A MITEL
PRODUCT
GUIDE

MiContact Center Enterprise

Installation Preparation

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Mitel
Powering connections

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INTRODUCTION

This document describes the MiCC Enterprise and MiCC Enterprise Network Operations Center (MiCC Enterprise NOC) pre-installation requirements. The document also contains installation instructions for the software and hardware that are needed before a MiCC Enterprise, or MiCC Enterprise NOC installation can take place.

The following are described:

- Hardware requirements for the MiCC Enterprise and MiCC Enterprise NOC server and clients
- License installation

An overview of the following is also provided:

- Windows Server installation
- SQL Server installation
- OAS Server installation
- Hardware installation

MINIMUM REQUIREMENTS

HARDWARE AND SOFTWARE REQUIREMENTS

For the latest information on compatibility data regarding MiCC Enterprise and software please refer to the System Engineering Guidelines available in the CPI library and on Dec Center accessible via the MiAccess portal. For information regarding patch management refer to the Mitel Applications General Patch Management Policy. This can be downloaded from KMS accessible from MiAccess.

PRINTER REQUIREMENTS

Printers must be either on the network or connected to local machines installed with Report Manager or Report Service. Please refer to the section *Hardware Compatibility List* included in the Microsoft Windows Operating System documentation, for a list of all printers that have passed the compatibility tests.

MX-ONE SETUP

Verify the parameters in Table 1 Setup requirements for MiCC Enterprise features prior to performing the installation on an MX-ONE.

Table 1: Setup requirements for MiCC Enterprise features

FEATURE	DESCRIPTION
Assistance	Agents that will be given the **Provide Assistance** privilege must have the ability to intrude on other agents. This can be set up by modifying the **SERV** parameter via: The KSCAC command for digital extensions on the MX-ONE TSW The GESPI and EXCCS commands for generic extensions on the MX-ONE TSW or MX-ONE TS To allow supervisors to intrude directly on agents for assistance, the *Free on Second Access Line* feature should not be enabled. Otherwise, the supervisor will ring on another line appearance when providing assistance.
Monitor	Agents that should be given the **Monitor** privilege need the ability to intrude on agents. This can be set up by modifying the **SERV** parameter on MX-ONE TSW or MX-ONE TS via one of these commands: - KSCAC (for digital extensions) - EXCCS (for analogue extensions) - GESPI (for generic extensions) Do not set the system to use the *Free on Second Access Line* feature; otherwise, the supervisor will not be able to intrude.
Data Extensions	**Data extensions** must not be configured on MiContact Center Agent telephones.
Diversion No Answer	The **Diversion No Answer** feature must not be configured on MiContact Center Agent telephones.
Multiple Directory Number	The Agent Directory Number cannot be assigned as a **Multiple Directory Number** (MDN) on other Digital Telephone Set (DTS) telephones.
Monitoring Key	The Agent Directory Number cannot be assigned as a **Monitoring Key** (MNS) on other Digital Telephone Set (DTS) or an IP-phone.
Call Pickup Group	The **Call Pickup Group** key must not be configured on MiContact Center Agent telephones. MiContact Center Agents cannot belong to any Call Pickup groups.
Do Not Disturb	The **Do Not Disturb** key must not be configured on MiContact Center Agent telephones. MiContact Center Agents cannot belong to any Do Not Disturb groups.
Multi Terminal Services	Extensions to be used by MiContact Center Agents should not be defined as a Main Directory or Secondary Directory number with any Multi Terminal Services including **Parallel Ringing** and **Forking.**
Personal Directory Number	Define the PDN in the MX-ONE as a pseudo PBX group (that is, a PBX group with no members). In the MX-ONE, set this number to divert to a CTI group which is configured as a BVD and associated with a Service Access.

FEATURE	DESCRIPTION
	Alternatively, it is also possible to define a DNIS number that routes to a CTI group. Configure the DNIS number in the MX-ONE to be routed to the CTI group which is configured as a BVD and associated with a Service Access. The Service Access should be configured in MiCC Enterprise to route to a Service Group defined as type “Voice – Manual Routing”. Checking the “Personal Calls” checkbox when defining the Service Group will allow the call to route immediately to the agent associated with the called PDN, if available. Otherwise, the call will be queued in the Dispatch Service Group. Note that using this feature requires a Dispatch agent license to be available.

WINDOWS SERVER INSTALLATION

Windows Server must be successfully installed before installing MiCC Enterprise. See the System Engineering Guidelines for a list of supported Windows Server versions.
For instructions on the correct installation and configuration of Windows Server, see the Microsoft documentation for the selected server operating system.

DOMAIN

For a production system, the MiCC Enterprise server must be part of a Windows domain. Clients may or may not be part of the same domain or another trusted domain.

TIME SYNCHRONIZATION

Synchronized time is critical to the MiCC Enterprise system, as well as the Windows operating system. Please ensure that some method of time synchronization is enabled for all MiCC Enterprise server and client machines. Normally, time synchronization is automatically handled when clients are on the same domain as the server. If clients are not part of the domain, some other form of time synchronization must be implemented.

SYSTEM DATE AND TIME FORMAT

During the Windows installation, you will be asked to specify the date and time format to be used by the system. Be sure to specify the format you wish to use when generating reports from the MiCC Enterprise product.

DISK PARTITION AND FILE SYSTEM SELECTION

During Windows installation, you will be asked to specify the disk partition onto which Windows will be installed. One consideration when selecting a disk partition is the file system for which the disk partition is formatted.

The *Windows Server Resource Kit* provides guidelines for choosing the disk partition and for choosing a file system. The following information should further aid you in this decision when installing Windows on a system to be used for the MiCC Enterprise:

1. MiCC Enterprise requires no specific file system in order to operate properly; it may be installed on either a FAT32 or NTFS file system.
2. You do not need to install MiCC Enterprise on the same disk partition as Windows. You may choose to install Windows and the MiCC Enterprise on different disk partitions, with each partition formatted for different file systems.
3. Compressed drive is not supported.

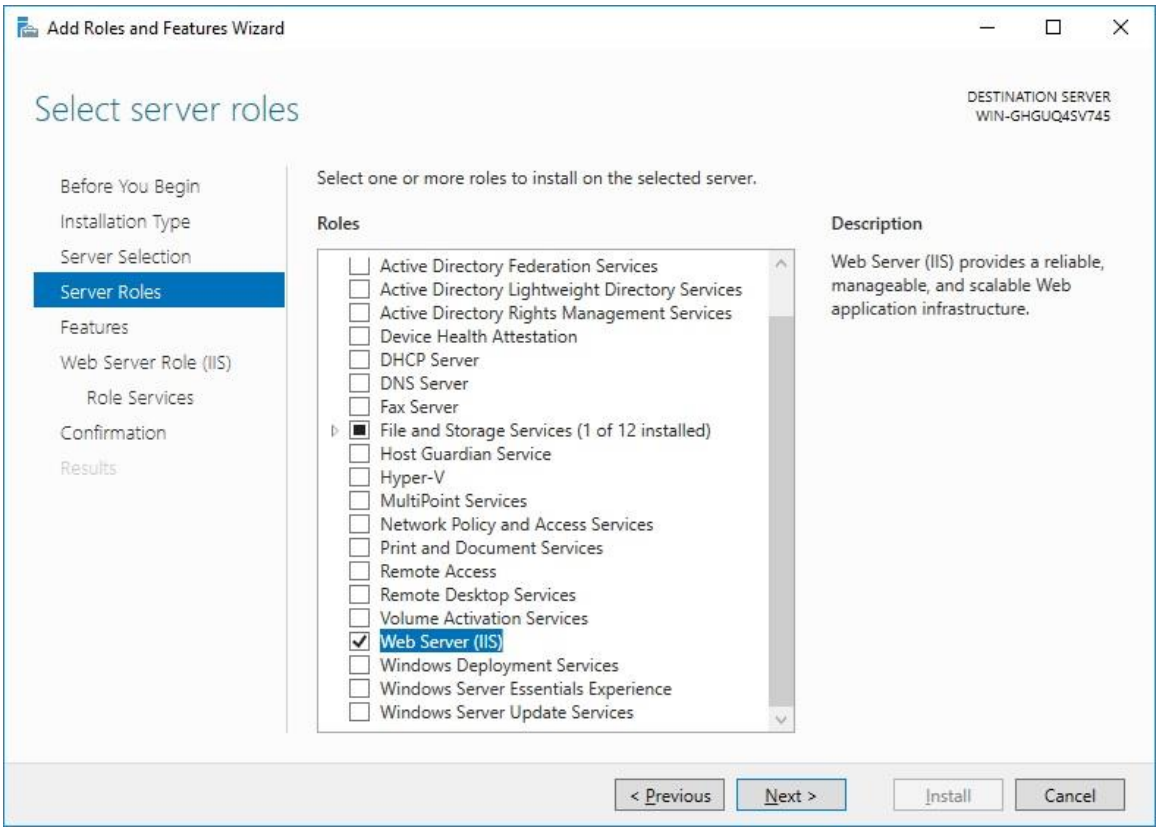
INTERNET INFORMATION SERVICES/WINDOWS FEATURES

Internet Information Services and various Windows features must be enabled on the server for MiCC Enterprise to be installed and operate properly. The options to enable may vary slightly depending on the version of the operating system.

Open the Server Manager, navigate to the ROLES AND FEATURES section and select the Add Roles and Features task. Add the following options:

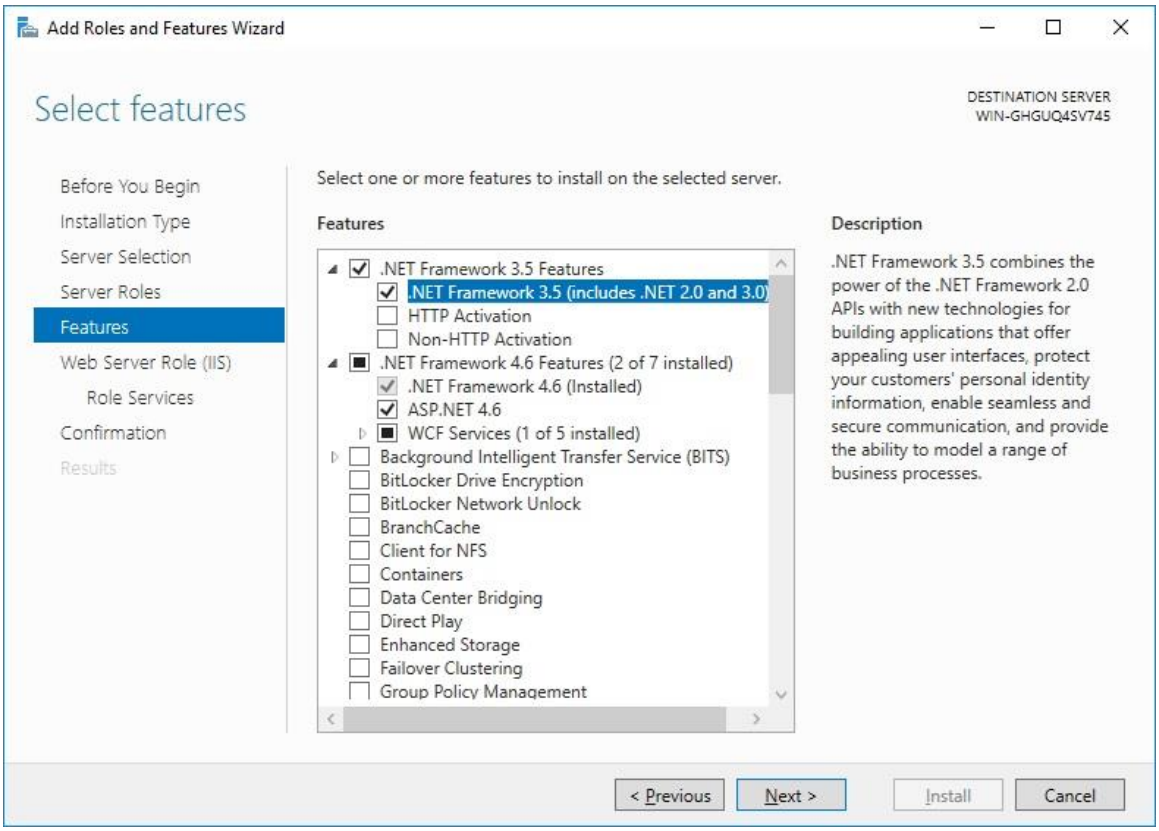
Server Roles

- Web Server (IIS)



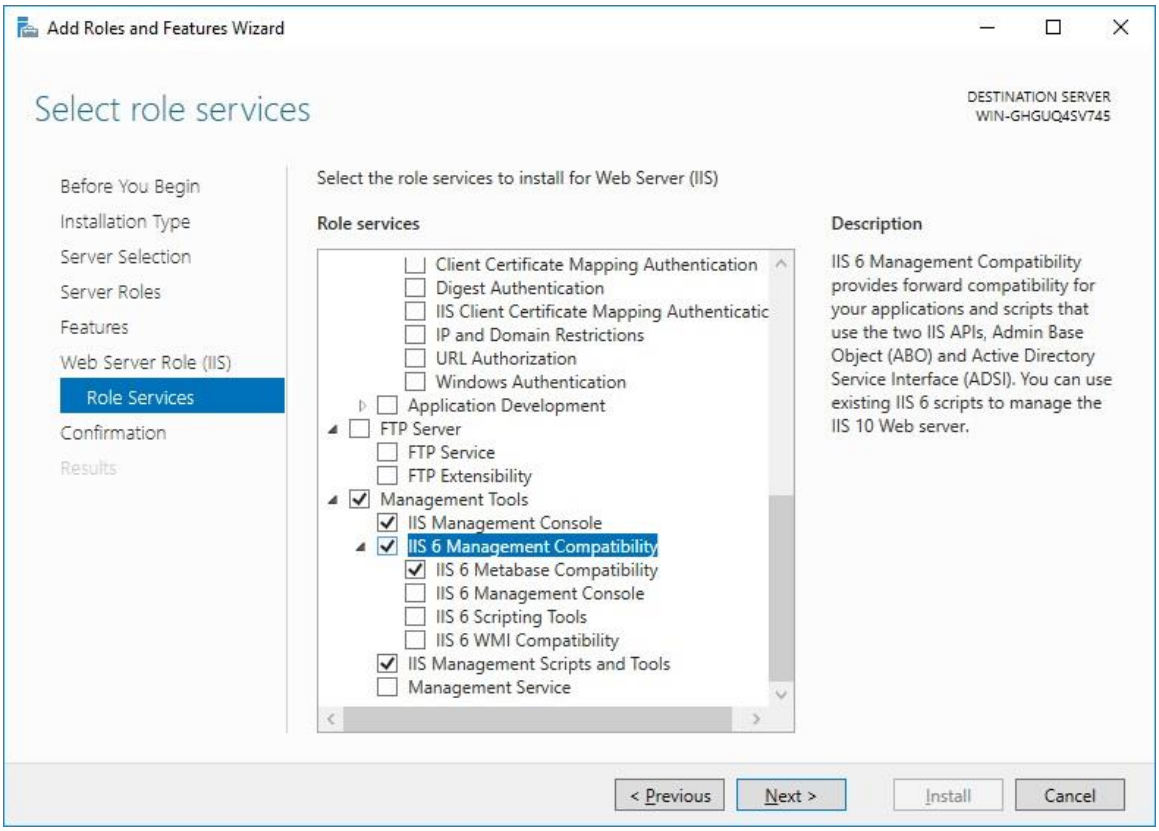
Features

- .NET Framework 3.5 Features\.NET Framework 3.5
- .NET Framework 4.6 Features\ASP.NET 4.6



Web Server Role (IIS)\Role Services

- Management Tools\IIS 6 Management Compatibility\IIS 6 Metabase Compatibility
- Management Tools\IIS Management Scripts and Tools



REMOTE DESKTOP SUPPORT

The applications have been tested while logged on to the supported Windows server versions Terminal Server via remote desktop. The Terminal Server must be installed in Application Server mode.

Note: SoftPhone support is disabled if MiContact Center Agent is running in a Terminal Server session.

For MiContact Center Agent to run properly under Terminal Server, the following steps must be taken on the Terminal Server PC:

1. Open Administrative Tools and click Local Security Policy.
2. Expand Local Policies, and then click User Rights Assignment.
3. In the right pane, double-click **Create global objects**.
4. In the Local Security Policy Setting dialogue box, click Add.
5. In the **Select Users or Group** dialogue box, select the user account that you want to add.

SQL SERVER INSTALLATION

MiCC Enterprise relies on Microsoft SQL Server for its databases. SQL Server may reside on the same computer as the MiCC Enterprise server or it may reside on an external server.

When installing the SQL Server, you need to log on with Local Administrator privilege. This account will then be assigned to SQL Server as its user account. There is no need to create any MiCC Enterprise database or user account since the MiCC Enterprise installation procedure handles this automatically.

Note: SQL Server collation must be case insensitive (CI). Case sensitive is not supported.

To optimize the database performance, it is highly recommended that the following criteria are applied to the physical placement and database option set for the *tempdb* database:

1. Allow the tempdb database to be automatically expanded as needed.
2. Set the original size of the *tempdb* database files to 25% of the intended size of the MiCC Enterprise database. (For details on how to estimate the size of the MiCC Enterprise database, see document *Estimating Database Size*).
3. Set the file growth increment percentage to 10%. If the file growth is too small compared to the amount of data being written to the *tempdb* database, then the *tempdb* database may need to be constantly expanded, thus affecting the performance of the data- base.

Note: When SQL Express is used as the MiCC Enterprise database server, ensure that the TCP/IP protocol is enabled. The default TCP/IP port configured for SQL Express may be different than SQL Server. The MiCC Enterprise installation may not be able to detect this port. If the port is not detected automatically, ensure that the correct port number is specified in the installation.

Note: If dynamic ports are configured for SQL Server named instances, ensure that a static port is configured for TCP/IP connections to the SQL instance used by MiCC Enterprise. The same port number should be entered in MiCC Enterprise installation for the SQL Server port number.

UPGRADING TO A LATER VERSION OF SQL SERVER

The supported versions of Microsoft SQL are listed in the *MiCC Enterprise System Engineering Guidelines.* If you have a previous version of Microsoft SQL on your current system and a previous version of MiCC Enterprise installed, it is necessary to upgrade to Microsoft SQL.

Note: You should always refer to current Microsoft documentation for additional information and updates.

1. Run **OASshutdown** from a command prompt to stop all OAS services.
2. Set all services, see *Table 2 Services*, by selecting **Control Panel Services**, **Administrative Tools** and **Services** to manually start and then stop the services.

Table 2: Services

SERVICES	NAMES
MiCC Enterprise *Do not stop the **CCBroker** service until you have backed-up your data. This service is required for running Database Maintenance.	CCAgent CCArchive CCBluePumpkin

	CCBroker CCCallControl CCCampaign CCChat CCConfiguration CCConfigurationWcf CCDBMT CCEmail CCEvent CCOpenMedia CCRealTime CCReport CCRouter CCScheduler CCSolidusAgent CCUpdater * Actual services may vary depending on installed components. Look for references to MiCC Enterprise in the Service Description for applicable services
Script Manager	SM Admin Service SM Configuration Service SM Logging Service SM Utility Service
Enterprise License Manager	Enterprise License Manager

3. Set the **Mitel Daemon** service to manual start to prevent the OAS service from starting.
4. Backup applicable MiCC Enterprise and SQL server information, including voice prompts and configuration data see *Troubleshooting* for specific details.
5. When back up is completed, set the **CCBroker** service to manual start and stop the service.
6. Make sure all OAS, ELM and MiCC-Enterprise services have been set to manual start.
7. Install and run the **SQL Upgrade Advisor** to check your system for upgrades. A report will be generated listing steps to follow before and after an upgrade. Review and perform the applicable steps.

   Note: You can run this utility after every database change to detect if your changes have fixed the applicable problem.

8. Install and run the SQL installation on your server.

   Note: During upgrade, if you need to change the installation path, you must click **Advanced** to access the **Installation path** button.
9. Follow the installation wizard instructions. When installation is complete, restart the system.
10. Restart the **CCBroker** service.

RUNNING THE SETUP PROCEDURE

To run the setup procedure, follow the instructions as described in the *Microsoft SQL Server Books Online*.

Note: Make sure to reboot the PC after installing SQL Server, so that the path will be properly setup, prior to installing MiCC Enterprise.

SYSTEM ADMINISTRATOR ACCOUNT PASSWORD

Do not use a blank password for the System Administrator Account.

CONFIGURING THE SQL SERVER

Follow these steps to configure the SQL Server:

1. Insert the SQL Server DVD into your DVD drive. If the auto run feature on your DVD drive does not launch the installation program, navigate to the root of the DVD and launch splash.hta.
2. Run SQL Server Installation Wizard.
3. Select **Components to Install**. Any combination of check boxes can be selected. If SQL Server of Analysis Services is selected and Setup detects that you are installing to a virtual server, the **Install as a Virtual Server** check box is enabled. This option must be selected to install a fail over cluster. MiCC Enterprise does not use the **Report Services** components so it is not necessary to install this component. Click **Next** to continue.
4. Select a default or named instance for your installation. If a default or named instance is already installed, and you select the existing instance for your installation, Setup upgrades it and provides the option to install additional components. To install a new default instance, there must not be a default instance on the computer. To install a new named instance, click **Named Instance** and then type a unique instance name in the space provided.
5. Specify the user name, password, and domain name for SQL Server service accounts. One account can be used for all services. Make sure to select SQL Server Agent Service to start services at the end of the setup.
6. On the **Authentication Mode** page, select **Mixed Mode (Windows authentication and SQL Server authentication)** to use for your SQL Server installation. Enter and confirm a strong password for the **sa** login. To proceed, click **Next**.
7. Select the **Auto Start Service** option for both SQL Server and SQL Server Agent.
8. Configure both the SQL Server and the SQL Server Agent to run using an account with administrator privileges. E-mail profiles cannot be created for the local system account which implies that both SQL Server and SQL Server Agent must run under a user account with administrative privileges to be able to use the alert notification.
9. On the **Memory** tab of the **SQL Server Properties** dialogue box, set the maximum value to half of the maximum memory allowed by the PC.
10. Set the original size of the **tempdb** database files to 25% of the intended size of the MiCC Enterprise database but not to exceed 200 MB. (For details on estimation of the MiCC Enterprise database size, please refer to *Estimating Database Size*)
11. Set the authentication mode to **Mixed Mode** (SQL & Windows authentication).

12. Reboot the PC after installing SQL Server, so that the path will be properly setup, prior to installing MiCC Enterprise.

MICC ENTERPRISE ACCESS TO SQL SERVER

Installation of MiCC Enterprise relies on the command line utilities generally installed along with SQL Server. Specifically, the SQLCmd.exe and BCP.exe utilities are required. If SQL Server is installed on an external server, these utilities must be installed on the MiCC Enterprise server. These utilities are included along with SQL Server Management Studio prior to release v18.X. They are also included in the Command Line Utilities for SQL Server installation package available from Microsoft. The installation of MiCC Enterprise will check for the existence of these utilities and will not proceed until available.

MICROSOFT SQL SERVER CLIENT ACCESS LICENSE REQUIREMENT

Microsoft licensing policy requires that every server in which SQL Server is installed must acquire a server license. In addition, a Client Access License (CAL) is required to allow a client device to connect to the SQL server database. A device can be a workstation, a terminal, a pager, and so on. SQL Server CALs can be configured either per Device or per User. Per Device licensing means a CAL must be acquired for each device connecting to any licensed SQL server. Per User licensing means that a CAL must be used for each user that accesses a server.

See License requirements for license requirements when MiCC Enterprise and the SQL Server are installed on the same machine.

Table 3: License Requirements

NUMBER OF LICENSES	DEVICE
1	Each OAS Server (unless installed on the same machine as MiCC Enterprise)
1	Each MiCC Enterprise Server

For each client that is running any of the following applications one CAL is needed:

- Information Manager
- Report Manager
- Configuration Manager
- Agent

MiContact Center Enterprise's use of SQL Server is classified as a "Multiplexed Application Environment". There are two options for licensing in this case:

- Option 1: The customer purchases SQL Server CALs for each named user. Each administrator, supervisor and agent will require an SQL CAL license.
- Option 2: The customer purchases SQL Server licenses based on processors (2008) or cores (2012) to enable unlimited users.

The choice between options 1 and 2 is largely dependent on the customer's environment. If there are a small number of users, option 1 is normally more economical. If there are a large number of users (or no way to count), option 2 is a better choice. In other words, this is not a product question. Whoever is selling the SQL Server licenses should provide this guidance.

OAS SERVER INSTALLATION

The OAS Server must be installed and configured prior to running MiCC Enterprise installation. It must reside in the same domain as the MiCC Enterprise server or a domain that has a trust relationship set with the domain in which the MiCC Enterprise services or applications are running.

Note: The Windows user account that MiCC Enterprise uses to access OAS (optionally) must belong to the Windows Global User Groups (that is, the OAS Administrator Group and the OAS Client Group) defined prior to OAS installation.

Refer to OAS Installation Instructions for details.

OAS AND MICC ENTERPRISE INTEGRATION SECURITY

A Windows User ID may be required to connect to OAS services. Refer to *OAS Installation Instructions* for details.

VOICE PROMPTS

Voice prompts for the applications must be copied to the OAS system. Refer to document *Message Files* for a listing of the entire MiCC Enterprise voice prompts. Refer to document *ASR and TTS Overview* for details.

With the introduction of the IP media server, OAS is moving away from .vox files to the .wave format. All prompts delivered in this version are in .wave format. Vox files are not supported for the IP media server.

PACKAGE BROWSER

The MiCC Enterprise media kit includes a master installation option, Install.exe.

LICENSE INSTALLATION

MiCC Enterprise licenses are managed by the Enterprise License Manager, a client/server license-control application. In order to register the MiCC Enterprise or MiCC Enterprise NOC licenses, the Enterprise License Manager Server must be installed on your network. See document *Enterprise License Manager* for more information.

Note: The Enterprise License Manager should only be installed on one computer on the network. If you already have Enterprise License Manager installed, simply provide the license server name during installation. The Enterprise License Manager client will then automatically be installed with MiCC Enterprise or MiCC Enterprise NOC.

VERIFYING THE ENTERPRISE LICENSE MANAGER SERVER INSTALLATION AND ADD LICENSES

See document *Enterprise License Manager* for detailed information.

ADDING CLIENT LICENSES WHILE SYSTEM IS RUNNING

Licenses may be added when the system is running. Added licenses will be visible to the MiCC Enterprise system after the next license refresh period. All installed licenses are visible in the Configuration Manager interface.

HARDWARE INSTALLATION

This section describes installation of hardware to MiCC Enterprise and MiCC Enterprise NOC.

PRINTERS

For Report Service to start successfully so that scheduled reports can be printed, the desired printer(s) must be added to the Windows user account that will start the service.

ASSIGNING A NETWORK PRINTER TO A WINDOWS USER ACCOUNT

1. Click **Start** on the task bar.
2. Point to **Programs**.
3. Point to Administrative Tools (Common), and click Computer Management.
4. In the **Console tree**, in Local Users and Groups, click **Users**.
5. Click **Action** and **New User** to verify the user account has been created. If not, create user account by using the **New User** command on the pop up menu.
6. Close the **Computer Management** window and log off from the system.
7. Log on to the system with the account described in step 5.
8. Add a network printer from the **Printers** window.

PERSONAL DIRECTORY SETUP

If Personal Calls will be used in the MiCC Enterprise system, follow the steps below to setup the personal directory numbers.

1. Define the Personal Directory Number (PDN) in the MX-ONE as a pseudo PBX group (i.e. a PBX group with no members). In the MX-ONE it also may be defined as a virtual extension. This must be done for each agent that will have a personal directory number.
2. Configure the number to divert to a CTI group, configured as a BVD in OAS.
3. Assign the BVD to a Service Access and have this Service Access send the calls to a Service group. This Service Group should have the purpose: Voice – Manual Routing, and have the check box for Personal Calls set.

It is also possible to define a DNIS number that routes to a CTI group, configured as a BVD in OAS or TAS. In this case, the DNIS number is defined as the agent's personal number in Configuration Manager. The DNIS number in the PBX is configured to be routed to the CTI group configured as a BVD as in steps 2 and 3 above.

To define this in the MX-ONE, use the following command:

ACTNI:DNUM=X,SGRP=Y;

Where X is the agent's personal number (i.e. the DNIS number) and Y is the directory number of the CTI group used for the Personal Number.