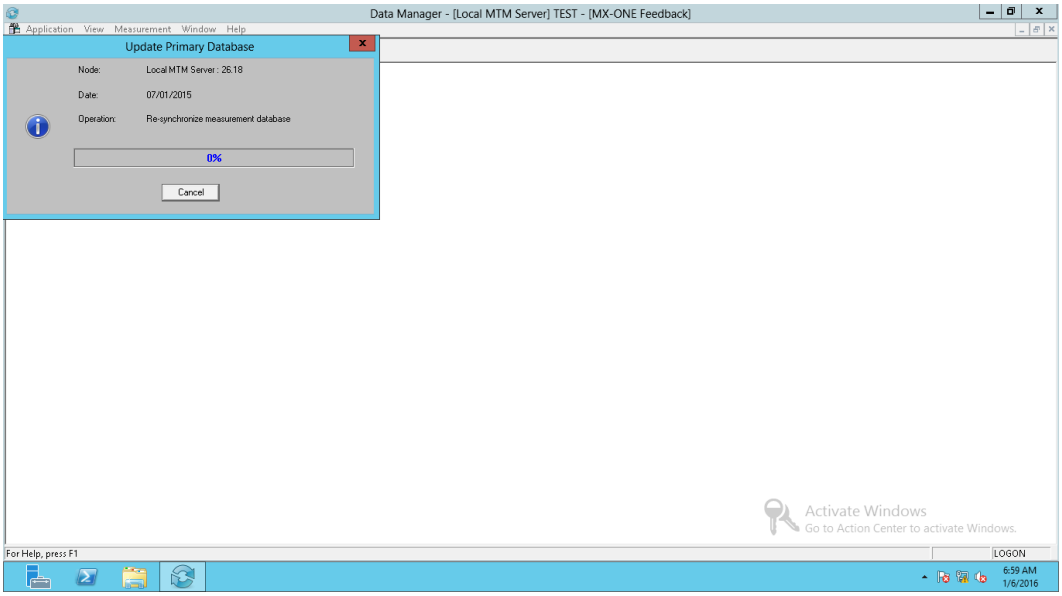
To update the traffic data in to database for a specified date range please follow the below mechanism.

1. Click on Application→update Primary database.



2. Select the Proper Node and Click on OK




Data Manager - [Local MTM Server] TEST - [MX-ONE Feedback]
Application View Measurement Window Help
Update Primary Database
Node: Local MTM Server : 26.18
Date: 07/01/2015
Operation: Re-synchronize measurement database
0%
Cancel
Activate Windows
Go to Action Center to activate Windows.
For Help, press F1
LOGON
6:59 AM
1/6/2016

3 APPLICATIONS

3.1 DESCRIPTION OF APPLICATIONS

The TM application suite is an integrated set of applications that allow you to operate and manage your MiVoice MX-ONE Service Node communications resources from stand-alone or networked PCs. The application suite includes the following applications.

APPLICATION	DESCRIPTION
TM Server*	The operational and administrative platform for the TM utilities and data structures. Includes system configuration and maintenance utilities for supporting TM applications.
MX-ONE Support	Utility used to connect and Synchronize data from MX-ONE Service Node, and populates the M.T.M Server's database with this data, which will be used by remaining applications in the M.T.M Application Suite.
Performance Manager **	A traffic measurement and reporting application for network performance analysis. Allows analysts and administrators to capture traffic data and generate reports. This application consists of Data Manager (DM), and Presentation Manager (PM), two separate applications. DM extracts traffic measurement data from one or more MX-ONE Service Nodes. PM creates reports from data extracted by DM.

* Available in GUI and online Help

** Available in GUI, online Help, and as electronic Getting Started Guide (Getting Started Guide for DM and PM are in English only).

Note! All applications are offered in English.

3.2 LIMITATIONS

3.2.1 ADD COMPONENT, ADD LOCALE, DATABASE UPSIZE, REINSTALLATION

If a component, locale, server database upsize, or reinstallation is needed, these actions must be performed from **Control Panel** > **Add/Remove** instead of the CD-ROM (media kit).

The side effect of performing the above mentioned activities from the CD-ROM, is that the service pack version information in the 'About Boxes' will be incorrect.

3.2.2 SQL SERVER 2008 AND SQL SERVER 2012 SECURITY MODE

TM 1.4 will only work if the SQL 2008 or SQL 2012 server is installed with "Mixed mode" / "SQL Server and Windows" security mode. TM 1.4 does NOT support the "Windows authentication mode" / "Windows only" security mode.

3.2.3 SQL SERVER 2008 AND SQL SERVER 2012 INSTANCES

TM 1.4 supports SQL Server 2008 or SQL Server 2012 installation option "default instances".

3.3 LICENSES

Compatibility with Other Network Elements

MiVoice MX-ONE Service Node

Coexistence with Other Products

TM can coexist with other products on the same server:

- Mitel CMG
- Mitel Advanced Messaging
- MiContact Center Enterprise

Note! TM cannot be installed on the server where D.N.A is installed.

4 LICENSE ADMINISTRATION

4.1 LICENSE HANDLING WITH TM 1.4

TM 1.4 is delivered with a 60 day fully opened license file giving the customer time to test and purchase features and functions that are licensed. Within 60 days a final license file (permanent license keys) has to be installed in the system to continue to use licensed features and functions.

The license file is downloaded from a Mitel Web interface on the Internet for smooth and fast administration. To access the Web application, the user needs a user ID and password (see “Providing access to the application”).

The license file downloaded through the web must be installed in the Enterprise License Manager. Enterprise License Manager controls the licenses for the TM server. The TM server periodically communicates with Enterprise License Manager to determine whether the license information has changed. If this is the case, TM will update the internal license information within the TM server. The periodic interval is 15 minutes.

For detailed information of Enterprise License Manager, please refer to Enterprise License Manager Documentation.

4.2 THE ORDER AND INFORMATION FLOW

Licenses are ordered in the same way as any other product from Mitel. Since licenses are a non-physical product there is no physical delivery.

The concept that Mitel has developed for delivering licenses is based on the needs to be able to handle each ordered product as an individual item independent if it is a physical product or not. When purchasing licenses the deliverable will include a unique identity (Unique Pick Number – UPN) for each license or license package ordered.

The Unique Pick Numbers (UPNs) are used in the License Web application described below to uniquely identify the purchased licenses. To access the ordered licenses, a user Id and password are needed to the License Web application and the unique pick numbers generated for each of the ordered licenses.

The unique pick numbers are delivered through e-mail to a pre-defined email address. The unique pick numbers can then easily be re-distributed to the persons that need the unique pick number to be able to generate the license file for a specific TM system.

4.3 GENERATING FINGERPRINT FILE

To generate the fingerprint information needed to install permanent licenses, the fingerprint tool installed by Enterprise License Manager is used. For detailed information of how to use the tool, please refer to Enterprise License Manager Documentation.

4.4 THE WEB APPLICATION

The application is available through the Web page http://ebusiness.mitel.com - look for License Administration. Clicking on the link License Administration, the user will be requested to enter a user ID and password.

After authentication, the user is able to choose to:

Create License

Download License

Verify License information

To obtain a new license file for a TM 1.4 system the user has to select:

Create License

At this point the user will be taken to a Wizard which will guide them through the step-by-step process.

The main steps are:

3. Select the UPN(s) to be assigned to the system.
4. Upload the fingerprint file from the TM system in question. The generated fingerprint file must be uploaded in order to create the new license file.
5. Provide the End Customer Information.
6. Verify that all are included before Submit.
7. Submit, which will generate a new license file. Submit initiates the creation of the new license file.
8. Download the new license file.

The new license file can now be installed in the TM system.

A number of checks are built into the Wizard to avoid basic faults.

If problem arises when using the tool, support is provided through the Enterprise License Centre.

4.5 PROVIDING ACCESS TO THE APPLICATION

The method for obtaining a user ID and password to the system is the same as for other applications like e-shop, Weblearn and Info Channel. The normal procedure for the partner to get the user ID and password is to send the user data for the users (name, company and e-mail address) to the contact person at the Partner Unit. The Partner Unit will then forward the information to Global Channel Operations for registration.

A partner can also let his resellers obtain access to the applications in the same way.

The e-mail address for UPN distribution is supplied in the same way.

4.6 ENTERPRISE LICENSE MANAGER ON WINDOWS 2008 AND WINDOWS 2008 R2

To be able to run ELM on Windows Server 2008 and Windows Server 2008 R2, IIS 6 compatibility has to be setup on the web server. To install the IIS 6.0 Management Compatibility Components, do the following:

1. Click Start, Administrative Tools, and then Server Manager.
2. In the left navigation pane, expand Roles.
3. Right-click Web Server (IIS) and select Add Role Services.
4. On the Select Role Services pane, scroll down to IIS 6 Management Compatibility.
5. Tick IIS 6 Metabase Compatibility and IIS 6 Management

Console, and click next.

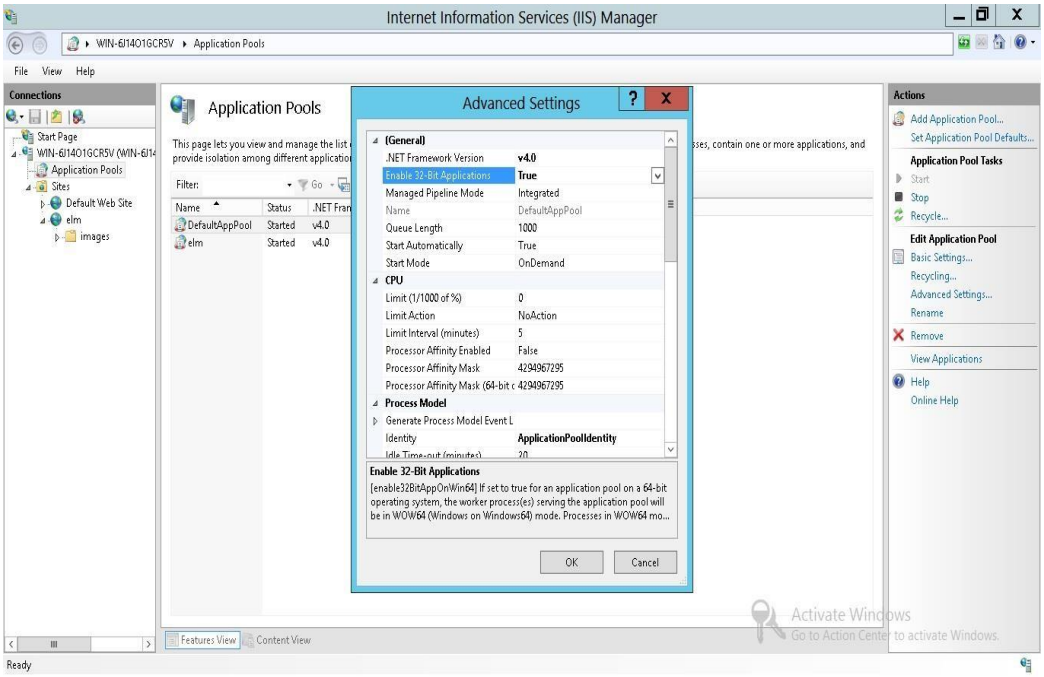
6. Click Install at the Confirm Installations Selections pane.
7. Click Close to leave the Add Role Services wizard.

Note 1: Add http://127.0.0.1/elm to trusted sites in browser to view the ELM menus.

Note 2: The same procedure needs to be followed on x64 Windows Server 2012.

4.7 TO ADD 32-BIT SUPPORT ON X64 SERVERS IN IIS

For 32-bit applications to work using IIS on x64 servers, support for 32-bit applications must be turned on, in IIS manager. A screenshot regarding this is provided below.



4.8 SUPPORT

For support, please contact your Mitel partner.

5 PRE-INSTALLATION

5.1 ABOUT PRE-INSTALLATION

Before installing TM Application Suite components, perform checks and preparations necessary for a smooth and successful completion. Specifically, make certain you perform the following:

1. Conduct a pre-installation meeting with the customer.
2. Verify that all PC hardware requirements have been addressed.
3. Verify that all software requirements have been addressed.
4. Verify that all MiVoice MX-ONE Service Node requirements have been addressed.

5.1.1 PRE-INSTALLATION MEETING

You can avoid many common TM installation problems by including at least one pre-installation meeting in your preparations. Use this meeting to coordinate your plans with the customer well in advance of the actual installation. The following manuals could be useful for Installation.

Windows System Guide

MiVoice MX-ONE Customer Library

SQL Server Books Online (BOL)

5.1.1.1 Addressing Important Issues

Try to cover all the major issues involved in the installation process. Don't make presumptions about issues that may seem "obvious." For example:

Who is responsible for arrangements and preparation of the computer network (IT Dept. or the customer)?

5.1.1.2 Pre-installation Checklist

Mitel provides a Pre-Installation Checklist to help with installation planning. Use this checklist to identify and verify the all-responsible persons and essential TM components.

5.2 MX-ONE SERVICE NODE HARDWARE REQUIREMENTS

Each PC running Data Manager (DM) must be connected to the MX-ONE Service Node. DM utilizes connections from the PC’s over SSH towards the MX-ONE Service Node.

5.3 CONFIGURATION OPTIONS

TM Application Suite consists of flexible products that can be used in a wide range of configurations. For purposes of this help guide, however, the general configuration options are explained in the following table.

CONFIGURATION OPTIONS	EXPLANATION
Network vs. stand-alone	In a network installation, TM applications are spread across multiple PCs. One PC (the server) includes the SQL database server and TM Server software. One or more other PCs (clients) are connected to the server and are used to run the applications. If desired, the server can also be set up as a client that runs applications. In a stand-alone installation, the SQL database server, TM Server software, and TM client applications are all installed on a single PC, and there are no connected PCs used to run applications. The stand-

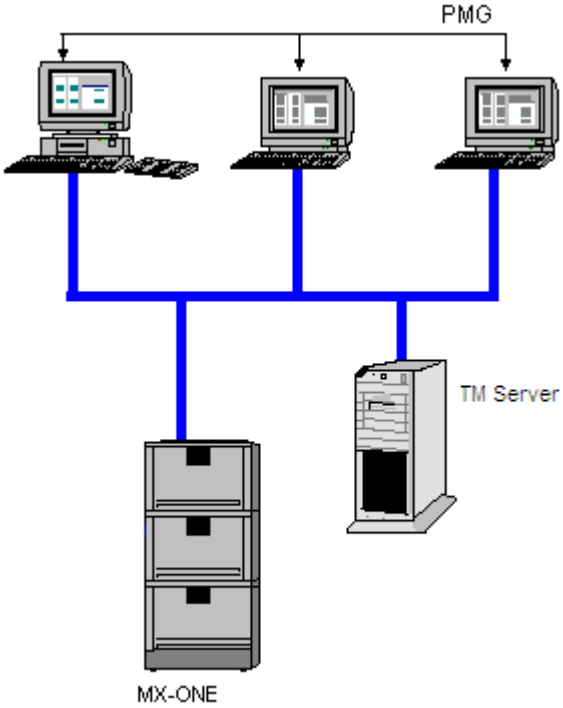
CONFIGURATION OPTIONS	EXPLANATION
	alone PC is set up as both the server and the client for all applications.
Single node vs. multi-node	Each TM installation can support one node or multiple nodes. Both network and stand-alone installations can be set up as single node or multi-node.

5.3.1 STAND ALONE

The stand-alone PC contains Microsoft Windows (Windows 2008 Server or Windows 2012 Server), the TM Server.

5.3.2 SINGLE SERVER WITH CLIENTS

This configuration represents a single TM Server with three clients. The clients are running Performance Manager.



The TM Server contains Microsoft Windows (Windows 2008 Server or Windows 2012 Server), Microsoft SQL Server, and the TM Server application. The TM Server and the MX-ONE are connected via the LAN and TCP/IP... All communication towards the MX-ONE is done through the clients.

The Performance Manager Clients communicate with the MX-ONE Service Node via the same physical interface Performance Manager to set up measurements in the MX-ONE Service Node. Updates of the Performance Manager Database are transferred from the MX-ONE Service Node to the Client and from there to the server database.

5.4 PC HARDWARE REQUIREMENTS

This section lists basic hardware requirements for TM server and client PC installations of up to 500 extensions.

5.4.1 SERVER

Each PC that will be configured as a TM server should meet the following requirements. For larger installations, more memory and faster CPU may be required for satisfactory operation (dependent upon specific TM installation).

COMPONENT	MINIMUM REQUIREMENT
PC/CPU	Pentium IV, 2.4 GHz (or better)
Memory	512 Mbytes RAM
Operating System	Windows 2008 Server or Windows 2012 Server
Monitor and Card	1024 x 768 monitor and video card resolution
Mouse	Microsoft-compatible two-button mouse.
CD-ROM	Required for server PC only.

Specific Requirements

COMPONENT	MINIMUM REQUIREMENT	
Platform	Database size: 20 Mbytes.	
Performance Manager	Primary database size:	9 Mbytes/month + 19 Mbytes (for 20 measurements).
	Auxiliary database size:	9 Mbytes/month + 10 Mbytes (for 20 measurements).
	Archive files:	4 Mbytes/month.

5.4.2 CLIENT PC

Each PC that will be configured as a TM client should meet the following requirements.

COMPONENT	MINIMUM REQUIREMENT
PC/CPU	Pentium IV, 800 MHz (or better)
Memory	512 Mbytes RAM (or better)
Operating System	Windows XP Professional, Vista or Windows 7 or Windows 8
Monitor and Card	1024 x 768 monitor and video card resolution
Mouse	Microsoft-compatible two-button mouse.
CD-ROM	N/A – Required for server PC only.

Specific requirements

COMPONENT	MINIMUM REQUIREMENT
Platform	No specific requirements

5.4.3 SERVER PC – WINDOWS SERVER 2008 OR WINDOWS SERVER 2012

This section lists system requirements for Server PCs running Windows Server 2008 or Windows Server 2012.

Recommended System Requirements

COMPONENT	MINIMUM REQUIREMENT
PC/CPU	Pentium IV, 1 GHz (or better), 32-bit (x86) or 64-bit (x64) processor
Memory	1 GB RAM (or better)
Operating System	Windows Server 2008 or Windows Server 2012 (32-bit and 64-bit)
Hard Disk	40 GB hard drive with at least 15 GB of available space
Monitor and Card	1024 x 768 monitor and video card resolution
Mouse	Microsoft-compatible two-button mouse.
DVD-ROM	N/A – Required for server PC only.

5.4.4 CLIENT PC – WINDOWS VISTA BUSINESS OR WINDOWS 7 OR WINDOWS 8

This section lists system requirements for client PCs.

Recommended System Requirements

COMPONENT	MINIMUM REQUIREMENT
PC/CPU	Pentium IV, 1 GHz (or better), 32-bit (x86) or 64-bit (x64) processor
Memory	1 GB RAM (or better)
Operating System	Windows Vista Business or Windows 7 or Windows 8(32-bit and 64-bit)
Hard Disk	40 GB hard drive with at least 15 GB of available space
Monitor and Card	1024 x 768 monitor and video card resolution
Mouse	Microsoft-compatible two-button mouse.
DVD-ROM	N/A – Required for server PC only.

Specific Requirements

COMPONENT	MINIMUM REQUIREMENT
Platform	No specific requirements.

5.5 HARD DISK REQUIREMENTS

When estimating hard disk storage requirements, always allow for the storage requirements of all applications, data, and support files that will reside on the hard disk. The following tables list server and client PC disk space requirements for individual TM applications.

Note! You must have 100 MB free disk space on each server or client PC in order to run the TM installation program.

5.5.1 RECOMMENDATION

For the best reliability, Mitel recommends that you use the Windows NT File System (NTFS). If you are supporting a large system requiring data redundancy, you may use any of Windows' RAID software implementations. However, if you choose to employ a hardware RAID solution, make sure it is on the Windows hardware compatibility list (HCL).

5.6 SERVER DISK SPACE REQUIREMENTS

The following table lists server PC disk space requirements for individual TM applications.

Note! You must have 100 MB free disk space on each server or client PC in order to run the TM installation program.

APPLICATION	EXECUTABLE	SQL DATABASE	CACHING FOR GUI EXECUTION	
MTM Server executable size	60 MB for executable files 200 MB for client installation and other files	MTMCOMMONDAT 4 MB MTMCOMMONLOG 2 MB MTMDFDAT 2 MB MTMDFLOG 10 MB SECUDAT 4 MB SECULOG 2 MB XDAT - 4 MB XLOG - 4 MB		
Performance Manager	5.5 MB	For minimum 20 measurements: DMDAT - 10 MB + 9 MB x (primary month + auxiliary month) DMLOG - 21 MB (if auxiliary is used) or 11 MB (if auxiliary is not used) + 9 MB x (primary month + auxiliary month) Database device size will be increased based on the number of Active Measurements (e.g., 30-40 = base size x 2) 50-60 = base size x 3	1 MB/1000 subscribers	Archive files - 4 MB per node per month Logs - 2 MB per node

Note! MPS Server: Assume that MDS is used not more than 15 days per month and the following month the log file is overwritten.

5.7 CLIENT DISK SPACE REQUIREMENTS

The following table lists client PC disk space requirements for individual TM applications.

Note! You must have 100 MB free disk space on each server or client PC in order to run the TM 1.0 installation program.

APPLICATION	EXECUTABLE	SQL DATABASE	CACHING FOR GUI EXECUTION		
			LOCAL DB	**MEMORY MAP FILES**	**LOG FILES**
TM Server	(EXE – 24.5 MB) (installation files - 18 MB)	N/A*	N/A	N/A	N/A

APPLICATION	EXECUTABLE	SQL DATABASE	CACHING FOR GUI EXECUTION	
Performance Manager	5.5 MB	N/A	1 MB/1000 subscribers	2 MB per node

*N/A = does not apply

5.8 SOFTWARE REQUIREMENTS

5.8.1 WINDOWS

The following are supported:

- Windows Server 2008 Service Pack 2
- Windows Server 2012 Service Pack 1 or later
- Windows XP Professional with Service Pack 3 and Windows Vista Business with Service Pack 2 and Windows 7 Service Pack 1, Windows 8
- Office 2007 Service Pack 2, or later
- Office 2010 Service Pack 1, or later
- Microsoft SQL Server 2008 and Microsoft SQL Server 2008 Express Edition, Microsoft SQL Server 2012 and Microsoft SQL Server 2012 Express

Note! You must have 100 MB free disk space on each server or client PC in order to run the TM installation program.

5.8.2 SQL SERVER

TM applications use Microsoft SQL Server 2008 or Microsoft SQL Server 2008 Express Edition, Microsoft SQL Server 2012 or Microsoft SQL Server 2012 Express Edition. If a database application does not exist on the server, the TM application suite installation program prompts you to choose between Microsoft SQL Server 2008/2012 for General Latin.

Note! TM 1.4 does not support SQL Server 2000 edition.

5.8.3 EXCEL

If you are installing Presentation Manager, then Excel 2007 or with SP2 or later or Excel 2010 or later must be installed on each PC where Presentation Manager will be installed. Refer to the Microsoft Excel documentation for installation instructions.

5.8.4 .NET FRAMEWORK

For TM 1.4 to function, .Net Framework 2.0 or 3.5 SP1 needs to be installed.

- For Server OS, the framework can be installed from Add Roles and Features in Server Manager.
- For Client OS, the framework needs to be installed from OS installation disk, by following steps
  1. Open Command Prompt (with Administrator rights)
  2. Run the following command "dism.exe /online /enable-feature /featurename:NetFX3 /Source:D:\sources\sxs /LimitAccess", where D: indicates the CD/DVD drive with OS disk.
  3. Wait till the installation completes.

5.9 CONFIGURATION MANAGEMENT HARDWARE CONNECTIONS

The TM Application Suite contains the following configuration Management applications.

MX-ONE Support

Data Manager

Each server or client PC running a configuration management application communicates with an MX-ONE via Ethernet connection on the client PC and Ethernet connection in the MX-ONE. These connections can be shared with other applications connecting to the MX-ONE.

6 SQL INSTALLATION

6.1 SQL SERVER 2008

Before installing SQL Server 2008, we recommend that you review the "ReadmeSQL2008.htm" and "RequirementsSQL2008.htm" sections prior to installing this release.

Note! When installing SQL Server 2008 for the TM Application Suite, it is recommended you do the Custom installation and select Dictionary Order, case-sensitive for the Sort Order.

When installing SQL Server 2008 from a network drive, do not use a Universal Naming Convention (UNC) file path such as:

- \\<Servername>\Servers\ setup.exe

Instead, map a drive to the appropriate location and run the Setup program from the drive letter, for example:

- F:\Servers\setup.exe

6.1.1 TO INSTALL SQL SERVER 2008

1. Use Setup.exe to install SQL Server 2008 from a network drive or CD-ROM.
2. If Microsoft SQL Server 2008 installation is started on a Windows 2008 Server, make sure to first install Windows Installer 4.5. The setup will be available at “F:\ Servers\redist\Windows Installer\”, where F:\ is a network mapped drive or a CD-Drive.
3. When Microsoft SQL Server 2008 setup starts up, it will detect if the pre-requisites are installed. If not installed, setup will install the pre-requisites, such as .NET Framework 3.5 SP1, Windows Installer 4.5 and PowerShell.
4. From the autorun dialog, click Run the SQL Server Installation Wizard.
5. On the End User License Agreement page, read the license agreement, and then select the check box to accept the licensing terms and conditions. Accepting the license agreement activates the Next button. To continue, click Next. To end Setup, click Cancel.
6. On the SQL Server Component Update page, Setup installs software required for SQL Server 2008. For more information about component requirements, click the Help button at the bottom of the page. To begin the component update process, click Install. To continue after the update completes, click Finish.
7. On the Welcome page of the SQL Server Installation Wizard, click Next to continue.
8. On the System Configuration Check (SCC) page, the installation computer is scanned for conditions that may block Setup. For information about configuration check items, click Help at the bottom of the page or see Check Parameters for the System Configuration Checker.
9. On the Registration Information page, enter information in the Name and Company text boxes. To continue, click Next.
10. On the Components to Install page, select the components for your installation. A description for each component group appears in the Components to be Installed pane when you select it. To install individual components, click Advanced. Otherwise, click Next to continue.
11. Note: When installing SQL Server 2008 or SQL Server 2008 Express Edition for the TM Application Suite, you must have the SQL Server Database Services component installed.
12. If you clicked Advanced on the previous page, the Feature Selection page is displayed. On the Feature Selection page, select the program features to install using the drop-down boxes. To install components to a custom directory, select the feature and then click Browse.
13. On the Instance Name page, select a default instance for your installation.

14. On the Services Accounts screen, select the Use the Local System account option and click Next >.
15. On the Authentication Mode page, choose the authentication mode as “Mixed Mode”. Enter and confirm a strong password for the sa login. To proceed, click Next.
16. On the Collation screen, select SQL Collations and select Dictionary order, case-sensitive from the Sort Order drop-down list and click Next >.
17. Click Next > on the Ready to Install Dialog to proceed to the Setup Process dialog.
18. When the installation completes, click Exit on the Microsoft SQL Server options page.

6.1.2 UPGRADING TO SQL SERVER 2008

Upgrading from Microsoft® SQL Server™ version 2005 to Microsoft SQL Server 2008 is one of the basic choices offered by the SQL Server 2008 setup. Upgrade is possible when SQL 2008 is applied over SQL Server 2005.

6.1.3 SECURITY

For security reasons, you should change the default sa Login ID and blank password of MS SQL Server.

1. In the Service Manager window, open the registered TM Server’s tree and the Logins tree.
2. Double-click on sa to open the Manage Logins dialog box.
3. Change the Login Name and Password and click Modify.

Note! After changing the "sa" password, also change your "Login ID Password" for the registered

TM Server in SQL Enterprise Manager. You can do this by right-clicking the Server Name.

6.1.4 MEMORY

SQL Server 2008 is configured dynamically. However, memory should be limited to ½ for SQL Server use.

To set a maximum value for memory (Enterprise Manager)

1. Expand a server group.
2. Right-click a server.
3. Click Properties.
4. Click the Memory tab.
5. In the memory box, select maximum size (MB), and slide it to the desired position.

Note! Same procedure needs to be followed for SQL Server 2012.

6.2 DEPENDENT PACKAGES FOR SQL 2008

Dot Net 3.5 SP1

The Dot Net 3.5 SP1 package is available in the Installation package under the path \TM\DBEngineInstall\SQLExpress2008

Windows Installer 4.5

Windows Installer 4.5 Package needs to be downloaded from Microsoft site if SQL 2008 Express edition is used. If SQL 2008 Standard/Enterprise edition is used, the SQL installation package will install the Installer. In case of SQL 2008 Express edition, Windows Installer 4.5 needs to be installed manually.

Power Shell

PowerShell for Windows 2003 Server needs to be downloaded from Microsoft site, if SQL 2008 Express edition is selected. In case of SQL 2008 Standard/Enterprise edition the Installation SQL installation package will install Powershell package will install the package.

In case of Windows 2008 Server Powershell need to be configured using Server Manager under features.

6.3 CHANGE SQL SA PASSWORD

For security reasons, you should never have a blank password for the sa login. If you install SQL Server 2008 or Express 2008, SQL Server 2012 or Express 2012 through TM 1.4 installation, a hard-coded password “Mitel123” is assigned to the sa login. You should change this password at your earliest opportunity. If SQL Server is already installed and blank password is used, you should change it.

If 2008/2012 is used you can use SQL Server Management Studio to change the password.

6.4 INSTALL SQL SERVER SERVICE PACK

Note! Service Packs for SQL 2008 or 2012 can be applied if needed.

7 TM INSTALLATION

7.1 ABOUT INSTALLATION

Before installing TM application software, be sure all PCs and MX-ONE Service Node nodes are set up as described in Hardware Requirements. Software installation for most TM applications is separated into server installation and client installation.

7.1.1 HARDWARE CONNECTIONS

You must perform or verify installation of all necessary communications and signaling connections before proceeding to software installation.

7.1.2 SOFTWARE INSTALLATION

Server Installation. For a TM Server installation, all server software is installed on one PC, and the client software is then installed on one or more PCs connected to the server.

Client Installation. Client software can be installed from a network TM Server or directly from TM software CD-ROM inserted in the client PC's CD-ROM drive.

7.2 INSTALLATION CHECKLISTS

This section provides checklists for TM server and client workstation installation. Use these checklists to assist in installing TM Application Suite Version components.

7.2.1 USING THE CHECKLISTS

These checklists help insure that important installation issues are not overlooked. Perform the steps listed in each checklist and check off each item as you proceed through each TM component installation. For future reference, leave copies of these records with the customer and with the responsible Mitel Customer Services location.

7.2.1.1 For More Information

For more information, see the user documentation delivered with the individual TM products.

7.2.1.2 Submit Your Comments

Send comments and remarks about TM installation checklists and other Technical Guide issues to the Mitel Global Technical Support.

7.2.1.3 Pre-installation Checklist

Use this pre-installation checklist to verify and identify all hardware and software components before beginning the installation process.

7.2.1.4 *Installation Profile*

List the customer identity along with all software and hardware components to be included in this installation.

Customer: _____

Responsible Contact: _____

Hardware Server: _____

_____

_____

Software TM: _____

Software MiVoice MX-ONE Service Node:

_____

Number of client PC's: _____

Installation Eng. TM: _____

Installation Date: _____

7.2.1.5 *Installation Component Verification*

☐ Windows Server 2008, Standard, Datacenter or Enterprise version or Windows Server 2012 Standard

☐ Windows XP Professional + SP 3 **-or-** Windows Vista Business + SP 2 or Windows 7 Service Pack 1 or Windows 8

☐ Windows SQL Server 2008

☐ Windows SQL Server 2008 Express

☐ Windows SQL Server 2012

☐ Windows SQL Server 2012 Express

Date: _____

Note! Microsoft SQL Server can be installed by TM Installation.

7.2.1.6 *Installation Product Identification*

Product ID Windows Server _____

Product ID Windows Workstation: _____,_____,

_____,_____,

_____,_____,

Product ID SQL SERVER: _____,

Product ID (TM Server): _____,

Product ID Performance Manager:_____,

Windows is a trademark™ of Microsoft Corporation.

7.3 APPLICATION SUITE INSTALLATION

This section helps you to prepare for the decisions and responses required during the installation process. You will encounter a different prompts and dialog boxes depending on whether yours is a new installation, a re-installation, a server installation, or a client installation.

You can install TM applications on a client PC or server. When you install the TM applications, you may include just the components you want, ranging from a minimal configuration to the entire suite of TM applications. The full installation installs all TM components.

MX-ONE TM runs on the following Microsoft Windows operating systems.

Windows XP Professional

Windows Vista Business

Windows 7

Windows 8

Windows Server 2008, Standard, or Enterprise

Windows Server 2012, Standard, or Enterprise

7.3.1 PRE-CONFIGURED SYSTEM

You can use a pre-configured installation file (*MTM.cfg*) to retrieve system information and make the installation automatic. The *MTM.cfg* file contains default settings for pre-configured information that you can edit for your installation. The installation program prompts you for the location and file name. In addition, the installation program validates the pre-configured information file to make sure all required information is defined correctly.

7.3.1.1 User Names and Privileges

There are two types of users that can be defined in the pre-configuration information file:

Administrator Account — All applications with pre-defined (highest privilege) privileges are assigned.

Regular User Account — The desired application with associated pre-defined privilege (highest privilege) will be assigned.

7.3.1.2 MX-ONE Communications

Node Information — All information associated with a node can be defined. For example, Node name, MX-ONE release, MX-ONE password, MX-ONE username.

Communication with MX-ONE — Your choice of communication with the MX-ONE can be defined. The Registry settings are loaded to the client system for all installed applications that requires the MX-ONE interface, such as MX-ONE Support, and DM.

7.3.1.3 MX-ONE Data Synchronization

1. Launch the **Programs→MX-ONE Traffic Manager→Administrative Tools →MX-ONE Support** Utility with the newly created user name and Password.
2. Under **Synchronization** Menu you will be able to find **Node Setup** Dialog heading
3. Click on it and Enter the Proper values in Node Number, MX-ONE Release Version Corresponding to Your MX-ONE Service Node, Connection Type(SSH), name (For easy identification),username and Password in order to Connect with MX-ONE Service Node,
4. Enter the IP Address of the Exchange that we want to Configure with our MX-ONE Support Utility in Host name Or IP Address Text box.
5. Click on so that IP Address can be added to Hostnames List Box.
6. Click On Apply and Close.

12. Now Under the **Application** Menu, Click on **Communications..** Corresponding to **Node** Drop down List matches the correct **Connection Type** and adds it to the List by clicking on **Define List.**

13. Now From the **Application→Connect (or)** Through Control bar Drop Down List connect to the MX-ONE Service Node that we previously Configured in Node Setup Dialog Box **.**

14. Synchronize the Node with MX-ONE Support utility so that Local M.T.M Server Database is populated with MX-ONE Service Node's data (Extensions (Here Only *Analog and Digital Extensions* details), Groups, Routes and Trunks etc.)

7.3.2 TRANSFERRING TM FROM ONE COMPUTER TO ANOTHER

If your existing TM installation is running on an older hardware platform there might be a need to transfer the complete system from one computer to another.

7.3.2.1 Install the new TM 1.x system

Next, install a new TM 1.x system on your new machine. Use SQL Server 2008, or Windows 2008, but install with the same number of extensions, sites and extensions per site as the old system. Also set the PMG database settings identical to the old system.

Note! After the TM Server has been installed, a full MX-ONE Service Node synchronization is required.

7.3.2.2 Install TM clients

Do not forget to load any available service packs or hot fixes for Windows, SQL Server or TM When done, test the applications on the server computer and finally install the clients.

7.3.3 INSTALLING ENTERPRISE LICENSE SERVER

The "Enterprise License Server" is used for TM 1.4. Application Suite Server installation will launch the Enterprise License Server if an older version of TM is detected.

7.3.3.1 Enterprise License Server Installation Wizard

This table lists the screens and prompts displayed when you perform an upgrade.

WIZARD SCREEN AND OPTIONS	EXPLANATION
Enterprise License Manager Installation Welcome	TM Application Suite installation launches Enterprise License Manager installation. Click Next > to continue.
Choose License Server Auto-discover license server(s) Manually specify a host Install license server locally	Choose your license server host among three options. Choose Auto-discover to list all the Enterprise license servers in your network. You can also specify the host that contains a license server and also define the port number. The third choice is to install license server on the local machine.
Auto-discovering license servers	This screen is displayed when Auto-discover is selected. All the hosts on the network that contain the license server will be displayed. The server with permanent license will be list first.

7.4 SERVER INSTALLATION

TM application setup recommends which applications to install and where to install them

The TM Server installation process installs the TM operating platform, all applications, and all administrative tools on your Windows Server PC. Windows Workstation client PCs may then connect to this server to install TM applications and support utilities.

7.4.1 AUTO-RUN INSTALLATION

Insert the TM CD in the CD-ROM drive. If supported by your PC, auto-run will activate the installation program and you will be presented with the following auto-run options:

- Install Application Suite
- Exit

7.4.2 TASKBAR INSTALLATION

Use this procedure to install from the CD-ROM on a PC that does not support auto-run.

1. Insert the installation CD.
2. Click **Start**, **Run** on the Windows taskbar.
3. Type the network path to the desired setup program (for example, installing from CD, type: **d:\MTM\setup.exe**. Alternatively, use the **Browse** button to browse to the appropriate *setup.exe* program file.
4. Click the **Server** installation option button and follow the instructions from the installation wizard.

Server Installation Wizard

This table lists the screens and prompts displayed when you perform a new installation.

WIZARD SCREEN AND OPTIONS	EXPLANATION
Welcome	Overview of what the installation will accomplish instructions for closing other applications, copyright warnings.
Installation Type ◉ Server ○ Client	Choose whether the PC you are setting up will be a TM Server or Client. The server installation creates a \\MTM_s directory containing selected applications. The client installation places selected applications in a \\MTM_c directory and assigns the connected server as the local server.
Database Server Language Collation ◉ General Latin ○ Simplified Chinese	This screen is displayed only when SQL Server is not installed.
Database Application Selection ◉ SQL Server 2008 Express (32-bit) ○ SQL Server 2008 Express ○ SQL Server 2012 Express (32-bit) ○ SQL Server 2012 Express	If installation cannot detect a database engine and General Latin was selected on the Database Server Language Collation screen, this page is displayed. You must have licensed SQL Server if you choose the Microsoft SQL Server option. Microsoft SQL Server 2008 Express Edition is provided by the TM Installation.
Database Application Selection ◉ SQL Server 2008 Express (32-bit) ○ SQL Server 2008 Express	This page is displayed when the installation cannot detect SQL Server and Windows Server version or Simplified Chinese was selected on the Database Server Language Collation screen.

WIZARD SCREEN AND OPTIONS	EXPLANATION
SQL Server 2012 Express (32-bit) SQL Server 2012 Express	You must have a licensed SQL Server if you choose the Microsoft SQL Server option. Microsoft SQL Server 2008/2012 Express Edition is provided by the TM Installation.
Database Application Installation Configuration Destination Path Installation Files Configuration FileCD Key	 Enter or browse for the destination of SQL Server files. Enter or Browse for the location of the SQL Server setup files. Enter the location of the SQL Server configuration file. The TM Installation displays the default configuration file provided by the installation package. Enter the SQL Server CD Key if required.
User Information	Enter your name and company.
Registration Confirmation	Click Yes if the registration is correct.
Database Application Administrator Password	Enter a password for the Database Administrator (sa) account if desired.
Nodes and Extensions for Database Number of Nodes (drop-down list) Total Number of Extensions (drop-down list)	Select from 1-256 nodes and 500 to 200,000 extensions for your network. This information is used to determine the amount of disk space needed for the installation. You may change these options. (Note: In this case Extension means only Analog and Digital Extensions)
Extension Per Node	Click the Change button to change the number of extensions for a selected node. (Note: In this case Extension means only Analog and Digital Extensions)
Performance Manager Databases Setup	Allows you to choose database sizes for primary and auxiliary databases, and for storing active measurements.
Choose Destination Location	Click Next > to accept the default folder for your installation, or click the Browse button to select another.
Data Files and Log Files Locations	Accept or choose locations for TM SQL database components. Use this screen to change the location of Log and Data files if desired.
RDS Scheduled Jobs	Select or unselect tasks that will be scheduled for automated execution after the installation completes.
Start Copying Files	Review a comprehensive summary of your installation choices. Click Next > to begin the installation process based on your choices. Click Back to change your selections before proceeding. Click Cancel to abort the installation.
Enterprise License Manager Installation Welcome	TM Application Suite installation launches Enterprise License Manager installation. Click Next > to continue.

WIZARD SCREEN AND OPTIONS	EXPLANATION
Choose License Server Auto-discover license server(s) Manually specify a host Install license server locally	Choose your license server host among three options. Choose Auto-discover to list all the Enterprise license servers in your network. You can also specify the host that contains a license server and also define the port number. The third choice is to install license server on the local machine.
Auto-discovering license servers	This screen is displayed when Auto-discover is selected. All hosts on the network that contain the license server will be displayed. The server with permanent license will be listed first.
Summary Installations	After the installation has finished, this screen displays a list of the TM components installed. It also displays any problems encountered during the installation.
Setup Complete	Choose Yes, I want to restart my computer now to restart your PC and complete the installation process. Choose No, I will restart my computer later to close the installation program and restart the PC later.

7.4.3 INSTALLATION OPTIONS

At any time after TM server software has been installed, you may use the Auto-Run or Taskbar installation methods to add, re-configure, and remove components using the following options.

OPTION	EXPLANATION
Add Components	Allows you to add TM components not already installed.
Reinstall	Allows you to repeat the last installation to restore missing or corrupted files.
Remove All	Deletes all installed TM components. (You may also perform this task using Add/Remove Programs from the Windows Control Panel.) Note: TM uninstallation will not remove the databases, we have to delete them manually.
Resize Database	Allows you to change the number of nodes, extensions, and other capacity parameters for the existing installation.

7.4.4 ADD COMPONENTS

On the TM Setup dialog box, select **Add Components**. You will encounter the following dialog boxes when adding TM components to an existing installation.

Select Components – Lists components available to be added.

Database Application Administrator Password

Data Files and Log Device Locations

Start Copying Files

Summary Installations

Setup Complete – Setup program has performed the requested upsizing tasks.

Click **Finish**. The system will now restart to complete the installation.

7.4.5 RESIZE DATABASE

You will encounter the following dialog boxes when resizing TM components in an existing installation. On the TM Setup dialog box, select **Resize Database**.

Nodes and Extensions for Database

Upsizing Components – Lists components eligible for upsizing.

Upsizing Extension Per Node – Allows you to change node and extension quantities.

Upsizing [Application ...Setup]

SQL Administrator Password

Start Copying Files

Summary Installations

Setup Complete – Setup program has performed the requested upsizing tasks.

Click Finish.

7.5 CLIENT INSTALLATION

The latest TM installation application improves the installation process. It now recommends which applications to install and where to install them.

Note! If you are installing an instance of TM Client on Windows XP, refer to **TM Client Installation on Windows XP**.

7.5.1 AUTO-RUN INSTALLATION

Use this procedure to install from CD-ROM on a PC that supports auto-run.

Insert the TM CD in the CD-ROM drive. If supported by your PC, auto-run will activate the installation program and you will be presented with the following auto-run options:

- Install Application Suite
- View Technical Guide
- View Release Notes
- Exit
- Select Install Application Suite.
- Click the Client installation option button and follow the instructions from the installation wizard.

7.5.2 TASKBAR INSTALLATION

Use this procedure to install from the network, or from CD-ROM on a PC that does not support auto-run.

1. If you are installing from a network location, connect to it. If you are installing from CD-ROM, insert the installation CD.
2. Click Start, Run on the Windows taskbar.
3. Type the network path to the desired setup program (for example, installing from CD, type: d:\MTM\setup.exe; installing from network, type: d:\MTM_s\mrs\InstallationFiles\ClientInstallation\setup.exe). Alternatively, use the Browse button to browse to the appropriate setup.exe program file.
4. Click the Client installation option button and follow the instructions from the installation wizard.

7.5.3 NEW CLIENT INSTALLATION

Client Installation Wizard

This table lists the Screens and prompts displayed when you perform a new installation.

WIZARD SCREENS AND OPTIONS	EXPLANATION
Welcome	Overview of what the installation will accomplish, instructions for closing other applications, copyright warnings.
Installation Type ◉ **Server** ○ **Client**	This screen is displayed when you install from the CD. Choose whether the PC you are setting up will be a TM Server or Client. The client installation places selected applications in a \\MTM_c directory and assigns the connected server as the local server.
User Information	Enter your name and company.
Registration Confirmation	Click Yes if the registration is correct.
TM Server Name	This screen is displayed when installing from a CD. Enter the network name of the TM server you wish to use as your installation source. Be sure to select a server that contains the same version of TM you are installing and all the components you need to install.
Choose Destination Location	Click **Next >** to accept the default folder for your installation, or click the **Browse** button to select another.
Start Copying Files	Review a comprehensive summary of your installation choices. Click **Next >** to begin the installation process based on your choices. Click Back to change your selections before proceeding. Click **Cancel** to abort the installation.
Summary Installations	After the installation has finished, this screen displays a list of the TM components installed. It also displays any errors encountered during the installation.

7.5.4 CLIENT INSTALLATION OPTIONS

At any time after TM client software has been installed, you may use the Auto-Run or Taskbar installation methods to add, re-configure, and remove components using the following options.

Note! You must perform these operations using the TM server that was the source for the original installation. To change to a different server, you must first un-install all TM software and repeat the installation using the new server.

OPTION	EXPLANATION
Add Components	Allow you to add TM components not already installed.
Reinstall	Repeats the latest installation to restore missing files and / or settings.
Remove All	Deletes all installed TM components. (You may also perform this task using Add/Remove Programs from the Windows Control Panel.)

7.5.5 MODIFYING THE SETUP (MTMSUITE.INI) FILE

As a starting point, use the *MTMsuite.ini* file (located in the same installation directory as *setup.exe*) that comes with the TM installation software. Copy and carefully modify this file for your needs. DO NOT delete any parts of this file, since all existing statements are used during the installation process. Make the following changes to the temporary installation file.

MTMSUITE.INI	STATEMENT	NOTES
[SETUP]	InstallClientPath=	Type a destination path for the installed files on the client PC, or leave blank to accept the default location (**c:\MTM_c**).
	ServerName=	Type the name of your local server. If left blank, the install program will prompt the user for a response. This is a required parameter.
	LaunchEXE=ADO\MDAC_TYP.EXE, /Q, /C:"setup /QNT",WAIT	You must include the '/Q' switch to run ADO in quiet mode.
[PMG]	Install=1	Set to **1** to install, **2** to not install*

7.5.6 INSTALLATION PROCEDURE

At the client PC, the installer performs the following steps.

1. From the taskbar and click **Start**, **Programs**, **Command Prompt**. The Command Prompt window will be displayed.
2. To get command prompt help, type:
   `command SETUP /?`
3. At the client PC, use the following setup command to execute the file-driven installation (see details on SETUP command below).
   `SETUP.EXE silent ini=full path of MTMsuite.ini`

7.5.7 USING THE SETUP COMMAND

There are three versions of the setup command for silent installation. One each for: New Installation, Re-Install, and Add Components.

TYPE	SETUP COMMAND	NOTES
New Installation	SETUP.EXE silent ini=[full path of MTMsuite.ini]	You can only install components that have been installed on the connected TM Server.
Re-install	SETUP.EXE silent reinstall	Parameter ini=filename.ini is not needed. The setup will process using the current installed .ini file settings. You can only install components that have been installed on the connected TM Server.
Add Components	SETUP.EXE silent add ini=[full path of MTMsuite.ini]	Setup will add components that have been flagged Install=1 You can only add components that have been installed on the connected TM Server.

7.5.8 INSTALLING WITH AUTO-RUN

TM provides auto-run support for PCs that support that feature. The installation process is automatically started when you insert the software installation CD into an auto-run compatible PC. The system will display an installation panel containing the following auto-run options:

- Install Application Suite
- View Technical Guide
- View Release Notes
- Exit

Note! If you're using a virus-protection utility, disable it before you run the TM *Setup* program. Also, close the control panel and any open Windows applications.

OPTION	EXPLANATION
Reinstall	Allows you to repeat the last installation to restore missing or corrupted files.
Remove All	Deletes all installed PM Lite components. (You may also perform this task using Add/Remove Programs from the Windows Control Panel.)

7.5.9 INSTALLING WITH AUTO-RUN

TM provides auto-run support for PCs that support that feature. The installation process is automatically started when you insert the software installation CD into an auto-run compatible PC. The system displays an installation panel containing the following auto-run options:

- Install Application Suite
- View Technical Guide
- View Release Notes
- Exit

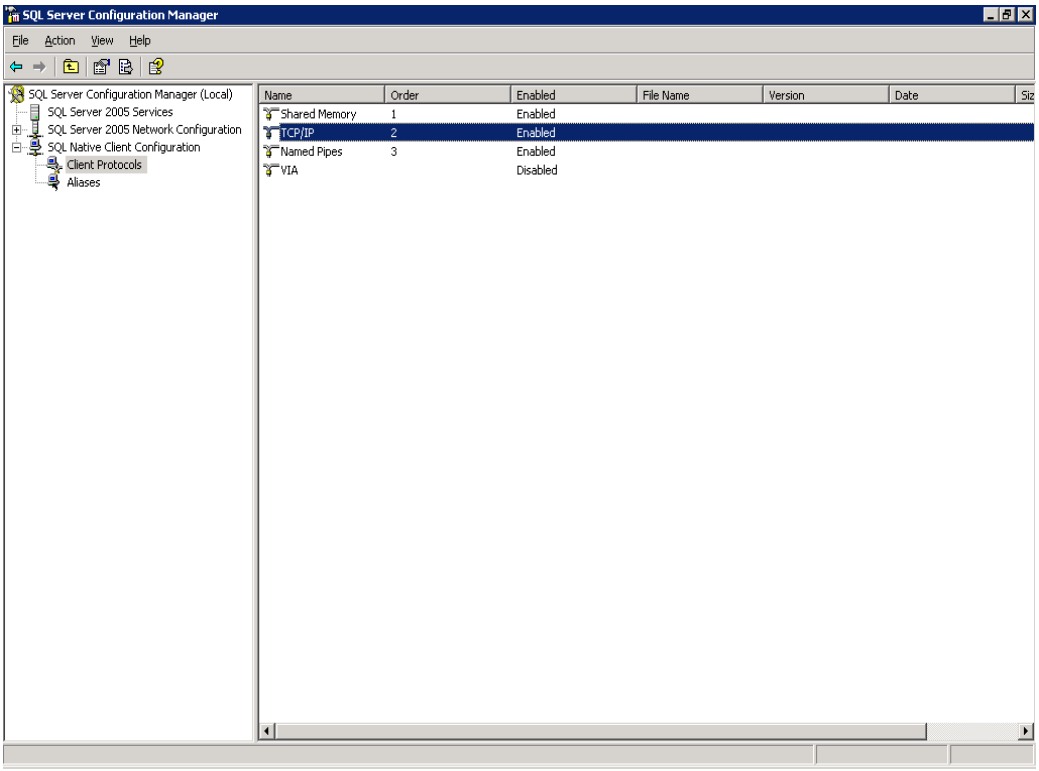
7.6 M.T.M CLIENT INSTALLATION ON WINDOWS XP

When installing M.T.M on a Windows XP client, the default read/write privilege is 'read only'. 'Write' privileges must be granted to users of the M.T.M applications for the MTM_C directory.

Only one language is supported during installation, after TM is successfully installed, these settings can be changed to handle multiple languages.

Note! If you are facing any problem with launching any TM application(s) in TM client systems, then please verify that TCP/IP and named Pipe connections are enabled in the TM Server Machine.

Please follow the screen dump.


SQL Server Configuration Manager
File
Action
View
Help
SQL Server Configuration Manager (Local)
SQL Server 2005 Services
SQL Server 2005 Network Configuration
SQL Native Client Configuration
Client Protocols
Aliases
Name
Order
Enabled
File Name
Version
Date
Shared Memory
1
Enabled
TCP/IP
2
Enabled
Named Pipes
3
Enabled
VIA
Disabled

8 TM SERVER

8.1 FACILITIES AND SERVICES

The TM Server is the security and support platform for the MX-ONE Traffic Manager (TM) applications. The TM Server provides the structural platform for flexible integration of TM applications. Major components include the Open Database Connectivity (ODBC) module, the Remote Data Server (RDS), the common SQL database, security administration, license management facilities, and a set of comprehensive application support utilities. The TM Server is a collection of secured facilities and services that provide support and software security for TM applications. Primary TM Server facilities and services include:

Security Data Server - The Security Data Server (SDS) provides high-level security in the form of licensing enforcement. SDS references encrypted licensing data to enforce authorized license limits. SDS also accesses data based on Logging Facilities Server requests.

Remote Data Server - Remote Data Server (RDS) is a TM service module that maintains continuous network database synchronization between MX-ONE Service Nodes, the TM SQL server, and all TM clients (LDB).

Logging Facilities Server - When you attempt to log-on to a TM application, the Logging Facilities Server (LFS) performs user authentication. LFS attempts to connect to SDS for on-demand access to TM SQL server security data. If the attempt fails, LFS connects to a local version of the database allowing essential security operations to proceed. When you attempt to access a remote data server (a server on a different network), LFS attempts to validate your access authorization at the remote server.

8.2 ADMINISTRATIVE TOOLS

Administrative tools installed with the TM Server platform and with individual applications support various system configuration operations. The TM installation process automatically installs these tools. The following table explains how these utilities are used.

TOOL	HOW IT IS USED	INSTALLED ON
RDS Configuration	Allows you to configure the Remote Data Server for TM database and application support roles, including network database synchronization between MX-ONE Service Nodes, the TM SQL Server, and TM Local Databases (LDBs).	Server
User Configuration	Provides controls for assigning and managing user descriptions and corresponding application access privileges.	Server
TM Server Configuration	Use this TM Server administrative tool to build and maintain a list of database servers accessible on the network.	Server
MX-ONE Support	The MX-ONE Support Utility allows you to perform initial MX-ONE Service Node configuration and data extraction for the TM Performance Manager and remaining applications.	Server and Client
LDS Configuration	Allows you to setup other local database servers from one that is already configured.	Server and Client

8.3 CHANGING USERS, SERVERS, AND PASSWORDS

As with TM applications, most TM Server utilities are protected by access security controls. Access facilities allow you to change logged users, change TM servers, and change your personal password.

8.3.1 TO CHANGE LOGGED USERS

1. Select Change Current User on the **Application** menu.
2. When the User Log On dialog box appears, type the new User Name and Password into the corresponding edit boxes. As you type the password, a string of asterisk characters (********) appears in the Password edit box, one asterisk for each character you type. Both the User Name and Password fields are case-sensitive, and you are allowed only a limited number of attempts.
3. Select a local or remote server from the TM Server drop-down list. The initial security authorization check and all subsequent validation actions are directed toward the server you select.
4. Click the OK button. If the user name and password are valid, the new user will be logged on to the application with the access authorizations permitted in their user profile. If the logon attempt fails, the Logging Facilities Server (LFS) restores the original user as the currently logged on user.

Note! We can run MX-ONE Support and Data Manager Applications in batch mode also. In order to do that, SYSTEM user should be created with empty password in User Configuration application.

8.3.1.1 To Change Logged TM Servers

1. Select Change Current User on the **Application** menu.
2. When the User Log On dialog box appears, type the new **User Name** and **Password** into the corresponding edit boxes. As you type the password, a string of asterisk characters (********) appears in the **Password** edit box, one asterisk for each character you type. Both the **User Name** and **Password** fields are case-sensitive, and you are allowed only a limited number of attempts.
3. Select a new local or remote server from the **TM Server** drop-down list.
4. Click the **OK** button. If the user name and password are valid, user authentication and all subsequent actions will be directed to the new server.

8.3.1.2 To Change Your Password

Your password is your personalized access code that, along with your User Name, TM uses for verifying your access authorization. Changing your password from time to time is a recommended security precaution that helps prevent unauthorized access.

1. Select **Change Password...** on the **Application** menu. The Change Password dialog box is displayed. A user password can be up to 20 characters in length, and is case-sensitive. The **Password Format** box explains minimum character requirements for defining passwords.

FIELD	EXPLANATION
Total Length:	Minimum number of characters required for a valid password.
Alphabetic:	From the Total Length, the minimum number of alphabetic characters required.
Numeric:	From the Total Length, the minimum number of numeric characters required.
Non-alphanumeric:	From the Total Length, the minimum number of non-alphabetic characters required. Example of non-alphanumeric characters are: -,&*# etc.

2. Enter your existing password into the **Old Password** edit box.
3. Enter your new password into the **New Password** edit box.
4. Again, enter your new password into the **Confirm New Password** field.
5. Check your entries and click the **Save** button.

8.4 REGISTRY

8.4.1 REGISTRY SETTINGS

The Windows Registry is a database repository for information about a computer's configuration. It is organized in a hierarchical structure of sub-trees and their keys, hives, and value entries. This section explains Registry settings that correspond to TM component properties not found in the GUI.

8.4.1.1 Scheduling a Task in the RDS Configuration Utility

Security settings on each machine are different. This causes scheduled tasks not to execute. In order to resolve this issue, RDS relies on a new registry key located below to determine how to start scheduled jobs.

```
HKLM\SOFTWARE\Ericsson\MRS\RemoteDS\Manage\UseSAForScheduledProcess
```

The default value of this registry key is 0, meaning new processes will not inherent the security attribute from its parent process. When the registry key value is set to 1, the new launched schedule tasks will inherent its parent process' security information.

The RDS service must be restarted after changing this registry key.

8.4.2 SERVER IDENTIFICATION

Use the TM Server Configuration Utility to build and maintain a list of available database servers. Mitel's MX-ONE Traffic Manager relies on uniquely identified servers for centralized database and application support services. TM applications and utilities accessing network servers through security services require user logon and server selection. The Server Configuration Utility allows you to specify names and other attributes for the servers appearing in the User Logon TM Servers selection list.

8.4.2.1 LDS Servers

After a TM Client machine has been removed, the list of LDS servers in the TM Server must be updated manually by deleting the following Registry keys and restarting RDS.

```
HKLM\SOFTWARE\Ericsson\MRS\RemoteDS\RDSClients\NumberOfLDSClients
```

```
HKLM\SOFTWARE\Ericsson\MRS\RemoteDS\RDSClients\LDS000x
```

RDS will rebuild these Registry keys with the correct number of LDS servers.

8.5 MAINTENANCE

8.5.1 SQL DATABASE

This section explains SQL database upsizing and maintenance procedures.

8.5.1.1 Database Upsizing

You can re-size TM database components to accommodate changes in the network. Use the Resize Database option.

1. Re-run the TM installation and choose the **Resize Database** button on the TM Setup dialog box.
2. Choose or enter new space requirements in the Nodes and Extensions for Database, Upsizing Extension Per Node, and Upsizing Performance manager Node Setup dialogs.
3. Respond to the remaining prompts and instructions from the installation wizard.

8.5.1.2 Tasks

You must schedule or perform maintenance tasks such as backing up databases and dumping transaction logs in support of SQL Server database operations. Refer to your SQL server documentation for information on managing these maintenance tasks.

8.5.1.3 Transaction Log

Note! Do not confuse the SQL transaction log with the TM Transaction Log. These resources serve two unrelated purposes.

8.5.1.4 The CleanDB Routine

To maintain efficient TM operation, run CleanDB. CleanDB is an RDS function that deletes unused User-defined Fields (UDFs) and keywords. This routine is performed on a nightly basis. You may reschedule CleanDB from the **RDS Schedules** tab. If you choose to do so, it is recommended that you schedule this task to be run at least once per day.

8.5.2 LOGGING FACILITIES SERVER

When you attempt to log-on to a TM application, the Logging Facilities Server (LFS) performs user authentication. LFS attempts to connect to SDS for on-demand access to TM SQL server security data. If the attempt fails, LFS connects to a local version of the database allowing essential security operations to proceed. When you attempt to access a remote data server (a server on a different network), LFS attempts to validate your access authorization at the remote server.

9 MAINTENANCE

9.1 ARCHIVAL BACKUP

DM creates one archive file for each MX-ONE Service Node that is written to the *MTM_S\Site**n**\Pmg\Archive* directory on the server PC (where ***n*** is the node number). Automatic or manual data extraction that exceeds the disk space configured for the primary TM server traffic measurement database causes the overflow to be extracted to archival flat files. For example, if TM traffic measurement disk space has been allocated for 3 months of data and you attempt to manually extract 6 months of data, the first 3 month's data will be placed in three separate monthly files, and the most recent 3 month's data are stored in the primary database.

Important! It is imperative that there be a minimum of 4 MB of disk space free for each node on the server disk where the *MTM_S* directory resides. To maintain available disk space, the archival files in the *Archive* subdirectory for each node should be periodically backed up to auxiliary storage and deleted from the server disk drive.

The archival files are used when setting up the auxiliary database, and all required files must be in the appropriate directory in order for it to be set up correctly. Therefore, when setting up the auxiliary database, you should restore any required files that were backed up and deleted from disk.

9.1.1 TEMPORARY WORKSPACE

DM uses local drives for temporary files to store data during data extraction and to display MX-ONE system information. There must be at least 2 MB of free space free on the disk drive where the TM directory is installed. Be sure to maintain this minimum of 2 MB of free space on the disk drive where the TM directory is installed.

9.2 AUTOMATIC EXTRACTION

Automatic data extraction refers to Performance Data Manager's downloading, translating, and transferring traffic measurement data to the TM database server on a daily basis. DM performs this task once each morning between 00:30 (or 30 minutes after midnight) and 06:00, based on a 24-hour time scale. The 00:30 time is the default setting and can be changed in the DM application. The polling period for database extraction extends to six hours by default from the configured start time. You can setup a Registry string to extend the polling time.

Note: DM makes three extraction attempts for each measurement site.

9.2.1 DATA MANAGER OPERATIONS

Since there may not be a corresponding DM release for each MX-ONE release, DM defaults to the latest available DM releases after receiving the MX-ONE identity.

9.2.2 TWO WAYS TO START THE EXTRACTION PROCESS

There are two ways to have data extraction process started automatically at a pre-defined time.

Leave DM running on PC. The data extraction process will start automatically at the pre-defined time.

Schedule DM via the Remote Data Server scheduler to start as a batch job. It must be scheduled prior to the pre-defined data extraction time. The data extraction process will then start automatically 30 minutes after the scheduled job is started by RDS. DM scheduling can be set during the installation procedure. This option is supported only on the TM Server.

9.2.3 CLOCK SYNCHRONIZATION

The MX-ONE midnight dump occurs at 11 minutes after midnight. The midnight dump signifies that dumping of the day's traffic measurement data to the HDU has been completed. The Performance Data Manager Extraction process is scheduled to run automatically at 00:30 (or 30 minutes after midnight). These time-related events require that the MX-ONE and PC clock to be synchronized with one another.

9.2.4 EXTRACTION PROCESS

The data extraction process includes Data Manager converting collected traffic measurement data from hexadecimal to decimal format and store the results in the TM database. DM is able to perform the extraction process for both local and remote TM database servers.

9.2.4.1 The First Extraction after PMG Installation

The first automatic data extraction after the initial installation of Performance Manager attempts to retrieve existing data from the HDU for the currently active MX-ONE measurements, store them in the TM database. The first extraction process, therefore, may require more time to execute. This functionality also further enhances the Presentation Manager utility by immediately allowing you to view your collected traffic measurement data in Microsoft Excel 2007 instead of having to wait for the data to be collected.

9.2.4.2 Data Collected Prior to PMG Installation

If PC-traffic measurement was used to collect traffic measurement data prior to Performance Manager Installation, it is possible that the traffic measurement data collected on the HDU is incomplete. This is caused by the PC-traffic measurement commands TRPEI and TRPEE, which allow PC-traffic measurement to retrieve traffic measurement data from a temporary buffer, transfer it to the PC-traffic measurement collection PC, then erase the buffer data before writing to the HDU.

9.2.4.3 Issuing MML Commands

We recommend against issuing MML commands such as TRREP during your scheduled data extraction interval. These commands access the MX-ONE Service Node traffic measurement data and may otherwise interfere with the data extraction process.

Example: If there are five nodes and only node 2 and 4 should be polled, set the Registry string to: 1,3,5, (make sure you end with a comma ",")

9.2.5 EXTEND POLLING TIME

The DM data polling routine will poll data for six hours starting from the *BatchTime* setting. You can setup a Registry string to extend the polling time. The polling time should be set between six to twelve hours. If no setting is present, or the setting is less than six, polling time defaults to six hours. If this setting is greater than 12, it is treated as a 12 hour polling time. The Registry key is `HKLM\SOFTWARE\Ericsson\PMG\BatchLength`.

9.3 PRESENTATION MANAGER

Following are important operation and maintenance considerations for Performance Presentation Manager.

9.3.1 TRAFFIC MEASUREMENT REPORTS

Although all traffic measurement data is stored in the SQL database, only objects related to Operators, Trunk Routes, Voice Extensions, (**Note**:In this case *Extension* means *only Analog and Digital Extensions*) MX-ONE Service Node Hunt Groups, and IP Device are available in pre-defined reports

9.3.2 PRESERVING EDITED REPORTS

All traffic measurement reports generated from the Query Measurements panel are write-protected. You must save edited traffic measurement report worksheets under different filenames to preserve their contents and to distinguish them from the original files.

10 TROUBLESHOOTING

10.1 LOG FILES

The TM installation program creates two logs that can be used to troubleshoot installation problems. The Detail log contains all operations performed during the installation process. The Summary log contains the final status (success or failure) for each installed component. These ASCII text files can be viewed with Windows Notepad.

10.1.1 TM SERVER INSTALLATION LOGS

Located at: <MTM installed directory>\MTM_S\detail.log and \MTM_S\summary.log

10.1.2 TM CLIENT INSTALLATION LOGS

Located at: <MTM installed directory>\MTM_C\detail.log and \MTM_C\summary.log

10.2 EVENT LOG MESSAGES

TM applications utilize the event logging facility to record error messages returned from the SQL server and generated by TM. If you encounter application or database operation difficulties, you can use the Windows Event Viewer to display information for events related to the problem and assist in problem isolation. Event Viewer displays system events registered by Windows and application events recorded by the various applications. Event Viewer can also display events for other PCs on the same network. Refer to the "Windows System Guide" for information about using Event Viewer.

APPLICATION	ERROR MESSAGE	CORRECTIVE ACTION
-*9/ClockSync	1001 Could not load resource library: %1	Initialization error. Verify that the cloksync.lll is in the same directory as the service. %1 = file name
ClockSync	1001 Could not duplicate thread handle.	Initialization error. Lack of system resources. Reduce the number of running applications and start the service again.
ClockSync	1002 Could not create event handle.	Initialization error. Lack of system resources. Reduce the number of running applications and start the service again.
ClockSync	1003 Could not open registry key %1, using defaults.	Initialization error. Verify the permission level of the service. Restart the service. %1 = Registry key name.
ClockSync	1004 Client is enabled, but server machine name is invalid. Client disabled.	Initialization error. Restart the service.
ClockSync	1005 Receive broadcasts are enabled, but server machine name is invalid. Receive disabled.	Initialization error. Restart the service.
ClockSync	1006 Could not open process token, client disabled.	Initialization error. Lack of system resources. Reduce the number of running applications and start the service again.

APPLICATION	ERROR MESSAGE	CORRECTIVE ACTION
ClockSync	1007 Could not enable time set privilege for process, client disabled.	Initialization error. Lack of system resources. Reduce the number of running applications and start the service again.
Installation	0 %1 unable to connect to database %2.	Refer to database manual for detailed information of database error. Correct the problem per database manual and redo the installation. %1 = Application name. %2 = Database error message.
Installation	0 %1 error inserting application %2.	Refer to database manual for detailed information of database error. Correct the problem per database manual and redo the installation. %1 = Application name. %2 = Database error message.
Installation	0 %1 error inserting elements %2.	Refer to database manual for detailed information of database error. Correct the problem per database manual and redo the installation. %1 = Application name. %2 = Database error message.
Installation	0 %1 error inserting sites %2.	Refer to database manual for detailed information of database error. Correct the problem per database manual and redo the installation. %1 = Application name. %2 = Database error message.
Installation	0 %1 number of licensed elements does not match element table.	Refer to database manual for detailed information of database error. Correct the problem per database manual and redo the installation. %1 = Application name. %2 = Database error message.
Installation	1000 %1 number of elements in element table does not match site table.	Refer to database manual for detailed information of database error. Correct the problem per database manual and redo the installation. %1 = Application name. %2 = Database error message.
Installation	1001 %1 error updating number of element licenses %2.	Refer to database manual for detailed information of database error. Correct the problem per database manual and redo the installation. %1 = Application name. %2 = Database error message.
Installation	1002 %1 the element type was not defined.	Refer to database manual for detailed information of database error. Correct the problem per database manual and redo the installation. %1 = Application name. %2 = Database error message.
LFS	1000 Could not load resource library.	Initialization error. Verify that the lfs.lll is in the same directory as the service.
LFS	1001 Failed to initialize application.	Initialization error. Reduce the number of running applications and restart the service.
LFS	1002 Failed to duplicate thread handle.	Initialization error. Reduce the number of running applications and restart the service.
LFS	1003 Failed to open named pipe acceptor.	Initialization error. Reduce the number of running applications and restart the service.
LFS	1004 Failed to initialize database.	Initialization error. Reduce the number of running applications and restart

APPLICATION	ERROR MESSAGE	CORRECTIVE ACTION
		the service.
LFS	1005 Failed to set low water mark.	Initialization error. Reduce the number of running applications and restart the service.
LFS	1006 Failed to set high water mark.	Initialization error. Reduce the number of running applications and restart the service.
LFS	1007 Failed to push module on Ustream.	Initialization error. Reduce the number of running applications and restart the service.
LFS	1008 Failed to open reactor.	Initialization error. Reduce the number of running applications and restart the service.
LFS	1009 Failed to set security attributes.	Initialization error. Reduce the number of running applications and restart the service.
LFS	1010 Failed to create message queue thread.	Initialization error. Reduce the number of running applications and restart the service.
LFS	1200 Failed to retrieve security data server name from registry.	Initialization error. Restart the service.
LFS	1201 Failed to initialize security data server client.	Initialization error. Reduce the number of running applications and restart the service.
LFS	1200 Cannot retrieve the password format data from the local database. Notify the system administrator.	Run-time error. Neither the primary nor the backup databases are available. Password cannot be changed with this condition. Contact your system administrator.
LFS	1201 Cannot retrieve the password format data from the server database. Notify the system administrator.	Run-time error. Cannot retrieve data from the primary database. Password cannot be changed with this condition. Contact your system administrator.
LFS	1202 Cannot retrieve the user data from the local database. Notify the system administrator.	Run-time error. Neither the primary nor the backup databases are available. Password cannot be changed with this condition. Contact your system administrator.
LFS	1203 Cannot retrieve the user data from the server database. Notify the system administrator.	Run-time error. Cannot retrieve data from the primary database. Password cannot be changed with this condition. Contact your system administrator.
LFS	1204 Cannot save the new password. The server database is unavailable.	Run-time error. Cannot store data to the primary database. Password cannot be changed with this condition. Contact your system administrator.
LFS	1205 Cannot save the new password. Unable to connect to the security data server.	Run-time error. Cannot store data to the primary database, due to communication problems with the security data server. Password cannot be changed with this condition. Contact your system administrator.
LFS	1206 Cannot retrieve the user data from the server database. The application may not be installed. Notify the system administrator.	Run-time error. Verify that the application is installed. Reinstall the application, if needed.
LFS	1207 Cannot retrieve the user data from the local database. The	Run-time error. Verify that the application is installed. Reinstall the

APPLICATION	ERROR MESSAGE	CORRECTIVE ACTION
	application may not be installed. Notify the system administrator.	application, if needed.
LFS	1500 Failed to close message queue normally.	Shutdown error. Notify the system administrator.
LFS	1700 Out of memory.	Initialization error. Reduce the number of running applications and restart the service.
UserConfig	1000 Cannot connect to database server %1.	Refer to database manual for detailed information of database error. %1 = Database error message.
UserConfig	1001 Cannot open user table %1.	Refer to database manual for detailed information of database error. %1 = Database error message.
UserConfig	1002 Cannot update the user %1.	Refer to database manual for detailed information of database error. %1 = Database error message.
UserConfig	1003 Cannot delete the user %1.	Refer to database manual for detailed information of database error. Correct the problem per database manual and try again. %1 = Database error message.
UserConfig	1004 Cannot reset the user's password %1.	Refer to database manual for detailed information of database error. Correct the problem per database manual and try again. %1 = Database error message.
UserConfig	1005 Cannot access the privilege/authority codes %1.	Refer to database manual for detailed information of database error. Correct the problem per database manual and try again. %1 = Database error message.
UserConfig	1006 Cannot update the password properties %1.	Refer to database manual for detailed information of database error. Correct the problem per database manual and try again. %1 = Database error message.
UserConfig	1007 Cannot load the application table %1.	Refer to database manual for detailed information of database error. Correct the problem per database manual and try again. %1 = Database error message.
UserConfig	1008 Cannot load the site table %1.	Refer to database manual for detailed information of database error. Correct the problem per database manual and try again. %1 = Database error message.

10.3 TECHNICAL SUPPORT

The Troubleshooting book contains information needed to resolve most problems that can occur with the TM applications. However, situations may occur in which you are unable to resolve problems using troubleshooting information. For additional technical assistance, contact your Mitel representative.

10.3.1 BEFORE CONTACTING TECHNICAL SUPPORT

In order to help restore your productivity as rapidly as possible, Mitel engineers will need the following information.

Versions for: Windows + Service Pack Level
SQL Server + Service Pack Level
TM + Service Pack Status + Hot Fix Status

Local Area Network:	Type of LAN and LAN configuration
System size:	Number of: • Names in subscriber database • MX-ONE or MX-ONE Service Nodes
If Hotfixes loaded:	Version of "fixed" .exe files (To view, use the Windows Explorer to select and right-click the .exe file, select **Properties** from the pop-up menu, click the **Version** tab.
MX-ONE Service Node setup:	MX-ONE Service Node software release Service Pack Status System size (i.e., nodes, extensions, etc.)
Include:	A detailed description of the problem. Although it is not necessary, it will also be helpful if you can try to guess the source of the problem and then try to provide Mitel engineers with detailed information relating to that part of your system.

10.4 REPORTING YOUR PROBLEM

To assist our support staff, please obtain the following information before contacting technical support. You should include as much information as is available on system specifications, applications, and the problem itself.

10.4.1 PROBLEM DESCRIPTION

State each problem description clearly and include any available details relating to the problem, including:

Time-of-day problem occurred

Operations in progress when the problem occurred

Applications and/or databases involved

General type of failure (i.e., transitory, repeatable/non-repeatable, application halt, system halt, etc.)

10.4.2 MX-ONE SERVICE NODE

MX-ONE Service Node Type

_____

Version _____

No. of Nodes _____

10.4.3 OPERATING SYSTEM INFORMATION (MARK ALL THAT APPLY)

Windows Workstation _____ Windows Server _____

Version _____ Language _____

10.4.4 CONFIGURATION

Workgroup_____ Domain _____

Stand Alone_____ File System_____

FAT _____ NTFS_____

10.4.5 NETWORK PROTOCOL (MARK ALL THAT APPLY)

NetBEUI _____ TCP/IP _____

IPX/SPX _____ Other _____

None _____ Software _____

10.4.6 PC

Manufacturer _____ Model _____

CPU _____ Clock Speed _____

Memory (RAM) _____ Hard Disk _____

10.4.7 TM APPLICATIONS

Report each application that was running when the problem occurred. Include the version/release level and which national language the application supports.

APPLICATION	VERSION/RELEASE	LEVEL	LANGUAGE SUPPORTED
Data Manager (DM)			
Presentation Manager (PM)			
Other			

10.5 DATA MANAGER

Use the following table to investigate problems identified in DM error messages.

ERROR MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
Cannot connect to MX-ONE.	Log in credentials are wrong	Try with correct set of Log in details
Cannot open communication device.	Communication device is being used by another application. Selected communication device does not exist.	Close the other application using the communication device or wait until the communication device is available. Specify a valid communication device.
No default attempt connection list is defined. TM application will not be able to connect to MX-ONE with SSH setting.	SSH is set for communication. However, there is no IP address set in the connection list.	Check the connection list via Communications -> Define list.
Cannot synchronize with MX-ONE.	Logon to MX-ONE not completed due to problem with connection to the MX-ONE or the MX-ONE itself.	Verify that the connection to the MX-ONE is good and verify that the MX-ONE is operating properly.
Communication line blocked. Communication line failure.	Problem with connection to the MX-ONE or the MX-ONE itself.	Verify that the connection to the MX-ONE is good and verify that the MX-ONE is operating properly. Verify that user account with MDSH as login shell and appropriate user groups is defined in the MX-ONE system
Data format error. Possibly caused by MX-ONE file system error.	MX-ONE file system problem.	Contact MX-ONE service personnel. Consider skipping data for that day (unrecoverable error).
Database operation failed or there was an error connecting to database server.	No SQL server connection available. SQL server is down or network connection is down. Data source is not set up correctly.	Check event log for more specific error messages provided by the SQL server. Restart DM. Verify that at least two connections are available. Verify that SQL server is up and network connection is OK. Verify that the data source is set up properly.
Failed to allocate memory.	Not enough system memory.	Close unnecessary applications and restart DM.
Failed to create temporary file. Failed to write to temporary file.	No disk space available on the local drive.	Delete unneeded files from the local drive to make space available.
Failed to get data associated with TM from the logging server.	Network is down, or RDS is not running.	Restart the network, and run RDS on the server.

ERROR MESSAGE	POSSIBLE CAUSE	CORRECTIVE ACTION
Unable to connect to database server. Unable to establish connection to database server.	No SQL server connection available.	Check event log for more specific error messages provided by the SQL server, restart DM, and verify that at least two connections are available. Verify that SQL server is up and network connection is OK.
	SQL server is down or network connection is down.	Verify that the data source is set up properly.
	Data source is not set up correctly.	Verify that the user ID and password for database is set up correctly.
	User for database is not set up correctly.	Reinstall the database for DM. Increase the size for the auxiliary database. You may want to back up the databases and restore them after reinstallation.
	Not enough space for the auxiliary database.	
Unable to lock database. Database is used exclusively by other process.	Database has been locked by DM running on another PC.	Retry the operation later.

10.6 PRESENTATION MANAGER

There are two troubleshooting tables and a description of the *PM.ini* file to help you identify and resolve problems for Performance Presentation Manager. The first troubleshooting table describes troubleshooting for general problems, and the second table describes troubleshooting for specific messages displayed by PM.

10.6.1 ESSENTIAL REQUIREMENTS

PM, like Microsoft Excel 2007 or Excel 2010, requires an installed printer driver to function when connected to a printer.

10.6.2 REPORT LIMITATIONS

Although all traffic measurement data collected on the hard drive is stored in the SQL database, only objects related to Operators, Trunk Routes, Voice Extensions, MX-ONE Service Node Hunt Groups, and IP Devices are available in pre-defined traffic measurement reports for PM.

All traffic measurement reports generated from the Query Measurements panel are write-protected. You must save edited report worksheets under new filenames to preserve their contents and to distinguish them from the original files.

10.6.3 GENERAL PM PROBLEMS

Use the following table to analyze Presentation Manager problems.

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Excel 2007,Excel 2010- Launch PM but only Excel is started	The macro security level is set too high.	Start Excel, select Macro from Tools menu, select Security, then change to Medium in the Security Level tab.
Excel 2007, Excel 2010 – Launch PM with Excel message “Macros are disabled because the security level is set to High…”	The macro security level is set too high.	Start Excel, select Macro from Tools menu, select Security, then change to Medium in the Security Level tab.

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Auto-formatted charts do not print properly.	Incorrect print driver selected or print driver not set up properly.	Use the Printers option for the Windows Control Panel to select a different printer or modify the printer setup.
Cannot access SQL database.	ODBC data source not set up properly.	Set up ODBC again.
	PM does not have access rights to one or more databases.	Make sure that all databases set up by DM and the different site databases grant the proper access to PM.
	Server goes down and the connection is damaged.	Exit and restart PM to re-establish the connection.
	Incorrect site database.	Use PM Switch Sites option to select the correct site and database (primary or auxiliary).

10.7 REMOTE DATA SERVER

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
RDS fails to execute a scheduled task.	Security settings on each machine differ, therefore the default security attributes conflict with the parent process.	Set security attributes so the return handle can be inherited by child processes/threads. Change the value of the following Registry key: HKLM\SOFTWARE\Ericsson\MRS\RemoteDS\Manager\UseSAForScheduledProcess Format: N/A Value: [REG_DWORD] 0=no (default value); new processes will not inherit security attributes from parent process. 1=yes; new processes will inherit security attributes from parent process.

11 APPLICATION DATA

11.1 REPORT GENERATION

Although TM applications can be used to display and report a wide variety of information, you may want to extract data directly from the application databases and use other applications to manipulate the data or generate reports.

To Generate Reports Using Access:

1. Click the Attach Table tool on the Access toolbar to attach the SQL Database.
2. After selecting SQL Database, Access prompts you for a data source. Select the data source pointing to the SQL server with MX-ONE data.
3. Login to the SQL server by entering **thirdpty** as the user ID and password. Click on the **Options** buttons to select a database.
4. Select a table from the list and attach all tables that you want to use for your reports.
5. Click on the **Query** tab, and then on the **New** button to define a New Query. In order to correctly set the table relations, you should refer to the technical documentation for the specific TM application.
6. After setting the table relationships, run the query and check the results to see if the data is coming back correctly. Click on the **!** tool on the toolbar to run the query.
7. Once you are satisfied with your query, click on the **Report** tab and then click on the **New** button. Access prompts you with the Database dialog box. Select the query that you defined in the previous steps, and then click on the **Report Wizard** button.
8. The report wizard guides you through the steps of defining a report.
9. Select the fields and the sort order that you want to include in your report, and define the report style and page orientation.
10. The Report Wizard asks you for a report title. After you have entered the title of the report, you can choose to run the report or go to report design view to further customize the report layout.

11.2 DM DATABASE ORGANIZATION

TABLE	INCLUDES DATA FOR
busy	Busy hour
c_bell	Common bell group
cfp	Cordless Extension Common Fixed Part
code_r	MFC code receiver
code_s	MFC code sender
confer	Conference
cxnmob	Cordless Extension Mobility
cxntrf	Cordless Extensions Fixed Part
dialdy	Dial tone delay
extens	Voice extension
ipbrd	IP Extensions
keyc_r	Key code receiver
keyc_s	Key code sender

TABLE	INCLUDES DATA FOR
measinfo	Measurements initiated by the user
opcorg	Call origin group—for MX-ONE Service Node operator
opindi	Individual MX-ONE Service Node operator
opmann	MX-ONE Service Node operator manned time
MX-ONE Telephony servergrp	Internal group hunting group number
roubwy	Both way (incoming and outgoing) route
rouddi	Direct indialing route
roudio	Direct indialing outgoing route
rouinc	Incoming route
rouout	Outgoing route
tone_r	Tone receiver
Trunks	Individual trunk

12 MML and unix COMMANDS

12.1 MX-ONE SUPPORT UTILITY

The TM Server MX-ONE Support Utility uses the following MML commands in its communications with the MiVoice MX-ONE Service Node.

Note! Only a subset of these commands is available in the MX-ONE. Please consult the MX-ONE O&M for details.

FUNCTIONAL GROUPING	COMMANDS
Digital Extension	KSCAP KSDDP KSTSP KSFKP KSMDP
Analog Extension	EXCAP EXDDP EXCCP
System PCM/LIM	pcm_config
Group Hunt	GHDAP
Automatic Call Distribution	ACGMP ACGCP ACPAP ACBGP
Automatic Network Call Distribution	NCNOP NCICP NCGRP NCGMP NCGSP NCSGP
Common Bell Group	CBDAP
Operator	OPDDP OPCGP OPRSP
Account Code	account_code_print
Trunk	RODNP ROCAP ROEDP RADSP RADNP
Application System Parameters	ASPAP
System Resource Status Info	resource_status
Cordless Extension	dect_extension

12.2 DATA MANAGER

The Data Manager (DM) application uses the following MML commands in its communications with the MX-ONE.

FUNCTIONAL GROUPING	COMMANDS
Common Bell Groups	TRCBI
Conference Units	TRCOI
MFC Code Receivers	TRCRI
MFC Code Senders	TRCSI
Dial Tone Delay	TRDDI
List active measurements in MX-ONE	TRDIP
Extensions	TREXI
Cordless Extension Common Fixed Part	TRCFI
Key Code Receivers	TRKRI
Key Code Senders	TRKSI
End individual active measurement in MX-ONE	TRMEE

FUNCTIONAL GROUPING	COMMANDS
MX-ONE Service Node Operator Manned Time	TROMI
MX-ONE Service Node Operator CORG	TROPI
Internal Group Hunting (MX-ONE Service Node) Group Number	TRPBI
Trunks	TRTLI
Tone Receivers	TRTRI
Specify Cordless Extension Common Fixed Part	TRCFI
IP Devices	TRIPI

12.3 MX-ONE SUPPORT COMMAND LINE SYNCHRONIZATION

You can control the MX-ONE Support utility from the Windows command line. With this function, you may specify: which individual node to synchronize, extension(s) or range of extensions to synchronize, or, LIM(s) or range of LIMs to synchronize, or features (e.g., digital, analog extensions) to synchronize. This means MX-ONE Support can be scheduled to synchronize the MX-ONE on a regular basis via a scheduling utility such as *RDS Scheduler*.

12.3.1 COMMAND LINE SYNTAX

Command line syntax for MX-ONE Support is:

```
MDS /site:<site#> [/sync:{ext=(digit,..,digit-digit..)} | {digdual,ana,...} |
{lim=(digit,..,digit-digit..)} ]
```

The ***/site*** parameter is required, while the following settings are optional:

Individual extensions or range of extension

Individual LIMs or range of LIMs

12.3.1.1 Supported MX-ONE Service Node Features

Note! Only a subset of these features is available in MX-ONE. Please consult the MX-ONE O&M for details.

- dig - Digital
- ana - Analog
- dirinf - Directory Information
- opequ - Operator Equipment
- ocorg - Operator Call Origin Group
- cb - Common Bell Group
- gh - Hunt Group
- acd - Automatic Call Distribution
- ancd - Automatic Network Call Distribution
- route - Route
- trunk - Trunk
- equ - Equipment Position
- numse - Number Series
- pcm - System PCM/LIM
- lim - Line Interface Module

12.3.1.2 Examples

To synchronize all information in node 1:

```
MDS.EXE /site:1
```

To synchronize a range of extensions in node 1:

```
MDS.EXE /site:1 /sync:ext= (1000,1004-1005)
```

To synchronize a range of LIM in node 1:

```
MDS.EXE /site:1 /sync:lim= (1-3)
```

To synchronize digital and number series in node 1:

```
MDS.EXE /site:1 /sync:digdual, numse
```

12.3.1.3 To set up RDS Scheduler to run MX-ONE Support

1. Assign MX-ONE Support privilege to a TM account, e.g., Mitel.
2. Log into RDS Configuration using the account in step 1.
3. Set up a schedule job running MDS, e.g., mds.exe /site:1.
4. RDS will save the current account into the Registry.
5. Make sure to check the option **Activate Using the Current Logged-In TM Account**.
6. When RDS Schedule invokes MDS, it will pass to MDS the schedule identifier that MDS uses to retrieve from the Registry the account identification. Internally, MDS uses this account to log in to TM

12.3.1.4 To set up other schedule utilities to run MX-ONE Support

1. Set up an account in TM having the same name as the Windows account. Assign the MX-ONE Support privilege to this account.
2. Scheduled a synchronization job running MDS. For example:

   ```
   mds.exe /site:1
   ```

13 FREQUENTLY ASKED QUESTIONS

13.1 TM SERVER

Question: What is the default user name and password for User Configuration?

Answer: Default User name is Mitel and the password is Mitel.

Qusetion: What are the products that can co-exist with M.T.M?

Answer: M.T.M can co-exist with the below products.

- Mitel CMG
- Mitel Advanced Messaging
- MiContact Center Enterprise
- Application Link

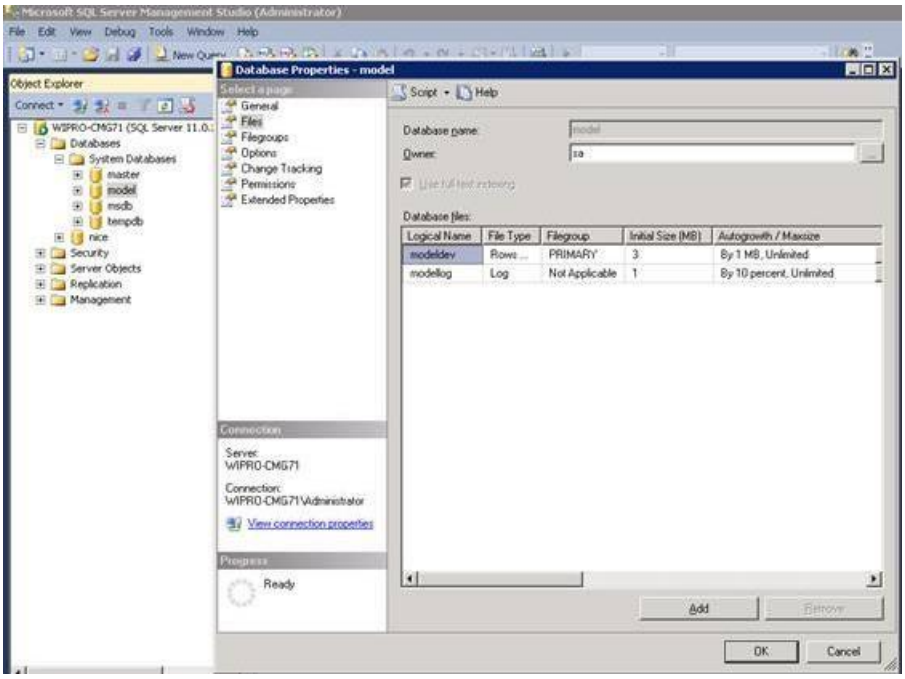
Note! M.T.M cannot be installed in a system in which DNA was already installed.

Note! TM uninstallation will not remove the databases, we have to delete the databases manually.

13.2 INSTALLATION

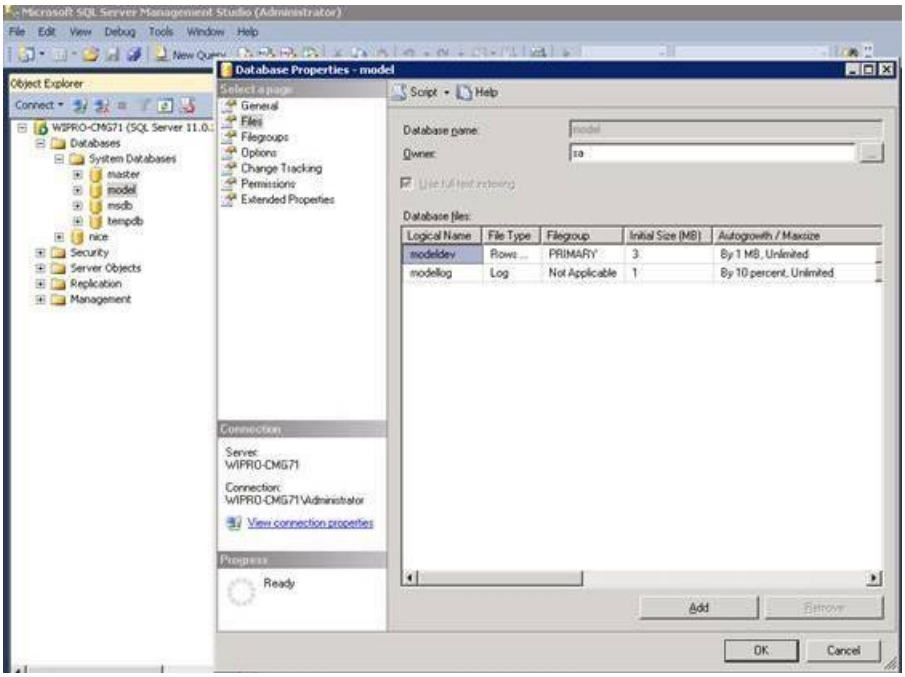
Question: Why I am getting the error, “emgdb Unable to create database” during installation?

Answer: Reduce the model database size to 3 MB in SQL Server Management Studio as shown below.



Question: Why I am getting the error, “DATABASE Insertion failure -1” during installation?

Answer: Reduce the model database size to 3 MB in SQL Server Management Studio as shown below.



13.3 REMOTE DATA SERVER

Question: What is the LOGDB?

Answer: In the `\MTM_S\MRS\DATA\RDS` directory there is a part of the local database called LOGDB. This part of the database is getting bigger and bigger. It seems that RDS is sometimes very busy

updating this file resulting in problems on the Operator Workstation clients. What is this LOGDB used for and why is it getting so big?

LOGDB is the transaction log for RDS's local databases. All the updates to the local databases will be registered in this transaction log, and it is quite natural that it grows as new subscribers are added, deleted, or updated.

Also, updates from messages and diversions are also logged. RDS uses this transaction log to synchronize all the TM clients. This transaction log gets cleaned up on a nightly basis. Please refer to RDS Configuration Utility - SCHEDULE 2 - Local Database Clean Up Scheduled Audit.

Question: How does the Standby Remote Data Server work?

Answer: If (for example) RDS crashes, it switches over to the standby side and generates a *DrOhan.log* crash dump file under *WINNT* directory. You will also get the following message in the Event Log.

E1186 - Remote Data Server Unexpectedly Terminated - Switching Over To Standby Remote Data Server

This log entry indicates that the standby Remote Data Server has taken over the RDS business. The new active RDS spawns for another standby process to monitor it. Unfortunately, the new active RDS is now running as a process and not as a service. This is because it is not possible to run two instances of the same service simultaneously.

However, starting from Windows 2000, the operating system provides support for restarting failed services. This provides equivalent functionality as the Standby Remote Data Server and is the preferred alternative. Open the RDS service properties in Windows Service Control Manager and display the tab called Recovery. Set First, Second, and Subsequent failures to Restart the service. Set reset failure count after 1 day and restart the service after 0 minutes. Save the configuration. Open RDS Configuration and disable Standby Service.

Question: How does the Standby Remote Data Server work?

Answer: If (for example) RDS crashes, it switches over to the standby side and generates a *DrOhan.log* crash dump file under *WINNT* directory. You will also get the following message in the Event Log.

13.4 DATA MANAGER

Question: How do I change the polling time for DM?

Answer: You can change this download time by adding a Registry-value.

`HKEY_LOCAL_MACHINE\SOFTWARE\ERICSSON\`

You need to add the value: **BatchTime**, **DWord**, and enter the hour in hexadecimal.

Example: Enter **BatchTime=0A** if you want to start DM downloading at 1000 Hours.

Question: How does DM work in BATCH mode?

Answer: Is it possible, in a multi node environment, to extract data from only a certain node? For example, in a two-node system the second node is created for future use. When *DM.EXE* BATCH is scheduled, DM is also trying to extract from node two, which results in errors because there is no MX-ONE to connect to. However, it is possible to select the desired node to poll.

13.4.1 TO SELECT A NODE TO POLL

1. Create a key with the TM Server machine name under
   `HKEY_LOCAL_MACHINE\SOFTWARE\Ericsson\PMG\`

   Example:
   `HKEY_LOCAL_MACHINE\SOFTWARE\Ericsson\PMG\<computer name>Site`**n**

2. Add the key **SkipSites** with the string of the nodes you want to skip separated by commas (",") under the key created in Step 1.

Example: If there are 5 nodes and only nodes 2 and 4 should be polled, set the Registry string to 1,3,5, (end with a ",")

Question: Which account is used for DM in batch mode?

Answer: In User Configuration you can allow or disallow a User to use DM for a certain node. DM polling however bypasses this TM security feature.

Performance Manager

Question: Why I could not be able to launch PM application?

If the PM application does not launch, Go to Tools->Reference is PM(excel) and check "64-bit PPM IN-Process Server" and uncheck "Missing: Compiled with VB6.0 SP5" then, Save it. Close and Restart the application

13.5 TM APPLICATION SUITE

Question: What different releases for TM exist?

Answer: The following table contains the releases of TM that are supported.

VERSION	RELEASE INFORMATION
TM 1.4	General release version TM 1.4 with support for 64-bit OS and SQL Servers, and MiVoice MX-ONE Service Node.
TM 1.1	General release version TM 1.1 with support for 64-bit OS and SQL Servers, and MX-ONE Service Node.
TM 1.0	General release version TM 1.0 and MX-ONE Service Node

Note! If TM is installed in other than C:\ drive, then batch file "dnareg.bat" (for 32-bit systems), "dnareg64.bat"(for 64-bit systems) located in "<Install Dir>\MTM_S\SHARE\BIN" must be manually edited with corresponding installed path and then run it.

13.5.1 CLOCKSYNC

Question: Does anyone know what happens if you have more than one ClockSync Server running on the network? How does a specific client know which ClockSync Server it needs to read? I do not see a computer name in the ClockSync part of the Registry.

When you have both a CCM and a TM server present in one Windows domain, how will the CCM clients know that they need to use CCM server ClockSync, and vice versa for TM clients?

Answer: It is OK to have multiple ClockSync servers on the network. The ClockSync server on which they were installed will update the clients.

This is defined in the Registry in:
`HKLM\SYSTEM\CurrentControlSet\Services\ClockSync\Parameters\ServerMachineName`

The use of Windows named pipes means that the time request event is directed. ClockSync does not use TCP/IP Broadcast packets to send out the time.

If you have two servers (CCM and TM) each with a ClockSync Server process (EnableServer in the above key is 0x1), you could change one to be a client of the other. For example, change CCM server machine to be a ClockSync client of the TM server, and then change all the CCM client machines to ask the TM server for time updates. If you change the CCM server and not the CCM clients, then they will not get the updates.

Note! A ClockSync client cannot also act as a server.

14 SECURITY

14.1 DIRECTORY SECURITY

The TM directories are open to anyone with full control, by default, if FAT is used. If NTFS is used, Read and Write permission is granted to the appropriate users by administrator. The following table contains the directories and the applications/services that require write permission.

14.1.1 TM SERVER

TM COMPONENTS	DIRECTORY / FILE	APPLICATIONS / SERVICES / USER
MRS	\Data\LFS	LFS
	\Data\RDS and sub-directories	RDS
	\Data\SDS	SDS
Share	\Data\LDS	LDS
	\Data\MDS	MX-ONE Support users
Site1, 2,	\MDS and sub-directories	MX-ONE Support users
	\PMG and sub-directories	DM users
PMG	\PMG\Data	DM users

14.1.2 TM CLIENT

TM COMPONENTS	DIRECTORY / FILE	APPLICATIONS / SERVICES / USER
Share	\Data\LDS	LDS
	\Data\LFS	LFS
	\Data\MDS	MX-ONE Support users
	\Data\SCS	SCS
Site1, 2,	\MDS and sub-directories	MX-ONE Support users
	\PMG and sub-directories	DM users
PMG	\PMG\Data	DM users

14.2 SERVICES AND ACCOUNTS/RIGHTS

14.2.1 TM SERVER

Service Display Name: The name displayed in Service manager.

Service Internal Name: The name listed in Registry, `HKLM\System\CurrentContolSet\Services`

SERVICE DISPLAY NAME	SERVICE INTERNAL NAME	STARTUP TYPE	LOGON	REMARKS
ClockSync	ClockSync	Automatic	Local System Account	
LDS	LDS	Manual	Local System Account	
LFS	LFS	Automatic	Local System Account	

14.2.2 TM CLIENT

SERVICE DISPLAY NAME (IN SERVICE MANAGER)	SERVICE INTERNAL NAME (IN REGISTRY)	STARTUP TYPE	LOGON	REMARKS
ClockSync	ClockSync	Automatic	Local System Account	
LFS	LFS	Automatic	Local System Account	

14.3 ODBC CONNECTION

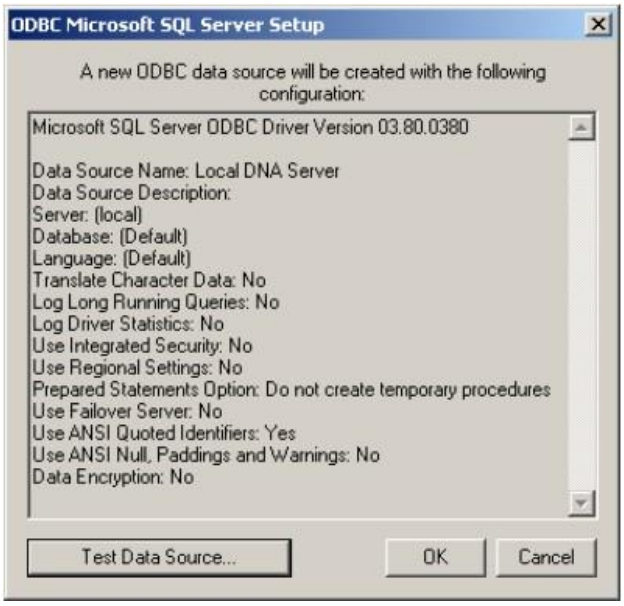
The ODBC User Data Source configuration is as follows:

Data Source name – Server name defined in the TM Server configuration. E.g., Local TM Server (default for local server)

Data Provider – SQL Server name

Authentication – use SQL Authentication, login ID is oliver.

Others
Refer to the following screen capture for the remaining configurations



14.4 FILES COPIED TO OTHER DIRECTORIES

Microsoft introduced Protect Files when the Windows 2000 operating system was released. These files should be installed by Microsoft only.

14.4.1 WINDOWS 2008, OR WINDOWS XP

DESTINATION DIRECTORY	FILES	REMARKS
System32		
	Api.dll	Third party files
	Cstrain.dll	Third party files
	Ossapi.dll	Third party files
	Ossdmem.dll	Third party files
	Soedber.dll	Third party files
	Ossmem.dll	Third party files
	Gapi32.dll	MS redistribution files
	Mfcans32.dll	MS redistribution files
	Mscal.ocx	MS redistribution files
	Mscomct2.ocx	MS redistribution files
	Msflxgrd.ocx	MS redistribution files
	Msvcp60.dll	MS redistribution files
	Olemsg32.dll	MS redistribution files
	Csh.dll	Third party files
	Roboex32.dll	Third party files
	Sms_rl.dll	TM file
Program Files\Common files\EricssonShare \ADSI	adsdna.dll	TM files
	applpy.dll	TM files
Program Files\Common files\EricssonShare\DMI\C IManager	CIMgr.exe	Intel files
	CiMgrLdr.exe	Intel files
	DmiProxy.dll	Intel files
Program Files\Common files\EricssonShare\DMI\M apper	Dmi2snmp.dll	Intel files

14.5 DATABASES

Permissions:

dbo: Database Owner with full controls

SELECT: Read permission

DATABASE	PERMISSION FOR USER ”OLIVER”	PERMISSION FOR USER ”THIRDPTY”
aux1, aux2…	dbo	SELECT

DATABASE	PERMISSION FOR USER ”OLIVER”	PERMISSION FOR USER ”THIRDPTY”
db_xaction	dbo	SELECT
TMdfdb	dbo	No permission
emgdb	dbo	SELECT
pmglocks	dbo	SELECT
security	dbo	No permission
site1pmg, site2pmg…	dbo	SELECT
site1, site2…	dbo	SELECT

14.6 REGISTRY

14.6.1 LOCATION

The root of the TM key is `HKLM\SOFTWARE\Ericsson`. The primary sub-keys for each individual TM application is created under `\Ericsson` by various installations.

DDB	Installed by TM installation
LocalDS	Installed on server and client
MRS	Installed on server only
PMG	Installed if PMG is selected

14.6.2 PERMISSIONS

14.6.2.1 Permissions Setup by TM Installation

Default Permissions

By default, the *Ericsson* Registry key permissions are set as follows by TM installations:

Administrator – Full Control

Everyone – Special Access.

Reference the following screen capture for Special Access permissions.

Deviation from Default Permission

Due to special needs by applications, the following specific sub-keys under `HKLM\SOFTWARE\Ericsson` are granted for Full Control to Everyone by TM installation.

LocalDS

MRS

- ConnectionList
- DirChangeLog
- DrOhan
- HIS
- LDS
- RemoteDS
- SCS
- Servers
- SMS

Registry Keys that Require Write Permissions

The following table contains the Registry keys and the applications that require write permission. All the Registry keys are located at `\HKLM\SOFTWARE\Ericsson\`

TM Server

REGISTRY KEY LOCATION HKLM\SOFTWARE\ERICSSON	APPLICATIONS
MRS\ConnectionList	MX-ONE Support
MRS\DirChangeLog	RDS
MRS\MDS	MDS
MRS\RemoteDS	RDS Configuration
PMG	Data Manager & Presentation Manager

TM Client

REGISTRY KEY LOCATION HKLM\SOFTWARE\ERICSSON	APPLICATIONS
MRS\ConnectionList	MX-ONE Support
MRS\LDS	LDS Configuration
MRS\MDS	MDS
MRS\RemoteDS	LDS
MRS\SCS	SCS Configuration
MRS\Servers	LFS
PMG	Data Manager & Presentation Manager