

MiCollab Advanced Messaging System Installation Guide

For version 6.1 and above

Notice

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Preface

NOTE Your system may have come with the latest Software Update (at time of shipment) on a disc in the package. In some cases, a Software Update will contain a complete updated installation for one or more components. If your system includes a Software Update disc, please review the Technical Bulletin for the Software Update to determine if you should install the component from the Software Update disc or the base software disc to avoid unnecessary work. It's also a good idea to run Live Update or check the support web site for any newer Software Updates or patches that have become available since your system was shipped.

This guide is written for those installing MiCollab Advanced Messaging (MiCollab AM) using version 6.1 software. This guide consists of the following parts:

- A brief introduction to the MiCollab AM software edition and its features
- Information on preparing to install MiCollab AM software
- Instructions about how to install Windows Server 2008 R2 with Service Pack 1 and Windows Server 2012 R2
- Instructions on installing Automatic Speech Recognition software
- Instructions on setting up the MiCollab AM software license
- Instructions on installing MiCollab AM software
- Instructions on configuring MiCollab AM for the first time
- Information on MiCollab AM Configuration
- Instructions about how to integrate the MiCollab AM software with the telephone system and how to troubleshoot the installation
- Instructions about how to install MiCollab AM client applications

This guide assumes that you are familiar with the Microsoft Windows operating system, including computer management, local users, and security settings.

References

A catalog of technical documentation is included on the MiCollab AM Installation Media. If you are installing any advanced applications, such as Networking and Fax Server applications, you should refer to the appropriate technical documentation for application and installation information.

Documentation

The technical documentation is produced in the PDF format and requires the PDF reader to view it. The documentation set for this MiCollab AM includes the following documents and resources:

- **Developer Resources.** Contains programming guides and API references for developers for integrating the server clients and web applications with MiCollab AM.
- **Integration Technical Notes (ITN).** Contains a set of guides that describe the integration methods and instructions for a variety of phone systems to work with MiCollab AM. The ITNs are generally used by resellers or administrators who are experienced with MiCollab AM and familiar with the integration procedures and terminology.
- **Quick Reference Card (QRC).** Contains shortcuts and quick instructions telling subscribers how to access and use the messaging system.
- **Server Documentation.** Available as a PDF only. Contains administrative guides for administrators about installing, configuring, and administering the messaging system, and user guides for subscribers about accessing the messaging system and checking and sending messages.
- **Spare Parts Documentation.** Contains a set of guides that describe the instructions for installing and configuring hardware parts to work with MiCollab AM. These documents are written for Mitel certified MiCollab AM technicians who are experienced with MiCollab AM and familiar with the procedures and terminology.
- **Software Release Notice (SRN).** This notice introduces the new features, capabilities, and hardware/software requirements for the corresponding MiCollab AM version.

To determine where to look for more information on a specific subject, refer to the following table.

Table 1. References

For information about...	See...
Configuring a MiCollab AM System Server and a OpenText™ RightFax® fax server to work together in managing incoming fax messages	The <i>RightFax Integration Guide</i> and Online book <i>Fax Messaging</i>
Configuring a MiCollab AM system to support Unified Messaging on an IMAP compliant e-mail server	Online book <i>Unified Messaging for IMAP</i>
Configuring a MiCollab AM system to support the Unified Messaging for Lotus Notes and Domino client program and installing that program on subscribers' computers	Online book <i>Unified Messaging for IBM Lotus Notes and Domino</i>
Configuring a MiCollab AM system to support the Unified Messaging for Microsoft Exchange client program and installing that program on subscribers' computers	Online books <i>Unified Messaging for Microsoft Exchange 2007</i> and <i>Unified Messaging for Microsoft Exchange 2010 2013 2016</i>
Configuring a MiCollab AM system to support an IMAP-based e-mail client	Online book <i>Integrated Client Access</i>

Configuring and changing your Short Message Service (SMS) message notification settings	Quick Reference Card <i>SMS QRC</i>
Configuring two or more networked MiCollab AM systems so that administrators on one server can view and change mailboxes and system configuration settings on the others	Online book <i>Netconnect Digital Networking</i>
Configuring, installing, or replacing a System Server platform or one of its hardware components	Spare parts document for the platform or component
Connecting the Call Server to the telephone system and programming both so that they handle calls in an integrated manner	The MiCollab AM Integration Technical Note for the telephone system
Creating new UConnect scripts automatically	The <i>UConnect Administration Guide</i>
Diagnosing and correcting conflicts in information traffic (known as mailbox conflicts and server conflicts) between networked MiCollab AM systems	Online book <i>Netconnect Digital Networking</i>
Installing and Administering Message Cache Manager	Online book <i>Web PhoneManager</i>
Installing and Administering the Mobility Data Server	The <i>Mobile Web Admin Administration Guide</i>
Installing a System Server platform, setting up the MiCollab AM software on it, and preparing it to be used for the first time	The <i>System Installation Guide</i>
Installing UConnect interactive voice response (IVR) development software	The <i>UConnect Administration Guide</i>
Installing the Web PhoneManager™ application on a web server and making it available to subscribers	Online book <i>Web PhoneManager</i>
Managing voice and fax messages through Lotus Notes	The Online help and Quick Reference Card <i>UM Notes QRC</i>
Managing voice and fax messages through Microsoft Outlook	The Online help and Quick Reference Card <i>UM Exchange QRC</i>
Managing voice and fax messages through Novell® GroupWise®	Quick Reference Card <i>UM IMAP QRC</i>

Networking a MiCollab AM system with one or more messaging servers or voice mail systems from other manufacturers so that they exchange messages over a data network	Online book <i>Netconnect Digital Networking</i>
Networking a MiCollab AM system with one or more voice messaging servers or voice mail systems from other manufacturers so that they exchange messages over standard telephone connections	Online book <i>Analog Networking</i>
Networking two or more MiCollab AM systems to exchange configuration information about Subscriber and Distribution list mailboxes	Online book <i>Netconnect Digital Networking</i>
Networking two or more MiCollab AM systems to exchange messages over a data network	Online book <i>Netconnect Digital Networking</i>
Networking two or more MiCollab AM System Servers to exchange messages over standard telephone connections	The Online book <i>Analog Networking</i>
New features and capabilities in your version of the MiCollab AM software	The software release notice for that version of the software
Notifying subscribers of new messages through Short Message Service (SMS) support	Online book <i>SMS and Simple UM</i>
Preparing a MiCollab AM system that runs a version prior to 3.0 of MiCollab AM so that you can upgrade the server to the current software version	Online book <i>Upgrading and Migrating MiCollab AM</i>
Providing library documents by fax to callers who request them	The <i>RightFax Getting Started Guide</i> and the online book Faxtext
A quick reference guide to the MiCollab AM Mobile Clients	Quick Reference Cards <i>Android Mobile Client QRC</i> and <i>iPhone Mobile Client QRC</i>
Recording names, recording greetings, and changing mailbox settings through an appropriate web browser	The Web PhoneManager application and its online help
Recording names, recording greetings, and changing mailbox settings through PhoneManager™	The Online help and the appropriate edition of the MiCollab AM Telephone Quick Reference Card
Specific UCCconnect programming syntax	The <i>UCCconnect Administration Guide</i>

Removing and Installing Dialogic and Aculab Software Support Components	The <i>Dialogic & Aculab Administration Guide</i>
Supporting Voice Intercept Messaging (VIM) features on an supported telephone systems	Online book <i>Voice Intercept Messaging</i>
Using basic MiCollab AM features over the telephone	The appropriate edition of the MiCollab AM Telephone Quick Reference Card
Using Voice Intercept Messaging (VIM) features with MiCollab AM	Quick Reference Card <i>VIM QRC</i>
Working with Call Processor Mailboxes	The <i>Call Processor Mailbox Administration Guide</i>
Working with Automatic Speech Recognition	The <i>Automatic Speech Recognition Administration Guide</i>
Working with Mailbox Archive	Online book <i>Mailbox Archive</i>

Documentation Updates

Documentation updates may be available from the following sources:

- Mitel certified technicians can view or download documents and program files from our partner web site: connect.mitel.com/connect

Help

The primary source of information about MiCollab AM is the online help available within any of its administrative utilities. You can access **Help** as follows:

- Click the **Help** button in the dialog box or window in which you are working
- Press the **F1** key at any time.

Document Conventions

The following conventions are used in this document:

- **Key Names.** Names of keys on the keyboard are shown in a box.

Example: **Enter**

When two keys must be pressed simultaneously, they are joined by a + sign.

Example: **Alt** + **Tab**

- **Reference to Document.** *Italics* fonts can also signify the titles of other documents.

Example: Refer to *System Installation Guide*.

- **UI Element Names.** Names of UI elements such as dialog windows, screens, menu items, tabs, buttons, icons, etc. are shown in bold.

Example: On the **Startup** screen, click the **Start** icon.

- **User Input.** Information required to be typed or spoken is shown in italics.

Example: Type the password *voicemail*.

- **Warning, Caution, Important, and Notes.** Text for the contents that require attention are shown as follows:

WARNING A warning paragraph advises you of circumstances that can result in the loss of data, harm to the system server platform, or personal harm.

CAUTION Failure to follow these recommendations can result in unauthorized access to the system and consequent loss of data.

IMPORTANT An important paragraph gives decision-making information or informs you of the order in which tasks need to be completed.

NOTE A note gives additional information, provides an explanation, or indicates an exception to the information in the preceding text.

Glossary

Table 2. Glossary

Term	Description
Access rights	Permission granted by a system's administrators to perform tasks such as adding, editing, or deleting mailboxes
Application	A System Server mailboxes and other settings that controls how the System Server and the telephone system work together to process calls
Audio Messaging Interchange Specification	An industry standard that allows voice messaging systems from different manufacturers to exchange messages
Automatic Number Identification	A series of digits that accompanies a telephone call and communicates the caller's telephone number

Blind Transfer	A transfer type in which the System Server dials the caller's destination telephone number or extension and releases the call immediately. See also monitored transfer and transfer type
Caller	A person who places a call to a telephone system; see also subscriber
Call Server	Call Servers provide the telephony and speech interface; they perform the call handling, message taking, and MWI and callout tasks of the system
Client Utilities	Programs that an administrator uses to configure and manage the System Server
Device	A telephone instrument
Dongle	A USB device that is attached to the MiCollab AM server platform, which verifies the license information and authorizes the software to run
Global User Administration	A feature that makes it possible to examine and change mailboxes and certain configuration elements on several System Server platforms simultaneously from one location
Integration	A specification, supplied with the System Server, that describes how to connect that server to the telephone system and program both so that they exchange as much information as possible about the calls they handle
License Key	The feature key installed on MiCollab AM to enable licensed features of the system
Monitored Transfer	A transfer type in which the System Server dials the caller's destination telephone number or extension and waits to detect ring tone before it releases the call. See also blind transfer and transfer type
Short Message Service	An industry-standard method of transmitting short text messages to a subscriber's mobile telephone, pager, or other device for immediate display
Subscriber	The user of a specific telephone instrument or extension within a telephone system; see also caller
Switch	Another word for a telephone system
System Server	<p>The System Server hosts the master database, manages the administration interface and the licensing of all assigned Call Servers</p> <p>Also refers to the combined set of System Server/ Call Server hardware and software that handles telephone calls, voice messages, and audio recordings in a MiCollab AM system</p>
System Server platform	Refers to the System Server and any Call Server computer platforms on which the server software runs

Text-to-Speech	A program that accepts strings of computer text and generates synthetic speech to read the text aloud
Transfer Type	The method that the System Server uses to transfer calls; see also blind transfer and monitored transfer
Transmission Control Protocol / Internet Protocol	A set of specifications and a resulting set of data networking protocols that support the Internet and a wide range of smaller networks
User ID	An account name that identifies an individual as a valid System Server administrator
Voice Intercept Messaging	A Service that allows subscribers to offer callers with a reason that they could not answer the call from a set number of options, then offer callers with choices of what they want to do next, such as leave a message, transfer to someone else, and so on; available on specific telephone systems only

Acronyms and Abbreviations

Table 3. References

Term	Description
AMIS	See Audio Messaging Interchange Specification
ANI	See automatic number identification
ASR	Automatic Speech Recognition
CPID	Calling party Identification. A service provided by the serving telephone company
DNIS	Directory Number Information Service. A service provided by the serving telephone company
PSTN	Publicly Switched Telephone Network
SMS	See Short Message Service
TCP/IP	See Transmission Control Protocol / Internet Protocol
TTS	see text-to-speech
VIM	See voice intercept messaging

VPIM

Voice Profile for Internet Mail, a specification for encoding audio recordings as long strings of plain text, which makes Digital Networking possible.

Overview of MiCollab AM

Welcome to MiCollab AM, the powerful unified messaging system from Mitel. With MiCollab AM, companies can integrate their telephone systems with their computer networks, providing a versatile, truly unified messaging environment for their employees and customers.

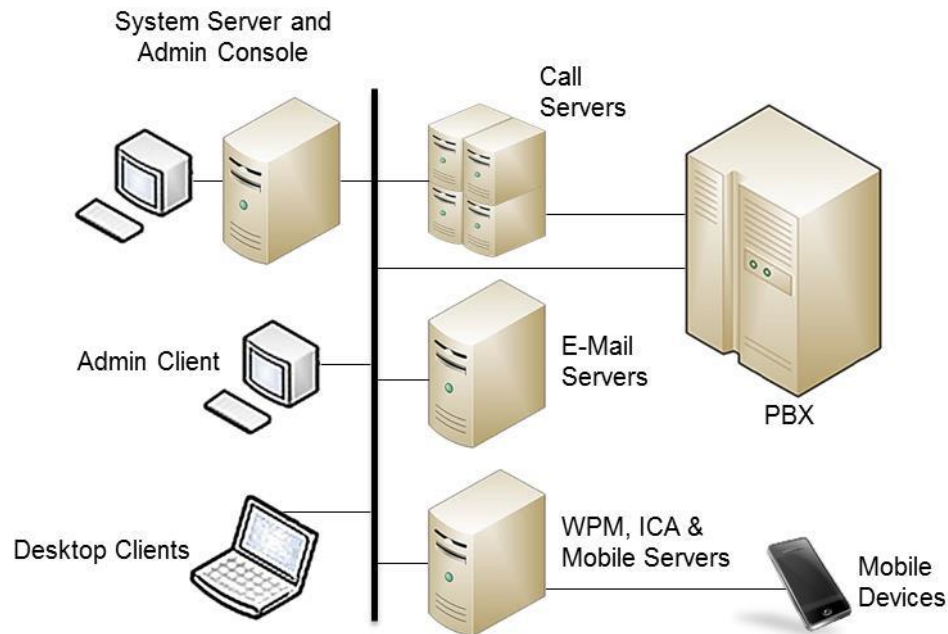


Figure 1. Possible MiCollab AM Integration Options

Basic MiCollab AM Messaging System

A basic MiCollab AM messaging system consists of a System Server with Call Services connected to the telephone system and the company's local area network (LAN). The scalability of MiCollab AM and the Microsoft Windows operating systems enable this messaging system to expand its versatility by adding any of the following components:

- Additional servers for applications such as digital networking or UCConnect service designed to enable business integration interactive voice response (IVR) applications.
- One RightFax® Enterprise Fax Server
- Additional e-mail servers using IBM Notes™ Domino Server or Microsoft Exchange Server, or e-mail servers compatible with the Internet Message Access Protocol (IMAP)

The MiCollab AM components that manage phone lines and process calls are designed to run as operating system services. This design protects the most critical server functions from interference caused by errant applications and allows the server to resume call processing automatically as soon as the operating system recovers from a power loss.

Expanded MiCollab AM Messaging System Topology

The basic MiCollab AM messaging system described above can be expanded from a single System Server with Call Services to a multi-server topology including:

- Up to three (3) System Servers protected by Neverfail technology. The Neverfail technology provides High Availability (HA) and Disaster Recovery (DR) for the System Servers.
- Up to twenty (20) Call Servers allowing messaging systems to grow to hundreds of ports while providing call processing redundancy.

The expanded MiCollab AM topology provides enterprises with the scalability, high availability, and disaster recovery capabilities required for mission critical application.

MiCollab AM Messaging System Management

The **MiCollab AM Admin** utilities can run either on the server platform itself or on another computer on the same LAN or WAN. This allows multiple administrators to manage the server from their own desks, either separately or as a team.

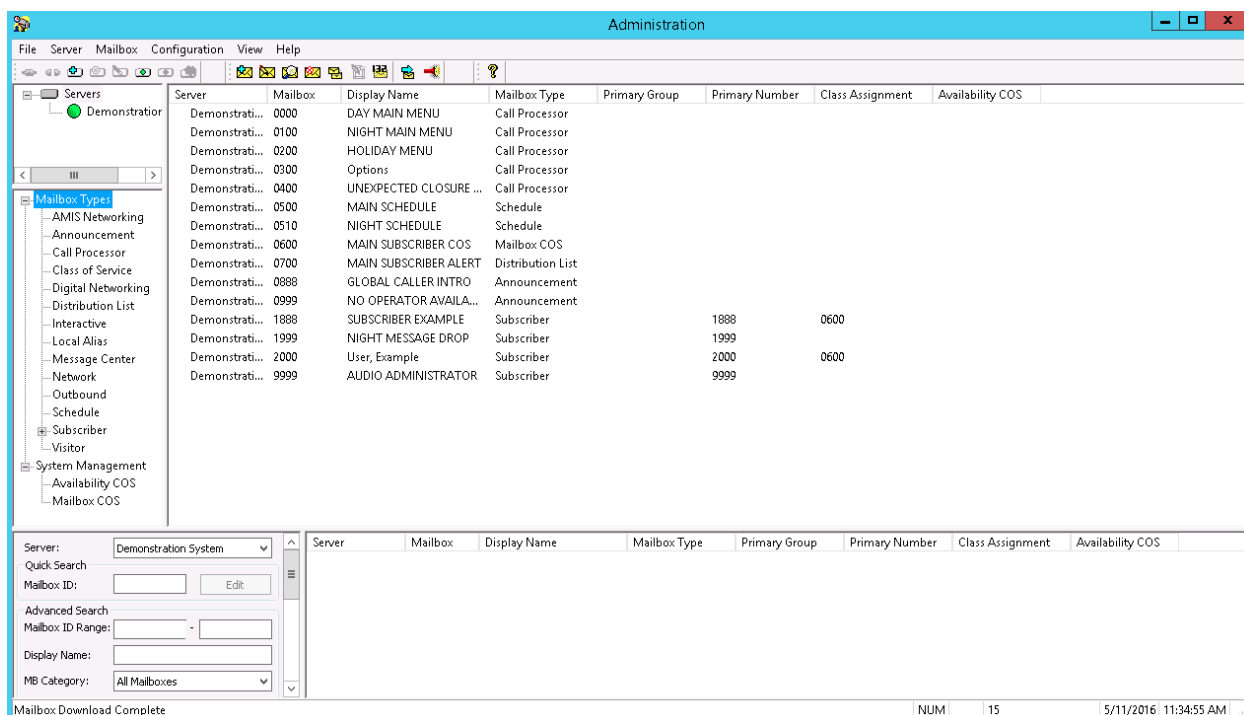


Figure 2. MiCollab AM Admin Utility

To configure and manage a server over a modem or Internet connection, administrators can use a remote control solution, such as the Microsoft Remote Desktop Connection, or Symantec® pcAnywhere software. These remote control software applications enable administrators and Technical Support personnel to view and manipulate the server's desktop as though they were at the server's own console. For more information about Remote Desktop or pcAnywhere, see the online help or *System Administration Guide*.

NOTE You can use software other than pcAnywhere to administer MiCollab AM remotely. To ensure the software is compatible with MiCollab AM, contact Technical Support.

For information on the use of anti-virus software running on the System Server or any Call Server, refer to the *Installing Anti-Virus Software* chapter in *System Administration Guide*.

Hardware/Software Licensing

There are two possible ways that MiCollab AM can be licensed: **Hardware** or **Software**.

- **Hardware** licensing relies on a USB dongle.
- **Software** licensing relies on cloud licensing, which requires permanent internet connectivity.

To simplify the licensing process both hardware and software licensing can be managed with the **License Management Utility**. The **License Management Utility** allows the administrator to download the MiCollab AM license file, and to register the server platform with the cloud license provider.

The [Licensing the Messaging System](#) section describes the steps to install and use the **License Management Utility** to license the MiCollab AM system.

Planning the MiCollab AM Installation

The following flowchart provides guidance on the steps to successfully install the MiCollab AM messaging system based on the specific installation needs.

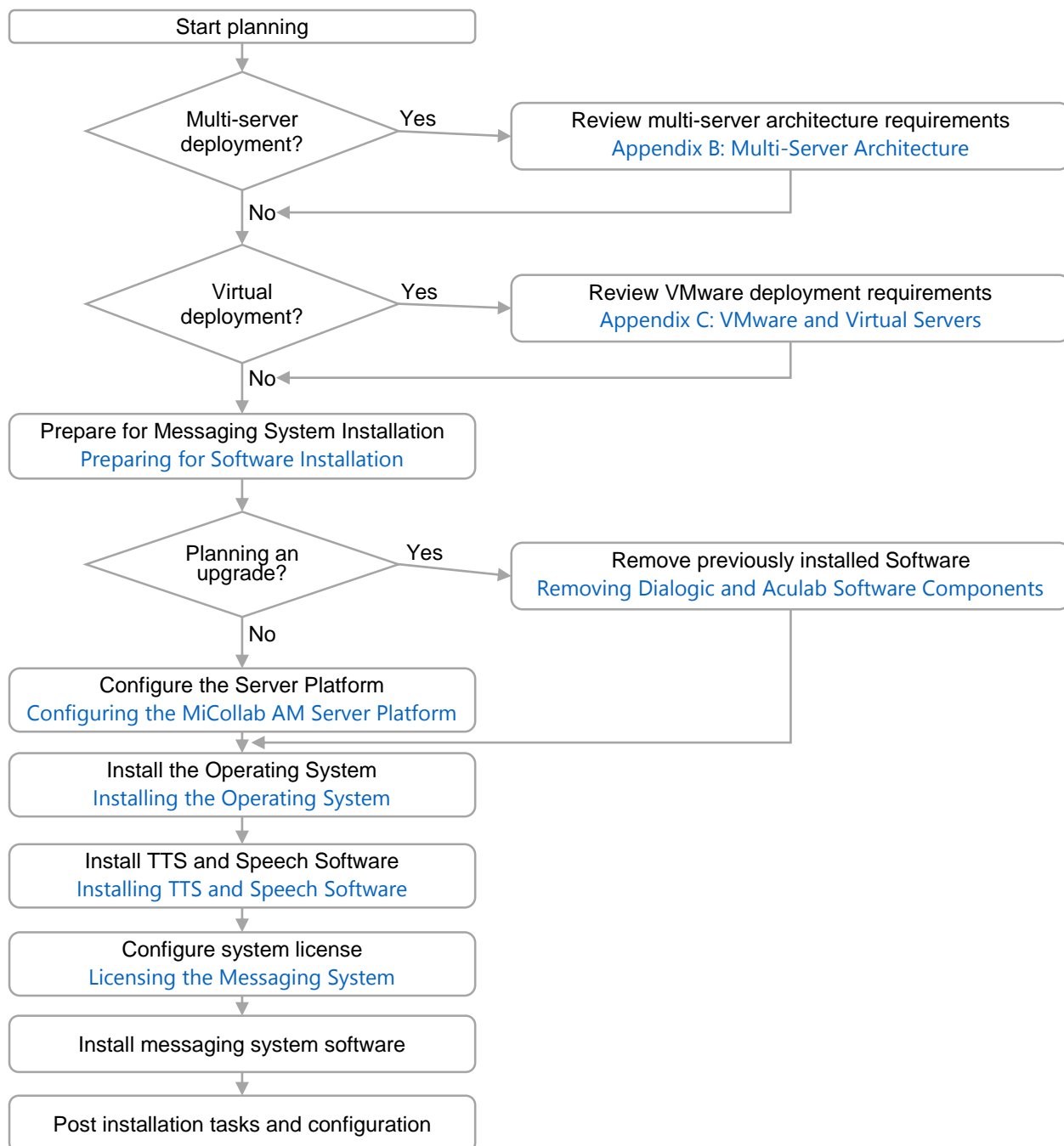


Figure 3. MiCollab AM Installation Process

Preparing for Software Installation

NOTE Certain versions of Windows, such as Windows 8/8.1/10 and Windows Server 2012 R2, may not allow MiCollab AM to install .NET 3.5 SP1. In those cases, you may need to manually install .NET 3.5 to use full MiCollab AM functionality.

This chapter discusses the installation or upgrade process you should follow to install the MiCollab AM software. You may complete installation either directly at the computer where you want to install MiCollab AM, or remotely through **Remote Desktop Connection**. For more information about **Remote Desktop Connection**, refer to the appropriate Microsoft documentation.

IMPORTANT

1. To install MiCollab AM through **Remote Desktop Connection**, you must log onto the server in console or admin session. If you do not, some drivers may not install correctly. In addition, Dialogic or Aculab board detection fails.
2. To install MiCollab AM through **Remote Desktop Connection**, you must be able to access the contents of the Nuance and MiCollab AM Installation Media by either copying them to a network drive or sharing the drive on the computer where you are performing the installation.
3. The pages, options, and installation procedures described in this chapter may differ from those presented by the Setup program you are using, based on the MiCollab AM software version and the optional components you have purchased.

Receiving the License Package

The MiCollab AM license is accessed via the **MiCollab AM License Management Utility**. The **License Management Utility** credentials are emailed to the customer contact designated during the customer account registration process.

The licensing process:

- A registration email is sent by Mitel to the Mitel reseller that ordered the product.
- The reseller might use the information in the registration email to register the customer account on behalf of the customer. Alternatively the reseller might forward the registration email to the appropriate customer contact for the customer to complete the registration.
- Upon the customer account being registered, the **License Management Utility** credentials are emailed to the customer contact designated during registration. The reseller will also receive their own credentials for managing the system license.
- Install the **License Management Utility** and use the credentials received by the customer after account registration to download the license certificate and register the System Servers if using software based licensing. See the following sections for details on installing and using the **License Management Utility**.

NOTE The System Server requires a feature file (license certificate); the Call Servers authenticate against the System Server instead of using their own feature file.

Before proceeding with the system installation, please make sure you have received by email the **License Management Utility** credentials.

IMPORTANT If you have not received the license package, contact Technical Support.

Performing Backups

If you are upgrading your version of MiCollab AM, Mitel strongly recommends that you perform a system backup and a mailbox archive of voice and fax messages before upgrading. These backups and archives allow you to restore the MiCollab AM system if there is an error during the upgrade process. Refer to *System Administration Guide* for instructions on performing these backups.

IMPORTANT A system backup and an archive of voice and fax messages may be your only means to recover a MiCollab AM system in the event of an error during the upgrade process.

Migrating from a Windows or OS/2 Platform

If you are upgrading from a previous version of MiCollab AM on a Windows or OS/2 platform, refer to the online book, *Upgrading and Migrating MiCollab AM*. In addition, there are text files to help you with the migration process. These text files are found in the related migration utility folders of the MiCollab AM Installation Media version 6.1.

Upgrading from a Previous Version of MiCollab AM

- If you are upgrading from a previous version of MiCollab AM, you must first install the MiCollab AM TTS/ASR Resources software before you upgrade the MiCollab AM software. You must install the TTS/ASR Resources software first, regardless of whether or not you are using the Speech or TTS features at this time. If you reinstall TTS/ASR later, you must re-install MiCollab AM software after installing the TTS/ASR software.

NOTE In MiCollab AM 5.1 and later, TTS/ASR installation is required. The TTS and ASR software has changed in 6.1. If upgrading a system from a version earlier than 6.1, you must install the TTS and ASR software required for the current MiCollab AM version.

- MiCollab AM version 6.1 requires Dialogic System Release 6 build 271. If your system is running a previous version of Dialogic software, it must be un-installed before you begin the MiCollab AM version 6.1 software installation. The installation process cannot continue if a previous version of Dialogic is detected. You can remove all Dialogic components from the Windows **Control Panel Add or Remove Programs** utility. For more information, refer to the *ReadmeCompatibleSW.txt* file located on the MiCollab AM Installation Media version 6.1 in the **\Server Installs\Telephony Server** folder.

- MiCollab AM version 6.1 requires Aculab software version 8.20.0.1 for 64-bit. If your system is running a previous version of Aculab software. It must be un-installed before you begin the MiCollab AM version 6.1 software installation. The installation process cannot continue if a previous version of Aculab software is detected. For more information, refer to the *ReadmeCompatibleSW.txt* file located on the MiCollab AM Installation Media version 6.1 in the **\Server Installs\Telephony Server** folder, the [Removing Dialogic and Aculab Software Components](#) section of this document, and/or *Dialogic & Aculab Administration Guide*.
- If you are configuring a multi-box environment, you must first upgrade the System Server before upgrading the Call Servers in the system. After the system is upgraded, install any additional Call Servers, and then add them to the System Server once the upgrade is complete.
- The port licenses available on the feature file are shared between all of the Call Servers in the system. Delegate the correct amount of ports to each Call Server using the Lines tab of each Call Server. Open only the ports you want to use on each Call Server. Close the ports you are not using to allow other Call Servers to use the remaining available port licenses.
- If you are using Digital Networking, the Directory Propagation Server must be upgraded prior to upgrading your MiCollab AM System. Follow the steps outlined in the *Installing the Directory Propagation Server (Master)* chapter in the *NetConnect Digital Networking Administration Guide* to perform the upgrade.

Once you have installed all of the software, the setup is the same as a new installation process, including the requirement of a license certificate (software) and a feature file to activate the options you have ordered with MiCollab AM. These two licensing components are provided in the license package you receive from Mitel. If your upgrade includes a new hardware lock, you must return the old hardware lock to Mitel.

NOTE The license package replaces the feature key disk that you may have used previously to install or upgrade MiCollab AM.

Removing Dialogic and Aculab Software Components

NOTE This section applies to messaging system upgrades.

Installing a new version of System Server software support components may require you to remove existing Dialogic or Aculab software support components prior to upgrading the system.

When the System Server Installation Wizard starts, it checks for previous versions of software. If it finds an incompatible version, the setup process is halted and the wizard advises you that you must un-install previous versions before you can continue with the installation.

Installing the current version is performed by installing the System Server version 6.1 software and selecting the software support components you require to support the Call Server. If version 6.1 software is already installed, you must re-install it to add these software support components.

Follow the procedures in this section to remove previous versions of Dialogic and Aculab software support components.

Refer to the document, *Dialogic & Aculab Administration Guide*, or the online help for more information on removing and installing these components.

Understanding Software Support Component Versions

Refer to the current version numbers in the following table to determine if the current software versions are compatible with the software version you are installing.

If you are upgrading from a previous version of software, and the current version of the Dialogic or Aculab components are not compatible with the current version, you must un-install the previous version before you install System Server software version 6.1.

Table 4. Software Version Compatibility

System Server Version	Dialogic Version	Aculab Version	Aculab Version (as referenced in MiCollab AM)
5.0	SR6 SU190	6.x	8.00.3.1
5.0 SP1	SR6 SU241	6.x	8.10.0.1
5.0 SP2	SR6 SU252	6.x	8.10.0.1
5.0 SP3	SR6 SU252	6.x	8.20.0.0

5.1 SU3	SR6 SU252	6.x	8.20.0.1
5.1 SU4	SR6 SU252	6.x	8.20.0.1
6.0	SR6 SU271	6.x	8.20.0.1
6.0 SU1	SR6 SU271	6.x	8.20.0.1
6.0 SU2	SR6 SU271	6.x	8.20.0.1
6.1	SR6 SU271	6.x	8.20.0.1
6.1 SU1	SR6 SU271	6.x	8.20.0.1
6.1 SU2	SR6 SU271	6.x	8.20.0.1

Configuring the MiCollab AM Server Platform

This chapter discusses how you must configure server platforms before installation of the operating system and MiCollab AM software.

Installing CTbus H.100 Compliant Linecards

To support MiCollab AM, Mitel sells PCI linecards that exchange data with one another through a H.100-compliant resource bus. The H.100 standard specifies a hardware design that supports signals from several earlier resource bus specifications including CTbus, SCbus, MVIP, and others.

Each telephony linecard in the Call Server platform is equipped with a CTbus connector, to which a CTbus cable is attached, connecting each telephony linecards H.100 bus together through the CTbus cable. Because the MiCollab AM software is designed to work without terminated resource buses, it is not necessary to add a terminator pack of any sort to either end of the CTbus cable or to change the termination settings on any CTbus linecard in the system.

NOTE The terms CT bus and H.100 are often encountered together. H.100 refers to the specific variant of the CT bus specification used in PCI linecards.

Installing LAN Cards

MiCollab AM requires that a LAN adapter card be installed in the server platform. This LAN card is required even if the server platform is not connected to a LAN.

MiCollab AM supports all LAN cards that are compatible with Windows Server 2008 R2 with Service Pack 1 and Windows Server 2012 R2. Refer to the Microsoft Windows Compatible Products List website (sysdev.microsoft.com/en-us/hardware/lpl/) for a list of LAN cards that are compatible with the Windows operating system.

For details relating to the installation and replacement of LAN cards, refer to the documentation that came with the LAN card or contact the hardware manufacturer.

Installing the Operating System

This chapter documents the critical application considerations that are essential for MiCollab AM to function properly on a Windows Server platform. Currently, Mitel supports the following Windows Server operating systems for use with MiCollab AM:

- Microsoft Windows Server 2008 R2 with Service Pack 1
- Microsoft Windows Server 2012 R2

This manual assumes that you are familiar with installing the Windows Server operating system and have read and understood the appropriate Windows Server documentation. Your installation and configuration of Windows Server may differ slightly based on your requirements.

IMPORTANT You must read and follow each requirement for MiCollab AM to function properly.

Installing Windows Server 2008 R2 with Service Pack 1 (64-bit) or Windows Server 2012 R2 (64-bit)

IMPORTANT After you install the Windows Server 2008 R2 with Service Pack 1 or Windows Server 2012 R2 operating system, but prior to installing the MiCollab AM TTS/ASR Resources software and the MiCollab AM System Server software, verify that the Local Security Policy, **User Account Control: Detect application installations and prompt for elevation**, is **enabled** on the server platform.

The security setting must be set to **enabled**, before you begin the MiCollab AM software installation.

On most editions of Windows Server 2008 R2 with Service Pack 1, this policy is enabled by default. However, on some editions the policy may be disabled by default.

To verify Local Security Policy:

- 1 Go to **Start > All Programs > Administrative Tools > Local Security Policy**. The Local Security Policy window displays.
- 2 Under **Security Settings**, select **Local Policies**, and then **Security Options**.
- 3 Locate the policy, **User Account Control: Detect application installations and prompt for elevation**, and then verify the **Security Setting** is **Enabled**.
- 4 If it is not enabled, double-click the policy. **The User Account Control: Detect application installations and prompt for elevation Properties** dialog box displays.
- 5 Select **Enabled**, and then click **OK**.

The following are the MiCollab AM requirements for Microsoft Windows Server 2008 R2 with Service Pack 1 or 2012 R2:

- Create a **C** partition on the hard disk with an NTFS file system that is at least 40 GB. This is the partition where the Windows operating system resides.
- Create a **D** partition on the hard disk with an NTFS file system for MiCollab AM. Mitel does not support the FAT file system.
- Do NOT install Internet Information Services (IIS). Installing this component interferes with MiCollab AM.
- A static TCP/IP address is recommended
- After you are finished installing Windows Server 2008 R2 with Service Pack 1, run the Windows Update Service to install any critical updates recommended by Microsoft. Refer to the *MiCollab AM Software Release Note* before upgrading to any future service pack releases.
- Configure the following Windows settings:

- Windows performance optimization:

To optimize Windows performance:

- 1** Right-click **Computer**, and then select **Properties** from the shortcut menu. The **System** window displays.
- 2** In the left pane, select **Advanced System Settings**. The **System Properties** dialog box displays.
- 3** In the **Performance** area of the **Advanced** tab, click **Settings**. The **Performance Options** dialog box displays.
- 4** On the **Visual Effects** tab, select **Adjust for best performance**.
- 5** Select the **Advanced** tab.
- 6** Under **Processor scheduling**, select **Background Services**.
- 7** Click **OK**.

- Memory dump size:

To Specify the Memory Dump setting for system recoveries:

- 1** Right-click **Computer**, and then select **Properties** from the shortcut menu. The **System** window displays.
- 2** In the left pane, click **Advanced System Settings**. The **System Properties** dialog box displays.
- 3** In the **Startup and Recovery** area, click **Settings**. The **Startup and Recovery** dialog box displays.
- 4** In the **Write debugging information** area, select **Small Memory Dump (256 KB)**.
- 5** Click **OK**.

- Save the new settings and close the **System** window.

- Make sure your display properties are set to a screen resolution of at least 1024 x 768.

Installing TTS and Speech Software

You must install the **MiCollab AM ASR/TTS Resources** software on your MiCollab AM servers. The ASR and TTS components must be installed prior to installing MiCollab AM Server software. Exit any running Windows programs before starting the Setup program.

NOTE It is required that you install the MiCollab AM ASR/TTS software regardless of whether you are using it. The MiCollab AM ASR/TTS software has changed for MiCollab AM version 6.1.

If you are upgrading from a MiCollab AM version earlier than 6.1, you must install the ASR and TTS support software for version 6.1. The MiCollab AM ASR/TTS setup will determine the required actions and will install, or remove, the software accordingly.

When you insert the MiCollab AM ASR and TTS Resources media into the appropriate drive, a search is made of the software currently installed, and the required actions will be displayed within the installation wizard dialogs.

IMPORTANT If it is determined that some applications require removal prior to installing the new software, that information is displayed for confirmation before the removal process begins.

At the end of the removal process, you will be instructed to reboot your system. Following the reboot, the setup wizard will resume automatically and begin installing the required ASR/TTS software for MiCollab AM version 6.1.

To start the setup wizard of the ASR and Text-to-Speech components:

- 1 Log on to the platform using a Windows Administrator account.

NOTE If you are installing MiCollab AM Unified Messaging, log on using the Unified Messaging account instead.

- 2 Shut down all running programs.
- 3 Insert the **MiCollab AM ASR and TTS Resources** Media into the appropriate drive.
- 4 The **MiCollab AM ASR and TTS Resources Welcome** dialog displays.
- 5 In the **Welcome** dialog, click **Next**. The **Language Pack Selection** dialog displays.
- 6 In the **Language Pack Selection** dialog, select the languages you would like to include for installation, click **Next**. The **Software Summary** dialog displays.

NOTE If any languages are disabled, this means that the corresponding ASR and TTS software is currently installed (and of the required version) and need no action.

- 7 In the **Software Summary** dialog, the ASR and TTS software that is about to be **INSTALLED**, and/or **REMOVED**, is noted. Please review the information, and click **Next** to start the software installation, and/or removal, process as noted.

NOTE If no existing software was detected that requires removal, only software to be **INSTALLED** is listed.

- 8 If existing software was detected that requires uninstallation, a series of status dialogs will display during the software removal of each component (it may take a few minutes before the process completes).

If no existing software was detected that requires removal, continue to **Step 12**.

- 9 Once the software removal is complete, a dialog will display informing a reboot is required.
- 10 Remove all disks from the computer's drives, select **Yes, I want to restart my computer now** option, and then click **Finish** to restart your system.
- 11 Log on as the Administrator after the platform restarts.
- 12 The **Software Summary** dialog displays informing the software to be **INSTALLED**.
- 13 Review the information, and click **Next** to start the software installation process as noted.
- 14 A series of status windows will display while the ASR and TTS software is being installed (it may take a few minutes before the process completes).
- 15 Once the ASR and TTS software installation process is complete, the **Setup Complete** dialog will display.
- 16 Click **Finish** to exit the wizard. A reboot is not necessary.

NOTE MiCollab AM Server Software must be installed, or re-installed if already exists, before any new ASR or TTS software can be used.

Licensing the Messaging System

There are two possible ways that MiCollab AM can be licensed: Hardware or Software. Both licensing options are configured using the **License Management Utility**.

At the appropriate point of the MiCollab AM installation process, the installer will prompt you for the feature.dat file you either received for the installation or downloaded using the **License Management Utility**.

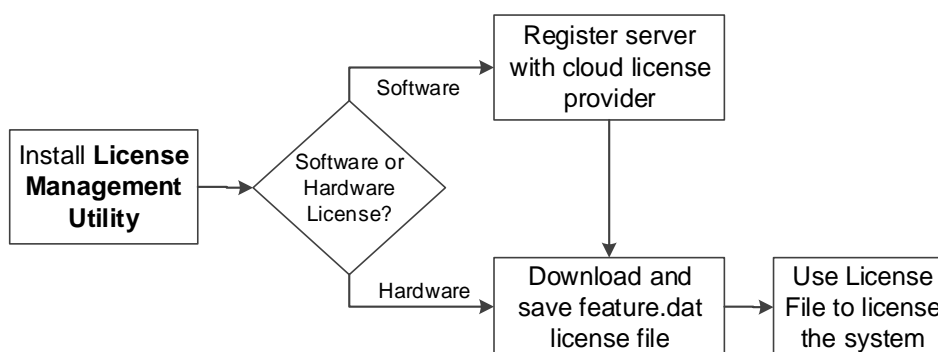


Figure 4. Using the License Management Utility

NOTE In order to use the **License Management Utility**, you must logon with the **License Management Utility** credentials provided by Mitel with the license package. See the instructions below to install and run the **License Management Utility**.

IMPORTANT If re-licensing a previously registered server, you must unregister that server before re-registering it against a new license slot.

Software Licensing

If your system uses software licensing, you will need to register the MiCollab AM server with the cloud license provider and download the **feature.dat** file using the **License Management Utility**. The MiCollab AM server registration allows the MiCollab AM application to acquire the license from the cloud license provider. The license can be acquired only when MiCollab AM is running on the registered server.

IMPORTANT Software licensing requires a permanent System Server Internet connection, however there is built in protection for temporary internet connection outages. See the [Configuring Firewalls](#) section for firewall configuration.

NOTE VMware Distributed Resources Scheduler (DRS) is not supported with Software Based Licensing.

Supported Server Hardware

MiCollab AM software licensing requires the System Servers to run either on physical server hardware or on VMware/Hyper-V virtual machines.

Hardware Licensing

If your system uses hardware licensing, it will use a license file, **feature.dat**, and a USB hardware dongle. You may download the license file via the **License Management Utility**.

IMPORTANT See the [Using the License Management Utility](#) and [Configuring Firewalls](#) sections for **License Management Utility** firewall configuration.

Installing the Hardware Lock and Sentinel Driver Software

If your system is using hardware licensing, the MiCollab AM System Server requires a USB dongle on the platform at all times. The hardware lock is associated with the software license key that is unique to the system and is part of the License package you received for the installation, or downloaded with the **License Management Utility**. The hardware lock must be installed in a USB port for MiCollab AM to run.

The Sentinel driver software is installed automatically during the MiCollab AM version 6.1 software installation. In addition to installing the necessary software to communicate with the hardware lock, the software installation process opens the required ports on the server's firewall necessary for MiCollab AM to communicate with the USB hardware lock.

Using the License Management Utility

The following sections describe the steps to install and use the **License Management Utility**.

Installing the License Management Utility

To install the License Management Utility:

- 1 Insert the MiCollab AM Installation Media to display available installation options.
- 2 Click **License Management Utility** under **Administrative Clients**.
- 3 Click **Run** if a security warning popup appears.
- 4 Follow the instructions to install the **License Management Utility**.
- 5 On the last screen, make sure the **Launch the License Management Utility** now checkbox is checked, and click **Finish**.

NOTE You can also start **License Management Utility** from **Start > All Programs > MiCollab AM Desktop**.

The License Management Utility Login

The **License Management Utility** login allows the connection to the cloud license management system.

IMPORTANT The **License Management Utility** login is not your MiCollab AM system login.

You may obtain your **License Management Utility** login in two ways:

- You may receive your login from your vendor.
- You may receive a link from your vendor. The link will allow you to register your customer account and configure your login via a web registration portal.

Using the License Management Utility

The **License Management Utility** is required for licensing your MiCollab AM system. The utility allows you to manage licensing for all System Servers for all purchased systems.

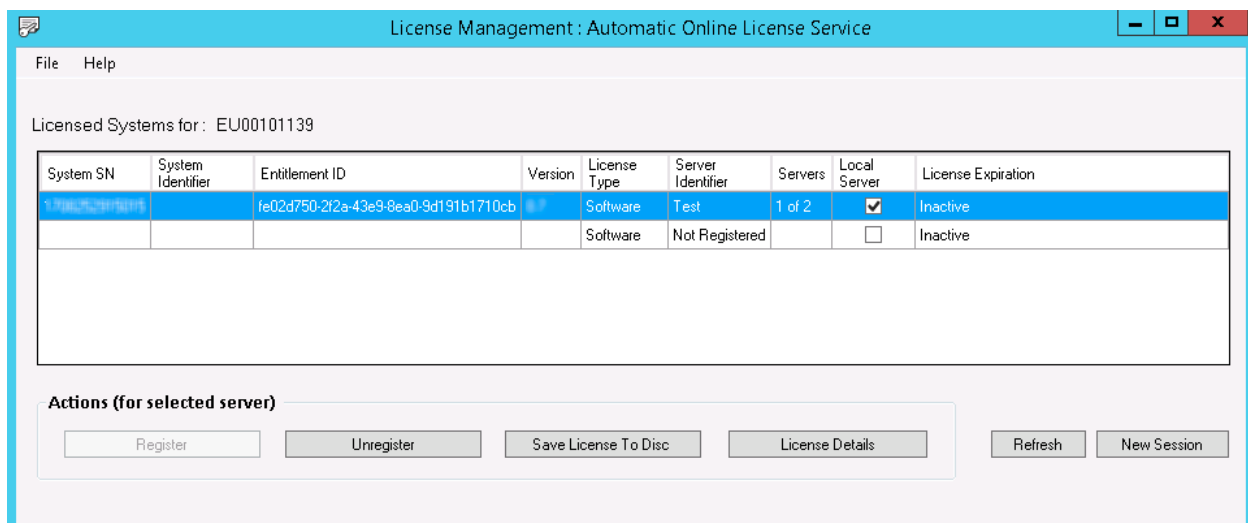


Figure 5. License Management Utility

Upon logging in, you are able to:

- View all purchased systems with their serial numbers. This includes **software licensed systems**, **hardware licensed systems**, and **hybrid licensed systems**.

Example for customer Standard Corporation:

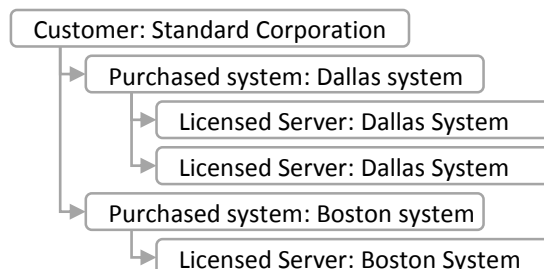


Figure 6. Standard Corporation Example

NOTE A hybrid licensed system is a system that has two or three licensed System Servers as part of a Neverfail topology. In a hybrid licensing mode, at least one System Server is licensed for software licensing, and at least one is licensed for hardware licensing.

- For each purchased system you can see and configure the license:

NOTE A single System Server MiCollab AM system has a single license, while a Neverfail system has two or three available licenses, depending on the Neverfail topology.

NOTE The hardware licensed servers are shown in the server list, however they cannot be registered or unregistered. The **Server Identifier** for a hardware licensed server is the USB dongle identifier, and cannot be edited.

- **System SN:** The system serial number that identifies the system, which the license is attached.

NOTE In some cases this field will contain additional information (in parenthesis) that helps the resellers identify the system.

Example: 1234567891012 (IPA 02-4335)

- **System Identifier:** A friendly name to help identify a particular message system. This field is user-configurable and will be saved when pressing the **Enter** key or clicking outside the field. This is especially helpful for customers that own multiple messaging systems and want to use a friendly name to differentiate them.
- **Entitlement ID:** The identification number of the license.
- **Version:** Displays the entitlement version of the system.
- **License Type:** The type of license, either software or hardware.
- **Server Identifier:** A user-configurable field that allows to enter a meaningful name that can clearly identify the server. During the registration process, the server is registered with the user-provided name.

If it shows **Not Registered**, it indicates that the server has not been registered, and the license has not been assigned to the server.

- **Servers:** The number in sequence of the server to which the license in a particular row is attached. Each licensed system might have one, two or three System Servers.
- **Local Server:** A checkbox that indicates whether or not a system server in the list is on the local server, meaning the system is on the same server where the **License Management Utility** is running.
- **License Expiration:** The expiration for the locally cached license. **None** indicates a hardware license.

NOTE For software licensed system servers, the **License Expiration** indicates when the local license expires. If a software licensed system server is without internet connectivity beyond the indicated **License Expiration** time, the system server license becomes invalid.

- **Register:** Register software licensed systems. Only the local server can be registered.
- **Unregister:** Unregister software licensed systems. Any registered server can be unregistered.
- **Save License to Disc:** Download and save the license file for any purchased system.
- **License Details:** See the license details for any purchased system.

Licensing your MiCollab AM System

To License your MiCollab AM System:

- 1 Start **License Management Utility**.
- 2 Log in using your **License Management Utility** credentials.
- 3 Select a server row for the system you want to work with, and perform one of the following tasks:
 - To register the local server for software licensing:

NOTE Only software licensed servers can be registered.

IMPORTANT If re-licensing a previously registered server, you must unregister that server before re-registering it against a new license slot.

- a Select a server row that shows **Not Registered** in the **Server Identifier** column. Make sure you select the server row that belongs to the system you want to register the local server against.
 - b Enter a meaningful server name in the **Server Identifier** column. It is important for the server name to clearly identify the server. This will be useful if you want to unregister the server.
 - c Click the **Register** button to register the server.
- To download the license file:
The license filename is based on the **System SN** and **System Identifier** fields.
 - a Select the server row for the system you want to download.
 - b Click the **Save License to Disc** button and save the **.dat** license file. You will need this file during the MiCollab AM installation process.
 - To unregister any server for any system:

NOTE Only software licensed servers can be unregistered.

- a Select the server record you want to unregister.
- b Click the **Unregister** button.

Converting from Hardware to Software Licensing

To convert from Hardware to Software Licensing:

- 1 Contact your reseller and request the conversion.
- 2 Receive license conversion confirmation from your reseller.
- 3 Make sure your MiCollab AM system is connected to internet.
- 4 Stop the MiCollab AM application on the server to be converted to software licensing.
- 5 Remove the USB dongle from the MiCollab AM server if not already removed.
- 6 Log in to the **License Management Utility** from the server you are converting to software licensing.

After logging in, you will notice that the server license that was previously listed as **Hardware** type is now listed as **Software** and the **Server Identifier** (if the row is not selected) is listed as **Not Registered**.

NOTE If the System Server to be converted to software license is the only server on the list, it will be selected by default and the **Server Identifier** field will have the text cursor inside waiting for a name/value to be typed in.

- 7 If not already selected, click on the server row showing as **Not Registered**.
- 8 In the **Server Identifier** field, type in a unique name that will clearly identify the server.
- 9 Click the **Register** button.
- 10 Click the **Save License To Disk** button and save the **.dat** license file to disk.
- 11 Import the new license from the **Licensing** tab of **MiCollab AM Configuration**.
- 12 Start the MiCollab AM application. Upon startup the application will acquire the software license from the software licensing cloud provider.

Converting from Software to Hardware Licensing

To convert from Software to Hardware Licensing:

- 1 Contact your reseller and request the conversion.
- 2 Receive license conversion confirmation from your reseller.
- 3 Stop the MiCollab AM application on the server to be converted to hardware licensing.
- 4 Plug in the USB dongle if not already plugged in.
- 5 Log in to the **License Management Utility**.

After logging in, you will notice that the server license that was previously listed as **Software** type is now listed as **Hardware**, and the **Server Identifier** field displays the USB dongle ID.

- 6 Click the **Save License to Disk** button and save the **.dat** license file to disk.

- 7 Import the new license from the **Licensing** tab of **MiCollab AM Configuration**.
- 8 Start the MiCollab AM application.

Replacing a Software Licensed Defective Server

IMPORTANT If re-licensing a previously registered server, you must unregister that server before re-registering it against a new license slot.

To replace a Software Licensed Defective Server:

- 1 Follow the installations steps for the new server, up to setting up the license.
- 2 Make sure the new server is connected to internet.
- 3 Install the **License Management Utility** as instructed in the [Installing the License Management Utility](#) section.
- 4 Log in to the **License Management Utility** from the new server.
After logging in, you will notice that the old defective server is still listed as registered.
- 5 Select the row corresponding to the defective server.
- 6 Click the **Unregister** button. Your machine will be unregistered.
- 7 Click on the server row showing as **Not Registered**, and in the **Server Identifier** field, type in the name for the server.
- 8 Click the **Register** button.
- 9 Click the **Save License to Disk** button and save the license file to disk if you no longer have it available.
- 10 Continue the MiCollab AM system installation and provide the license file when required.
- 11 After the installation is complete the new MiCollab AM server will acquire the software license from the software licensing cloud provider.

Changing System Server Fingerprint

A server fingerprint might change if certain hardware components are replaced, or if the entire server is replaced.

After System Server registration via the **License Management Utility**, the software license is linked to the System Server fingerprint. A fingerprint change will cause the license to become invalid.

IMPORTANT If re-licensing a previously registered server, you must unregister the server before re-registering it.

To change System Server Fingerprint:

- 1 Stop the MiCollab AM application.
- 2 Log in to the **License Management Utility** from the server which the fingerprint has changed.

- 3 Select the row corresponding to the server.
- 4 Click the **Unregister** button. This will unregister your System Server.
- 5 Click on the server row showing as **Not Registered**, and in the **Server Identifier** field, type in the name for the server.
- 6 Click **Register** button.
- 7 In the MiCollab AM installation directory, delete the **SentinelCloudUsage** folder.
- 8 Start the MiCollab AM application. Upon startup the application will acquire the software license from the software licensing cloud provider.

Other License Management Utility Uses

The **License Management Utility** does not require any MiCollab AM components to run. It can be installed on servers or workstations that run a MiCollab AM supported operating system.

IMPORTANT When installing the **License Management Utility** on a server or workstation that is not your MiCollab AM system server, make sure you DO NOT use the **Register** function.

Depending on the circumstances, you might find it useful to use the **Unregister** and **Save License to Disc** functions on a system that is not your MiCollab AM server; for example, if you use hardware licensing and the MiCollab AM server doesn't have internet access.

The **License Management Utility** also allows you to save the server signature, also known as the server fingerprint. While you don't need to do this during the normal licensing process, you might need to save and send the fingerprint to Mitel Technical Support for troubleshooting purposes.

For this, generate the proper system fingerprint for either Hardware Based Licensing or for Software Based Licensing by clicking the appropriate **Save Software Fingerprint** or **Save Hardware Fingerprint** button in the **License Management Utility**.

Installing MiCollab AM Server Software

The installation of both the System Server and the Call Server(s) is identical until you reboot the server. Be sure to exit any running Windows programs before starting the Setup program.

IMPORTANT On Windows Server 2008 R2 with Service Pack 1 and Windows Server 2012 R2 Servers the Local Security Policy, **User Account Control: Detect application installations and prompt for elevation**, must be **enabled** before you begin the MiCollab AM Server software installation.

For more information about changing the security setting, refer to the [Installing the Operating System](#) section or refer to the Windows help.

If the security policy is not enabled, a pop-up message displays when you insert the MiCollab AM Installation Media.

To start the setup wizard for the MiCollab AM Server Software installation:

- 1 Log on to the platform using a Windows Administrator account.

IMPORTANT If you are installing MiCollab AM Unified Messaging, log on using the Unified Messaging account instead.

For more information on Unified Messaging administrative accounts, see the *Unified Messaging Administration Guide* for the type of Unified Messaging you are using.

- 2 Shut down all running programs.
- 3 Insert the MiCollab AM Installation Media into the appropriate drive.
- 4 Perform one of the following:
 - If autorun is enabled, the Mitel MiCollab AM 6.1 installation front page displays. Skip to **Step 6**.
 - If autorun is not enabled, from the Windows taskbar, select **Start > Run > Browse**, and then continue to **Step 5**.
- 5 Open the location where the installation media is inserted, and double-click the **start.hta** file. The MiCollab AM installation front page displays.
- 6 In the **Server Components** menu area, select **MiCollab AM Server (System or Call Server)**.
- 7 In the **Welcome** page, click **Next**. The **License Agreement** dialog box displays.
- 8 Click **Yes** to accept the License Agreement.
- 9 If you have not installed the **MiCollab AM Speech and TTS Support** components, a warning displays.

IMPORTANT You must accept the terms of the license agreement to continue with the setup.

- 10 Click **Next**, to continue to the next step of installation. The **Select Hardware Support Components** dialog box displays.
- 11 In the **Software** list, select the checkboxes for the corresponding software required for your MiCollab AM installation.

NOTE If the installation detects the current version of any of the software packages is valid, the corresponding checkbox is not available.

- Dialogic System Release 6.0 PCI Update 271
- Aculab Driver Software Package 8.20.0.1
- Nortel BCM Enabling Software

- 12 Click **Next** to continue. The **Select Components** dialog box displays.

NOTE It is recommended that you install the software components you require for the application now, regardless of whether you intend to enable them for service later. Installing components later requires a reinstallation of the MiCollab AM software and any related updates or patches.

- 13 In the **Components** list, select the checkboxes to for the corresponding components required for your MiCollab AM installation.
 - **Client Network Install** – Copies the MiCollab AM client application setup files to another directory on the server platform or to a shared directory on the LAN or WAN, in addition to installing the MiCollab AM software on the server platform.
 - **UCConnect** – Installs the UCConnect Development System on the System Server platform. Refer to *UCConnect Getting Started Guide* for details.
 - **Digital Networking** – Installs support for voice and fax networking over the internet on the System Server platform. Refer to the *NetConnect Digital Networking Administration Guide* for instructions on configuring a digital networking application.
 - **Digital Networking Configurator** – Installs the Digital Networking Configurator. Refer to *NetConnect Digital Networking Administration Guide* for more information.
 - **SNMP Support** – Installs the SNMP support. You must install the SNMP support on the System Server and on each Call Server on which you want to use the SNMP support feature. If you want to install the SNMP component, you must first install the SNMP Service.

Refer to the Windows Help for instructions. The **AVTC.mib** and **AVTC.tdf** configuration files you need to configure the **SNMP Management** console are located on the MiCollab AM Installation Media in the **\Server Installs\Server Installs\Telephony Server\SNMP** folder.

- 14 Verify that the **Destination Folder** points to the location where you want MiCollab AM installed.

If you want to change the default destination folder, click **Browse**, and then type or select the drive and folder destination from the list.

IMPORTANT It is recommended that you install MiCollab AM on a different partition than the operating system. By default, MiCollab AM is installed on the **D** drive partition in the **\CX** folder.

15 Click **Next**.

16 Depending on whether or not you chose **Client Network Install** as one of the components to install, proceed as following:

- If you chose **Client Network Install**, the **Network Client Installation Path** page displays. Continue to **Step 16**.
- If you did not choose **Client Network Install**, skip to **Step 17**.

17 In the **Network Client Installation Path** page, accept the default destination folder or click **Browse** to choose a different location.

NOTE Although you can install client program files to the default folder on the server platform, Mitel recommends that you install them to a shared directory on the network. You must have the correct permission in Microsoft Windows to create a shared directory on the network. If you have already created a shared directory on the network for the MiCollab AM client program installation files, click **Browse** to locate the directory.

18 Click **Next**, to continue the installation.

19 Depending on whether or not you chose **Digital Networking** as one of the components to install, proceed as following:

- If you chose **Digital Networking**, the **Digital Networking Administration Account** page displays, continue to **Step 19**.
- If you did not choose **Digital Networking**, skip to **Step 20**.

20 In the **Digital Networking Administration Account** page, create the **Username** and **Password**, and then confirm the password.

IMPORTANT The account credentials you specify in this step is created automatically on the Digital Networking server. However, in **MiCollab AM Admin**, you must manually create an administrator and give the administrator the Digital Networking admin access with the exact same username and password. Otherwise, the Digital Networking server cannot log on to the System Server with adequate permissions to transmit messages or propagate mailboxes. For more information, refer to *System Administration Guide* and the *NetConnect Digital Networking Administration Guide*.

21 Click **Next**. The **Start Copying Files** dialog box displays.

22 Verify the components you are about to install, and then click **Next**. The installation starts.

IMPORTANT If you previously selected the **Dialogic** Hardware Support Component, a pop-up dialog box may display during the software installation process noting, **Windows can't verify the publisher of this driver software**. To continue with the installation, select **Install this driver software anyway**.

23 After Setup finishes copying the files to the server:

- If the **Windows Error Reporting Configurator** dialog box displays, continue to **Step 24**.
- If the dialog box does not display on your system, skip to **Step 25**.

24 In the **Windows Error Reporting Configurator** dialog box:

- Click **Yes** to configure the **Windows Error Reporting** to send output log files to the **\CX\Log** folder.

NOTE Sending the file to the **\CX\Log** folder allows the system to gather as much information as possible in the event of a system failure.

- Click **No** to leave the existing settings.

25 When the first part of installation finishes, the **System Restart Required** dialog box displays. Click **Finish** to restart your system. The installation continues after the system restarts.

26 After the platform restarts, sign in as the Administrator. A prompt may display to alert you that the installation is resuming, and then the software continues installing.

27 Continue to the next section, [MiCollab AM Setup and Database Initialization](#).

IMPORTANT If you are installing **MiCollab AM Unified Messaging**, log on using the Unified Messaging account instead.

For more information on Unified Messaging administrative accounts, see the *Unified Messaging* online book for the type of Unified Messaging you are using.

MiCollab AM Setup and Database Initialization

Once you have completed the software installation, you must continue through the setup program and database initialization process. During the setup procedures, you are prompted to choose logon account names for **MiCollab AM Services**, choose a mailbox number length, select a telephone system and integration, configure language packs, and choose whether to use the standard database.

Setting the Log-on Account for the MiCollab AM Services

Call Servers must access the System Server in order to share files. To do so, the **MiCollab AM File Manager Service** on the System Server and all of the Call Servers must have administrator-level logon rights. Furthermore, if you are using Exchange 2007, the MiCollab AM Service must likewise have administrator-level logon rights.

NOTE If you have not already created the same administrator-level user on both the System Server and all of the Call Servers you must do so before continuing with the installation.

During the database initialization, you can configure the **MiCollab AM File Manager** and **Services** for Unified Messaging or to use with a multi-server MiCollab AM system.

- Configure the **MiCollab AM File Manager Service** on the System Server and each Call Server to use the **Online Backup Location** feature to a network location.
- Configure the **MiCollab AM File Manager Service** on the System Server and each Call Server to allow each server to communicate and share files with each other.
- Configure the **MiCollab AM Service** on the System Server and each Call Server if you are going to use the Unified Messaging feature.

To set the logon account for the Services:

- 1 In the **Database Initialization – Service Configuration** dialog box, select **New System Installation** in the **Initialization Mode** section.
- 2 Click the **Launch Windows Services Manager** button. The **Services** window displays.
- 3 In the list of Services, double-click **MiCollab AM File Manager**. The **MiCollab AM File Manager Properties** dialog box displays.
- 4 Select the **Log On** tab, and then click the **This account** radio button.
- 5 Type the administrator's account name or click **Browse** to search for the name.
- 6 Enter the password in the **Password** and the **Confirm password** fields, and then click **OK**.

IMPORTANT You must delete the dots that are shown in the **Password and Confirm password** fields and enter the correct password in these fields before you click **OK**.

- 7 A dialog box displays to tell you that the account you selected has been granted the **Log On Service** right. Click **OK**.
- 8 Another dialog box displays informing that you must stop and restart the **Services** in order for your changes to take effect (if they are running). Click **OK** to continue.
- 9 From the **Services** window, right-click **MiCollab AM File Manager**, and then click **Start** or **Restart** (Optional).
- 10 Close the **Services** window. You are taken back to the **Database Initialization – Service Configuration** dialog box.
- 11 Click **Next**. The **Database Initialization - Service Configuration** dialog box displays. Proceed to the next section, [Choosing the Role of the Server](#).

Choosing the Role of the Server

The next step in configuring MiCollab AM is to choose the role of the server. You must choose whether the server is a System Server or a Call Server. You can configure the System Server to include Call Services on a single platform configuration.

Initializing the Database as a System Server

To initialize the database as a System Server:

- 1 In the **Database Initialization - Service Configuration** dialog box, click **Next**. The **Database Initialization - Local Server Settings** dialog box displays.

The screenshot shows the 'Database Initialization - Local Server Settings' dialog box. It has a title bar with a standard Windows icon and a close button. The dialog is divided into two main sections: 'Local Server Configuration' and 'Online Backup'. In the 'Local Server Configuration' section, there are radio buttons for 'System Server' (selected) and 'Call Server'. Below these is a checked checkbox for 'Include Call Services'. There are text input fields for 'System Name' (containing 'Demonstration System') and 'Server Display Name' (containing 'SystemServer'). For 'Network Address', there are radio buttons for 'IP' and 'DNS' (selected), with a text input field below containing 'systemserver.labs.local'. A 'View Readme...' button is located to the right of this section. The 'Online Backup' section contains an important note about the default backup location and a 'Location' text input field with '\backupserver\'. A 'Browse...' button is next to the location field. At the bottom of the dialog are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

- 2 The **Server Role** is set to **System Server** by default.
- 3 The **Include Call Services** checkbox is selected by default. If do not want to include call services on your MiCollab AM System Server, clear this checkbox.

NOTE A System Server can function as a combined System Server with Call Services.

- 4 In the **System Name** field, type the name of your system. The system includes the System Server and all of the Call Servers.
- 5 In the **Server Display Name** field, type the name of that can identify this server.
- 6 In the **Network Address** field, select either **IP** or **DNS**, and then enter your network address into the text field.
 - If you select **IP**, enter the TCP/IP address of the server.
 - If you select **DNS**, enter the domain name address of the server.
- 7 Click **Next**. The **License Key Import** dialog box displays. Proceed to the [Installing the License Key](#) section.

Initializing the Database as a Call Server

Once you have installed the MiCollab AM software on a Call Server, you are ready to initialize the server and authenticate it with the System Server. Call Servers do not require an individual license key, they authenticate with the System Server.

The System Server must be installed and a Node license must be available before you can initialize a Call Server. The Call Server authenticates with the System Server through a network connection; make sure the Call Server is properly networked with the System Server before you begin.

IMPORTANT Each Call Server requires a Node license on the license key of the System Server.

To initialize database as a Call Server:

- 1 In the **Database Initialization – Local Server Settings** dialog box, select the **Call Server** radio button from the **Local Server Configuration** section.

Database Initialization - Local Server Settings

Local Server Configuration

Server Role: ☐ System Server ☒ Call Server
☒ Include Call Services

System Name: <UNASSIGNED>

Server Display Name: CallServer

Network Address: ☐ IP ☒ DNS
server.labs.local

View Readme...

Online Backup

IMPORTANT: By default, the Daily Maintenance routine backs up minimal data to a location on the local drive only, and this default backup generated cannot be used to restore a system. To maintain a full backup that can be used to restore your system, you must specify a valid Location below where you want to store database, message, report, and speech files during the Daily Maintenance routine.

Location: Browse...

< Back Next > Cancel Help

- 2 In the **Server Display Name** field, type the name of this server.
- 3 In the **Network Address** field, select either the **IP** or the **DNS** radio button, and then enter your network address into the field
 - If you select **IP**, enter the TCP/IP address of the server.
 - If you select **DNS**, enter the domain name address of the server.
- 4 Click **Next**. The **Database Initialization - System Server Information** dialog box displays.

Database Initialization - System Server Information

For this Call Server to become operational, it must belong to a System. To become part of a system, please specify the network address and logon credentials to the system server which to join.

System Server Connection Information

Network Address:

MiCollab AM Administrator

Password:

Port:

< Back Next > Cancel Help

- 5 In the Network Address field, enter the network address of the System Server.
 - If you are using **IP**, enter the TCP/IP address of the System Server.
 - If you are using **DNS**, enter the fully qualified domain name of the System Server.
- 6 Enter the MiCollab AM Administrator **ID** and **Password**.
- 7 Enter the **Port** value. You can leave it as the default setting.
- 8 Click **Next**. The server attempts to communicate with the System Server and authenticate to it.
- 9 Once authentication is complete, a notification popup advises you that the authentication process is successful and complete.
- 10 Click **OK**. The **Database Initialization Parameters** dialog box displays. Proceed to the [Selecting Required Parameters](#) section. (Skip the [Installing the License Key](#) section.)

Installing the License Key

The Setup program for the System Server uses the license key, or feature file (feature.dat) to determine which features and modules it should enable.

In the case of an upgrade, Setup may not ask for the feature file if it can find feature information for the components and items you have selected previously in Setup. However, if you are upgrading from a previous version of software, you must install a new license key.

NOTE Call Servers do not require a license key; they authenticate themselves automatically on a regular basis with the System Server in order to receive license certificates.

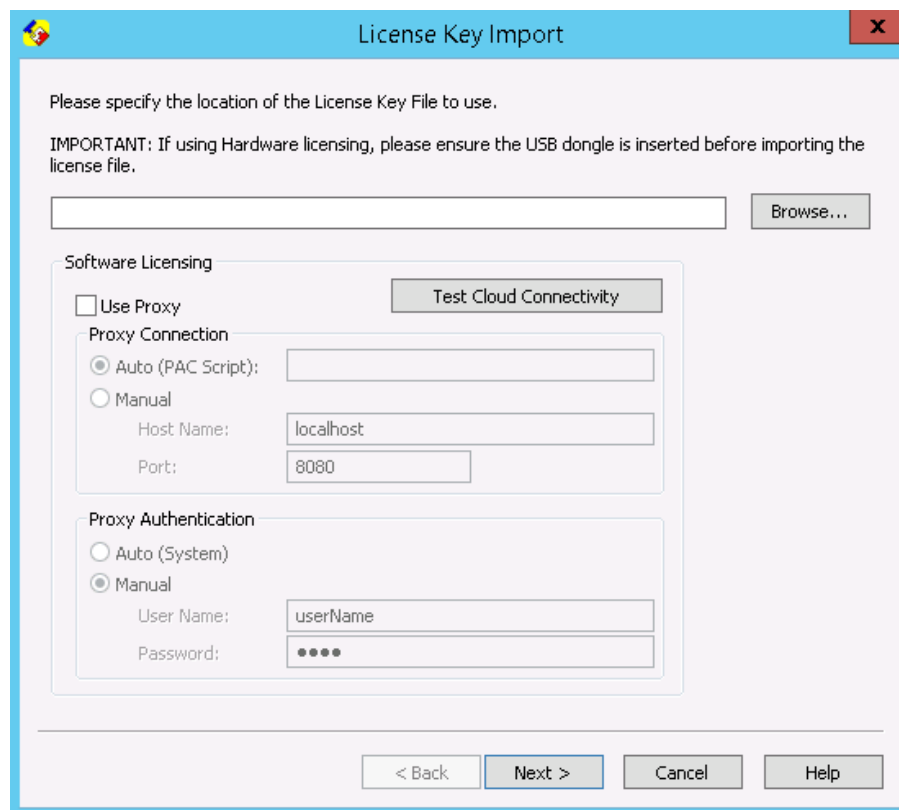
To install the License key:

IMPORTANT Make sure the following prerequisites are met prior to installing the license key:

- If you are using a Hardware licensing, make sure that the USB dongle is inserted.
- If you are using a Software licensing, make sure that you have generated the license key (feature file) using **License Management Utility**. For more information about how to license your system and get the feature file via **License Management Utility**, refer to the [Licensing the Messaging System](#) and [Using the License Management Utility](#) sections.

If you have the license key handy, proceed with the following steps.

- 1 In the **License Key Import** dialog box, click **Browse** to locate the feature file (**feature.dat**).

The image shows a Windows-style dialog box titled "License Key Import". At the top, it says "Please specify the location of the License Key File to use." Below this is an "IMPORTANT" note: "If using Hardware licensing, please ensure the USB dongle is inserted before importing the license file." There is a text input field for the file path and a "Browse..." button. Below this is a "Software Licensing" section. It contains a "Test Cloud Connectivity" button and a "Use Proxy" checkbox. Under "Use Proxy", there are two sub-sections: "Proxy Connection" and "Proxy Authentication". "Proxy Connection" has radio buttons for "Auto (PAC Script)" (selected) and "Manual". The "Manual" option has fields for "Host Name" (containing "localhost") and "Port" (containing "8080"). "Proxy Authentication" has radio buttons for "Auto (System)" and "Manual" (selected). The "Manual" option has fields for "User Name" (containing "userName") and "Password" (containing four dots). At the bottom of the dialog are four buttons: "< Back", "Next >", "Cancel", and "Help".

- 2 If you are using a Hardware licensing, click **Next**, and then skip to **Step 4**.
- 3 If you are using a Software licensing:
 - a Click the **Test Cloud Connectivity** button to ensure that you are connected to the network and test the cloud connectivity.
 - b **[Optional]** If your system uses the Proxy server, you can select the **Use Proxy** checkbox and configure the **Proxy Connection** and **Proxy Authentication** options.

Once you've entered the configuration options, click the **Test Cloud Connectivity** button to verify that the options are properly set.

c Click **Next**.

- 4 The **Database Initialization Parameters** dialog displays. Proceed to the next section, [Selecting Required Parameters](#).

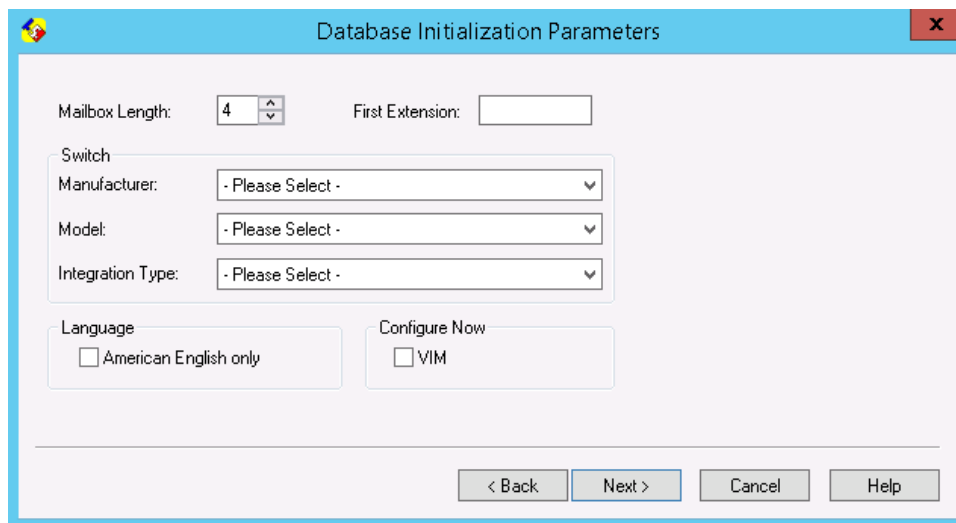
Selecting Required Parameters

The next steps require you to choose the mailbox length and a telephone switch. Additional parameters can be entered at this time to expedite the setup process.

To select the required parameters:

- 1 Enter the mailbox length. The mailbox length you type typically matches the PBX extension number length used at the site.

NOTE If you need to increase the mailbox length in the future, you can change the value in **MiCollab AM Configuration**. From the **Main** tab, click the **Database** button. However, you cannot decrease the current mailbox length unless you re-initialize the database, which will cause all data to be removed.

The screenshot shows a dialog box titled "Database Initialization Parameters" with a standard Windows-style title bar (blue with a red close button). The dialog has a light blue background. It contains several input fields and buttons. At the top, there's a "Mailbox Length" field with a spinner box set to "4" and a "First Extension" text box. Below these, there's a "Switch" section with three dropdown menus: "Manufacturer:", "Model:", and "Integration Type:", each with a "- Please Select -" option. At the bottom left, there's a "Language" section with a checkbox for "American English only". At the bottom right, there's a "Configure Now" section with a checkbox for "VIM". At the very bottom, there are four buttons: "< Back", "Next >", "Cancel", and "Help".

- 2 **(Optional)** In the **First Extension** box, assign the extension number that will be used as the first line (Line 1).

Subsequent lines are assigned automatically to the next extension number, incremented by one.

NOTE If you leave this box empty, you can assign extension numbers later from the **Lines** tab in **MiCollab AM Configuration**.

- 3 In the **Switch** section, select the **Switch Manufacturer**, **Model**, and **Integration Type**.

NOTE Be sure the license key is enabled for the telephone switch and integration type you select.

- 4 In the **Language** section, select the **American English only** checkbox if the system will use American English only for its language pack (prompts, ASR, and TTS).

NOTE The **American English only** option is disabled if American English is not available for one or more of the language components (prompt set, ASR language, or TTS language).

- 5 In the **Configure Now** section, select the **VIM** checkbox, if applicable.

NOTE If you do not want to configure this feature at this time, you can configure it later from the **VIM** tab in **MiCollab AM Configuration**.

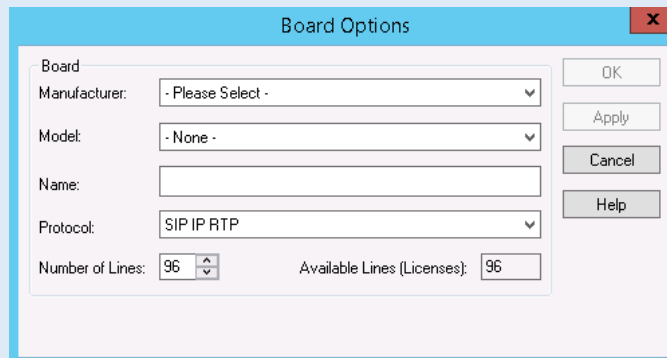
NOTE The **VIM** tab contains the information needed to support **Voice Intercept Messaging (VIM)** for subscribers. **VIM** is available only on systems that are integrated with specific telephone systems that support the **VIM** feature.

VIM is a licensed feature of Mitel and this tab is available only if the **VIM** feature is enabled on the license key. For more information about configuring **VIM** support, see *VIM User Guide*.

- 6 Click **Next** to continue.

- If hardware linecards are automatically detected, the **Switch Options** dialog box displays.
- If hardware linecards are detected and you have additional virtual boards to configure, you can configure them later from **MiCollab AM Configuration**.

NOTE If you are implementing an **Internet Protocol (IP)** integration and there is no Dialogic or Aculab linecard installed in the telephony platform, the **Board Options** dialog box will display for the board configuration.



Refer to the [Integrating MiCollab AM with the Telephone System](#) section for information on these dialog boxes.

- 7 The **Switch Options** dialog box allows you to modify your switch settings. Typically, no changes are needed in this dialog box.

Switch Options

Manufacturer:

Model:

System Switch:

System Switch Settings

Switch Name:

Transfer Support: ☒ Extension to Extension ☒ Trunk to Extension
☐ Extension to Trunk ☐ Trunk to Trunk

MWI Settings

Refresh Trigger: Refresh Type:

Refresh Interval: Initialize Mode:

Refresh Time of Day: Set Preference:

Inter-Switch Connectivity Group Assignments

Name	Type	Member
Incoming 1	Inter-Switch Incoming Uniform Numbering Plan	<input type="checkbox"/>
Incoming 2	Inter-Switch Incoming Uniform Numbering Plan	<input type="checkbox"/>
Outgoing 1	Inter-Switch Outgoing Uniform Numbering Plan	<input type="checkbox"/>
Outgoing 2	Inter-Switch Outgoing Uniform Numbering Plan	<input type="checkbox"/>

Local Switch Settings

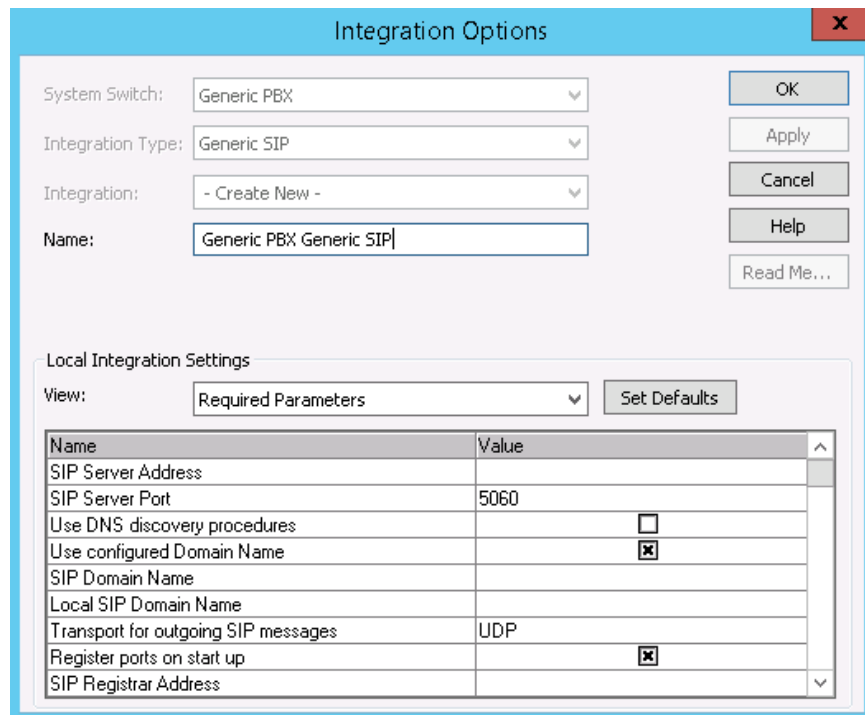
View:

Name	Value
Disconnect Loop Current Length (ms)	0
Flash Hook Time (ms)	500
T1 Protocol	FXS
T1 Signaling	Immediate

- 8 Click **OK** to accept the current settings. The **Integration Options** dialog box displays.
- 9 The options that appear in the **Integration Options** window are dependent on the type of integration you are using.

Verify that the integration settings are correct for the type of integration you are using, and then fill in any required parameters pertaining to the integration you are configuring.

NOTE Refer to the appropriate *Integration Technical Note* for information on configuring this dialog box.



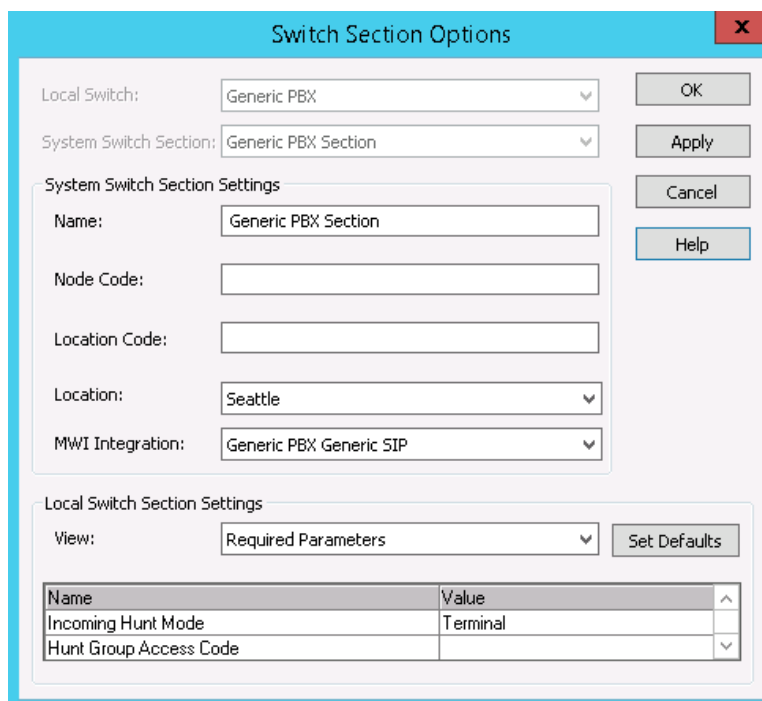
The **Integration Options** dialog box is shown. It contains the following fields and controls:

- System Switch:** Generic PBX (dropdown)
- Integration Type:** Generic SIP (dropdown)
- Integration:** - Create New - (dropdown)
- Name:** Generic PBX Generic SIP (text field)
- Buttons:** OK, Apply, Cancel, Help, Read Me...
- Local Integration Settings:**
 - View:** Required Parameters (dropdown)
 - Set Defaults** (button)
 - Table:**

Name	Value
SIP Server Address	
SIP Server Port	5060
Use DNS discovery procedures	<input type="checkbox"/>
Use configured Domain Name	<input checked="" type="checkbox"/>
SIP Domain Name	
Local SIP Domain Name	
Transport for outgoing SIP messages	UDP
Register ports on start up	<input checked="" type="checkbox"/>
SIP Registrar Address	

- 10 Click **OK** when you have filled in all the parameters required for the integration. The **Switch Section** dialog box displays.

NOTE Refer to the appropriate *Integration Technical Note* for information on configuring this dialog box.



The **Switch Section Options** dialog box is shown. It contains the following fields and controls:

- Local Switch:** Generic PBX (dropdown)
- System Switch Section:** Generic PBX Section (dropdown)
- Buttons:** OK, Apply, Cancel, Help
- System Switch Section Settings:**
 - Name:** Generic PBX Section (text field)
 - Node Code:** (text field)
 - Location Code:** (text field)
 - Location:** Seattle (dropdown)
 - MWI Integration:** Generic PBX Generic SIP (dropdown)
- Local Switch Section Settings:**
 - View:** Required Parameters (dropdown)
 - Set Defaults** (button)
 - Table:**

Name	Value
Incoming Hunt Mode	Terminal
Hunt Group Access Code	

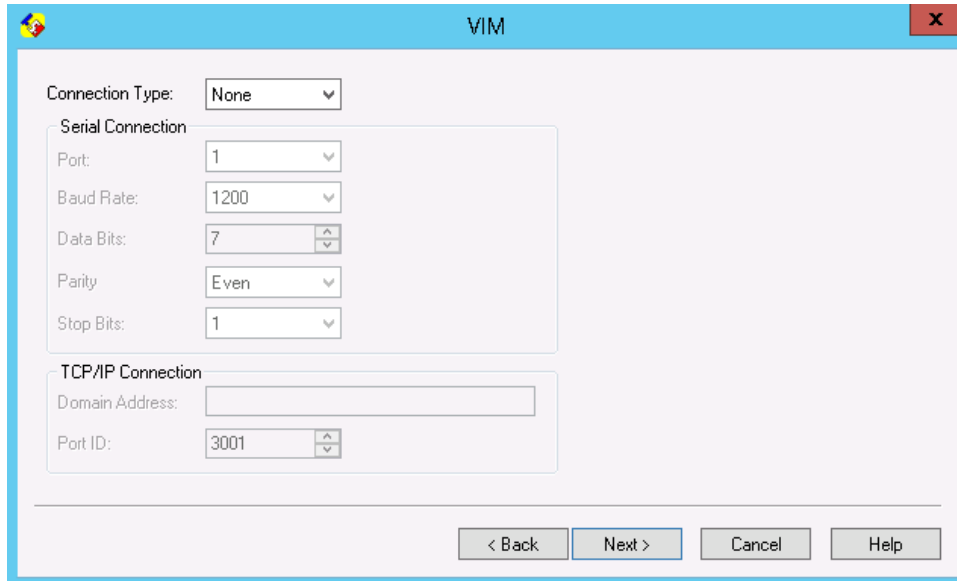
- 11 In the **Hunt Group Access Code** field, enter the value, and then click **OK**.

12 Depending on whether or not you chose to configure **VIM** now in **Step 5**, proceed as following:

- If you chose to configure **VIM**, proceed to the next section, [Configuring VIM](#).
- If you did not choose to configure **VIM**, skip to the [Configuring Language Packs](#) section.

Configuring VIM

If the Voice Intercept Messaging (VIM) feature is enabled in the MiCollab AM feature file, and you selected the **VIM** checkbox from the installation configuration page, the **VIM** page displays.



The screenshot shows a window titled "VIM" with a close button (X) in the top right corner. The window contains two sections: "Serial Connection" and "TCP/IP Connection".

Serial Connection:

- Connection Type: None (dropdown)
- Port: 1 (dropdown)
- Baud Rate: 1200 (dropdown)
- Data Bits: 7 (dropdown)
- Parity: Even (dropdown)
- Stop Bits: 1 (dropdown)

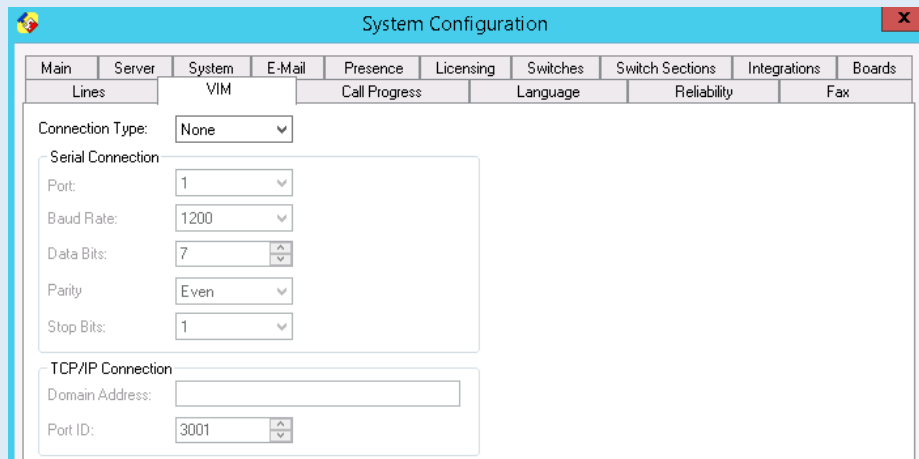
TCP/IP Connection:

- Domain Address: (text field)
- Port ID: 3001 (dropdown)

At the bottom of the window are four buttons: "< Back", "Next >", "Cancel", and "Help".

NOTES

- 1.** **VIM** is available only on systems that are integrated with specific telephone systems that support the **VIM** feature. **VIM** is a licensed feature and is available only if the **VIM** feature is enabled on the license key. For more information about configuring **VIM** support, see the *Voice Intercept Messaging* online book.
- 2.** The **VIM** settings can also be configured through the **VIM** tab in **MiCollab AM Configuration**.



The screenshot shows a window titled "System Configuration" with a close button (X) in the top right corner. The window has a tabbed interface with the following tabs: Main, Server, System, E-Mail, Presence, Licensing, Switches, Switch Sections, Integrations, and Boards. The "System" tab is selected, and within it, the "VIM" sub-tab is active. The "VIM" sub-tab contains the same configuration options as the standalone "VIM" window shown in the previous screenshot.

System Configuration - VIM Tab:

- Connection Type: None (dropdown)
- Serial Connection:
 - Port: 1 (dropdown)
 - Baud Rate: 1200 (dropdown)
 - Data Bits: 7 (dropdown)
 - Parity: Even (dropdown)
 - Stop Bits: 1 (dropdown)
- TCP/IP Connection:
 - Domain Address: (text field)
 - Port ID: 3001 (dropdown)

To configure VIM:

- 1 In the **VIM** page, choose your **Connection Type**.
 - If you choose **Serial Port**, the **Serial Connection** section will become active.
 - If you choose **TCP/IP**, the **TCP/IP Connection** section will become active.
- 2 Configure the appropriate section as necessary.
- 3 Click **Next**. The **Language dialog** box displays. Proceed to the next section, [Configuring Language Packs](#).

Configuring Language Packs

Setup displays the **Language dialog** box that allows you to edit Language Packs and enable them for use. Each Language Pack consists of a **Prompt Set**, **TTS Language**, and **ASR Language**, if licensed.

Default language packs are created and selected by default during database initialization on the System Server. Generation of default Language Packs is based on the TTS and ASR Languages selected at the time of TTS and ASR software installation.

NOTE TTS and ASR are licensed optional features of MiCollab AM. To use these features, you must purchase TTS and/or ASR resources from Mitel. The TTS and/or ASR Language selections may not be available for edit depending on what options are enabled on your MiCollab AM license.

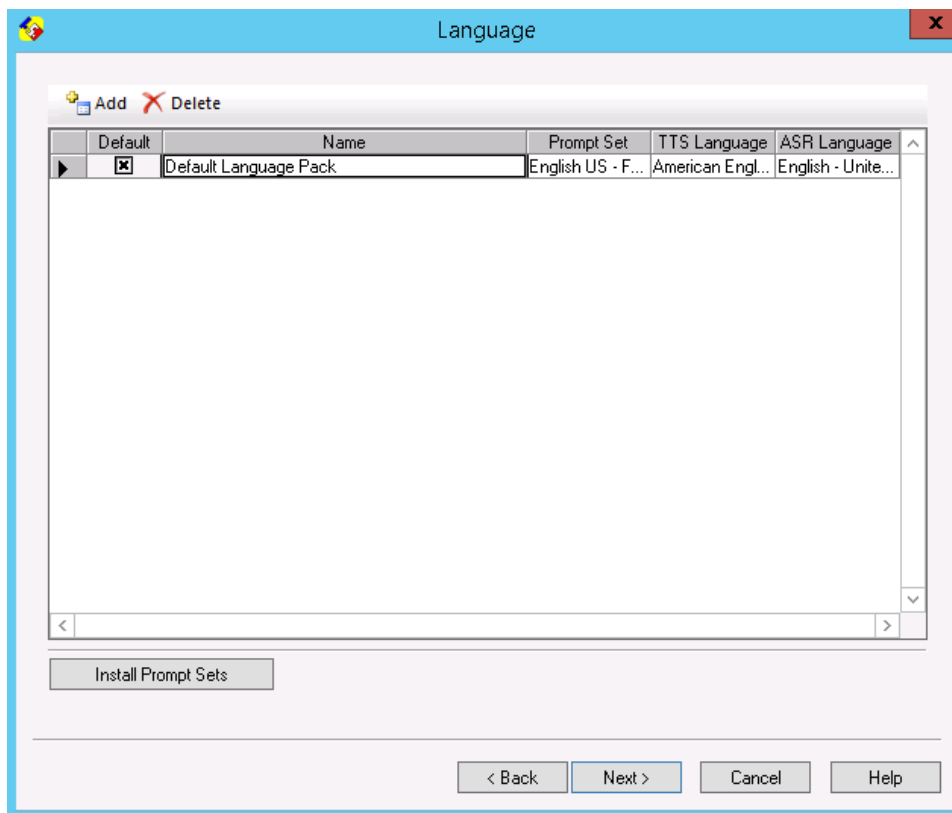



Figure 7. Language Dialog Box

To install and enable additional Prompt Sets:

- 1 Insert the MiCollab AM Installation Media into the appropriate drive.
- 2 In the **Language** dialog box, click the **Install Prompt Sets** button. The **Prompt Language Installation** dialog box displays.
- 3 Click the  (**Browse**) button. The **Prompt Language Directory Selection** dialog box displays.
- 4 Select the drive where the installation media is inserted, and locate the **\Server Installs\Telephony Server\Prompts** folder.
- 5 Select the language(s) you want to install, and then click **OK**. The **Prompt Set** files are copied to the hard disk drive of the server platform.
- 6 After the prompt files are copied to the hard disk drive, the installed **Prompt Set** will appear in the dropdown entries within the **Prompt Set** column in the **Language** dialog box.

Add

Delete

	Default	Name	Prompt Set	TTS Language	ASR Language	
	<input checked="" type="checkbox"/>	English US - Female	English US - Female	American English	English - United Sta...	^

To create and configure additional Language Packs:

IMPORTANT The following steps apply to System Servers only.

- 1 To create a new Language Pack, click the **Add** button. A new row is created as shown below.

Add

Delete

	Default	Name	Prompt Set	TTS Language	ASR Language	⌵
	<input checked="" type="checkbox"/>	English US - Female	English US - Femal...	American English	English - United Sta...	
	<input type="checkbox"/>					

- 2 Type a **Name** for the new Language Pack. Then, for each column (**Prompt Set**, **TTS Language**, and **ASR Language**), select languages as you would like configured for your new Language Pack.

IMPORTANT You may create as many Language Packs as you would like. However, the total number of **Prompt Sets**, **TTS Languages**, and **ASR Languages** that you can select individually, spanning across all Language Packs, is determined by your MiCollab AM license per language type. This number is limited to five (5) or fewer per language type.

For example, if your MiCollab AM license allows for 2 TTS Languages and 1 ASR Language, you may create multiple Language Packs. However, the Language Packs created must consist of at most 2 different TTS Languages, and must be assigned the same ASR Language in each entry.

- 3 To specify a Language Pack as the default entry, select the **Default** checkbox on the desired language pack row.

NOTE The default Language Pack is used by MiCollab AM unless specifically configured otherwise.

- 4 If you wish to migrate prompt recordings from one prompt set to another, click **Migrate Recordings**.

NOTE Migrating recordings from one language to another does not delete greetings such as mailbox greetings, personal greetings, etc. that were previously recorded and associated with the prior language. Instead, a migration of the recordings results in the re-assignment of those prompts to the new language selected.

- 5 Click **Next**. The **Initialize Database** dialog box displays. Proceed to the next section, [Initializing the Standard Database](#).

Initializing the Standard Database

MiCollab AM offers a standard database of thirteen mailboxes. Some of these mailboxes have pre-recorded announcements, which include:

- Five **Call Processor** mailboxes
- Three **Subscriber** mailboxes
- Two **Announcement** mailboxes
- One of each **Distribution List**, **Mailbox Class of Service**, and **Availability Class of Service** mailboxes

The screenshot shows the 'Initialize Database' dialog box. It has a title bar with a close button. The main area contains the following options:

- ☒ Use Standard Database
- Auto Attendant User Interface:
 - ☐ DTMF
 - ☒ Speech
- Directory Key Mapping:
 - ☒ 1
 - ☐ 9
- Call Processor Transfer Type:
 - ☒ Blind
 - ☐ Transfer
 - ☐ Monitor
- Location (Required):

At the bottom, there are four buttons: '< Back', 'Finish', 'Cancel', and 'Help'.

To initialize the standard database:

- 1 Select the **Use Standard Database** check box to initialize the standard database.

IMPORTANT If you choose not to select Use Standard Database, you must manually create mailboxes and an Administrator User ID.

- 2 Choose how standard database creates the Automated Attendant User Interface. Select **Speech** if the **Speech** feature is installed. Select **DTMF** if the **Speech** feature is not installed. The default setting is Speech.

NOTE Unless licensed, speech is not available.

- 3 In the **Directory Key Mapping** box, select the **DTMF** key that callers should press to hear a directory of extensions. This key is mapped to the selected key on all of the Call Processor mailboxes created in the standard database.

- 4 In the **Call Processor Transfer Type** box, select the appropriate transfer type:

- **Blind:** MiCollab AM initiates the transfer and releases the call.
- **Transfer:** MiCollab AM initiates the transfer and monitors call progress for busy, reorder, and ring back tone before releasing the call.
- **Monitor:** MiCollab AM initiates the transfer and monitors call progress for busy and reorder tones before releasing the call.

- 5 In the **Location** box, enter a name to describe the location of the system. The location is referenced within the **Call Routing** and **Auto Attendant Scheduling** configuration.

NOTE This field typically represents a geographical location such as Seattle.

IMPORTANT The **Location** value is required. The **Finish** button will not become active if this field has not been filled in.

- 6 Click **Finish**. The **Administrators** dialog box displays. Proceed to the next section, [Confirming Administrator User IDs](#).

Confirming Administrator User IDs and Completing Database Initialization

To use the **MiCollab AM Admin**, **Diagnostics**, **Line Status** and **Reports** utilities, you must have an **Administrator User ID** that has permission to use these utilities.

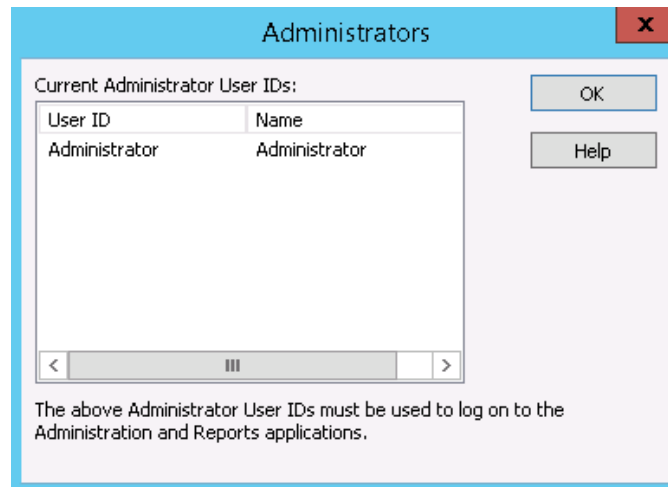
MiCollab AM employs a security model that grants permissions to **Administrator User IDs** (also called administrator accounts). Administrators who have Windows domain accounts that match their **Administrator User IDs** (if the Windows Logon option is set for them) can access these utilities without retyping their user IDs and passwords.

When you install MiCollab AM for the first time, an **Administrator User ID** called *Administrator* is created. This account is granted with the permission to access all administrative functions automatically in the

MiCollab AM Admin, Diagnostics, Line Status, and Reports utilities. Refer to **Help** or the *System Administration Guide* for information on modifying this **Administrator User ID**.

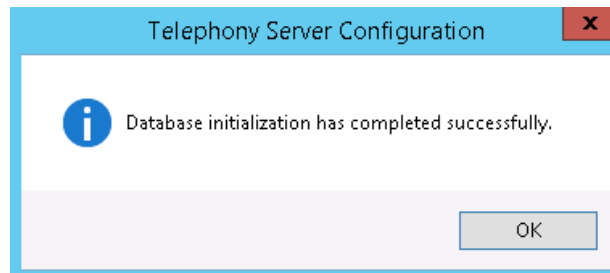
To confirm Administrator User IDs and complete the setup process:

- 1 In the **Administrators** dialog box, click **OK** to confirm.



NOTE The **Administrator** dialog box, as shown above is intended to show only the administrator accounts that currently exist. New installations display the default administrator account while upgraded systems display any additional accounts that have been created. You cannot change any of the administrator accounts in this dialog box.

- 2 A prompt displays alerting you that the initialization is complete.



- 3 Click **OK**. The MiCollab AM setup and database initialization is now complete.

Starting MiCollab AM for the First Time

This section discusses creating desktop shortcuts you want for the MiCollab AM utilities and Windows utilities, allocating lines, starting MiCollab AM and installing the permanent license.

Once you have completed the software installation and the database initialization you are ready to start MiCollab AM for the first time. If you installed Dialogic software, verify that the Dialogic Configuration Manager has correctly identified the linecards and all of the parameters for the linecards are configured correctly for your system.

Configuring Dialogic Linecards

If you installed the Dialogic system software, you must change the settings in the Dialogic Configuration Manager (DCM) for your site if you are using unique country codes, or third-party software/linecards. For more information, refer to the appropriate spare parts document that is included in the Mitel documentation library.

Creating Shortcuts for MiCollab AM Icons on the Desktop

As a convenience, you may want to create shortcuts on the Windows desktop. By creating shortcuts, you can quickly find and access them because they are located in one place. For instructions on creating program shortcuts, refer to the Windows Help.

As an example, the following procedure shows you how to place a shortcut on the Windows 2008 R2 with Service Pack 1 Server desktop for MiCollab AM Admin.

To place a shortcut for MiCollab AM Admin:

- 1 From the Windows taskbar, go to **Start > Programs > MiCollab AM Desktop**.
- 2 Right-click **MiCollab AM Admin** and drag it to the desktop.
- 3 Release the button and select **Create Shortcut here**.

You can create a shortcut for MiCollab AM Configuration in the Control Panel in much the same way.

NOTE For easy access to utilities used during troubleshooting, you may also want to consider creating shortcuts on the Windows Server desktop for the Event Viewer in the Administrative Tools (Common) program folder and the Services and Devices icons in Control Panel.

Licensing and Line Allocation

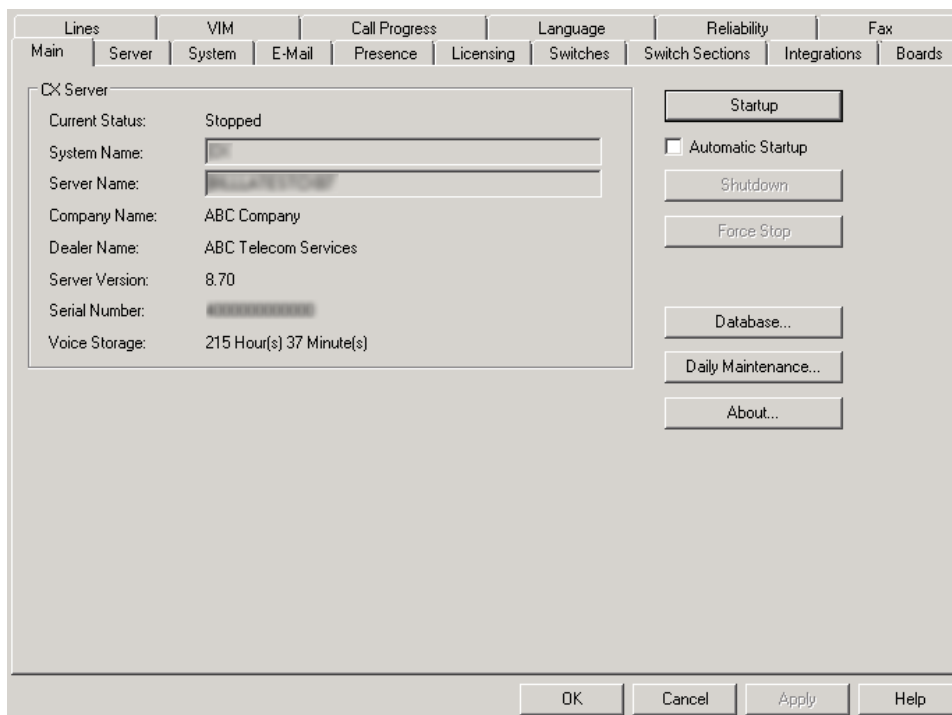
MiCollab AM dynamically allocates line usage per server based on the total number of Voice Lines specified on the license key. The total number of voice lines pertains to the entire system. For example, if you have a System Server with Call Services with lines and two Call Servers in the system, the total number of voice lines is shared between the three servers. Line allocation between servers is performed from the Lines tab in MiCollab AM Configuration.

Voice line licenses are allocated to the Call Server when they are allowed to open. De-select any lines in the Lines tab that you do not want to assign to each particular server. For example, if you have 24 Dialogic ports installed in one Call Server but you only want to use 12 voice line licenses and assign the remaining voice lines to other Call Servers, de-select the 12 lines you do not want to open at startup in the Lines tab.

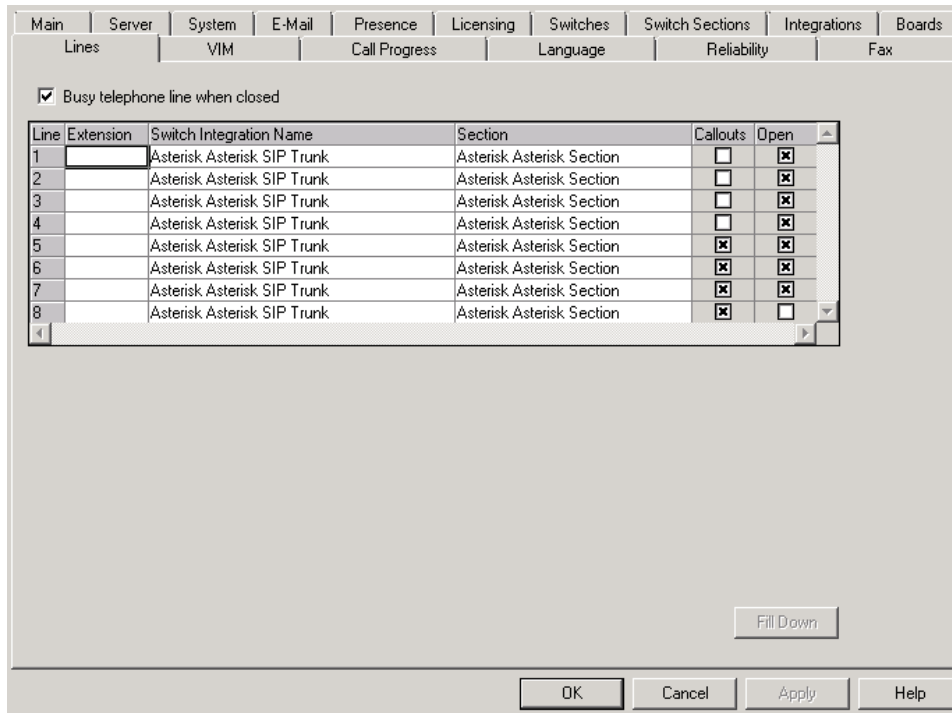
NOTE MiCollab AM must be shutdown to open or close lines in the Lines Tab.

To allocate voice lines between call servers:

- 1 Go to **Start > Settings > Control Panel**
- 2 Double-click **MiCollab AM Configuration**. MiCollab AM Configuration starts on the **Main** tab.



- 3 Click the **Lines** tab.



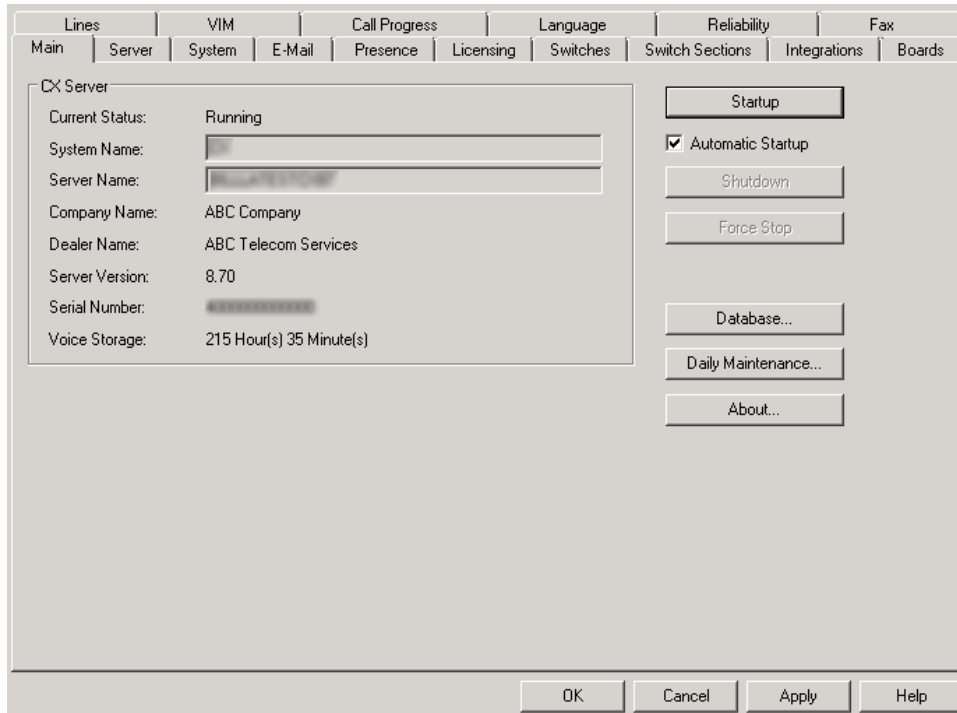
- 4 In the Open column, de-select the individual lines that you do not intend to allocate to the server.
- 5 Click **Apply**.

Changing the Startup Mode

If you want MiCollab AM to start automatically in subsequent restarts, enable the automatic startup feature. When enabled, MiCollab AM starts automatically in the event of a server restart.

To change the Startup mode:

- 1 Go to **Start > Settings > Control Panel**.
- 2 Double-click **MiCollab AM Configuration**. MiCollab AM Configuration displays on the **Main** tab.



- 3 Select the **Automatic Startup** check box, and then click **Apply**.

Starting MiCollab AM

After installing the MiCollab AM software and restarting the computer, you must start the software for the first time manually.

To start the software:

- 1 Go to **Start > Settings > Control Panel**.
- 2 Double-click **MiCollab AM Configuration**. **MiCollab AM Configuration** displays on the **Main** tab.
- 3 Click the **Startup** button.

Verifying that MiCollab AM is Running

MiCollab AM is installed as a Service, not as an application program. Therefore, MiCollab AM does not appear as an icon or a button on the Windows taskbar.

To verify that MiCollab AM is running:

- 1 Go to **Start > Settings > Control Panel**.
- 2 Double-click **MiCollab AM Configuration**. **MiCollab AM Configuration** displays on the **Main** tab.
- 3 Verify that the **Current Status** line indicates **Running**.

MiCollab AM Configuration Utility

The MiCollab AM Configuration is installed in the Windows Control Panel on the System Server platform when you install the MiCollab AM server software. If you followed the recommendations for creating shortcuts as described in the previous section, there is also a shortcut on the Windows Desktop for the MiCollab AM Configuration.

To use MiCollab AM Configuration, you must be logged on to the System Server platform locally, using an account that has administrator privileges. MiCollab AM Configuration does not have a corresponding client application for use at machines other than the System Server. For most operations, however, it is possible to access MiCollab AM Configuration by means of a remote-control utility, such as Windows Remote Desktop, or Symantec® PcAnywhere™.

Many changes and modifications that you perform with MiCollab AM Configuration can be completed with the system running and processing calls. All such changes take effect immediately. Some modifications, such as hardware-level integration configuration and major database structure changes, can only be performed with the System Server shutdown. Items that cannot be configured with the system running are grayed out or presented in a read-only mode until the system is stopped.

As a rule, installers or maintenance technicians perform changes to MiCollab AM Configuration. The customer's administrator(s) generally do not use MiCollab AM Configuration, and may not even need to be aware of its presence. When training end-user administrators, it is a good idea to warn the administrators that any changes in MiCollab AM Configuration should be first reviewed with their service provider. Modifications applied to MiCollab AM Configuration incorrectly can produce unexpected results, generate system-wide problems, result in loss of valuable data, or even cause a complete system failure.

For full documentation on MiCollab AM Configuration, please refer to the Online Help or the *System Administration Guide*.

To start MiCollab AM Configuration:

- 1 Go to **Start > Settings > Control Panel**.
- 2 Double-click MiCollab AM **Configuration**. **MiCollab AM Configuration** displays on the **Main** tab.

Main Tab

The **Main** tab allows you to shut down and start up the call handling Services for maintenance or to make changes to the System Server. It also allows you to change the system name, and access the Database and the Daily Maintenance dialog boxes on the System Server. Further, it displays attributes of the System Server software and the voice storage available on the System Server hardware.

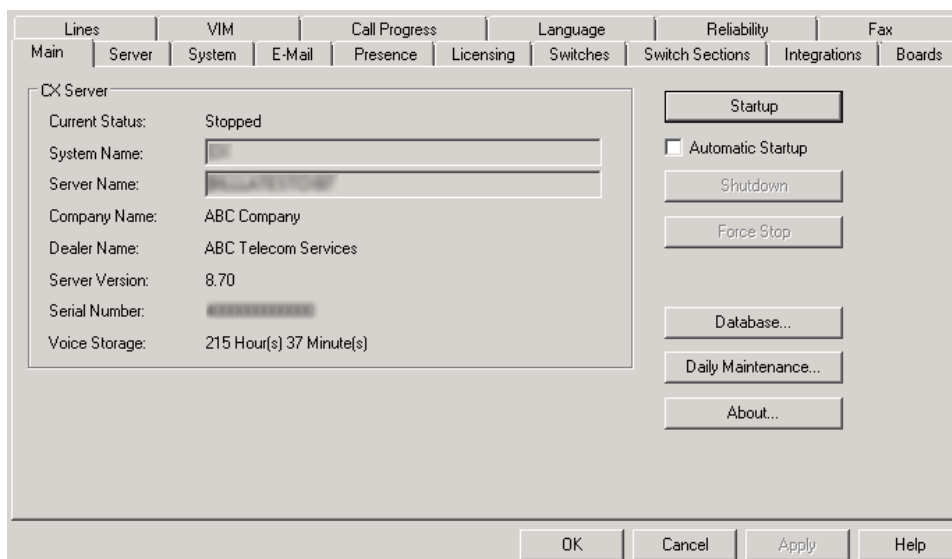


Figure 8. MiCollab AM Configuration – Main Tab

- **Current Status:** Displays the current state of the System Server: Stopped (not currently processing calls), Running, Starting, or Stopping. The Current Status line automatically updates when you click **Startup**, **Shutdown**, or **Force Stop**.
- **System Name:** Displays the name of the MiCollab AM system specified during installation; you can change the system name when the system is shutdown.
- **Server Name:** Displays the name of the MiCollab AM server
- **Company Name:** Displays the name that represents your organization in the license package for this System Server
- **Dealer Name:** Displays the name of the dealer from whom you purchased this System Server.
- **Server Version:** Shows the Version, Build, and Service Pack number of the System Server software currently installed. This information is updated automatically when a new version is installed.
- **Serial Number:** The System Server's serial number is required to obtain Technical support.
- **Voice Storage:** Displays the total amount of voice storage capacity remaining on the System Server's hard disk drive, in hours and minutes
- **Startup Button:** Click to start the System Server. The change in the server's status displays on the Current Status line. The button name changes to Shutdown when the system is running.
- **Automatic Startup:** Select this box to set the System Server to start automatically when the operating system starts. Clear the box to start the System Server manually. The System Server must be started before it can process calls.

- **Shutdown Button:** Click **Shutdown** to shut down the System Server and its call handling Services. Shutdown closes a line only after it becomes inactive. Subscribers accessing their mailboxes hear a prompt asking them to complete their action and hang up. The Shutdown button works independently of the Force Stop button.
- **Force Stop Button:** Click **Force Stop** to force all lines to close and shut down call handling Services immediately. Subscribers accessing their mailboxes do not hear a prompt asking them to complete their action and hang up, they are disconnected immediately.

The Force Stop button works independently of the Shutdown button.

WARNING Use the Force Stop button to shutdown MiCollab AM only when lines are stuck in the dropping or incoming state. Shutting down the system with this method does not preserve data integrity and some data may be lost.

Database Dialog

Click to open the **Database** dialog box, in which you can perform database maintenance actions. Use this dialog box to:

- Allow Trusted Logon (Auto Logon)
- Re-initialize the database
- Recover the database with a previous backup
- Re-synchronize a Call Server database with the System Server
- Increase the mailbox length
- Purge database records
- Select the default recording format for messages
- Select the user account to be used for Web Services Impersonation
- Set the toggle to keep private messages local

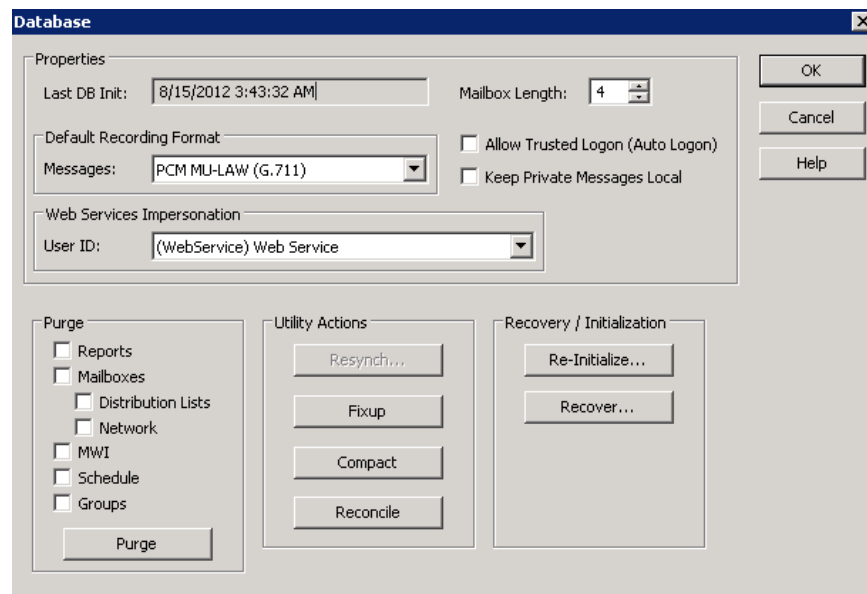


Figure 9. Configuration - Database Dialog box

Daily Maintenance Dialog Box

IMPORTANT The Daily Maintenance routine backs up minimal data to the local drive only. To maintain a full backup that can be used to restore your system, you must specify a valid Online Backup Location where you want to store your database, messages, reports, and speech files during Daily Maintenance.

- Set the time for the scheduled Daily Maintenance to run for the local server
- Run a complete Daily Maintenance
- Run Daily Maintenance without backing up messages
- Configure the online backup location
- Adjust the retention properties for:
 - Server files
 - Messages
 - Reports
 - Online backups

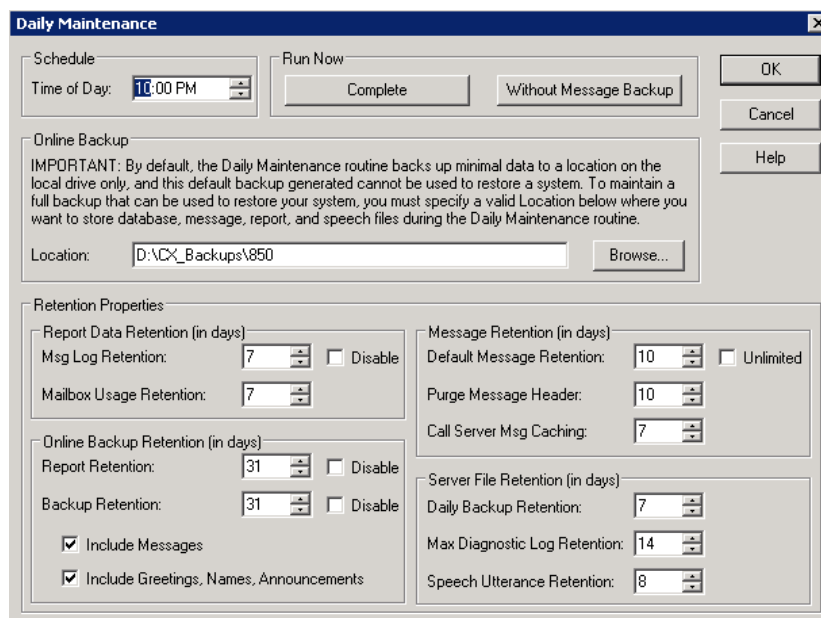


Figure 10. MiCollab AM Configuration - Daily Maintenance Dialog Box

About Button

The **About Configuration** dialog box provides details about:

- The MiCollab AM software version
- The installed patches and updates
- System information
- File versions of MiCollab AM files that reside in the MiCollab AM\Bin directory

Server Tab

The **Server** tab allows you to configure the local server. As you configure your system, additional information about each of your servers displays in the table at the bottom of this window.

Name	Value
ASR Remote TCP Port	6060
ASR Audio Format	pcm
No Input Timeout (Milliseconds)	3000
Speech Complete Timeout (Milliseconds)	1500
ASR Start Delay	0
TTS Remote TCP Port	6060

Figure 11. MiCollab AM Configuration - Server Tab

- **Local Server Configuration:**
 - **Server Display Name:** The display name of the local server
 - **Role:** The role of the server is determined at the time of database initialization to be either a System Server or a Call Server and cannot be changed from this tab. To change the role of a server you must re-initialize the database from the Database dialog box. However, on a System Server you can add or remove Call Services.
 - **Add or Remove Call Services:** (System Server Only) The Add or Remove Call Services button is a dual function button. It allows you to Add Call Services if it is not enabled or Remove Call Services if it is enabled. This allows you to configure Call Services on a System Server without having to re-initialize the database.

IMPORTANT When you add Lines and Call Services to a System Server it requires a license for each added Line and a Call Services Node license. You must have an available Node license to enable Lines and Call Services on a System Server. Removing Call Services frees a Node license for use on a separate Call Server. Lines are licensed per system. They can be used on any server within the system that has call services enabled.

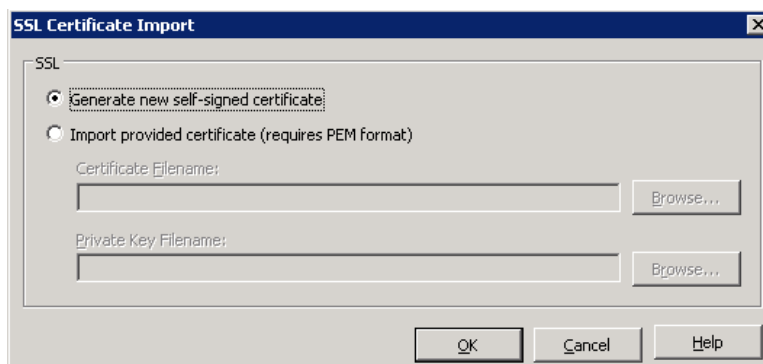
NOTE If you want to enable Lines on the System Server, the correct line allocation must be enabled on the License key, and a Call Services node must be enabled on the License key. However, a Call Services node license is not required to support an MWI Only Integration that does not use lines, even though Call Services is enabled.

- **Network Address:** Select the type of network address you are using by selecting either the IP or DNS radio buttons, and then enter an appropriate network address in the Network Address field. If you select IP, select an IP address from the drop-down list. If you select DNS, enter the Domain Name Server name.

IMPORTANT

1. If you change the network address of the System Server, you must shut down the attached Call Servers and remove them from the System Server. Then you must re-add each Call Server back to the System Server (using the updated System Server's network address).
2. The network address of a Call Server can be updated only if it is connected to the System Server. If you need to update or change the network address of a Call Server that is not connected to the System Server, you must first remove it from the System tab on the System Server. Change the address of the Call Server, and then add it back to the System Server once the address is changed.

- **System ID:** The identification number assigned to the server during the initial startup and inclusion into the system.
- **Port:** Enter a TCP port number. The default port number is 18276.
- **Description:** Enter a description of the server.
- **Contact:** Enter a contact name in case
- **Location:** Enter a location of the server.
- **SSL Certification:**
 - **Certification Expiration:** Displays the expiration date of the existing SSL Certificate.
 - **Import New SSL Certificate:** Select this button to launch the **SSL Certificate Import** dialog, allowing for the user to import provided set of certificate and key files, or generate a new self-signed certificate.



- **Generate new self-signed certificate:** Creates your own self-signed certificate and key files for use (stored in \bin [serverkey.pem and servercert.pem]).
- **Import provided certificate (requires PEM format):** Click the **Browse** buttons to import two *.pem files that contain the certificate and private key.

System Tab

The **System** tab allows you to change the system name, as well as add and remove call servers from your system. Further, it displays attributes of each of the servers in your system environment.

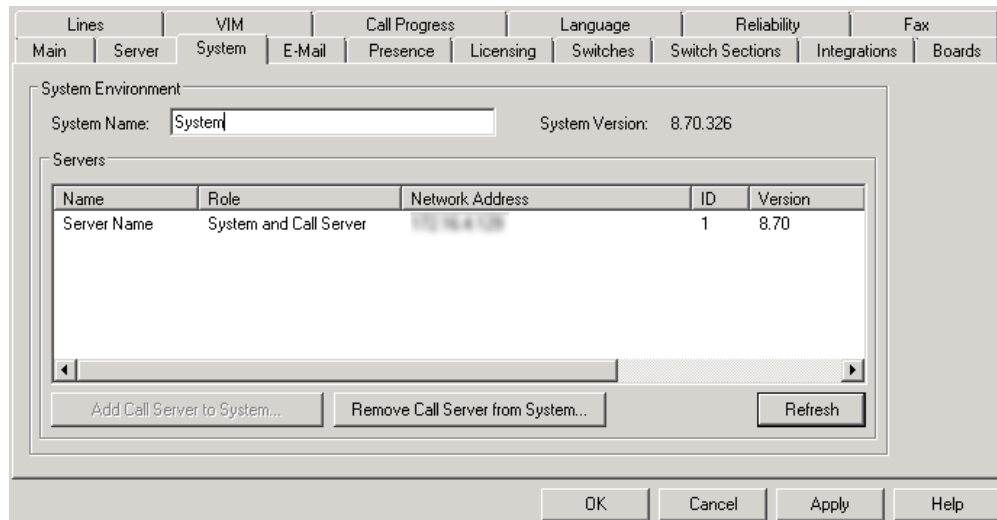


Figure 12. MiCollab AM Configuration - System tab

- **System Name:** Enter the name of your MiCollab AM System
- **System Version:** Displays the servers and their related attributes in your MiCollab AM environment.
- **MiCollab AM System Environment:** Displays the servers and their related attributes in your MiCollab AM environment.
- **Add Call Server to System** button: Allows you to add a Call Server to your MiCollab AM system
- **Remove Call Server from System** button: Allows you to remove a call server from your MiCollab AM system.
- **Refresh** button: Allows you to refresh the MiCollab AM System Environment list

E-Mail Tab

The **E-mail** tab allows you to configure the System Server for the applications E-Mail Access and Server-Based Unified Messaging (either Unified Messaging for IBM Notes and Domino or Unified Messaging for Microsoft Exchange). To make changes to most of the boxes on this tab, you must shut down the System Server.

Figure 13. MiCollab AM Configuration - E-Mail Tab

- **Name:** Displays the unique name given to the messaging server profile.
- **Route/Path:** Displays the route or path used by the messaging server profile to communicate with the e-mail or messaging server
- **Enabled:** Denotes if the messaging server profile is enabled or disabled
- **ID:** Displays the internal unique identifier for the messaging server profile, a GUID
- **Add** button: Click **Add** to create a new messaging server profile.
- **Edit** button: Click **Edit** to edit the selected messaging server profile.
- **Copy** button: Click **Copy** to copy the selected messaging server profile.
- **Delete:** Click **Delete** to delete the selected messaging server profile.
- **Cache Configuration - Cache Size:** Select a cache size between 10 and 500 megabytes (MB).

This setting applies to systems with Server-Based Unified Messaging (Unified Messaging for IBM Notes and Domino or Unified Messaging for Microsoft Exchange) and allows faster access to messages stored on these servers.

The System Server can be configured to cache the content of voice and fax messages stored on the e-mail or messaging server. These messages are copied into this cache as they are moved from the New folder on the System Server to the message store on the e-mail or messaging server.

Subscribers using a telephone can retrieve their new messages much more quickly because messages are retrieved directly from the cache. Without caching, subscribers have to wait while the System Server retrieves their messages from the message store.

The System Server does not store messages in the cache indefinitely. When the cache is full, older messages are removed to make room for newer messages, ensuring that subscribers always have quick access to their latest messages.

You should increase the size of the cache if the following message displays in the Windows Event Viewer Application Log more than once per day: *External Mail Cache purge*.

- **Message Waiting Notification TCP/IP Port:** Enter the TCP/IP port used for listening for message waiting notification. The default is 60000.

NOTE This feature is not currently available in all e-mail server configurations.

- **IMAP Voice File Extension:** Choose the voice message file to be delivered in UMA or WAV.
- **MWI Registration Refresh:** The time that the MWI registration refreshes.
- **MWI Change Tolerance:** The number of changes in number of MWI users added or deleted that will trigger a refresh regardless of the set time. If set to 0, no refreshes will occur until the regularly scheduled refresh.

Licensing Tab

The **Licensing** tab lists the features licensed on the System Server. This information is useful in determining the features assigned in the installed license package. For more information about specific feature availability in your license package, contact Technical Support.

Hardware System License

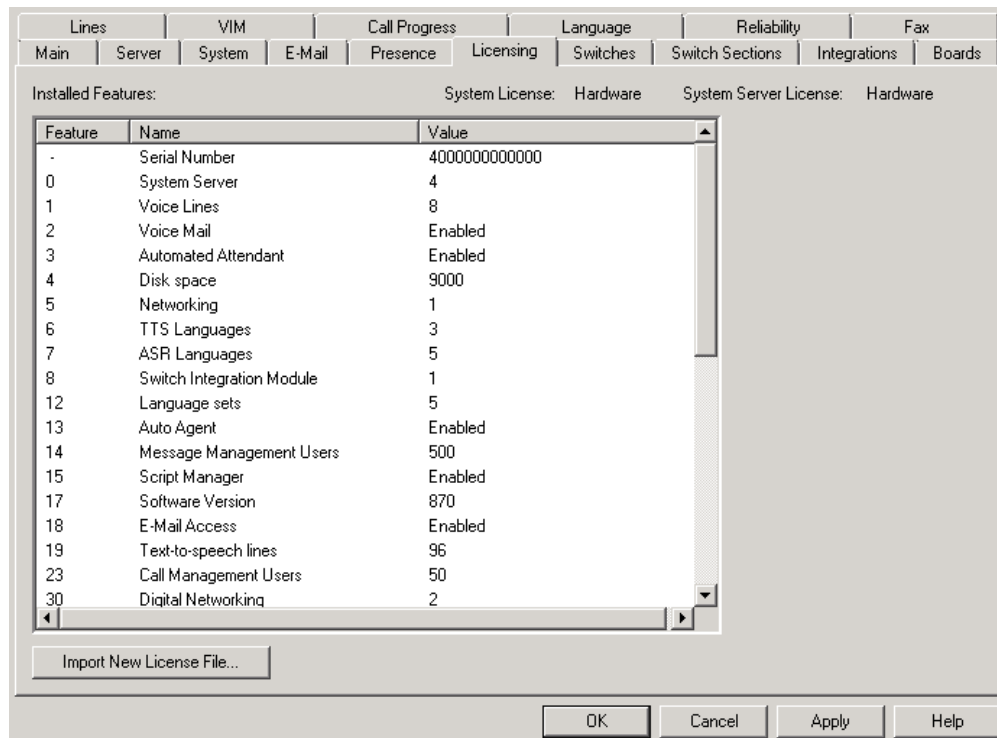


Figure 14. MiCollab AM Configuration – Licensing Tab for Hardware System License

- **System License:** Displays the type of license your system server is licensed with (as defined on your license key).
 - *Hardware:* Your system server is licensed only for a *Hardware* licensing.
 - *Software:* Your system server is licensed to only for a *Software* licensing.

- *Hybrid*: Your system server is licensed to use either *Hardware* or *Software* licensing.

NOTE The *Hybrid* license type is available only if you are using Neverfail.

- **System Server License**: Displays the type of license the system server is currently using – *Hardware* or *Software*.
- **Installed Features**:
 - **Feature**: Displays the feature number of the feature in the installed feature file.
 - **Name**: Displays the name of the feature or advanced application that is licensed by the installed feature file.
 - **Value**: Displays information about each feature or advanced application on this System Server.

For example:
For Voice Lines, the value 4 indicates four voice lines allowed; for Voice Mail, the word *Enabled* means that feature is enabled and available; and for Disk space, the value indicates the maximum amount of hard drive space that can be used for messaging and recordings.
Values in this list are determined by the installed feature file.
- **Import New License button**: Click **Import New License** to open the **License Import** dialog box and import a new or updated license certificate or feature file.

NOTE The **Import New License...** button can be used for updating or changing the license file. Importing a new license key will force MiCollab AM to look for the appropriate new licensing method, whether hardware or software.

IMPORTANT After you import the new certificate or feature file, the System Server must be shut down, and then restarted. Be sure to save any changes you have made before you shutdown.

Software/Hybrid System License

In addition to the options described in the [Hardware System License](#) section, the Software/Hybrid System License provides a set of configuration options that are specific to Software Licensing.

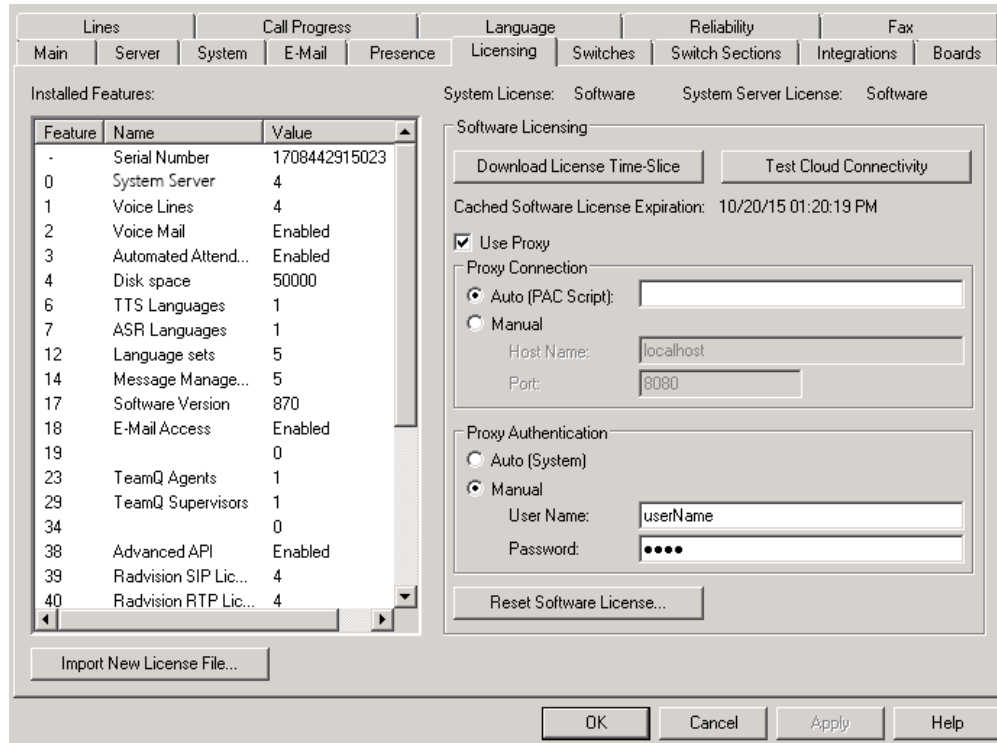


Figure 15. MiCollab AM Configuration – Licensing Tab for Software/Hybrid System License

- **System License:** Same as Hardware System License. Refer to the descriptions in the [Hardware System License](#) section.
- **System Server License:** Same as Hardware System License. Refer to the descriptions in the [Hardware System License](#) section.
- **Installed Features:** Same as Hardware System License. Refer to the descriptions in the [Hardware System License](#) section.
- **Software Licensing:** The Software Licensing options appear if your system server is licensed for *Software* or *Hybrid*.
- **Download License Time-Slice:** Manually downloads the License Time-Slice. Upon the completion of the download, the updated expiration time/date will display in the **Cached Software License Expiration** field according to the time/date you clicked the **Download License Time-Slice** button.
- **Test Cloud Connectivity:** Verifies whether the system server is properly connected to the cloud. The result will display whether the cloud connectivity test was successful or not.

NOTE Use the **Download License Time-Slice** and **Test Cloud Connectivity** features for troubleshooting and diagnostic purposes.

- **Cached Software License Expiration:** Displays the expiration of the current License Time-Slice. The expiration time/date is automatically updated daily.

NOTE If you want to manually update the license expiration based on the current time/date, click the **Download License Time-Slice** button.

- **Use Proxy:** Checking this box enables the following options for configuring the Proxy settings.
 - **Proxy Connection:**
 - **Auto (PAC Script):** Enter the PAC script to automatically connect to the Proxy server.
 - **Manual:** Click this option if you want to provide connection configuration option for the Proxy server.
 - **Host Name:** Enter the host name for the Proxy server.
 - **Port:** Enter the port number for the Proxy server.
 - **Proxy Authentication:** Configure these settings if the Proxy server requires any authentication.
 - **Auto (System):** Click this option if you want the authentication to be done automatically.
 - **Manual:** Enter login credentials if your Proxy server requires login.
 - **User Name:** Enter the username of the Proxy server.
 - **Password:** Enter the password mapped with the username.
- **Reset Software License:** Clears any cached license information and resets the software license.

IMPORTANT It is recommended that you use this option under the supervision of Technical Support or if you are familiar with the license features.

- **Import New License button:** Same as Hardware System License. Refer to the description in the [Hardware System License](#) section.

Switches Tab

The **Switches** tab allows you to configure the server for the telephone system (switch). You also use this tab to add additional switches for a multiple switch configuration. To add or delete a switch, you must shut down the System Server.

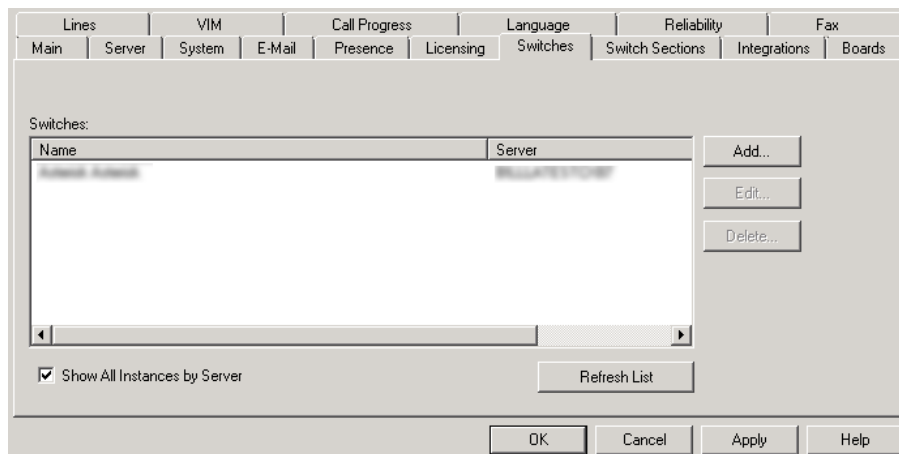


Figure 16. MiCollab AM Switches Tab

- **Switches:** Lists the switches that are currently installed
- **Name:** Displays the name of the telephone system

- **Is Local:** Denotes with Yes or No if the switch is local to this server or on a remote Call Server
- **System Instances:** Displays how many instances of the switch are installed on the entire system including all of the Call Servers in the system.
- **Show All Instances by Server:** Select to view each instance of the switches that exist within the system.
- **Refresh List:** Click to refresh the list.
- **Add** button: Click **Add** to add a new switch. The Switch Integration Data Setup dialog box displays.
- **Edit** button: Click **Edit** to edit the selected switch. The Switch Options dialog box displays.
- **Delete** button: Click **Delete** to delete the selected switch.

Switch Options Dialog Box

The **Switch Options** dialog box allows you to add a new switch to the system or edit an existing switch.

Switch Options

Manufacturer: Asterisk
Model: Asterisk
System Switch: Asterisk Asterisk

OK
Apply
Cancel
Help

System Switch Settings

Switch Name: Asterisk Asterisk

Transfer Support: ☒ Extension to Extension ☒ Trunk to Extension
☐ Extension to Trunk ☐ Trunk to Trunk

MWI Settings

Refresh Trigger: None Refresh Type: Set
Refresh Interval: 14400 Initialize Mode: None
Refresh Time of Day: 12:00 AM Set Preference: First

Inter-Switch Connectivity Group Assignments

Name	Type	Member
Incoming 1	Inter-Switch Incoming Uniform Numbering Plan	<input type="checkbox"/>
Incoming 2	Inter-Switch Incoming Uniform Numbering Plan	<input type="checkbox"/>
Outgoing 1	Inter-Switch Outgoing Uniform Numbering Plan	<input type="checkbox"/>
Outgoing 2	Inter-Switch Outgoing Uniform Numbering Plan	<input type="checkbox"/>

Local Switch Settings

View: All Settings Set Defaults

Name	Value
Disconnect Loop Current Length (ms)	75
Flash Hook Time (ms)	300
T1 Protocol	FXS
T1 Signaling	Immediate

Figure 17. MiCollab AM Switch Options Box

- **Manufacturer:** Click the drop-down box to select the manufacturer of the switch from the list.
- **Model:** Click the drop-down box to select the model of the switch from the list.
- **System Switch:** Displays the currently selected system switch.
- **System Switch Settings:**
 - **Switch Name:** This field can be edited when creating a new switch to give the switch name a unique name in the system.
 - **Transfer Support:**
 - **Extension to Extension:** Select Extension to Extension to indicate the switch is capable of transferring an extension call to another extension. This box is selected by default.
 - **Trunk to Extension:** Select Trunk to Extension to indicate the switch is capable of transferring an external trunk call to an internal extension. This box is selected by default.
 - **Extension to Trunk:** Select Extension to Trunk to indicate the switch is capable of transferring an internal extension call to an external number.

IMPORTANT The site may have a policy that they do not want to allow these capabilities even though the switch can do them. If this is the case, do not check the box.

- **Trunk to Trunk:** Select Trunk to Trunk to indicate the switch is capable of transferring an external trunk call to another external number.

IMPORTANT The site may have a policy that they do not want to allow these capabilities even though the switch can do them. If this is the case, do not check the box.

- **MWI Settings:**
 - **Refresh Trigger:** Click the drop-down box to select the trigger from the list. The default is none.
 - Select Daily Maintenance to trigger the MWI refresh during Daily Maintenance.
 - Select Interval to trigger the MWI refresh in a defined interval of time.
 - Select Switch Initiated to trigger the MWI refresh with a switch initiated event.

NOTES

1. Select a Refresh Trigger only if the PBX requires one. Refreshing MWI needlessly can hinder system operation.
2. This event is triggered by a command sent from the PBX to refresh MWI. The PBX integration must be capable of sending such a command in order to use this setting. Typically, an acknowledgement command is sent back to the PBX confirming the completion of the refresh request. Select Time of Day to trigger the MWI refresh at a defined time of day.

- **Refresh Type:** Select the refresh type.
 - The default is Set.
 - Set-Refreshes all MWIs that should be on
 - All-Refreshes all MWIs
 - None-No action is taken
- **Refresh Interval (seconds):** Select the time in seconds for the MWI refresh interval to occur. This field is editable only if Interval is selected as the Refresh trigger.
- **Initialize Mode:** Select to determine the initialization mode.
 - The default is None, no initialization occurs.
 - Set-Initializes all of the MWIs that are supposed to be on
 - All-Initializes all MWIs
- **Refresh Time of Day:** Select the Time of day to trigger the MWI refresh. The default is 12:00 AM. This field is editable only if Time of Day is selected as the refresh trigger.
- **Set Preference:** Select the MWI Set Preference.
 - First-Sets the MWI on the first new message
 - All-Sets the MWI on every new message occurrence

NOTE Selecting All can have adverse call processing effects on a busy system.

- **Inter-Switch Connectivity Group Assignments:** By default, the system assumes an extension on one switch cannot be dialed directly or be recognized by another switch. However, in actual practice two switches can be networked together to allow this functionality. Typically, this is done by imposing a Uniform Numbering Plan across all networked switches, referred to here as Inter-Switch Connectivity. All switches sharing this relationship are considered part of the same Inter-Switch Connectivity Group. This relationship only applies to extensions.

There are four standard connectivity groups:

- Incoming 1 and 2 are for recognizing the extension numbers of calls originating from a switch in the same group.
- Outgoing 1 and 2 are for allowing extensions of switches in the same group to be dialed freely.

All extension devices that are part of switches in the same Inter-Switch Connectivity group are assumed to have unique numbers. If two or more switches are assigned to the same "Inter-Switch Connectivity Group," they can dial each other's extensions directly (Outgoing Uniform Numbering Plan) or recognize each other's extensions directly (Incoming Uniform Numbering Plan). If they are separate unique switches, they are treated as one switch by the users and by MiCollab AM in regards to extension numbers.

Select the Member checkbox in the Inter-Switch Connectivity Group Assignments grid to assign a switch to a particular group. Typically, switches are one part input group and one part output group. If multiple relationships exist, a switch can be part of multiple groups of the same type. If there is only one switch in the system, no selections are needed. There is no limit to the

number of switches that can be part of the same group. The incoming and outgoing selections are independent. For example, an integration link may expose the extensions of another switch, but not allow the extension of the other switch to be dialed directly.

IMPORTANT Since MiCollab AM lines are part of a switch, this switch should be in the same group as any extension devices the lines are expected to dial, and for it to recognize the extensions.

- **Local Switch Settings:**

- **View All Settings:** Click the drop-down box to select the view. In many cases, the All Settings view is the only view in this dialog box.
- **Set Defaults button:** Click **Set Defaults** to return all parameters to the default value.
- **Disconnect Loop Current Length (ms):** Enter the disconnect loop current length of time in milliseconds. This is the time interval that the switch opens or reverses current on the line to signal a disconnect to the Call Server.
- **Flash Hook Time (ms):** Enter the flash hook length of time in milliseconds. (The hook flash is the signal the Call Server sends to the switch to signal a transfer or a transfer abort.)
- **T1 Protocol:** Select the T1 protocol if applicable. If the telephony connection between the Call Server and the switch is a T1, you must select either FXS or E&M protocol.
- **T1 Signaling:** Select the type of T1 signaling for the T1 connection between the Call Server and switch. Choose Wink or Immediate.

Switch Sections Tab

The **Switch Sections** tab allows you to add additional switch sections to the system or configure existing ones.

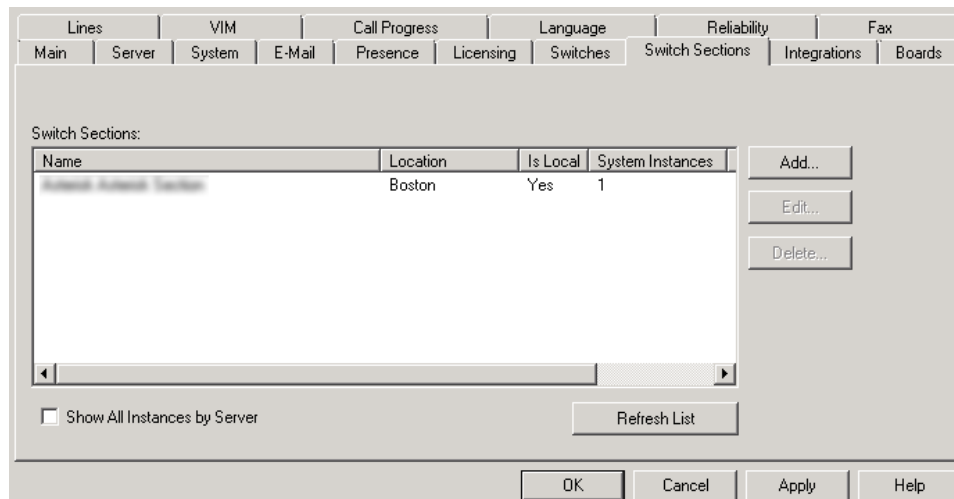


Figure 18. MiCollab AM Switch Sections Tab

- **Switch Sections:** Lists the switch sections that are installed or configured

- **Name:** Displays the name of the switch section
- **Location:** Displays the location of the switch section
- **Is Local:** Denotes with Yes or No if the switch section is local to this server or on a remote Call Server
- **System Instances:** Displays how many instances of the switch section are installed on all Call Servers in the system.
- **Show All Instances by Server:** Select to view each instance of the switch sections that exist within the system.
- **Refresh List:** Click **Refresh** to refresh the list.
- **Add button:** Click **Add** to add a new switch section to the System Server.
- **Edit button:** Click **Edit** to edit the selected switch section.
- **Delete button:** Click **Delete** to delete the selected switch section.

Switch Section Options Dialog Box

The **Switch Sections Options** dialog box allows you to add a Switch Section or edit the settings of the selected Switch Section.

- Enter the Node code or Location code if applicable.
- Select a different MWI integration to use for this switch section, if applicable.
- Select none if the integration does not set or clear MWI or you do not want to use the MWI functionality of the integration.

Name	Value
Incoming Hunt Mode	Terminal
Hunt Group Access Code	46387

Figure 19. Switch Section Options Dialog Box

- **Local Switch:** The current selected local switch.
- **System Switch Section:** The current selected System Switch Section
- **System Switch Section Settings:**

- **Name:** Type a name for the switch section or accept the default name. You can give the switch section a short name or one significantly different from the existing switch sections. This makes it easier to select the correct switch section from the Section drop-down list on the Lines tab.
- **Node Code:** The node code is a unique numeric code representing a specific PBX in a network of PBXs. When used, the node code is received in the integration data in addition to the PBX extension number. The node code is also required when dialing an extension located on a remote PBX. Leave the field blank unless your PBX network requires this feature.
- **Location Code:** The location code is a unique numeric code representing the geographic location of the caller. The location code is received in the integration data in addition to the caller's public telephone number. Leave this field blank unless your PBX requires this feature.

IMPORTANT Do not type any value in the Node Code or Location Code fields unless the ITN or a Technical Support representative specifically instructs you to do so.

- **MWI Integration:** Click the drop-down box to select the integration that sets and clears MWI (message waiting indicators) for extensions in this switch section and switch node. If you do not want MWI functionality in this switch section, select none.
- **Local Switch Section Settings:**
 - **View:** Select a view from the list to filter the displayed switch section settings by type
 - **Switch Section Settings:** To change a setting's value, click the Value field you want to edit, and then enter a new value. The switch section settings allows you to specify the number of lines that System Server can use to make callouts in order to support setting message waiting indicators, network callouts, message notification, and message deliveries from outbound mailboxes.

NOTE Set the Maximum Callouts value to at least one (1), but use caution when deciding how many lines on which to allow callouts. Setting too many lines can adversely affect the System Server's ability to handle incoming calls. Typically, this number should be approximately half of the total number of lines in the system. For more information, see the section, [Configuring Callout Settings](#).

IMPORTANT If Maximum Callouts is set to zero, the System Server cannot make callouts and logs an error on the Error Log report when a callout is attempted. Consult the documentation for the telephone system, the Integration Technical Note, for more information about the data that you may need to enter here.

- **Set Defaults** button: Returns the selected switch section settings, but not the display name, to their default values

Integrations Tab

The **Integrations** tab allows you to add additional integrations to the system or edit (configure) existing ones. One telephone system (switch) can have multiple integrations (for example, one integration per serial port). Multiple telephone systems (if you have a multiple switch configuration) can have one or more integrations apiece. The System Server must be shut down in order to add or delete an integration.

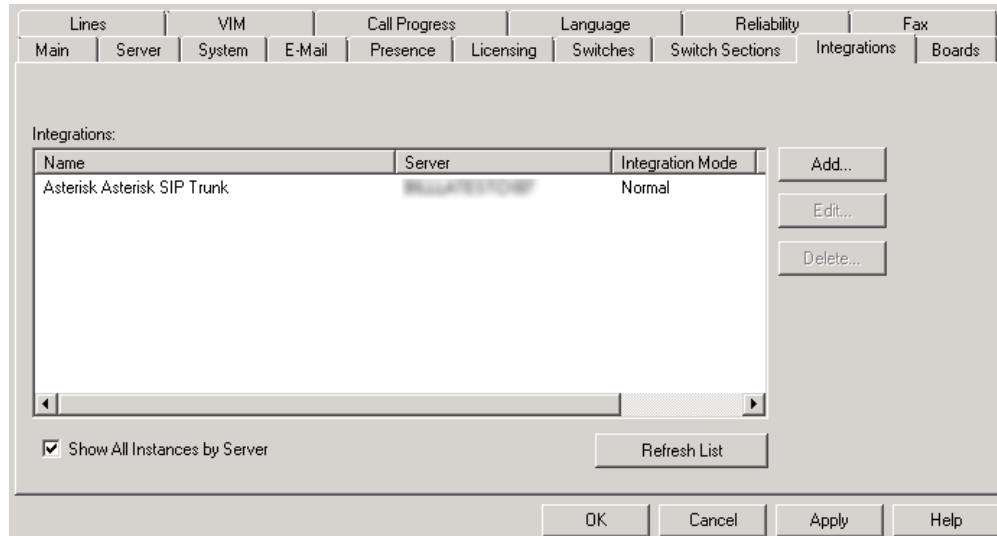


Figure 20. MiCollab AM Configuration - Integrations Tab

- **Integrations:** Lists the integrations that are installed or configured
- **Name:** Displays the name of the integration
- **Is Local:** Denotes with Yes or No if the integration is local to this server or on a remote Call Server
- **System Instances:** Displays how many instances of the integration are installed, including all of the Call Servers in the system.
- **Show All Instances by Server:** Select to view each instance of the integrations that exist within the system.
- **Refresh List:** Click **Refresh** to refresh the list.
- **Add** button: Click **Add** to add a new integration to the System Server.
- **Edit** button: Click **Edit** to edit the selected integration.
- **Delete** button: Click **Delete** to delete the selected integration.

Integration Options Dialog Box

The **Integrations** dialog box allows you to edit the integration settings for the selected integration. The information in this dialog box is specific to the Integration that is selected.

WARNING Modifying parameters in this dialog box affects the functionality of the integration between the System Server and the telephone system. Consult the related Integration Technical Note documentation or Technical Support engineer prior to making changes to the parameters in this dialog box.

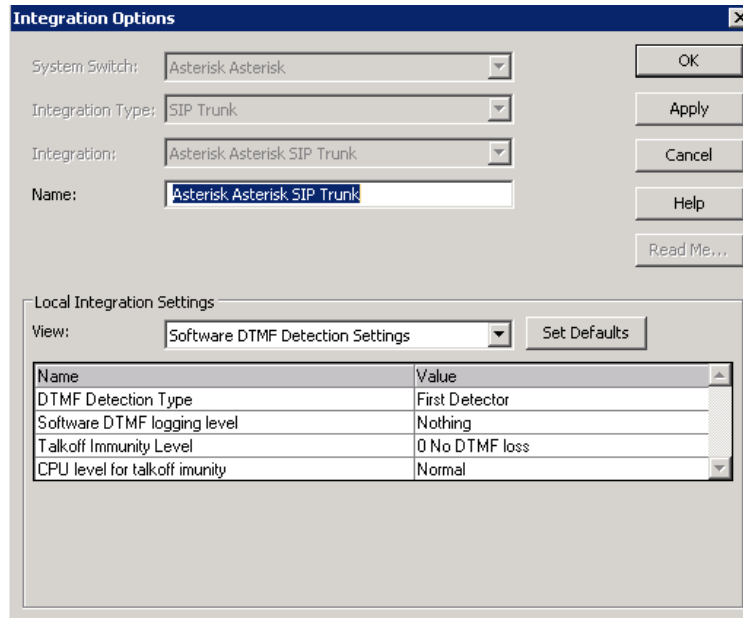


Figure 21. MiCollab AM Configuration - Integration Options Dialog Box

- **System Switch:** Select the name of the telephone system (switch) that you want to integrate with the System Server. Only those switches that are installed are listed here.
- **Integration Type:** Select the method to connect the System Server to the telephone system so the two work closely together. Only those integration types that work with the switch you selected are listed here. Refer to the Integration Technical Note or the documentation for the telephone system to verify the integration type.
- **Integration:** Displays the current system integration.
- **Name:** Type the name you want to give this integration, or accept the default name.
- **View:** Select a view from the list to filter the displayed integration settings by type.
- **Local Integration Settings List:** The Local Integration Settings table lists the settings for the local integration. To change a setting's value, click the Value field you want to edit, and then enter a new value. Consult the documentation for the telephone system or the Integration Technical Note for more information about data that you may need to enter here.

NOTE With the exception of any settings in the Required Parameters view, you should not need to change many settings. Most default values are the correct settings for the integration.

- **Set Defaults** button: Click **Defaults** to return the integration settings, but not the display name, to their default values.
- **Read Me...** button: Click to view the integration-specific read me file for the selected integration. The read me file contains information about the integration. If the Read Me button is unavailable (grayed out), there is no integration-specific read me file for the selected integration.

Boards Tab

The **Boards** tab allows you to add additional boards (cards) to the system or configure existing ones. To make changes to this tab, the System Server must be shut down.

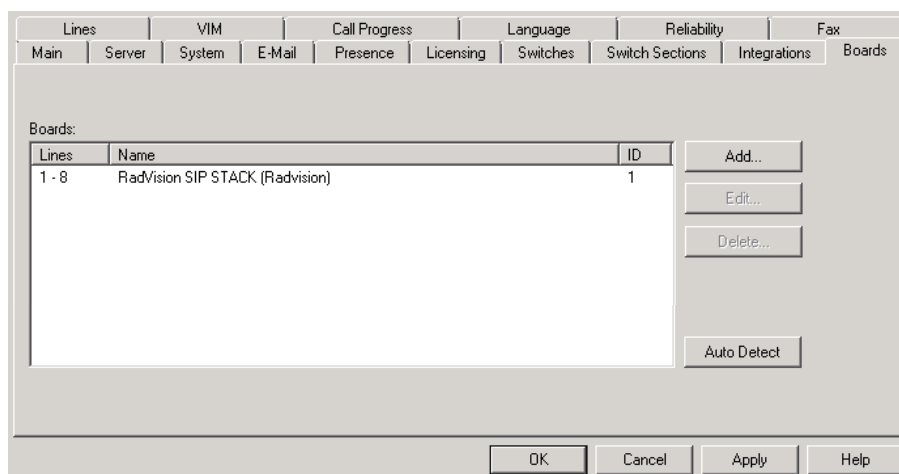


Figure 22. MiCollab AM Configuration - Boards Tab

- **Boards:** Lists the boards that are installed or configured
- **Lines:** Lists the number of lines on the board, and their physical port numbers in the system
- **Name:** The name of the board
- **ID:** The board number in the system
- **Add** button: Click **Add** to add a new board to the System Server.
- **Edit** button: Highlight the board, and then click **Edit** to edit the selected board.
- **Delete** button: Highlight the board, and then click **Delete** to delete the selected board.
- **Auto Detect** button: Click **Auto Detect** to have the system detect a new or replaced (upgraded) Dialogic card automatically. To add a Dialogic card, install the card, configure it using the Dialogic Configuration Manager, and then click the **Auto Detect** button on the Boards tab.

NOTE This button detects Dialogic and Aculab cards that are configured properly in their respective application programs. You must add all other boards manually using the Add button.

Lines Tab

The **Lines** tab allows you to assign extension numbers, switch integrations, and switch sections to individual lines on the system. You can also specify the startup state (open or closed) for each telephone line and specify which lines are enabled for callouts.

Voice line licenses are allocated to the Call Server when the system starts and attempts to open the line. Any line, which is marked as open, consumes a voice line license. Those lines, which are not marked as open, do not consume a license, and are not be put into operation. For example, if you have 24 Dialogic

ports installed in one Call Server but you only want to use 12 voice line licenses and assign the remaining voice lines to other Call Servers, uncheck the 12 lines you do not want to open at startup in the Lines tab. To make changes to the *Switch Integration Name*, *Switch Section*, and *Open* columns, the System Server must be shut down.

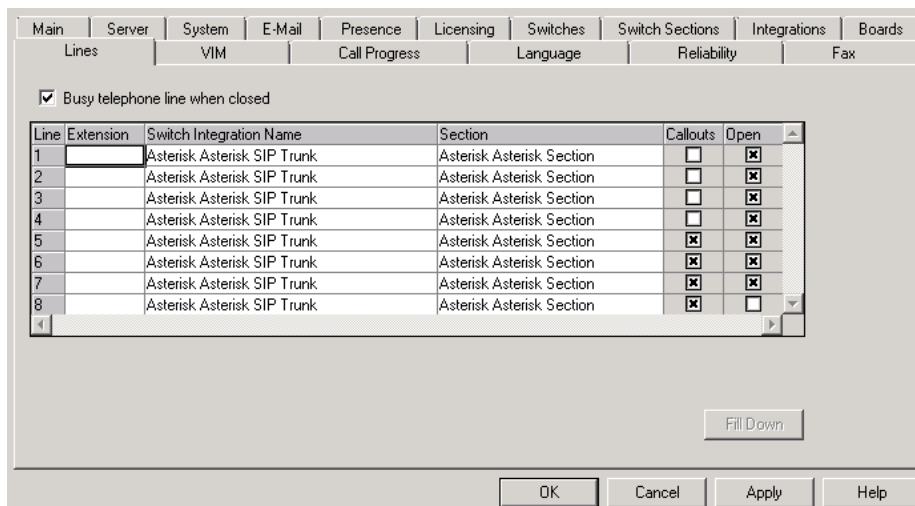


Figure 23. MiCollab AM Configuration - Lines Tab

- **Busy telephone line when closed:** Select this checkbox if you want the System Server to take analog, loop-start ports off-hook and cause a busy signal when lines are closed or the system is down. Clear the box to leave ports on-hook, causing a ring no answer (RNA) signal. For changes to this field to take effect, you must restart the Call Server.

NOTE If you are not using an analog loop-start board or a non-Dialogic telephony board (such as an Aculab board), this checkbox is not applicable. It is only applicable to systems with analog, loop-start Dialogic boards.

- **Line:** Lists the available lines; the information shown in this column cannot be modified.
- **Extension:** Specify an extension number up to 11 digits long for each telephone line. The extension you type must match the extension or logical terminal number (LTN) connected to the System Server port. Consult the Integration Technical Note for more details.

NOTE During installation, if the first extension number was correctly entered, the extensions are set up and you should not need to make changes to this field.

IMPORTANT Integrations cannot function correctly if extension numbers are omitted or incorrect.

- **Switch Integration Name:** Select the name of the switch integration to which you want to assign the MiCollab AM port extension. It is necessary to assign ports to integrations only when you have multiple switches or multiple integrations per switch.
- **Section:** From the list, select the name of the section to which you want to assign the MiCollab AM extension. It is necessary to assign ports to switch sections only when you have multiple switch sections. A typical integration has only one switch section.

- **Callouts:** Check this box for each line you want System Server to use for callouts for message notification, daily message reminders, and so forth.

To enable callout settings, you must have at least one line enabled for callouts, and it is recommended that you enable all lines for callouts.

NOTE The number of callout ports are configured for each Switch section. Be sure the correct number of lines are configured in the corresponding Switch Section.

IMPORTANT If no lines are enabled for callouts, the System Server cannot make callouts and logs an error in the Windows Event Viewer when a callout is attempted. Consult the Integration Technical Note for more details.

- **Open:** This column allows you to set the startup state, Open or Closed, for each telephone line in the system. Clear the box to have a line closed on startup.

NOTE Each Line that is selected to Open requires a Voice Line license.

- **Fill Down** button: Copies the contents of the topmost item of a selected range into the lines below. To fill items down, select the item you want to copy, drag down through all the lines you want to fill, and then release the mouse button. Click **Fill Down** to complete the copying process.

VIM Tab

The **VIM** tab allows you to select the connection type and configure the settings of the connection to the VIM server.

NOTE The VIM tab contains the information needed to support Voice Intercept Messaging (VIM) for subscribers. VIM is available only on systems that are integrated with specific telephone systems that support the VIM feature. VIM is a licensed feature of Mitel and this tab is available only if the VIM feature is enabled on the license key. For more information about configuring VIM support, see the *Voice Intercept Messaging* online book.

The screenshot shows the 'VIM' tab in the MiCollab AM Configuration Utility. The tab is titled 'VIM' and contains settings for 'Connection Type', 'Serial Connection', and 'TCP/IP Connection'. The 'Connection Type' is set to 'None'. The 'Serial Connection' section includes fields for Port (1), Baud Rate (1200), Data Bits (7), Parity (Even), and Stop Bits (1). The 'TCP/IP Connection' section includes fields for Domain Address and Port ID (3001). At the bottom are buttons for OK, Cancel, Apply, and Help.

Figure 24. VIM tab

- **Connection Type:** Select a serial or TCP/IP connection for transporting messages between the VIM Server and the System Server.
- **Serial Connection:**
 - **Port:** From this list box, select a serial COM port on the System Server to use for connecting to the VIM Server. The parameters you set for this COM port must match the parameters set for the COM port on the VIM Server.
 - **Baud Rate:** Select the transmission baud rate for the COM port.
 - **Data Bits:** Specify the data bits setting for this COM port.
 - **Parity:** Specify the parity setting for this COM port, Odd or Even.
 - **Stop Bits:** Specify the stop bits this COM port.
- **TCP/IP Connection:**
 - **Domain Address:** Type the host name or IP address of the VIM server in the Domain Address box.
 - **Port ID:** Type the port number to use for the connection in the Port ID box. You can also use the up or down arrows to select an ID. Use the default setting of 3001 that displays unless a manufacturer's representative directs you to use a different setting.

Call Progress Tab

Allows you to modify the call progress pattern types (ring back, busy, reorder) on the telephone system connected to the System Server. The default values in the call progress files provided with the System Server are suitable for most telephone systems.

You may never need to make changes to call progress. However, if your system is having problems such as incomplete transfers or false determinations of line status, you might need to make changes to call progress.

WARNING Do not make changes to call progress unless instructed to do so by a Technical Support Engineer.

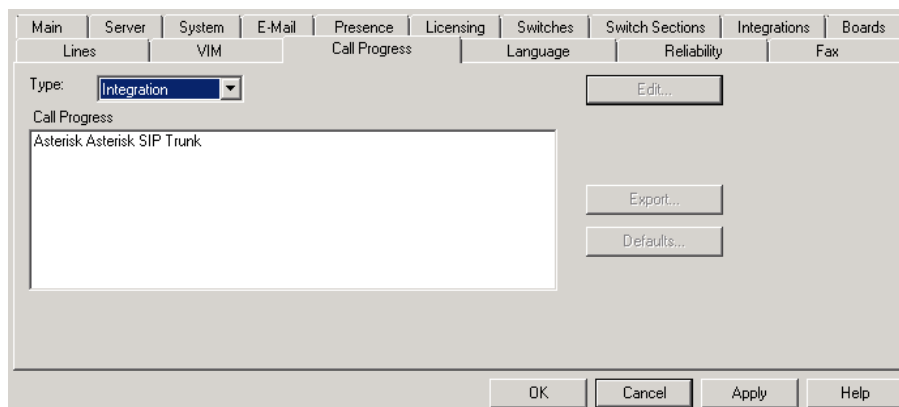


Figure 25. Call Progress Tab

- **Type:** Select **Integration** to see all integration-specific (internal) call progress environments. Select **Country** to see all country-specific (external) call progress environments.
- **Call Progress:** Lists the integrations or the country that are configured.
- **Edit Button:** Click **Edit** to edit the selected call progress environment.
- **Export Button:** Click **Export** to export a record of the selected call progress environment to a .zip file.
- **Defaults Button:** Click **Defaults** to return the settings for this call progress environment to their default values. The call progress environment's display name is not reset.

Languages Tab

The **Languages** tab is where you select languages, prompt sets, TTS languages and ASR languages. Place a check mark next to the language that will be the default Language Pack. You can customize the prompt set, TTS language, and ASR language for each Language Pack by clicking in the fields next to the Language Pack name and selecting the desired option.

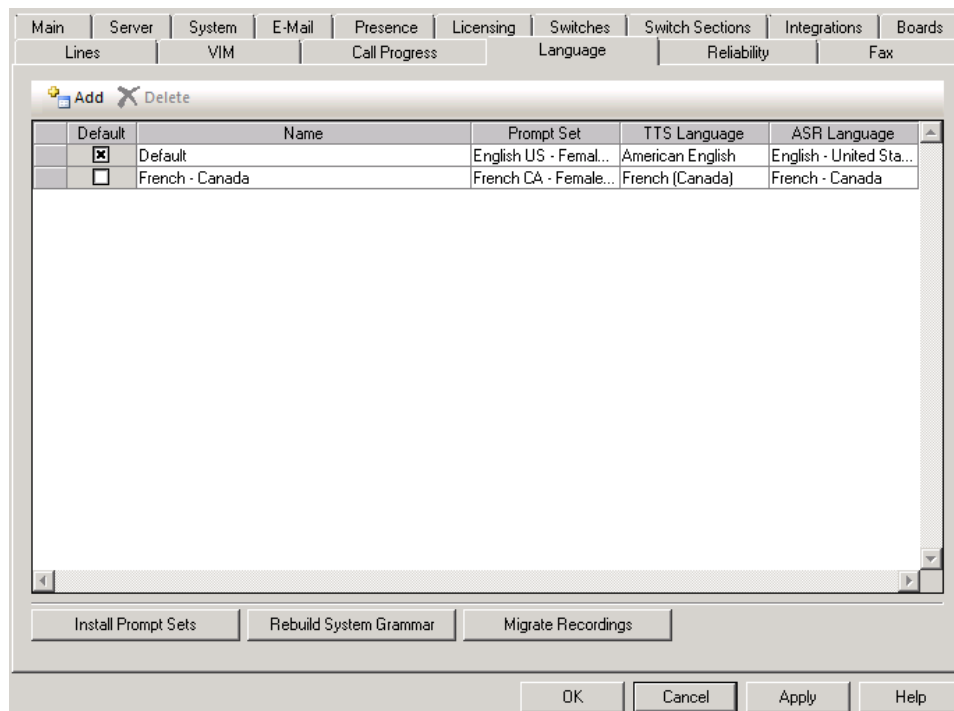


Figure 26. MiCollab AM Configuration - Languages Tab

- The **Install Prompt Sets** button brings up a dialog box where you can browse to new prompt sets for installation.
- The **Rebuild System Grammar (Resync System Grammar on Call Servers)** button rebuilds the system grammar if you have made changes in this dialog box.
- The **Migrate Recordings** allows you to change languages while leaving all system recordings unchanged. This is useful in cases where, for example, one version of English was installed in error. You could change the language prompt set, ASR, and TTS without losing existing recordings.

Reliability Tab

The **Reliability** tab can be configured to send e-mail notification to administrators in the event of a system fault. Reliability e-mails inform administrators of the following:

- Call processing errors
- High CPU usage
- High memory usage
- System startup
- System shutdown
- Power restoration

The screenshot displays the 'Reliability' tab within the MiCollab AM Configuration utility. The interface includes a top menu bar with tabs: Main, Server, System, E-Mail, Presence, Licensing, Switches, Switch Sections, Integrations, and Boards. Below this is a sub-menu bar with: Lines, VIM, Call Progress, Language, Reliability (selected), and Fax. The main content area is divided into two sections. The left section, titled 'System E-Mail Notification', contains fields for 'Mail Server (SMTP):', 'Encryption Type:' (set to 'None'), 'Port:' (set to '25'), 'Username:', 'Password:' (masked with dots), and 'Confirm Password:' (masked with dots). There is a checked 'Urgent' checkbox and fields for 'From:', 'To:', and 'Subject:' (pre-filled with 'System Message at Site'). The right section contains a 'Test line periodically' checkbox and a 'Reboot Server' group box with three checkboxes: 'On call processing errors', 'On high CPU usage', and 'On high memory usage'. At the bottom are 'OK', 'Cancel', 'Apply', and 'Help' buttons.

Figure 27. MiCollab AM Configuration - Reliability Tab

- **System E-Mail Notification:**
 - **Mail Server (SMTP):** Enter the name of the SMTP server that the System Server should use to send e-mail if it detects certain serious system errors.
 - **Encryption Type:** Select the type of encryption to use when sending e-mail messages.
 - None - No encryption method is used.
 - Auto - The encryption method is auto-negotiated between the client and the provider.
 - TLS - Messages are encrypted using Transport Layer Security.
 - SSL - Messages are encrypted using Secure Socket Layer.
 - **Port:** Select the TCP port to use when sending e-mail messages.
 - None – 25
 - Auto – 25
 - SSL – 465
 - TLS – 587

- **Username:** The Username and Password fields are the credentials for the account used to logon to the SMTP provider. Enter the user's e-mail address in this field.
- **Password:** Enter the password for the user account to log on to the SMTP server.
- **Urgent:** Select this box to mark the e-mail as urgent. This is particularly useful if the people receiving this message filter or forward their e-mail based on level of importance.
- **From:** Enter an e-mail address, a display name with an e-mail name in brackets, or a display name. To use a display name and an e-mail address together in this field, the e-mail address must be in angle brackets.

■ **For example:** System Administrator <sysadmin@company.com>

If only a display name is entered, the system includes an unknown e-mail address.

■ **For example:** unknown@defaultsmtp.com.

The default is the site name for this System Server.

- **To:** Enter the e-mail address of the recipients (typically the system administrator) who should receive these messages. Separate multiple e-mail addresses with commas.
- **Subject:** Enter a descriptive subject line for the e-mail or accept the default subject line.
- **Test Line Periodically:** Select this box to allow the System Server to run line tests occasionally. The line test simulates a callout and verifies that the low-level call processing components of the system are working properly. If a critical error is detected, the System Server sends an e-mail notification to the addresses listed in the **To** box under **System E-Mail Notification**.

To allow the system to reboot the System Server platform if it detects a critical error during the line test, select the **On call processing errors** box.

- **Reboot Server:**

- **On Call Processing Errors:** Select this box to allow the System Server to restart the System Server platform if it detects a critical error during its periodic line tests.
- **On High CPU Usage:** Select this box to allow the System Server to restart the System Server platform if it detects that one of the System Server processes is using too much CPU time. For example, if the system runs at 95% CPU for 5 minutes, the System Server attempts to shut down and restart the Windows operating system.

For information on how to change the threshold values (percentage of CPU usage and length of time at that level), contact Technical Support.

- **On High Memory Usage:** Select this box to allow the System Server to restart the platform if it detects that one of the System Server processes is using too much memory. For example, if the system runs at 95% memory usage for 5 minutes, the System Server attempts to shut down and restart the Windows operating system if this box is selected.

For information on how to change the threshold values (percentage of memory usage and length of time at that level), contact Technical Support.

Fax Tab

The **Fax** tab allows you to configure a RightFax or third party fax server.

NOTE Separate hardware, software, and licensing requirements apply to the fax functionality of MiCollab AM.

Figure 28. MiCollab AM Configuration - Fax Tab

- **Fax Type:** Select either RightFax or Third Party, depending on the type of fax server you are using.
- **Advanced:** Click here to enter a Fax Template String for a Third Party Fax server.

IMPORTANT Before making any changes to the Fax Template String, refer to your fax server documentation to determine how messages should be sent to the fax gateway.

- **RightFax Settings:**
 - **Server Name:** This box contains the name of the computer system running RightFax.

IMPORTANT You must manually type the RightFax server name so that the two servers can communicate. In addition, the setting in this box does not take effect until after the System Server has been shut down and restarted.

- **Board Name:** If RightFax and its fax linecards reside on separate platforms, specify the name of the platform containing the fax linecards that RightFax uses to exchange fax messages with the System Server. If RightFax and its fax linecards reside on the same platform, specify the name of that platform in the Server Name box and leave this box blank.

IMPORTANT The Named Pipes protocol must be installed and available on both the System Server platform and the platform where the fax linecards are installed for the setting in this box to be used. As a result, this box cannot be used in conjunction with clustered RightFax systems. Note also that the setting in this box cannot take effect until the System Server is shut down and restarted.

- **Server Protocol:** Specify the protocol to use for communication between the System Server and RightFax.

IMPORTANT This setting does not take effect until the System Server has been shut down, and then restarted.

- **RightFax User ID and RightFax Password:** To integrate MiCollab AM with RightFax, you must first create an Administrator account in RightFax. Those credentials must then be entered into the **RightFax User ID** and **RightFax Password** fields on MiCollab AM Configuration's **Fax** tab.

NOTE The account used should not be the default RightFax administrator account. For security the account used should have a password. The Test Connection button will verify that the connection and account are valid.

Type one of the identifiers in the following table:

Table 5. System Server and RightFax Communication Options

If the System Server and RightFax communicate using ...	Then type ...
The TCP/IP protocol	The IP address of the RightFax platform
The Named Pipes protocol	The computer name given to the RightFax platform in Windows

- **Third Party Fax Settings:**

- **Message Store Type:** Select either Notes or Exchange, depending on the desktop client you are using.
- **Message Classes:** This list displays the message classes that the System Server recognizes as faxes when using Microsoft Exchange. You can add message classes by clicking the **Add New** button.
- **Fax Domain Name:** Type the domain name that IBM Notes uses to identify faxes.
- **Allow All:** Select this box if you want to allow all file extensions to be sent to a fax machine when subscribers forward e-mail.
- **Allowed File Extensions:** This list displays the file extensions that can be sent to a fax machine when subscribers forward e-mail. You can add extensions by clicking the **Add New** button.

Configuring Callout Settings

Depending on the call patterns at your site and how your system is configured, you may need to change the default callout settings.

NOTE These settings apply only to lines associated with the switch section for which these settings are modified.

Using the **Maximum Callouts** field in the **Switch Section Options** dialog box, you can limit the total number of lines that are used for simultaneous callouts of all types (message waiting indicator and notification callouts, network callouts, and so forth).

This value cannot exceed the number of lines associated with this switch setting. If you have four lines assigned to this switch section then you cannot have a value greater than 4 for the maximum.

Additionally, you can limit the number of lines that are used for specific types of callouts. Callouts are also affected by the number of lines reserved for incoming calls, which you set using the Incoming Line Reserve field.

The **Maximum Callouts** field is related to the **Incoming Line Reserve** field in two ways:

- The total number of lines specified for both cannot exceed the number of lines in your system when the combined total would exceed the count of the lines associated with this switch section. (Note that if you increase the **Incoming Line Reserve** field by one, the Maximum Callouts field is decreased by one automatically.)
- Because priority is given to incoming calls, no new callouts are initiated if the number of open (or idle) lines is less than or equal to the number of lines specified in the **Incoming Line Reserve** field, regardless of the number of callouts specified in the **Maximum Callouts** field.

IMPORTANT Desktop callouts (callouts made from a subscriber's PC to MiCollab AM) are not considered outgoing calls and therefore the callout constraints do not apply directly. However, a Desktop callout can only proceed if there is an available line in the specified switch section and the line is permitted to make callouts (Lines tab). In addition, the incoming line reserve setting must be satisfied.

Use the following guidelines to configure callout and incoming line settings:

- If you find that you often have lines idle and callouts are backing up, you may want to decrease the value in the Incoming Line Reserve field.
- If your callers often get a busy signal when trying to reach you, you may want to increase the value in the Incoming Line Reserve field.
- If you find that one type of callout is using more than its share of the total in the Maximum Callouts field, you may want to reduce the maximum value for that callout type.

To configure callout settings:

- 1 Start MiCollab AM Configuration.
- 2 Click the **Switch Sections** tab.
- 3 If you have more than one switch section, select the switch section whose callout settings you want to configure from the **Switch Sections** list, and then click **Edit**.
- 4 From the **View** list within the **Switch Section Options** dialog box, select **Callout Limit Settings**.

NOTE The Incoming Line Reserve setting is visible on the Incoming Call Setting view, not the Callout Limit Settings view.

- 5 For the **Maximum Callouts** setting, enter the total (or maximum) number of lines you want occupied with callouts at any one time. To enter a value, click the **Value** field to the right of the setting name, and then enter a value (or use the up and down arrows to select the value).

IMPORTANT Typically, it is recommended that this number be approximately half of the total number of lines in the system. Setting too many lines for callouts can adversely affect the ability of MiCollab AM to handle incoming calls.

- 6 For the **Maximum MWI Callouts** setting, enter the total number of lines you want occupied with message waiting indicator callouts at any one time (MWI callouts are calls MiCollab AM makes to set or clear message-waiting indicators). This value should not exceed the Maximum Callout Setting.
- 7 For the **Maximum Network Callouts** setting, enter the total number of lines you want occupied with network callouts at any one time. It is recommended that this number be approximately half of the number in the **Maximum Callouts** field. This value should not exceed the Maximum Callout Setting.
- 8 For the **Maximum Message Notification Callouts** setting, enter the total number of lines you want occupied with immediate message notification callouts at any one time. It is recommended that this number be approximately half of the number in the **Maximum Callouts** field. This value should not exceed the Maximum Callout Setting.
- 9 For the **Maximum Other Callouts** setting, enter the total number of lines you want occupied with other types of callouts at any one time. It is recommended that this number be approximately half of the number in the **Maximum Callouts** field. This value should not exceed the Maximum Callout Setting.
- 10 From the **View** list, select **Incoming Call Settings**.
- 11 For the **Incoming Line Reserve** setting, enter the total (or maximum) number of lines you want to reserve for taking incoming calls. To enter a value, click the **Value** field to the right of the setting name, and then enter a value (or use the up and down arrows to select the value).

NOTE The incoming line reserve should be set to 0 or 1 to avoid delayed IMN callouts.

- 12 Click **OK**.
- 13 Click the **Lines** tab.

- 14 To enable callout settings, verify that one or more lines are enabled for callouts.

NOTE When you add a new switch section, there are no lines assigned to it. Before you can configure the new switch section, you must first assign lines to it. Mitel recommends that you enable lines for callouts starting from the last line first to avoid line collisions.

- 15 Click **Apply**.

- 16 Click the **Main** tab, and then click the **Startup** button to start MiCollab AM.

About MiCollab AM Admin

MiCollab AM Admin allows you to manage the system's mailboxes that make up the site's applications, and to manage the system configuration parameters necessary to the administrative functions of the system.

MiCollab AM Admin can run on client workstations as well as from the System Server platform, allowing remote administration of the system.

For more information on MiCollab AM Admin, configuring mailboxes, recording names and greeting, configuring auto attendant scheduling, creating Speech commands, Assigning subscribers to groups, refer to *System Administration Guide*.

Integrating MiCollab AM with the Telephone System

This section describes the typical hardware and software required to support the integration, or connection, of a Call Server to a telephone system so that the two work closely together.

The telephone system could be a private branch exchange (PBX), key system, hybrid, VoIP telephony system, or Centrex central office. When integrated, the distinction between the features provided by MiCollab AM and the features provided by the telephone system is transparent to the caller. An inbound telephone call is automatically directed to the correct greeting, announcement, or action.

When the telephone system receives an inbound call, it sends two forms of important information to the Call Server: the call type and the digits that identify the calling and/or called party.

The digits can be one or more of the following:

- Calling station extension number
- Automatic Number Identification (ANI) number, which is also known as Calling Line Identification (CLI) number or Calling Party Identification (CPID).
- Called station extension number
- Trunk number
- Called party Dialed Number Identification Service (DNIS) number. This call type originates from the Publicly Switched Telephone Network (PSTN).

Based on the call type and the identification of the calling and/or called party, the Call Server directs the caller to the appropriate greeting, announcement, action, or set of options. The Call Server can also send a Message Waiting Indicator (MWI) enable command to the telephone system to notify the subscriber of new messages.

MiCollab AM Integration Features

In most integrations, MiCollab AM offers the following features:

IMPORTANT Telephone systems provide different levels of integration from one manufacturer to another as well as from one model or software level to another. Although MiCollab AM has the capacity to provide each of the following described features, not every telephone system has the ability to present the data necessary to meet the requirements of each feature.

- **Automatic logon** - The Call Server recognizes a Direct Station call or Direct External Call (ANI number), identifies the caller's extension or PSTN number, and prompts the caller to enter the security code of the Subscriber mailbox associated with that extension number.

- **Call Forwarding** - The telephone system forwards a call to a subscriber's personal greeting if an extension is busy or not answered, or if it is set on Do Not Disturb or Forward All. Both internal and external callers can be forwarded to the subscriber's personal greeting. Depending on how the subscriber's mailbox is configured and on the information provided by the telephone system, an appropriate greeting can be played for both a Busy and a Ring No Answer (RNA) condition. Callers can then leave messages in the subscriber's mailbox or be presented with another list of options.
- **Call Routing** - Call Routing is based on the trunk number, DNIS number, or forwarded PBX extension number. These types of calls can be routed to a specific subscriber, department, application, audio library, ACD agent, or call center.
- **Calling Party Identification** - This feature allows a subscriber to reply directly to, or transfer to, the sender of messages.
- **Escape to Operator** - This feature allows the caller to reach a subscriber-specific or general operator by dialing zero (0).
- **Message Waiting Indicator (MWI)** - This feature can be configured to set automatically when new messages are left by callers and canceled when new messages are reviewed by subscribers.
- **Signaled disconnect** - This feature allows the Call Server to terminate a call when signaled by the switch integrated to it, thereby improving system efficiency by reducing the amount of time each telephone line remains in use after the end of a call.

Integrating the Telephone System and MiCollab AM

This section describes procedures that are common to all integrations. For specific instructions for the telephone system you are integrating, refer to the appropriate text file for an inband integration and the Integration Technical Note for an outband integration.

Integrating the telephone system and MiCollab AM consists of the following steps:

- Programming the telephone system to recognize and communicate with MiCollab AM
- Performing advanced integration, if necessary
- Testing the integration (see the [Testing the Telephone System Integration](#) section)
- Troubleshooting the integration, if necessary (see the [Testing the Telephone System Integration](#) section)

Programming the Telephone System to Recognize and Communicate with MiCollab AM

The installing technician should be technically familiar with the telephone system before attempting to program it. If your organization is not responsible for the telephone system, arrange for the telephone system vendor's representative to program it.

- **For outband integrations**, telephone system programming instructions are provided in the Integration Technical Note.

- **For inband integrations**, telephone system programming instructions are provided in text file format only. Text files can be found in the D:\Cx\Bin\Pbxinfo directory on the server platform. The name of the file is *.txt, where * represents the name of the telephone system. You can also click the **Read Me** button on the Integration Options dialog box to view the text file for the integration.

In addition to the Integration Technical Note or text file, you may need the telephone system documentation.

Adding an Additional Telephone Switch

After the telephone system has been programmed to recognize and communicate with MiCollab AM, you may need to perform additional tasks, such as adding another telephone switch and integrating it.

IMPORTANT Before you implement multiple switch configurations; please contact Mitel Technical Support for configuration assistance.

This section describes how to add another telephone switch and integrate it. It also describes how to add or update a board, assign extension numbers to telephone lines, and configure callout settings.

For additional information about values that you need to enter for the switch, see the online Help, the Integration Technical Note (or integration text file) and the documentation for the telephone system (switch).

MiCollab AM supports concurrent integration with multiple telephone systems (switches). MiCollab AM supports the following multiple switch configurations:

- Two circuit-switched telephone system and one IP telephone system
- Up to three different circuit-switched telephone systems

Read the Integration Technical Note and the documentation for the telephone system you are integrating with MiCollab AM before performing this procedure.

To add an additional telephone switch:

- 1 Shut down MiCollab AM.
- 2 Click the **Switches** tab, and then click **Add**.
- 3 In the **Switch Integration Data Setup** dialog box, select the telephone system (switch) manufacturer from the **Manufacturer** list, the switch model from the **Model** list, the Integration Type from the **Integration** list, and then click **OK**.
- 4 Enter a name for the switch in the **Name** box or accept the default name.
- 5 From the **View** list, select **All Settings**. Configure the remaining switch settings as needed. Enter values for the switch settings. To enter a value for a switch setting, click the **Value** field you want to edit, and then enter a value.
- 6 Click **OK**. The Switch Sections tab displays.
- 7 In the **Switch Section Options** dialog box, select the telephone system (switch) for which you are creating the switch section from the **Switch Name** list.

- 8 Enter a name for the switch section in the **Name** box or accept the default name.
- 9 Enter the **PBX node code**, if it is a requirement of your networked PBX. Leave the field blank unless it is required.
- 10 Enter the **PBX location code**, if it is a requirement of your networked PBX. Leave the field blank unless it is required.
- 11 In the **Required Parameters** view, enter values for the required switch section settings. To enter a value for a switch setting, click the **Value** field you want to edit, and then enter a value.
- 12 Configure the remaining switch section settings as needed.
- 13 Click **OK**, the **Integrations** tab displays.
- 14 From the **Switch Name** list in the **Integrations Options** dialog box, select the telephone system (switch) for which you are creating the integration.
- 15 From the **Type** list, select the type of integration.
- 16 Enter a name for the integration in the **Name** box or accept the default name.

NOTE To complete the following steps, you need the Integration Technical Note and the documentation for the telephone system (switch) for which you are creating the integration.

- 17 From the **View** list, select **Required Parameters**. Enter values for the required integration settings. To enter a value for a setting, click the **Value** field you want to edit, and then enter a value.
- 18 Configure the remaining settings as required.
- 19 Click **OK**.

Assigning Lines to the Integration

Assign the lines to the new integration as needed. Configure each line to serve the specific integration and switch section you require in the Lines tab.

To assign lines to the integration:

- 1 Shut down MiCollab AM.
- 2 Click the **Lines** tab.
- 3 Click the **Switch Integration Name** field for the line you want to assign a new integration.
- 4 Select the new integration the line from the drop-down list.
- 5 Click the related **Section** field, and then select the switch section to which the integration is assigned.
- 6 Click **Apply**.

Adding or Updating a Dialogic or Aculab Linecard

Use the following procedure if you are adding another board to the MiCollab AM platform (such as an Aculab board) or if you are replacing or updating an existing board (for example, if you are replacing a 16-line Dialogic board with a 32-line linecard).

NOTE Auto Detect detects Dialogic linecards and Aculab boards that have been approved for use with MiCollab AM. It does not detect boards by any other manufacturer or unsupported linecards.

For more information, refer to the documentation that came with your new board.

To add a Dialogic or Aculab board:

- 1 Shut down MiCollab AM.
- 2 Click the **Boards** tab.
- 3 To update an Aculab or a Dialogic board, make sure the board has been properly installed and configured, and then click the **Auto Detect** button.
- 4 Click **Apply**.

Adding a Virtual Board

This section describes how to add a virtual board. Virtual line cards must be configured manually.

To add a virtual board:

- 1 Start **MiCollab AM Configuration**, and then shutdown MiCollab AM if it is running.
- 2 Click the **Boards** tab, and then click **Add**. The **Board Options** dialog box opens.



- 3 Select a Board Manufacturer from the **Manufacturer** drop-down menu. (Refer to the related ITN for the correct board type.)
- 4 The **Model** field is filled automatically based on your board Manufacturer selection.
- 5 The **Protocol** field is filled automatically based on your board Manufacturer selection.
- 6 Select the number of lines you want to configure for your virtual board.

IMPORTANT Be sure that the MiCollab AM feature file supports the additional lines and board types that you require when you add or update a board and that the Line displays the correct number of lines.

- 7 Click **OK**. Setup displays the progress popup showing that your virtual board is being created.
- 8 Once the virtual board is created, you can continue with the configuration of your MiCollab AM server.

Assigning Extension Numbers to Lines

The installation program can assign extension numbers to lines for you, so you typically do not need to perform this procedure. Depending on the integration type, you may however, need to assign extension numbers to lines in the following situations:

- After installing MiCollab AM, if you did not specify the first extension in your system during installation.
- If the extension numbers in your system are not contiguous and the installation program was unable to assign extension numbers to lines for you.
- After adding additional lines to your system

To assign extension numbers to lines:

- 1 Shut down MiCollab AM.
- 2 Click the **Lines** tab.
- 3 Click the **Extension** box next to the line for which you want to assign an extension number, and then enter the extension number.
- 4 Repeat step three for each additional line that needs an extension number assigned to it.

NOTE If your extensions are numbered contiguously, you can use the Fill Down button to quickly assign extension numbers to lines. To fill extension numbers down, select the last extension number you entered, drag down through all the lines you want to fill, and then release the mouse button. Click **Fill Down** to complete the process.

- 5 If you want a busy signal instead of a ring no answer (RNA) signal when lines are closed or the system is down, select the **Busy telephone line when closed** box.

NOTE The Busy telephone line when closed setting effects Dialogic analog linecards only and is effective only when MiCollab AM is running. The setting has no effect if the server platform is shutdown.

- 6 When you are finished, click **Apply**.
- 7 Click the **Main** tab, and then start MiCollab AM.

Testing the Telephone System Integration

After programming the telephone system and completing the MiCollab AM integration, you must test the installation to verify that the integration functions correctly.

NOTE Instructions in this section assume that you are using the MiCollab AM standard database. Not all telephone systems support the features described in this testing section. Further, the text file or Integration Technical Note for the telephone system may contain additional testing information.

The following basic integration features must be tested

- Message Waiting Indicator (MWI) set and cancel
- Direct subscriber logon to a mailbox
- Call forward to a personal greeting and reply to an internally forwarded caller
- Transfers
- Direct call from operator
- Disconnect test

Because these tests may uncover problems with the telephone system as well as the MiCollab AM system, Mitel recommends that someone who is technically competent with both the MiCollab AM system and the telephone system perform these procedures.

If your company is not responsible for the telephone system, arrange to have a technical representative from the telephone system vendor available for these tests. Mitel also recommends that you perform these tests without subscribers accessing the MiCollab AM system so that the tests can be completed more quickly.

You need the following items for testing and problem resolution:

- Two working DTMF test telephone extensions within visual range of the server console.
- For inband integrations, a telephone test set capable of monitoring calls. A test set with signal detection and measurement capabilities (digit grabber) such as the ZIAD PhD may be necessary to test all of the integration functions completely.
- Two unassigned Subscriber mailbox numbers with primary extensions matching your two test telephones (the integration testing procedure requires two Subscriber mailboxes).

Before you begin the integration tests, verify the telephone system programming. For programming specifics, refer to the Integration Technical Note for your particular telephone system.

Preparing the Software for Testing

NOTE If a call fails any of the following tests, refer to *Troubleshooting Solutions for Common Problems*.

To prepare the software for testing:

- 1 Create two subscriber mailboxes, one for each test telephone station, and verify the following:
 - The **Primary Extension** box matches the actual extension number.
 - The **Set MWI** box is set to **Yes**.
 - The **Clear MWI mode** box is set to **First**, **Last**, or **Empty**, depending on the text file or Integration Technical Note for the telephone system.
- 2 Record a personal greeting and a busy personal greeting (if supported by your telephone system), provide names for both mailboxes, and verify that the recordings are present. If you are using busy personal greetings, be sure to program the subscriber mailbox appropriately.
- 3 At the Lines tab in MiCollab AM Configuration, for inband integrations, make sure at least one port has been designated for Callouts.

Message Waiting Indicator Set and Cancel Test

Follow these steps to test the MWI set and cancel functions.

To test MWI Set/Cancel:

- 1 Verify that the test station being used has MWI capabilities and that the MWI is currently not set.
- 2 Place a call to the server platform from the second test station and do the following:
 - a Log on to the second test subscriber mailbox, record a message, and send it to the first test mailbox.
 - b Press **5** to send the message.
 - c Log off and hang up.
- 3 From the first test station, call the server platform.
- 4 After the Call Server answers, log on to the mailbox and listen to the test message.
- 5 Save or discard the message as desired.
- 6 Log off and hang up.
- 7 After the Call Server hangs up, check the test station to confirm that the MWI has been canceled.

Direct Subscriber Logon Test

Follow these steps to test the direct subscriber logon.

NOTE This test may not be supported by your telephone system.

To test direct subscriber logon:

- 1 Verify that the telephone system is programmed appropriately.
- 2 From the test station, place a call to the lead number of the MiCollab AM system and do the following:
 - a Monitor the Line Status screen to verify which mailbox is accessed when the Call Server answers.
 - b When you hear Please enter your security code, enter the appropriate security code and make sure you are in the correct mailbox.
 - c Log off and hang up.

Call Forward on Ring No Answer

This test explains how to test call forwarding to a personal greeting. It also tests the ability of a subscriber to reply directly to a message left by an internally forwarded caller.

NOTE This test may not be supported by your telephone system.

To test call forwarding on Ring No Answer (RNA):

- 1 Set a test station so that it call forwards on RNA and rings to the lead number of the MiCollab AM system.
- 2 From another test station that has a subscriber mailbox in the system, place an internal call to the forwarded station. After the designated number of rings at the test station, the call should forward to the server platform.
- 3 Observe the **Line Status** screen to make sure that the Call Server answers the forwarded call with the appropriate subscriber's mailbox. After the Call Server answers the call, you should hear the personal greeting of the called station.
- 4 After the personal greeting ends, leave the subscriber a short message, and then hang up (just as a non-subscriber would do).
- 5 Repeat Steps two through four, but call into the Call Server using an outside line. If the telephone system is equipped with Direct Inward Dial (DID) trunks, this functionality should also be tested. Again, the call should forward to the Call Server and to the personal greeting of the called station.

Call Forwarding on Busy Test

Leave the telephone programmed as in the previous test.

NOTE This test may not be supported by your telephone system.

To test call forward on busy:

- 1 Make the station busy and place an internal call to that busy station. The call should immediately forward to the Call Server.
- 2 Observe the Line Status screen to make sure the Call Server answers the forwarded call with the appropriate subscriber's mailbox. You should hear the busy personal greeting of the called station.
- 3 Log off the Call Server at the personal greeting and hang up.
- 4 Repeat Steps 2 and 3, but call into the MiCollab AM system using an outside line. Again, the call should forward to the Call Server and to the busy personal greeting of the called station.

Transfer Testing

Follow these steps to test transfers in your system.

To transfer a call:

- 1 Call MiCollab AM and request a transfer to another extension that you know is available.
- 2 Repeat the transfer with a line that is busy.
- 3 Repeat the transfer with outside calls into the automated attendant.

Reply to a Message from an Internally Forwarded Caller Test

Leave the telephone programmed as in the previous test.

NOTE This test may not be supported by your telephone system.

To reply to a message from an internally forwarded caller:

- 1 With the MWI set at the called test station, make a direct call to the lead number of the MiCollab AM system from this station.
- 2 After entering the security code, press 1 to listen to new messages.
- 3 After listening to the first message left through internal forwarding, press 8 to reply to the message.

The system informs you that this reply will be sent to the calling test station. No other action is required by you for the system to know which mailbox to send the reply to.

NOTE If you press **8** to reply to the second test message, you will notice that single-key reply is not available for messages left through external forwarding.

- 4 Record a short reply and press **5** to send the message. Then log off and hang up.

Direct Operator Call from an Attendant Console to MiCollab AM Test

Follow these steps to test a direct operator call to the Call Server.

This test requires a Subscriber mailbox for the operator console. Additional programming may be required for the telephone system. Refer to the telephone system programming documentation for details.

To direct operator call to the Call Server:

- 1 At the operator console, dial the MiCollab AM lead number.
- 2 Turn on DTMF (end-to-end signaling) by pressing the appropriate programmed button on the console, or by using the external tone generator, if required.
- 3 Listen for the prompt *Enter the extension of the person you wish to reach, followed by the pound sign key*.
- 4 Press the **Release** key.

Disconnect Test

To make the best use of the Call Server ports, it is important that you verify the server's ability to disconnect when a caller hangs up. Because disconnect signaling varies greatly among telephone systems, only general guidelines are offered.

To test disconnect:

- 1 Start the Line Status utility.
- 2 Call the MiCollab AM hunt group and enter the target extension number. After several seconds, you are prompted to leave a message.
- 3 Begin speaking at the tone and leave a five-second message.
- 4 When you are finished, hang up without pressing any DTMF keys.
- 5 Watch the Line Status window. The line status should change to on hook a few seconds after you hang up.

If you encounter a problem, repeat the test while monitoring the MiCollab AM line with a telephone test set to determine the disconnect signaling used by the telephone system, then adjust the values in the Switch Options dialog box and the Disconnect and Answer Settings in the Integration Options dialog box from MiCollab AM Configuration. If DTMF digits are sent by the PBX as a disconnect code, enter those digits in the DTMF Disconnect String field

Table 6. Disconnect Test indications

If the telephone system indicates a disconnect by...	From MiCollab AM Configuration, check the value of the following setting...
Dial tone or Reorder tone	Disconnect recognition settings in the Call Progress Environment dialog box
DTMF digit string	DTMF Disconnect String box in the Integration Options dialog box (Available on some inband integrations)
Open loop Current	Current length in millisecond in the Disconnect Loop Current Length (ms) box in the Switch Options dialog box

NOTE If the telephone system sends an inband string such as 55 as the disconnect string, type that disconnect DTMF string in the DTMF string box.

Last, check the silence timeout setting in the Silence Timeout box in the Messaging tab of the MiCollab AM Admin's System Configuration dialog box.

This is the end of the integration test procedures. Be sure to remove any mailboxes that were created for the sole purpose of running the integration tests. Also, verify that any configuration parameters changed for testing purposes have been changed back to realistic working values.

Troubleshooting the Integration

If the integration does not function properly after you install and configure it, review the following common integration mistakes and problems before calling Technical Support.

The Call Server

- On the Switches and Integrations tabs, do the parameters have the recommended values found in the text file or Integration Technical Note?
- In the Lines tab of MiCollab AM Configuration, have the correct extension or position logical terminal numbers (LTNs) been assigned to each MiCollab AM port?
- If the integration is a Datalink integration; is the data link connected to the serial port correctly? Is the serial port configured properly under the Communication Settings view in the Integrations Options dialog box of the Integrations tab?
- Do all Subscriber mailboxes that require MWI functions have the Set MWI box selected?
- For inband integrations, check the callout log report to see MWI set and clear actions.

The Telephone System

- Is the telephone system correctly programmed to provide the MiCollab AM system with the requirements listed in the Programming the Telephone System section of the Integration Technical Note?
- Is all forwarding from subscriber telephones configured to forward to the MiCollab AM system correctly?
- Have you made sure there are no line appearances of the MiCollab AM system ports on any other station?
- Are all bridge clips, jacks, line cords, and other types of wiring correctly terminated and properly connected?

Configuring Firewalls

If you intend to use a firewall to protect your MiCollab AM system, you must create openings at the firewall so that programs have access to the software ports that MiCollab AM uses. The number, size, and location of these openings depend on the following decisions:

- How you deploy the firewall in your organization
- Whether or not the MiCollab AM system should be able to exchange mailbox and server information through Global User Administration or MiCollab AM Digital Networking
- Whether or not MiCollab AM subscribers should be able to use client programs, such as Unified Messaging and Integrated Client Access, to log on to MiCollab AM from the other side of the firewall
- Whether or not MiCollab AM administrators should be able to use the administrative utilities to log on from the other side of the firewall

If the users in your organization log on to MiCollab AM using such features as Unified Messaging, NetConnect Digital Networking, and the MiCollab AM Admin utilities, you need to open the additional ports that those programs need to communicate with the various software processes that make up MiCollab AM.

In addition, if you want to enable the built-in firewall provided with the operating system on the server platforms that host the components of the MiCollab AM system (for example, the Digital Networking and UCCconnect servers, as well as the main System Server platform), you must open all of the ports that the MiCollab AM processes require.

The following tables list the ports that MiCollab AM components use. These tables are organized into groups of Services. Each table provides the necessary information for you to configure the appropriate firewall settings that enable Services for that particular group. If a Service or a service-group does not apply to your installation, no configuration is required.

Table 7. System Services

Service Description	Server	Client(s)	Port(s)
SOAP Interface for System Services	System Server	AD Snap-In	18276 (HTTP)
		Call Server	18277 (HTTPS)
		MiCollab AM Admin	
		Digital Networking Configurator	
		Integrated Client Access Server	
		Line Status	
		Reports	
		Web PhoneManager	
		Unified Messaging Clients	
		Message Cache Manager	

MiCollab AM API Interface	System Server	RightFax Work Server MiCollab AM Admin Digital Networking Server Diagnostics utility	5321 (TCP)
NetBIOS connections	System Server	Call Server Reports	139 (TCP) 445 (TCP)
My SQL Database	System Server	Call Server	3310 (TCP)

Table 8. Call Services

Service Description	Server	Client(s)	Port(s)
SOAP Interface for Call Services	Call Server	System Server Other Call Servers (only for Split Integrations) Line Status	18276 (HTTP) 18277 (HTTPS)
MiCollab AM API Interface	Call Server	Diagnostics utility	5321 (TCP)
NetBIOS connections	Call Server	System Server	139 (TCP) and 445 (TCP)
My SQL Database	System Server	Call Server	3310 (TCP)

Table 9. Integration Services

Service Description	Server	Client(s)	Port(s)
SIP integrations	Call Server / System Server with call services	Various IP PBX	5060 (UDP and TCP) 5061 (TCP) (Can be configured differently)
Cisco SCCP integration	Cisco Unified CallManager / Cisco Unified CallManager Express / Cisco Unified SRST	Call Server / System Server with call services	2000 (TCP)
Media Streaming Ports	Call Server / System Server with call services	Various IP PBX and IP phones	Configurable base port: 10000 (UDP) Range: Base Port to (Base Port + 10*Number of Lines)

MITEL MiTAI integration	MITEL 3300	Call Server / System Server with call services	8001 (TCP) 6802 (TCP)
MITEL MiTAI integration	Call Server / System Server with call services	MITEL 3300	Base port 9000 (UDP) Range: Base Port to (Base Port + Number of lines)
MITEL SIP Convertor (For IP integration)	Call Server / System Server with call services	MITEL MX-ONE /	1090-1120 (UDP) 1720 (TCP)
Outband Datalink for VM and CAS integrations	System Server / Call Server	MITEL / MX-ONE	2555 (TCP)
Outband Datalink	Fujitsu 9600	System Server / Call Server	Configurable (TCP)
Outband Datalink (For MCI LAN integration)	NEC PBX	System Server / Call Server	60020 (TCP)
MWI (Devlink)	System Server / Call Server	Avaya IP Office	50791 (UDP)
MWI (Devlink)	Avaya IP Office	System Server / Call Server	Dependent on PBX version (UDP)

Table 10. Integration Services

Service Description	Server	Client(s)	Port(s)
MITEL SIP Convertor (For IT integration)	Call Server / System Server with call services	Local Processes only	5060 (UDP)
NEC IP Protims (NEC Only)	Call Server / System Server with call services	Various NEC PBX systems which support IP Protims	Base port 15000 (UDP) Range: Base Port to (Base Port + 3 * Number of lines) Base port 16000 (TCP) Range: Base Port to (Base Port + 2 * Number of lines) Additionally there are ephemeral client ports: the range of these

ports depend on the operating system in use

Table 11. Other Services on System Server and Call Servers

Service Description	Server	Client(s)	Port(s)
Administrator Alerts	E-mail Server	System/Call Server	SMTP Port 25, 465, or 587
SMS over SMTP	E-mail Server	System Server	SMTP Port 25, 465, or 587
Simple UM	E-mail Server	System Server	SMTP Port 25, 465, or 587
UCConnect Services	System Server/ Call Server	Local or Remote Applications	5323 (TCP)
Live Diagnostic Process logging	Diagnostics utility	System Server Call Server Directory Propagation Master	Base Port 49800 (TCP). Range: Base Port to (Base Port + X) Where X is the max number of simultaneous live diagnostic sessions that are allowed
MITEL VIM	MITEL	System Server	3001 (TCP)
MWI for Exchange 2007 or Domino	System Server	Exchange 2007 or Domino Server	60000 (TCP)
Exchange 2010 Listener Service	System Server	Exchange 2010	8877 (TCP)
Microsoft Office 365 Listener Service	System Server	Microsoft Office 365	8877 (TCP)
MWI for Exchange 2007	MWI for Exchange Component	System Server	60001 (TCP)
Office 365 Listener Service	System Server	Exchange 2010/2013/2016	
Exchange 2010 MWI Service	System Server	Local Processes only	8870 (TCP)

Microsoft Office 365 MWI Service	System Server	Local Processes only	8870 (TCP)
Exchange 2010 Auto Discover Service	System Server / Call Server	Local Processes only	8731 (TCP)
UM for IMAP	E-mail Server	System Server and all Call Servers	IMAP port 143 or 993
Message Delivery for UM for IMAP	E-mail Server	System Server and all Call Servers	SMTP Port 25, 465, or 587
System Grammar Service (HTTP)	System Server	Call Servers	9070 (TCP)
Presence	System Server	Call Servers	9080 (TCP)
Channel Management	Call Server / System Server w/ Call Services	Call Server / System Server w/ Call Services	Base Port 9081 (TCP) Range: Base Port to (Base Port + Number of lines)
Call Server Grammar Service (HTTP)	Call Server	Local Processes only	9070 (TCP)
Grammar Service	System Server / Call Server	Local Processes only	10111 (TCP)
Nuance	System Server / Call Server	Local Processes only	6060 (TCP) 4900 (TCP)

Table 12. Digital Networking Services

Service Description	Server	Client(s)	Port(s)
SOAP Interface for Directory Propagation Master	Directory Propagation Master	MiCollab AM System Server MiCollab AM Server Digital Networking Configuration	18276 (HTTP) 18277 (HTTPS)
Digital Networking Administration	Digital Networking Server	Digital Networking MiCollab AM Admin	445 (TCP)

Message Delivery	Digital Networking Server	Other Digital Networking Servers in the network	25 (TCP)
MySQL Database	Directory Propagation Master	Local Processes Only	3311 (TCP)

Table 13. Message Cache Management

Service Description	Server	Client(s)	Port(s)
Soap Interface for Message access	Message Cache Manager	Web PhoneManager	18276 (HTTP) 18277 (HTTPS)

Table 14. Web Phone Manager Services

Service Description	Server	Client(s)	Port(s)
HTTP	Web Server	Browsers over the LAN/Internet	80 (TCP)
Secure HTTP (HTTPS)	Web Server	Browsers over the LAN/Internet	443 (TCP)

Table 15. Integrated Client Access Services

Service Description	Server	Client(s)	Port(s)
IMAP	Integrated Client Access Server	e-mail clients over the LAN/Internet	143 (TCP)
Secure IMAP (IMAPS)	Integrated Client Access Server	e-mail clients over the LAN/Internet	993 (TCP)

Firewall Setup for Licensing

For the License Management Tool to work properly, certain IP addresses must allow outbound traffic from the MiCollab AM server to port 443 of several IP addresses. These addresses may, over time, change. As part of the installation process, you must set up firewall automation to resolve the following URLs to their underlying IP addresses. A possible tool for identifying the underlying IPs on Windows OS is lookup.

- *yps-ws.sentinelcloud.com* (required for software-based licensing).
- *pdx02-cloud.prod.sentinelcloud.com* (required for software-based licensing).
- *licensing.avst.com* (required to run License Management Utility).

Installing Client Utilities

This chapter explains how to install MiCollab AM Admin, Digital Networking Configurator, and Reports client utilities on other computers connected to the System Server by a LAN. Installing these client applications on administrators' workstations allows those administrators to manage the System Server from their own desks, provided they have been granted sufficient permissions.

To support the MiCollab AM Admin, Digital Networking Configurator, or Reports client utilities, a computer must run one of the following Microsoft operating systems:

- Windows Server 2008 R2 with Service Pack 1
- Windows Server 2012 R2
- Windows Vista
- Windows 7
- Windows 8/8.1
- Windows 10

IMPORTANT Because any computer running MiCollab AM Admin is potentially able to attach to the System Server, be sure to change the password of the Administrator account from its default. For additional information on changing this password, see the help topic, or refer to *System Administration Guide*.

Configuring the System Server to Support Client Utilities

The following items must be configured on the System Server before you install the client utilities.

Sharing the Reports Directory

If system administrators generate reports using the client Reports utility, the folder where it resides, usually **D:\CX\Reports** must be shared. All administrators who run the Reports utility at their own computers, or the group to which they are assigned, must be assigned Read and Change permissions for this shared folder.

Granting System Admin Access

To use the MiCollab AM Admin and Reports utilities, system administrators must be granted appropriate access rights. You can grant such rights by creating a User ID account for each administrator. For more information on creating administrator accounts, see the help topic or refer to *System Administration Guide*.

NOTE

1. You must have the correct permission in Microsoft Windows to create a shared directory on the network.
2. The connection to MiCollab AM Admin defaults using Secure Sockets Layer (SSL). If you do not want to use SSL to connect to MiCollab AM Admin, you must append *http://* to the server's address to force an unencrypted connection, for example *http://systemserver.domain.com*. SSL connections are supported to the home server only. If you are using Global Administration to administer multiple systems, you must append remote server addresses with *http://*.

If the server does not support SSL, you are prompted to try logging again using an unencrypted connection. If this connection succeeds, the application remembers to use the unencrypted connection in the future. The *http://* prefix can be removed at any time once the server is upgraded to a version that supports SSL, and you want to use SSL by default.

Client Utility Resources

The MiCollab AM client utilities can be installed from either of the following locations:

- The MiCollab AM Installation Media
- A shared directory on the LAN or WAN

If you want to install these programs from a shared directory, you must have access to a directory on your LAN or WAN that contains the client installation files and has appropriate permissions set. This directory normally displays under the name **ClientNetInstall**. For information on setting up such a shared directory, see the administrator responsible for the System Server platform.

NOTE Certain versions of Windows, such as Windows 8/8.1 and Server 2012 R2, may not allow MiCollab AM to install .NET 3.5 SP1. In those cases, you may need to manually install .NET 3.5 to use full MiCollab AM functionality.

Starting Setup from the MiCollab AM Installation Media

To start the setup wizard for the MiCollab AM Client Application:

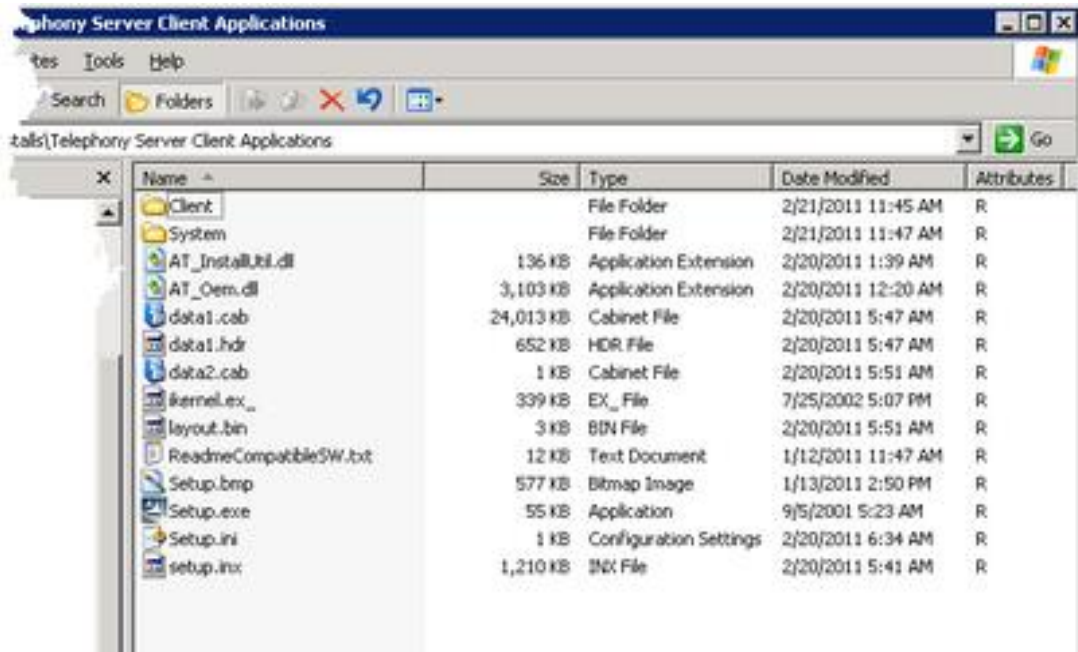
- 1 Log on to the platform using a Windows Administrator account.
- 2 Shut down all running programs.
- 3 Insert the MiCollab AM Installation Media into the appropriate drive.
- 4 Do one of the following.

If autorun is...	Then...
Enabled	In the MiCollab AM Installation Media Administrative Clients area, click MiCollab AM Administrative Clients , and then go to Step 5

Disabled

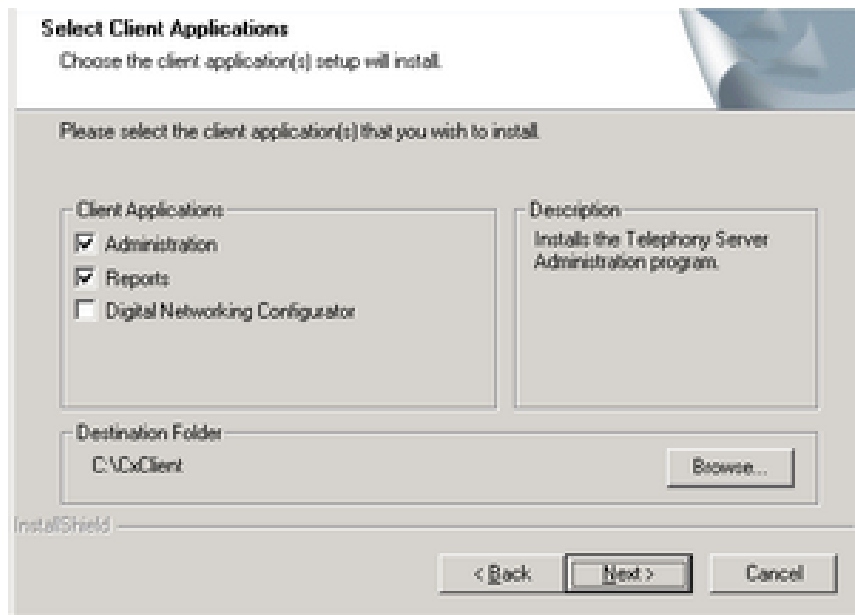
On the taskbar go to **Start > Run > Browse**, and then the steps below must be done before step 5.

- 5 Locate and open the **Client Installs\Telephony Server Client Applications** folder, and then double-click **Setup**.



- 6 In the **Welcome** page, click **Next**.
- 7 In the **License Agreement** dialog box, click **Yes** to accept the License Agreement.
- 8 In the **Select Components** page, select the client application you want to install.

IMPORTANT You must read and accept the terms of the license agreement to continue with Setup.



- **Administration** - Installs MiCollab AM Admin, which allows administrators to configure MiCollab AM remotely. Refer to *System Administration Guide* for more information.
 - **Report** - Installs the Reports utility. Refer to the help topic or *Reports Administration Guide* for more information.
 - **Digital Networking Configurator** - Installs the Digital Networking Configurator. Refer to the *Managing an Enterprise System* online book for more information.
- 9 If you want to change the default destination folder, click **Browse**, and then enter the location or select it from the list.
 - 10 Click **Next**. The **Start Copying Files** page displays.
 - 11 Click **Next** to continue. The installation completes. The **Installation Wizard Complete** page displays.
 - 12 Select **Yes, I want to restart my computer now**, and then click **Finish** to restart the platform and complete the installation.

IMPORTANT You must restart your platform to complete the installation.

Starting Setup from the Shared Directory

Exit any Windows programs before running the **Setup** program.

To start Setup using the shared directory:

- 1 Connect to the shared directory on the network containing the MiCollab AM client files. This shared directory is the one that you specified in the **Network Client Installation Path** dialog box during MiCollab AM Setup.
- 2 Double-click **Setup**.
- 3 Read the instructions shown in the **Welcome** dialog box, and then click **Next**.
- 4 Click **Yes** to accept the **License Agreement**. You must read and accept the terms of the license agreement to continue with Setup.
- 5 Select the check boxes in the **Components** list to choose the following individual components:
 - **Client Administration** - Installs MiCollab AM Admin, which allows administrators to configure MiCollab AM remotely. Refer to *System Administration Guide* for more information.
 - **Client Report** - Installs the Reports utility. Refer to *System Administration Guide* for more information.
 - **Digital Networking Configurator** - Installs the Digital Networking Configurator. Refer to the *Managing an Enterprise System* online book for more information.
- 6 Change the destination folder, if necessary.
- 7 Click **Next**.
- 8 In the **Start Copying Files** dialog box, review the items on the **Current Settings** list and click **Next** to accept them and begin copying files. The installation begins.
- 9 Remove all disks from the computer's drives, select **Yes**, I want to restart my computer now, and then click **Finish** to restart the platform and complete the installation.

IMPORTANT You must restart your platform to complete the installation.

Installing the OpenText RightFax Fax Server

Refer to *the RightFax Fax Board Guide and the RightFax Administrator's Guide* for instructions on installing the RightFax fax server software on another computer. Two additional documents explain how to configure advanced applications with *MiCollab AM: Faxtext* and *Fax Messaging* online books.

NOTES

1. RightFax is required to support Fax Over IP (FoIP). MiCollab AM does not natively support FoIP.
2. You must install RightFax on a separate platform. The RightFax Server and the System Server must be networked together. Separate hardware, software, and licensing requirements apply to the fax functionality of MiCollab AM.

Appendix A: Tools and Applications

Built in MiCollab AM Configuration, MiCollab AM Admin, and Maintenance Tools

The following utilities enable installers and administrators to configure, administer, and maintain a system:

- **License Management utility** allows the administrators to download the latest license file for MiCollab AM system, and in case of software licensed systems, allows server registration with the cloud license provider.
- **MiCollab AM Configuration** provides control over such fundamental server configuration settings as telephone system setup, database management, and integration setup. It also allows system administrators to shut down and start up the server's main call handling Service. MiCollab AM Configuration is a Control Panel utility; it can run on the server platform only.
- **MiCollab AM Admin** is a system administrator's main point of contact with the server. It is used to create and edit mailboxes that make up the site's applications and to change the call handling schedule as well as perform other administrative functions.
- **Line Status** provides status information on the system's telephony ports and processes, as well as the status of your call servers. You can also use this utility to open and close lines, stop and start Services on your call servers as well as reboot individual call servers.
- **Reports** generate, display, and print a number of reports that are useful in administering the system. The utility can also save generated reports in many popular file formats, allowing system administrators to import and analyze the reported data using a wide range of programs.
- **Mailbox Archive** backs up and restores voice and fax messages that are stored locally, mailboxes with their associated audio files. Archive supports all of the media types that the operating system supports, allowing system administrators to use the backup media that work best in their specific companies. This utility must have direct access to the backup devices available to the System Server platform.
- **Diagnostics** allows administrators and technicians to monitor the activity of server processes, start and stop event and process logging for troubleshooting and diagnostic purposes.
- **System Status Utility** The System Status utility allows you to view the real time status of the System Server, each Call Server in the system, and the connection between them. In addition, the utility provides information about:
 - The node ID of each server
 - The software version and build number each server is running
 - The Switch locations
 - The Switch Section locations

- The Integration locations
- Neverfail topology and Neverfail failover status (if installed)

The setup program places applications, such as MiCollab AM Admin, Line Status, Reports, Archive, Diagnostics, and System Status utilities in a new program folder that it creates, named MiCollab AM Desktop; it also adds a MiCollab AM Configuration icon to the Control Panel. All seven of these utilities can run simultaneously if needed. In addition, MiCollab AM Admin, Reports, and Digital Network Configurator can be installed and run from other clients connected to the system through a LAN or WAN. Multiple copies of these utilities can run simultaneously.

Several of the advanced applications discussed later in this chapter add utilities of their own to the system and rely on options in the basic utilities to set up and configure their features. For information about these applications, see the appropriate online book.

Additional Applications

Each system includes automated attendant and voice mail features to provide the system's internal callers, external callers, and subscribers with call routing and messaging capabilities. A number of advanced applications expand the system's available features. Any of these applications can be purchased separately for systems that do not include them. Licensing requirements apply for all of the additional applications.

Unified Messaging

The unified messaging applications available for MiCollab AM provide its subscribers with seamless access to all of their messages. Whether the subscribers manage their messages over their telephones or at their computers, they can find all of their voice, fax, and e-mail messages in one convenient place.

- The **MiCollab AM Unified Messaging** application enables subscribers to manage their voice and fax messages at their workstations. Unified Messaging supports the management of voice and fax messages using the popular e-mail programs Microsoft Outlook, IBM Notes, and Novell GroupWise, and other IMAP-compatible e-mail programs.
- **E-mail Access™** enables subscribers to be notified of e-mail messages using Immediate Message Notification. On MiCollab AM systems with the text-to-speech option installed, subscribers can listen to their e-mail messages from any telephone.
- The **RightFax Fax Server** enables fax messaging when teamed with MiCollab AM. It also offers such features as fax store and forward, fax broadcasting, and fax on demand (also known as fax text) applications.

NOTE Unified Messaging is licensed on a per user basis. Subscribers can use the unified messaging feature only if they are allocated a license for it.

Automatic Speech Recognition

The Automatic Speech Recognition (ASR) capability of MiCollab AM provides the Speech enabled automated attendant and Voice User Interface (VUI) features that allow callers to navigate through the

automated attendant and the Subscriber mailbox features of MiCollab AM using speech commands. ASR simplifies the use of MiCollab AM and enables other features that are impractical using DTMF input. The use of speech commands allows callers to interact with MiCollab AM hands free through the Voice User Interface (VUI). Automatic Speech Recognition features include:

- **Subscribers** – Speech commands provide the capabilities of the traditional telephone user interface (TUI) for subscribers and enhance the usability of new features within the Subscriber mailbox. Subscribers can log on to their mailboxes using speech commands to manage their availability, messages, calls, calendars, and contacts. ASR allows callers to use the find me/follow me feature of the Subscriber mailbox to locate or leave messages for subscribers hands free, simply by speaking their names.
- **Automated Attendant** – Speech enabled automated attendant is based on Call Processor mailbox architecture. Speech commands are created based on the application and used within the Call Processor mailbox to perform the same action types as DTMF commands.
- **Directory** – The Speech Directory enables callers to locate and transfer to subscribers by speaking the name of the subscriber. These names are referenced from Subscriber mailbox name fields. Custom directories are created based on Group affiliations of subscribers.

NOTE Licenses are allocated within the system on a per-port basis. A caller can use the Speech Recognition feature only if there is a license currently available.

Personal Assistant

Personal Assistant is a licensed set of features that is intended to provide additional value for end-users that require the advanced functionality that Personal Assistant provides. These features include:

- **Availability (Presence)** – Availability is the combined subscriber's ability to receive calls at their location. Subscribers can use a default weekly schedule or customize their "presence" based on their current availability.
- **Find-me / Follow-me** - A list of telephone numbers from which the subscriber can be located. MiCollab AM offers the caller the choice of locating the subscriber or taking a message. MiCollab AM continues to descend the list to locate the subscriber at the caller's request while offering to take a message from the caller.
- **Contact Management / Dialing** - Subscribers can access contact information from popular groupware applications like Microsoft Exchange and IBM Domino allowing subscribers to manage their contacts from within MiCollab AM. It also provides services like contact dialing and ANI lookup.
- **Calendar Management** - Subscribers can access calendar information from popular groupware applications like Microsoft Exchange and IBM Domino, allowing subscribers to manage their calendar from within MiCollab AM.
- **Call Waiting** - A feature that allows a subscriber to be notified of an incoming call when the subscriber is already connected to MiCollab AM. When a subscriber is not in a hands-free or joined call conversation with another person, the call waiting notification is "whispered" to the subscriber. When the subscriber is not connected to another call, their session is interrupted with the call waiting notification.

- **Acknowledge** - A Call Screening feature that allows the recipient of a call to record a message, which is played to the caller followed by the leave a message process. The subscriber acknowledges the caller but does not take the call.
- **Call Divert** - A Call Screening feature that allows a subscriber to re-direct an incoming call to another subscriber, the operator, or one of the subscriber's other devices. For example, diverting a telephone call from the user's desk phone to the user's mobile device
- **Call Transfer** - Call Transfer is a feature that allows for the hands-free transfer of a call while the call is in progress. MiCollab AM must be listening in on the call. The subscriber directs MiCollab AM to place the call on hold and then to transfer to another subscriber, the operator, or one of the subscribers other devices. For example, diverting from the user's desk phone to the user's mobile device
- **Call Recording** - The ability to record a conversation and then deposit the recorded conversation into the subscriber's mailbox.
- **Missed Call Notification** - MiCollab AM sends an automatic missed call notification message to the subscriber to notify of an unanswered incoming call.

NOTE Personal Assistant is licensed on a per-user basis. Subscribers can use the Personal Assistant features if they have been allocated a license for it.

TUI (Telephone User Interface) Emulation

Subscribers can use a TUI emulation they are most familiar with when navigating through their Subscriber mailbox. In addition to the original and alternate MiCollab AM TUI, the following TUI emulations are supported:

- Adomo
- Intuity AUDIX
- Intuity AUDIX Alternate
- Centigram
- Kinesis/UM8500
- Meridian Mail/CallPilot
- Octel Aria®
- Octel Aria Alternate
- Octel Serenade® 200/300
- Octel Serenade® 200/300 Alternate
- Repartee/UM4730

TUI emulation is a licensed feature.

MiCollab AM Scheduler

NOTE MiCollab AM Scheduler is deprecated as of MiCollab AM 6.1.

MiCollab AM Scheduler is an ancillary application used to augment the Extension Specific Processing (ESP) capabilities of MiCollab AM. MiCollab AM Scheduler provides the ability to configure individual subscriber ESP Call Processor mailboxes on a time of day, day of week, or specific date basis. This gives the administrator the ability to create sophisticated personal and departmental menus as well as interactive audio menu applications for specific extensions based on time and date.

UCConnect

For sites where the MiCollab AM system needs to exchange information with callers automatically, an interactive voice response (IVR) application called UCConnect is available.

UCConnect enables companies to provide routine information from a host database over a telephone or fax machine or to gather information from callers. UCConnect supports the Microsoft Visual Basic[®] standard, enabling Visual Basic programmers to write and modify IVR scripts quickly and easily.

MiCollab AM Notify

MiCollab AM Notify is an UCConnect application that uses the MiCollab AM notification engine to place outbound calls based on external events. MiCollab AM Notify provides the ability to tie outbound notification into your MiCollab AM application. Some MiCollab AM Notify applications are:

- Appointment reminders
- Emergency message notification
- Status of service order information
- Closure notifications

Networking

The networking application available for MiCollab AM provides companies with the ability to link together voice mail systems at different sites. It supports two different networking methods:

- NetConnect digital networking allows MiCollab AM systems to exchange messages with one another or with VPIM-compatible voice mail systems using TCP/IP-based networks or the Internet.
- Analog and AMIS networking support allows MiCollab AM systems to coordinate with one another or with AMIS-compatible voice mail systems using telephone connections.

Global User Administration

Global User Administration (GUA) provides centralized management of multiple digitally networked MiCollab AM systems. Each centrally managed MiCollab AM system must be equipped with both MiCollab AM Digital Networking and MiCollab AM GUA. GUA makes it possible to view and change mailboxes and configuration elements on several System Servers simultaneously from one location. Global

User Administration allows administrators to manage systems in different geographic locations while at the same time requiring its work force to be familiar with only one group of mailbox numbers. The following diagram shows how such a system is laid out.

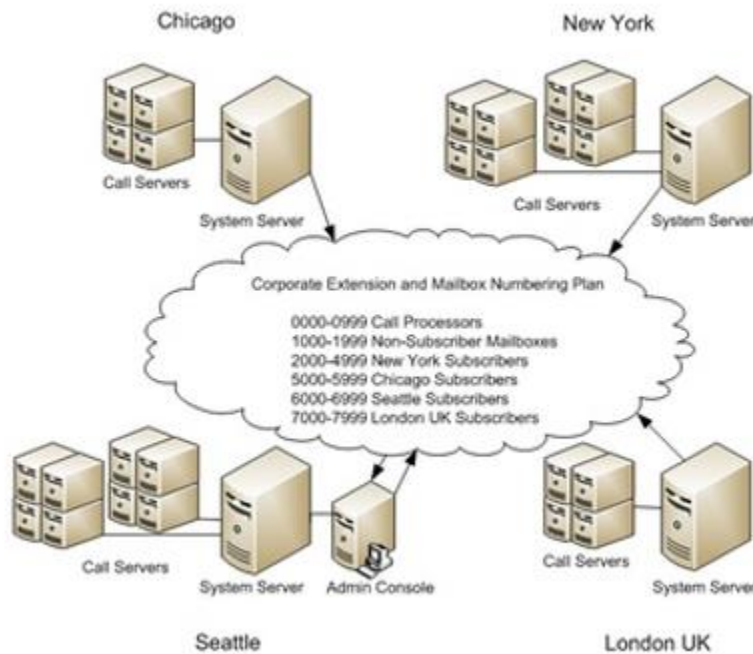


Figure 29. Global User Administration System Setup

System Administration

MiCollab AM Admin is performed through the System Server. When the System Server database is changed, the changes are replicated to the corresponding Call Servers.

Administrative tasks can be performed on the System server, through Remote Desktop, or by installing the MiCollab AM Admin client software on administrators' workstations.

Administrators can dynamically monitor the system status of all servers through the Line Status utility and use the notification tools to keep informed of system faults. The Reports utility can also be used to proactively diagnose problems, monitor system usage, and troubleshoot applications.

Administrative alerts notify MiCollab AM administrators of communication failures between the System Server and any Call Server through an SMTP server, the SNMP module, the Reliability tab of MiCollab AM, and the Windows Event logs of both the System Server and the Call Servers.

Line Status

The Line Status information of each Call Server can be viewed from the System Server using the **Line Status** utility, or you can view the lines of each Call Server from each individual Call Server.

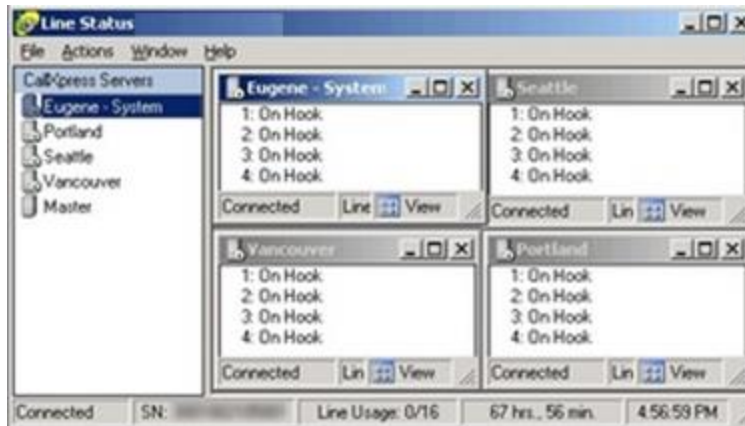


Figure 30. Line Status Window

Reliability Tab

You can configure MiCollab AM to send e-mail notification to administrators in the event of a system fault. This feature is configured on the Reliability tab of MiCollab AM Configuration. Reliability e-mails can inform administrators of the following:

- Call processing errors
- High CPU usage
- High memory usage

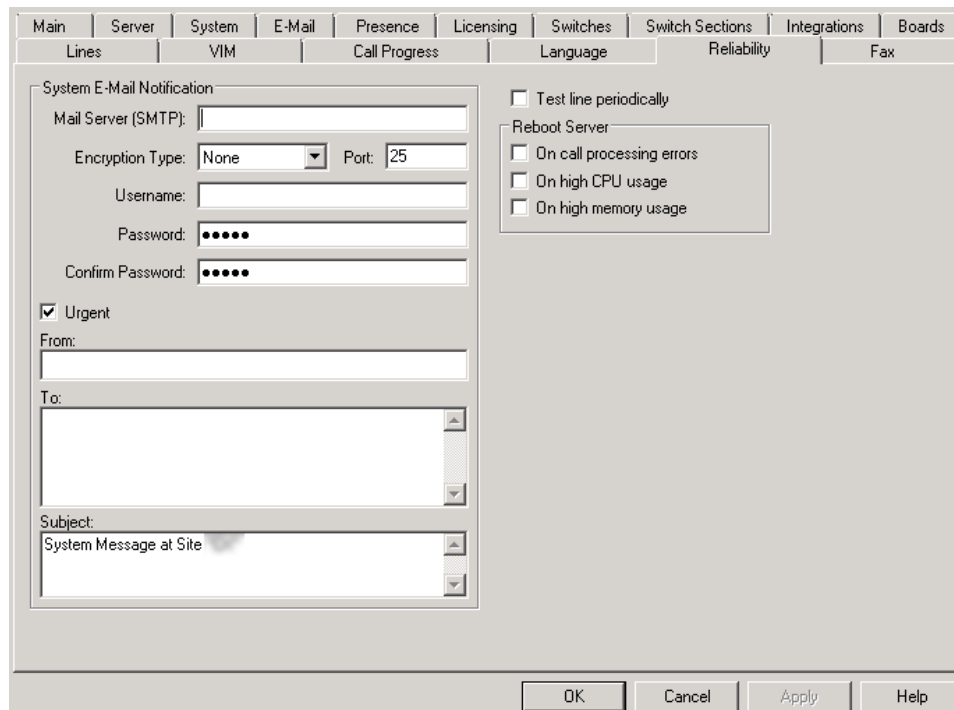


Figure 31. MiCollab AM Reliability Tab

The SNMP Management Console

The SNMP management console supports management info base (.mib) or trap definition (.tdf) files. The SNMP management console is a Windows support application; it is installed and configured as part of the operating system. Once the SNMP management console is configured, the system administrator can manage MiCollab AM from another computer on the same LAN or WAN, including the ability to stop and start MiCollab AM Services. MiCollab AM pushes the following types of information to the SNMP console:

- Server status (stopped, started, pending, etc.)
- Traps (errors, warning, informational messages, etc.)
- Current software versions
- Remaining message storage space on the server

Appendix B: Multi-Server Architecture

MiCollab AM is designed to provide reliability and scalability through a multi-server architecture that minimizes a single point of failure.

MiCollab AM is comprised of two primary components; a single *System Server* and one or more *Call Servers*.

- The *System Server* hosts the master database, manages the MiCollab AM Admin interface and the licensing of all assigned *Call Servers*.
- *Call Servers* provide the telephony and speech interface; they perform the call handling, message taking, MWI, and callout tasks of the system.

The *System Server/Call Server* architecture uses the LAN/WAN to communicate directly with each other. This multi-*Call Server* environment reduces the possibility of a catastrophic failure and creates a high standard of availability.

A MiCollab AM *System Server* and *Call Server* can be run on a single server computer for small call processing applications or be expanded to run on multiple *Call Servers* to serve as large capacity systems.

High availability and high survivability are achieved through port distribution across multiple *Call Servers*. *Call Servers* configured in multi-server environment can share call traffic to ensure continuous call processing should a single *Call Server* fail.

Call Servers can be configured to share the load of high traffic situations, perform specific roles, serve specific telephone systems, or a combination of configurations. The ability to configure the *Call Server* to meet specific needs creates a flexible and powerful application environment.

Reliability and Scalability

MiCollab AM provides reliability and scalability by using distributed processing; multiple servers configured as one MiCollab AM system.

A single *System Server* can control up to twenty *Call Servers*. These servers can be arranged as redundant to one another, or in a load-sharing configuration, each server separately processing calls, messaging, TUI, and Speech recognition applications. In this configuration, no one *Call Server* failure can cause a complete system failure.

Multiple *Call Servers* greatly increases reliability. When a *Call Server* fails or network communication fails, the *System Server* recognizes the service interruption. Meanwhile other *Call Servers* continue to process calls. When the *Call Server* returns to service and communication to the *System Server* is restored, the *System Server* updates the *Call Server* with any new database information.

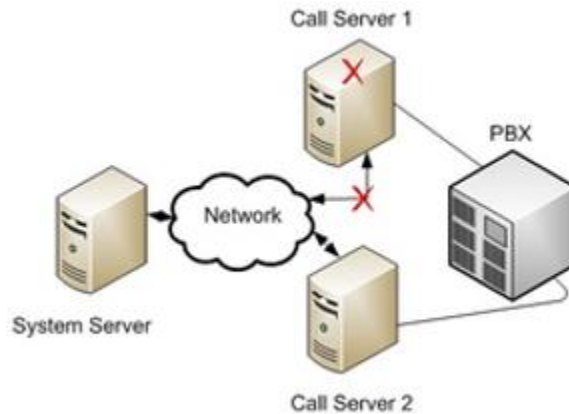


Figure 32. Reliability example, one Call Server failure

If a System Server fails, call processing continues on each Call Server until the System Server is restored. When the System Server is restored, the Call Servers pass any queued messages to the System Server for deposit into subscriber mailboxes.

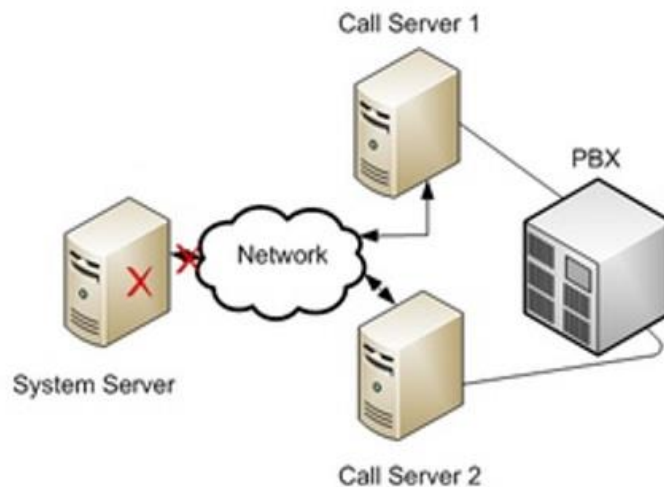


Figure 33. System Server Failure, Call Servers continue to take calls

Neverfail – High Availability and Disaster Recovery for the System Server

The Neverfail Replicator and Heartbeat software is used with MiCollab AM to provide a High Availability and Disaster Recovery solution for the System Server. The System Server is configured as a pair or trio of servers that communicate with each other through network connections, referred to as Neverfail Heartbeat channels. MiCollab AM version 6.1 with Neverfail supports three types of Neverfail configurations.

- **High Availability**—the Primary and Secondary System Servers share the same IP address on the same LAN. In this configuration, the Secondary System Server performs an automatic fail-over in the event the Primary System Server fails.

- Disaster Recovery—the Primary and Secondary System Servers do not share the same IP address. Fail-over to the Secondary server is performed manually. The Secondary System Server is typically located on a WAN, at a remote disaster ready site.
- High Availability and Disaster Recovery—the Primary and Secondary System Servers share the same IP address on the same LAN. In this configuration, the Secondary System Server performs an automatic fail-over in the event the Primary System Server fails. Fail-over to the Tertiary System Server is performed manually. The Tertiary System Server is typically located on a WAN, at a remote disaster ready site.

System Server and Call Server Roles

The System Server controls the Call Servers. It is the central store of the database and messages. It controls licensing, and provides the MiCollab AM Admin interface for the system while the Call Server's purpose is to perform all of the telephony functions of the system; the telephone user interface (TUI), the voice user interface (VUI) for automatic speech recognition, automated attendant, and interactive voice response (IVR).

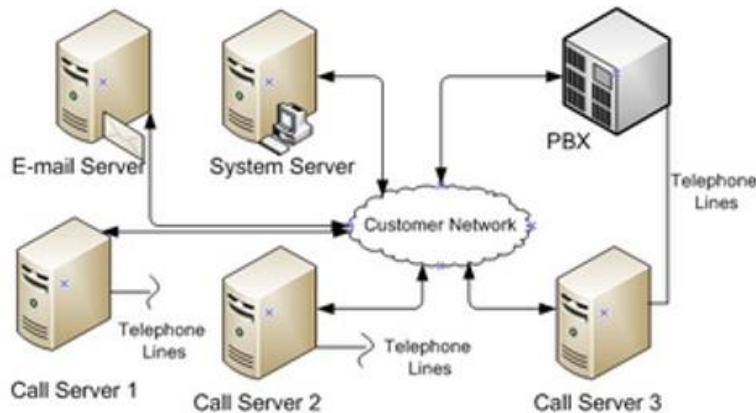


Figure 34. Example of System Server Setup

The following list describes the division of operation for both the System Server and the Call Server.

Table 16. Operations supported by System and Call Servers

The System Server supports...	The Call Server supports
MiCollab AM Application software	MiCollab AM Application software
Master Database <ul style="list-style-type: none"> • System Server Configuration • Messaging • Mailboxes • Names, Greetings, Announcements 	Replicated database <ul style="list-style-type: none"> • Integrates to System Server for message fetch/delivery
MiCollab AM Admin Interface	Telephony linecards or IP Channels

Reports, Licensing, USB Hardware Lock	Telephony Interface <ul style="list-style-type: none"> • Integration • Call handling • Speech Recognition • TTS Engine • IVR
Client Interfaces <ul style="list-style-type: none"> • Unified Messaging (e-mail Store) • Client Based Unified Messaging (ICA) • Web PhoneManager 	Server based UM (fetch and retrieve) <div> NOTE Access to Server-based UM messages happen directly from the Call Servers </div>
Internal Services <ul style="list-style-type: none"> • MWI and Callouts (commands are sent to individual call servers) • Backup and Restore 	Client based UM e-mail (fetch and retrieve)
Digital Networking	

System Server with Call Services Configuration

In a single server environment, the System Server runs with Call Services on the same platform. This combined configuration provides the same functionality as the multiple server configuration with the following capacities:

- Maximum port capacity is 144 ports without Automatic Speech Recognition (ASR).
- Maximum port capacity is 96 ports with ASR.
- Supports a maximum of 15,000 users without ASR or 10,000 with ASR.
- Supports 3 TDM PBX integrations or 2 TDM PBX integrations and 1 IP integration.
- Supports 3 SIP integration types with up to 10 integration instances total per call server.

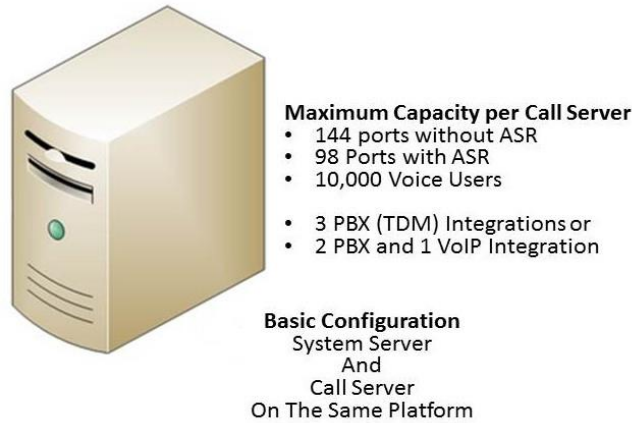


Figure 35. Single Server Specifications

Multiple Call Server Configuration

One System Server supports up to twenty Call Servers in a single MiCollab AM configuration. The maximum port capacity of MiCollab AM is 500 ports. These ports (lines) can be shared between twenty Call Servers but the maximum port capacity of any Call Server is 144 ports without ASR or 96 ports if utilizing the ASR feature. The intent to allow for a twenty Call Server capacity is to provide for system redundancy and high availability. Call Servers in a warm stand-by mode do not require line licenses until lines are assigned to them; they are replicating with the System Server but have no lines assigned to them. Assigning and opening lines on these warm stand-by servers requires manual intervention.

A fully implemented MiCollab AM system supports a maximum of 40,000 Voice users or 20,000 Unified Messaging users. The following table provides a list of capacities per Call Server in a MiCollab AM system.

Table 17. Multiple Call Server Capabilities

Call Servers (Includes one System Server)	Max Ports without ASR	Max Ports with ASR	Text to Speech Channels	Max Users without ASR (Approx.)	Max Users with ASR (Approx.)
1	144	96	96	15,000	10,000
2	288	192	192	30,000	20,000
3	432	288	288	40,000	30,000
4	576	384	384	40,000	40,000
5	720	480	480	40,000	40,000
6	752	500	500	40,000	40,000
7	752	500	500	40,000	40,000
8	752	500	500	40,000	40,000
9-20	752	500	500	40,000	40,000

NOTES

1. Each Call Server can support up to three PBX (TDM) integrations, or two PBX and one VoIP integration. Each Call Server supports 3 SIP integration types with up to 10 integration instances total per call server.
2. Each Call Server can support up to 10 Dialogic DMG devices for a maximum of eighty ports.

Call Servers can serve separate PBX or VoIP integrations or they can serve multiple integrations on each platform. Call Servers can be configured as redundant at a disaster recovery site. Call Server licenses are required if redundant Call Servers are in a warm-standby mode, but line licenses are not required if they are not taking calls.

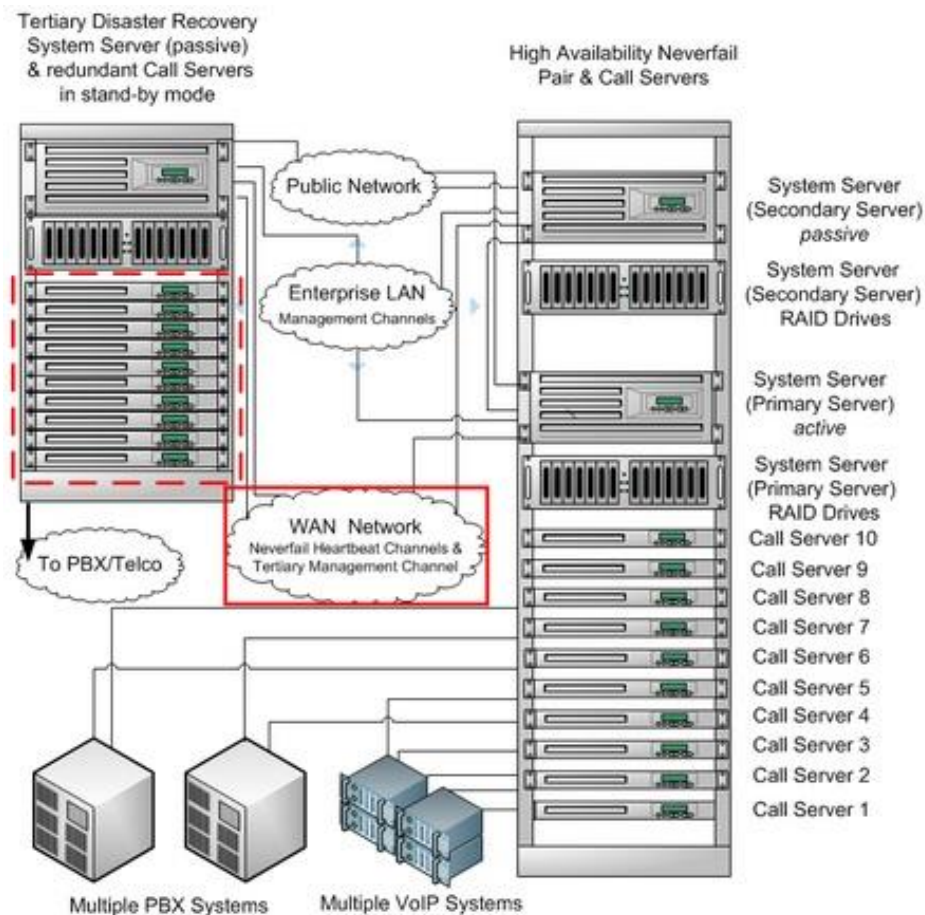


Figure 36. High Availability and Disaster Recovery Neverfail Environment

Call Servers can be configured for maximum port distribution to provide a high availability/high survivability load sharing arrangement of ports for continuous call processing in the event of a Call Server failure.

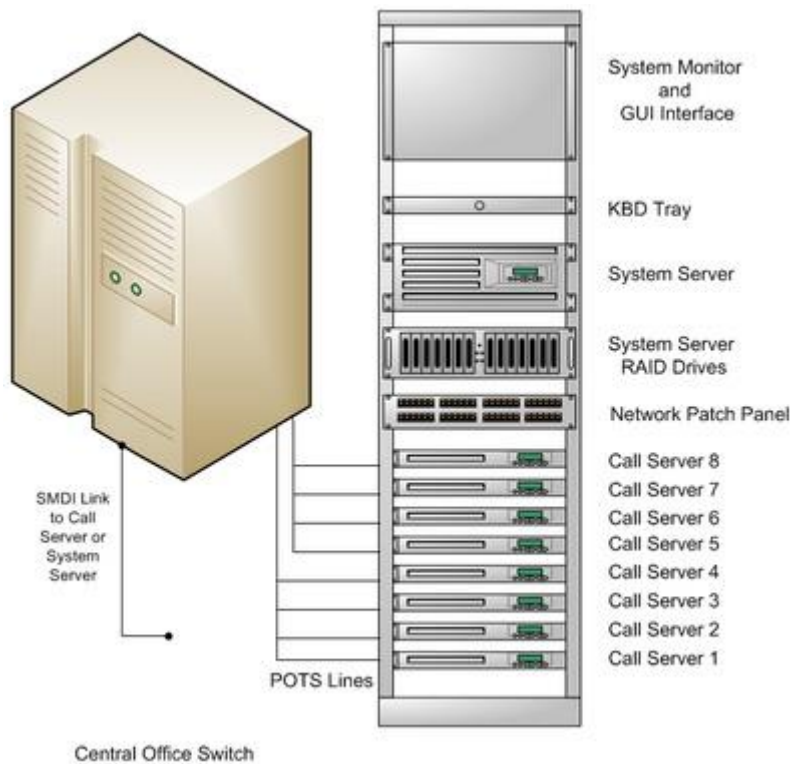


Figure 37. Call Servers in a High Survivability/High Availability Configuration

Remote Call Server Configuration

Call Servers can be located in remote locations and connected to the System Server through the enterprise LAN/WAN network. For example, Call Servers can also be distributed:

- Throughout a campus environment to serve individual departments or to create a de-centralized environment
- Located in a branch office and served by its own telephone system
- On warm-stand-by at a disaster recovery site

IMPORTANT A reliable network with sufficient bandwidth is required between the System Server and the Call Servers to provide an adequate response time.

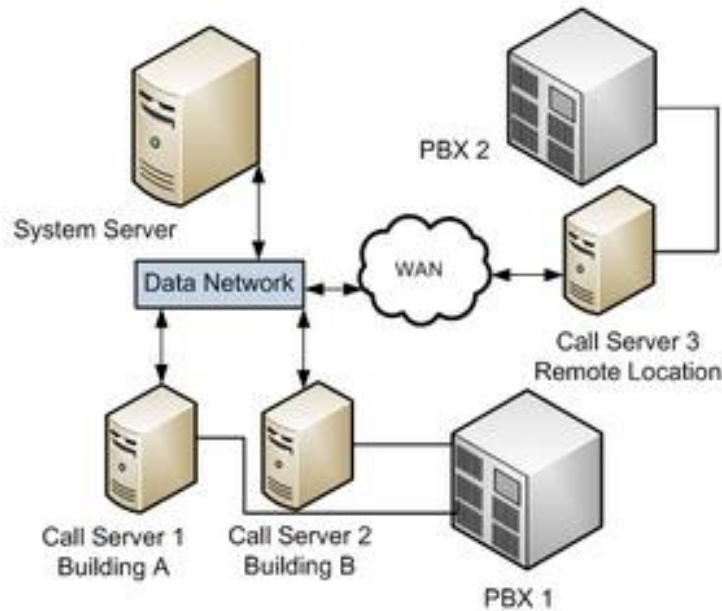


Figure 38. Call Server Configuration to Serve a Remote Location

Deployment Considerations

There are many caveats to be aware of when deploying a Call Server in a remote location. Designing a multi-Call Server installation requires careful consideration of the design before a system is installed, particularly if more than one telephone system and integration is involved. Depending on the proximity and location of Call Servers to the System Server, some installations may require multi-vendor support and WAN connections between locations. Reliability requirements for each Call Server also play a significant role in the system design.

Network Considerations

Call Servers communicate with the System Server through an Ethernet network. MiCollab AM is a real-time application that provides an optimum end user experience with a low latency (<1 ms) medium bandwidth (100 Mbps or greater) LAN connection. Acceptable performance can be achieved over medium latency (60 ms) low bandwidth (1 Mbps) WAN connections with a slight degradation in TUI responsiveness. Communication between servers includes:

- **Messages** - Messages are stored on the System Server, transmitted to a Call Server, or are moved from the System Server to the UM message store.
- **MWI and Callouts** - The System Server schedules MWI and callouts then sends the commands to the respective Call Server to perform. The System Server can be configured to perform all MWI for the system in some integrations. This eliminates the Call Servers from the process.
- **Master Database** - The Master database is stored on the System Server. Call Servers must be able to retrieve database information from the System Server.
- **Licensing** - The System Server manages licensing for all Call Servers. Call Servers receive licensing certificates from the System Server.

IPv6

IPv6 is supported as long as all core MiCollab AM components, System Servers and Call Servers, use the same protocol, with certain limitations:

IMPORTANT For any system supporting the following, IPV4 must be supported on the system.

- Aculab/Prosidy require IPv4 for RTP streams to MiCollab AM
- Installations using Neverfail will require IPv4
- Cisco, MiTAI, and any integration with an IP data link are not supported via IPv6.

Telephony Considerations

The location of the Call Server must be considered in relationship to the telephone system. Each Call Server may require a different telephone system integration and may be serviced by a different vendor. PBX integrations using either 2500-type stations or digital station set emulations have specific wire length limitations. RS-232 (serial port) connections also have specific cable length restrictions. Careful design and planning prior to implementation ensures a successful installation. Some important considerations when planning a multi-Call Server installation are:

- **Voice Bandwidth** - IP integrations may require a separate network interface card if the VoIP network is separate from the enterprise data network. A separate subnet or VLAN may be required for security or if a particular Quality of Service (QoS), is required. The location of the Call Server and the IP telephone system must be considered when designing the physical network and bandwidth must be allocated for voice transmission through the network. Even small delays in voice transmission are apparent to callers. Refer to the PBX manufacturer's network requirements for VoIP traffic.
- **Telephony Architecture** - The telephone system architecture must be considered in the design of a multi-server environment.
- When multiple Call Servers serve the same telephone system integration, multiple data links or network connections providing data for the integration may be required. Ancillary hardware such as COM port multiplex devices or network switches may be integral to the design and installation. If port capacity is shared between Call Servers, the telephone system must be capable of providing data for ports on all of the Call Servers.
- When multi-Call Server configurations are served by the same integration, line groups and hunt groups must be able to continue processing calls when group members are out of service. In the event of a Call Server failure, the lines may be busied out for such a duration that the telephone system takes them out of service. Hunt group members in service on remaining Call Servers must continue to process calls.
- Hybrid integrations such as the Dialogic Media Gateway that host circuit based PBX integrations yet integrate to MiCollab AM with IP integrations require consideration of the telephone system, the physical network, and network bandwidth requirements.
- **Uniform Numbering Plans** - Numbering plans should be planned carefully. Using discreet numbering plans can avoid confusion. Duplicate extension numbers cannot exist within MiCollab AM unless they are shared extensions, or are within separate switch sections. If Inter-Switch

Connectivity Groups are assigned, duplicate extensions within separate switch sections become shared extensions.

NOTES

1. Uniform Numbering Plans can be grouped using the Inter-switch Group Assignment section of the Switch tab in MiCollab AM Configuration.
 2. When working with a uniform numbering plan (unique extensions across all PBX nodes), be sure group your PBX switches together if you want to use the Subscriber Msg action and address by extension number features. If you do not have a uniform numbering plan, (i.e. you have overlapping extension numbers) or if you do not want to group your switches together, then be sure to use a Message Center mailbox so you can address the message by mailbox number instead.
- **Call Traffic** - Call volume and traffic patterns should be considered when designing multi-Call Server environments. Multiple Call Servers can be used to handle high volumes of call traffic and increase the Grade of Service (GoS). Call Servers serving unique application or department needs can be sized to handle overflow traffic of other departments during peak periods.
 - **Auto Attendant Scheduling Configuration** - If the remote Call Server shares call handling with other Call Servers, the auto attendant scheduling configuration must be identical with the Call Servers that serve the same call handling application.
 - **Networked PBX** - If the PBX is networked to serve a remote location, a properly sized and configured network must be established prior to deployment.

E-Mail Considerations

Unified Messaging Applications require communication with the System Server and the Call Servers. The e-mail server location, the domain structure, network bandwidth, and necessary domain permissions require consideration when locating and configuring the System Server and Call Servers.

Remote Locations and Multi-Vendor Installations

Installing Call Servers in remote locations may require other service organizations to perform installations, provide both telephone, and network facilities in the remote location. Consider building a working relationship with the other vendor and establish a cooperative communication network with the technical staff prior to system installation and cutover.

Fault Tolerance

Build System Servers with high quality server platforms using RAID redundant components. In the event of a System Server failure, call processing continues on each Call Server. When the System Server returns online, the Call Servers update the System Server with any new database information.

When communication with the System Server fails, subscribers lose some feature capability and access to the message database store until the server is restored. New messages are stored on the Call Server until

the System Server is restored. Once restored, the System Server re-establishes communications with the Call Servers. Messages held by Call Servers are retrieved; the message database is updated and synchronized with all the Call Servers.

When a Call Server fails or network communication fails in a multi-Call Server architecture, call processing continues through the other Call Servers. However, the PBX or IP telephone system must be able to recognize when ports are out of service and continue to process calls through ports that remain in service. Normal call processing and subscriber functionality continues through the operational Call Servers until the failed Call Server is restored and brought back online.

Call Servers run with replicated versions of the master database. They continue to process calls and take messages when the System Server is down. Messages stored locally are queued until the System Server is restored. Subscribers using Server Based Unified Messaging mail servers can retrieve existing messages from their e-mail client, however new messages are queued until the System Server is restored.

The following table describes the affected call processing functions of MiCollab AM when a System Server fails, or when a Call Server fails (assuming multiple Call Servers are processing the same calls).

Table 18. Functionality impacts from System and Call Server failure

A System Server failure affects the following...		A Call Server failure affects the following...	
Functionality	Impact	Functionality	Impact 2
Voice and Fax Messaging	Affected 1	Voice and Fax Messaging	None
Automated Attendant	None	Automated Attendant	None
IVR	None	IVR	None
Personal Assistant	None	Personal Assistant	None
Callouts	Affected 1	Callouts	None

NOTES

1. When the System Server is down the Call Servers continue to take messages and queue them for delivery until the System Server is restored. Once operational, the System Server posts the messages to Subscriber mailboxes or to the subscriber's e-mail Inbox if the Subscriber mailbox is configured for external store. Message notification (MWI, Immediate Message Notification, Daily Message Reminder, SMS, and SMTP) does not take place until the message is delivered to the subscriber's mailbox and therefore is affected until the System Server is restored.
2. A Call Server failure does not affect functionality, but does affect overall port capacity.

Maintenance and Prevention Policies

Data loss and corresponding system downtime can be prevented by performing regular backups of the system. Despite the reliability of RAID drives and a multi-server environment, maintenance routines remain an important task of the MiCollab AM administrator. Administrators must establish sound backup routines for all systems involved in the enterprise. Implement an administrative routine:

- To create backups capable of doing full system restores
- To configure automatic scheduled backups of system files and database files on MiCollab AM, e-mail servers, telephone systems
- To store system backups in multiple locations
- To backup mission critical messages

Appendix C: VMware and Virtual Servers

Virtualized server implementations of MiCollab AM applications are supported at the following VMware versions:

- vSphere/ESXi 6.0 Update 2
- vSphere/ESXi 5.5 Update 2
- vSphere/ESXi 5.1

These environments require the following three components:

- **Hardware Platform**
- **VMware® vSphere™ Hypervisor™**

Throughout this section we will refer to it as the Hypervisor or Host. The Hypervisor hosts the virtual machines and provides the necessary resources to the virtual machines.

- **VMware vSphere Client**

The vSphere Client is used to manage the Hypervisor and provide the administrator the means to provision, monitor, and manage the virtual machines.

Virtualized MiCollab AM systems and components can be created, configured, and managed in both standalone and managed environments.

For detailed information about setting up and managing VMware virtual environments and provisioning, monitoring, and managing virtual machines, see the online documentation for your version of VMware or contact your VMware Sales representative.

VMware Feature Support

The following features are supported for virtualized MiCollab AM components deployed in all supported versions of VMware:

NOTE When running UCConnect on a virtual machine, you can't pass microphone inputs directly from the host machine to the virtual machine. However, the prompts may be recorded elsewhere then copied to the virtual machine.

Table 19. Features Supported for MiCollab AM on ESXi

Feature	Supported	Details
vMotion	Yes	<ul style="list-style-type: none">• There may be instances of degraded audio (including DTMF) for brief periods as the system transfers.• Only supported in LAN environments, not WAN.

VMware Distributed Resources Scheduler (DRS)	No	<ul style="list-style-type: none"> VMware DRS is not supported with Software Based Licensing.
Dynamic Resources	Yes	
AnywhereUSB	Yes	
High Availability	Yes	<ul style="list-style-type: none"> Mitel recommends that systems should be set to auto-start. Calls in-progress may be dropped or may just hang with no indication that they have failed. Monitoring of specific applications is not supported, the transfer will only occur of the operating system, host, or hardware fails.
Latency Sensitivity	Yes	<ul style="list-style-type: none"> Only supported on High.
Flash Read Cache	Yes	
Pass Through	No	<ul style="list-style-type: none"> Pass though of any type, including USB, is not supported.
Fault Tolerance	Yes	

Virtualizing MiCollab AM Components

Application virtualization changes, to a great extent, the concept of hardware usage and requirements as follows:

- In **non-virtual environments**, all hardware resources are applied toward the operating system running the application.
- In **virtual environments**, the Hypervisor likely provides resources to multiple virtual machines. As a result, resource allocation can be complicated.

In a **virtual environment**, the following considerations apply:

- The Hypervisor distributes the hardware resources to one or more virtual machines.

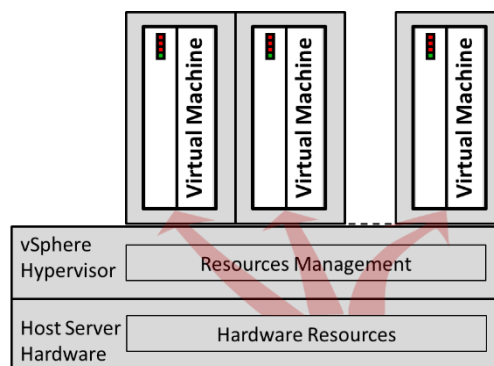


Figure 39. Diagram of Virtual Machine Setup

- The total hardware resources available to the Hypervisor are larger than the needs of any of the virtual machines on the system.

- When evaluating the resource requirements for a specific virtual machine, the focus moves from the actual hardware on which the Hypervisor is running to the virtual machine performance counters.

The Hypervisor administrator monitors virtual machine performance metrics, such as the average CPU usage of virtual machines (see [Figure 40. Virtual Machine Performance Reading](#)), to determine whether the virtual machines have sufficient resources.

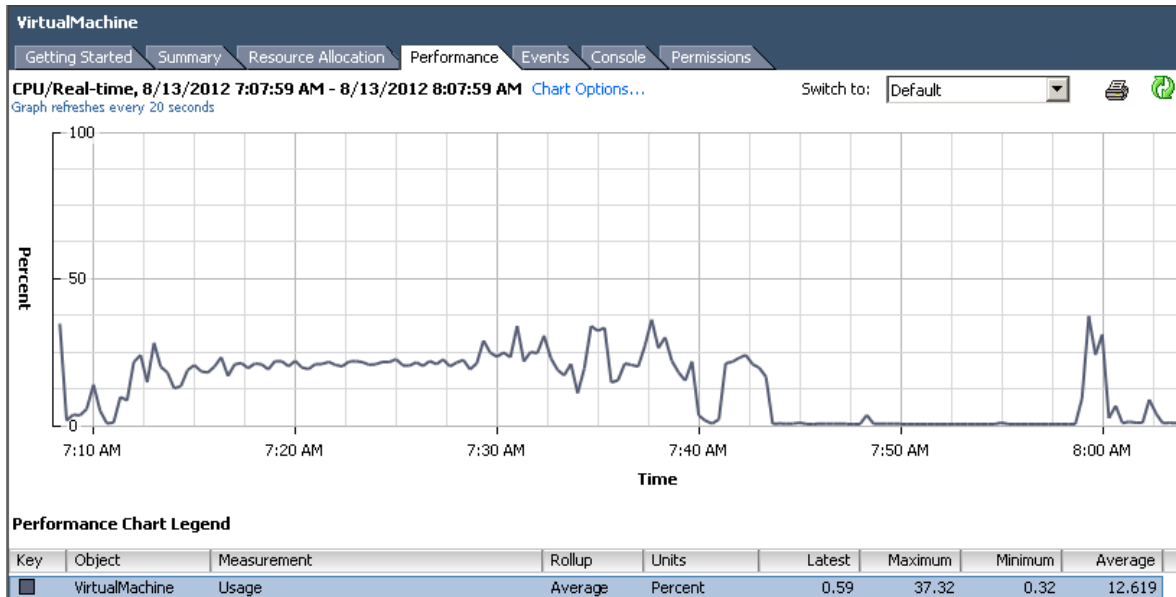


Figure 40. Virtual Machine Performance Reading

MiCollab AM Components Sizing

Perform the following steps when allocating resources to the virtualized MiCollab AM components:

[Step 1] Review the MiCollab AM Software Release Notice (SRN) and identify the minimum hardware requirements (CPU and memory) for your system size.

[Step 2] Based on the above determination of the CPU and memory requirements, allocate to the MiCollab AM virtual machine resources as follows:

- **CPU:** At a minimum, allocate resources equal to those identified in **[Step 1]** to the MiCollab AM virtual machine. If necessary, this initial allocation will be further refined in **[Step 3]**.

For example:

If the identified minimum CPU requirement is a 2.27 GHz quad-core Intel Xeon E5520 CPU, the Hypervisor administrator must allocate at least an equivalent amount of CPU resources to the MiCollab AM virtual machine.

- **Memory:** At a minimum, allocate the same amount of memory identified in **[Step 1]** to the MiCollab AM virtual machine.

[Step 3] Install the desired MiCollab AM components and monitor the virtual machine CPU utilization.

When the virtual machine is under heaviest load, you want CPU usage to be 60% or less to avoid the possibility of performance related issues.

NOTE Average CPU load should never exceed 60% for best performance.

Host Server and Hypervisor Requirements

In order for a Hypervisor platform to support virtualization of the MiCollab AM components, the server hardware the Hypervisor runs on must meet the following requirements:

- The hardware platform must be VMware approved.
- All virtualization options must be enabled for the hardware platform.
- The Hypervisor must be a supported version.

Installing New Virtual System

Setting up a new MiCollab AM virtual system is a 2-Step process:

[Step 1] You must first create and configure the virtual server that MiCollab AM will run on.

[Step 2] Install MiCollab AM on the new virtual server.

Use the tables in the current MiCollab AM Software Release Notice (SRN) to determine the number of CPUs and the amount of RAM needed to support a MiCollab AM system of your size. Use these values when creating the new MiCollab AM virtual machine.

Power up the new VM and install and configure the operating system, and install and configure the desired MiCollab AM components. The VMware Hypervisor will automatically assign the necessary computing resources based on the CPU and RAM configuration of the new VMs.

Converting Non-Virtualized System

If you are virtualizing an operational MiCollab AM component or system manually, use the same CPU, RAM, and local storage as the existing system. You can also use the VMware Standalone Converter to create a configured virtual system from the hardware MiCollab AM server.

Licensing MiCollab AM in a VMware Virtual Environment

The VMware virtual environment can be licensed through two methods, **Software Licensing** and **Hardware Licensing**, as follows:

- **If using Software Licensing:**

Follow the procedure in the [Licensing the Messaging System](#) section to license the system.

- **If using Hardware Licensing:**

Digi AnywhereUSB® may be used for connecting the MiCollab AM USB dongle to the System Server via the customer network.

NOTE AnywhereUSB devices are not sold by Mitel, and are not supported by Mitel Technical Support.

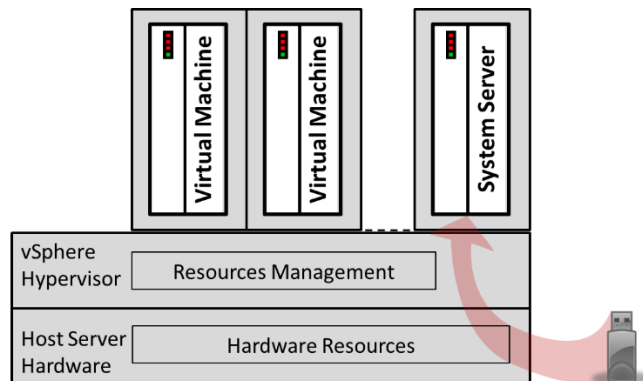


Figure 41. Virtualization with AnywhereUSB

AnywhereUSB network attached USB hubs are VMware certified and supported in standard and Neverfail topologies.

Use the Digi installation and configuration instructions to setup the AnywhereUSB network appliance, and install the necessary software on the MiCollab AM installation. For solution description and configuration details, see the white paper, **esx_anywhereusb2.pdf**.

NOTE All AnywhereUSB devices supported by VMWare may be used for associating the USB dongle with the System Server. Mitel validated the AnywhereUSB solution with the AnywhereUSB/5 Gen2 device.

System Server Configuration with Neverfail

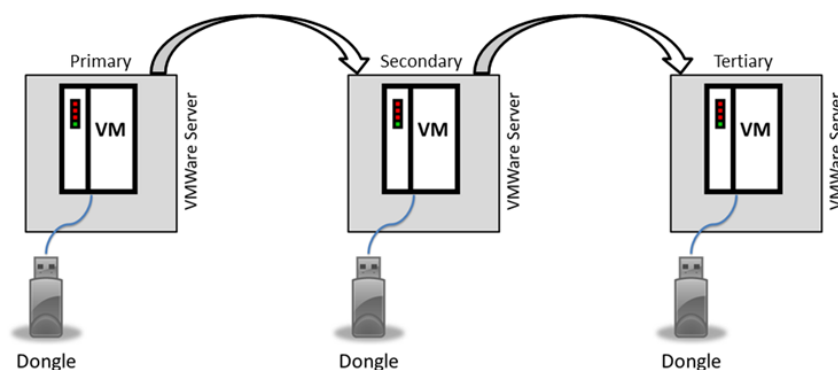


Figure 42. Server Configuration with Neverfail

System Servers can be configured on individual virtual machines using Neverfail.

The VMware virtual machine installation steps are identical to the single Host configuration topology. For more information about installing Neverfail, refer to the Neverfail Documentation in the Docs directory of your installation media.

AnywhereUSB network attached USB hubs are supported for Neverfail topologies. When using Neverfail topologies, it is highly recommended that at least two AnywhereUSB devices are used, in order to avoid situations where the entire Neverfail enabled MiCollab AM system stops functioning because all USB dongles are connected to a failed AnywhereUSB device:

Table 20. Necessary AnywhereUSB Devices

Topology	AnywhereUSB devices
Single System Server	1
Two System Servers (Neverfail)	2
Three System Servers (Neverfail)	3

Benefits

Using this topology offers the following benefits:

- Allows for more efficient hardware resource utilization.
- Minimizes downtime during maintenance by allowing for an alternate System Server (Secondary System Server) to operate while the other is undergoing maintenance.
- Minimizes downtime in the event of a VMware host failure by allowing the System Server services to be available on the other Hosts (Secondary System Server for automated fail-over or Tertiary System Server for disaster recovery).
- Allows for automatic failover to the Secondary System Server in the event of a software or host failure.
- Allows for geographical failover (disaster recovery via the Tertiary System Server)
- Protects enterprise from both hardware and software failures through the real-time replication occurring between the System Servers.
- Allows for quick re-deployment of the application software on a new host, if required.

Limitations

- If you choose to run multiple MiCollab AM virtual machines on a single host, Technical Support may require you to isolate a specific MiCollab AM virtual machine to a dedicated physical host server for troubleshooting purposes.
- Telephony hardware integrations are not supported in a virtual environment. MiCollab AM Call Servers may be run in a VMware environment using IP integrations only.

- Although not presently supported, installations using USB pass-through should continue to work. However, the currently supported and recommended licensing procedure for virtual machines is to use Software Licensing.
- You may not combine Neverfail with VMware VMotion, High Availability (HA), or Fault Tolerance (FT) technologies.

Choosing the Right High Availability Technology

As customers choose to implement high availability, they come across a decision point regarding the right technology to use. Customer expectations might include all or some of the following benefits:

- Continuous Availability
- Maximize UP Time and SLA
- Automatic Recovery
- Prevent Failure
- Local Survivability
- Geographical Survivability
- Keep Mission Critical Systems Running

When considering the technologies that enable High Availability (HA), the following two approaches can be identified.

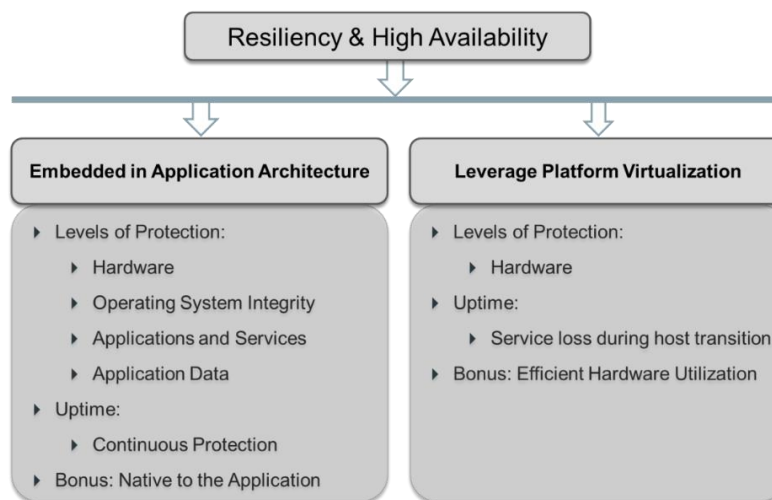


Figure 43. Resiliency and High Availability Approaches

As illustrated above, while virtualization provides for quick and reliable High Availability implementation, the investment some vendors such as Mitel make in native technology significantly improves the system reliability and minimizes down time during a High Availability event.

The main differences between VMWare HA and Neverfail HA stem from the technology with two solutions as follows:

- **Resiliency**
 - VMware server hardware level protection:

VMWare HA can only protect for server hardware failures as VMware HA 'moves' the System Server virtual machine from one physical host to the other.

- **Neverfail complete protection of server hardware, operating system, services, applications, and application data:**

As opposed to VMware, given its design, Neverfail protects the system down to the data level.

Neverfail implies 2 or 3 independent System Server physical (or virtual) installations with the System Server data being replicated among them. Regardless of what happens with the components of one server (hardware problems, operating system issues, installed services and applications malfunction), the other System Server instances will continue to function.

By monitoring the health of all server components Neverfail maintains continuous services should any of the Active System Server components fail (server hardware, operating system, applications, or services).

- **Uptime**

- Neverfail HA provides for immediate (within minutes) System Server services availability, as all the System Servers in the environment are fully operational, and their data is kept up to date all the time. In case of a System Server failure, the Call servers automatically connect to the new active System Server.
- In case of a System Server failure, VMWare HA automatically restarts the virtual machine on the other host.

Depending on the context of the failure, restarting the virtual machine and all required services on the other host takes significantly longer than the Neverfail failover, and in some cases the restart might be problematic should the failure triggering the failover has caused any data corruption.

Example:

- Data being written to the HDD at the time of the failure
- Data being written to the database at the time of the failure, etc.

A side effect of this can be extended down time due to Call Servers getting out of sync with the System Server which might requires data re-synchronization between the Call Servers and System Server.

Table 21. High Availability Protection Chart

Protection	Neverfail HA/DR	VMware
Continuous Up Time	No	Yes ¹
VM Corruption	Yes	No
Host Server Failure	Yes	Yes
Operating System Failure	Yes	Yes ²
Services and Applications Failure	Yes	No
Services and Applications Monitoring	Yes	No

Network Outage Monitoring	Yes	Yes ³
Snap Shots	No	Yes

¹ Available with Fault Tolerance.

² Available with High Availability but not Fault Tolerance.

³ Available with High Availability or Fault Tolerance.

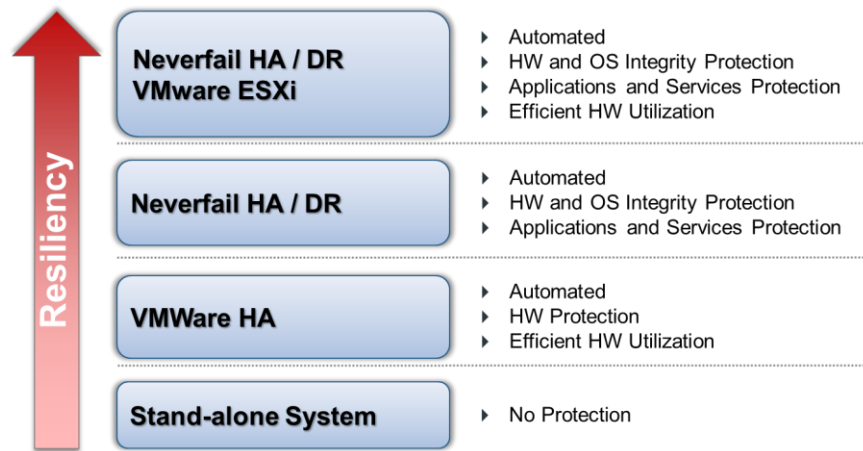


Figure 44. High Availability Deployment Recommendations

Appendix D: Microsoft Hyper-V

Throughout this section, we will refer to the *Hypervisor* and *Host*.

- The *Hypervisor* is the process that provides the necessary resources and manages the real-world IO for the virtual machines. In Windows Server 2012 R2 the *Hypervisor* is part of the Hyper-V Server role.
- The *Host* or *Host server* is the hardware platform the Hypervisor runs on. Virtualized server implementations of MiCollab AM applications are supported using the Hyper-V role in Windows Server 2012 R2.

The environment requires the following components:

- **Hyper-V Host:** The server running the Hyper-V hypervisor. The server must support Windows Server 2012 R2 Standard or above. It must have sufficient storage, CPU and memory resources to support the planned number of virtual machines it will host.
- **Hyper-V Server role:** The software infrastructure and basic management tools for creating and managing a virtualized server computing environment.
- **Hyper-V Manager:** Installed as a part of the Hyper-V role. It is used to manage the Hypervisor and provide the administrator tools to create, provision, monitor, and manage the virtual machines.
- **System Center Virtual Machine Manager (optional):** A separate server to allow management of multiple Hyper-V host servers from a single location.

Installing and configuring the Hyper-V Role:

Hyper-V is a standard Windows Server Role for Windows Server 2012 R2. Use the **Role Installation Wizard** to install Hyper-V. The Microsoft Hyper-V Portal is a good source for detailed information about:

- Supported hardware
- Installing and configuring Hyper-V
- Creating virtual server environments
- Provisioning, monitoring, and managing virtual machines

MiCollab AM Virtualization Support

Mitel supports virtualization of the all MiCollab AM components.

NOTE When running UCConnect on a virtual machine, you can't pass microphone inputs directly from the host machine to the virtual machine. However, the prompts may be recorded elsewhere then copied to the virtual machine.

The following features are supported for MiCollab AM installed on Hyper-V Server 2012 R2:

Table 22. Features Supported for MiCollab AM on Hyper-V Server 2012 R2

Feature	Supported	Details
MiCollab AM Licensing	Yes	<ul style="list-style-type: none"> Either software licensing or use of a dongle connected to an AnywhereUSB device is supported.
Neverfail	No	<ul style="list-style-type: none"> MiCollab AM with Neverfail running on a Hyper-V virtual environment has not been certified at this time.
Live Migration	Yes	<ul style="list-style-type: none"> There may be instances of degraded audio (including DTMF) for brief periods as the system transfers.
High Availability	Yes	<ul style="list-style-type: none"> Hyper-V uses Microsoft Clustering Service (MSCS) and Network Load Balancing (NLB) for virtual machine High Availability. MSCS and NLB are included in Windows Server 2012 R2 Standard, Datacenter, and Hyper-V Server 2012 R2 Core. Shared storage and a trusted Active Directory domain are also required.
Dynamic Memory	No	<ul style="list-style-type: none"> The MiCollab AM application suite does not support Dynamic RAM. Virtual servers running the MiCollab AM application must be assigned a fixed amount of RAM.
Pass Through	No	<ul style="list-style-type: none"> Pass through of any type, including USB, is not supported.
AnywhereUSB	Yes	<ul style="list-style-type: none"> AnywhereUSB is a 3rd-party device that has been tested with the MiCollab AM application suite in Hyper-V environments. Mitel does not sell or provide technical support for this product. Consult the manufacturer's documentation for additional information about using AnywhereUSB products in virtualized environments.

Virtualizing MiCollab AM Components

Determining hardware usage and requirements can be complicated.

- In *non-virtual environments*, all hardware resources are applied toward the operating system running the application.

- In *virtual environments*, resources are shared by the host server and multiple virtual machines.

The Hyper-V host server must have adequate resources for its own base functions, the Hyper-V role management tools and all of the VMs being hosted. See the document, *Software Release Notice*, for detailed MiCollab AM requirements.

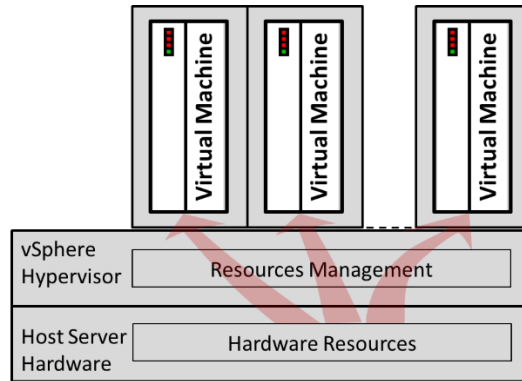


Figure 45. Diagram of Virtual Machine Setup

Hyper-V Host Server

In order for a Hypervisor platform to support virtualization of the MiCollab AM components, the Host Server must meet the minimum requirements for the version of Windows Server 2012 R2 being run.

The supported versions are *Standard* and *Datacenter*. All virtualization options must be enabled.

MiCollab AM components

Review the document, *Software Release Notice*, for the minimum hardware requirements (CPU and memory) for your system size. Use these numbers to set the resources assigned to the new MiCollab AM component virtual machine:

If you are virtualizing a currently running hardware MiCollab AM system use the current server's CPU memory configuration and hard disk capacity to set the new VM's resource needs.

- **CPU:** Resources should be equal to or greater than those identified in Step 1.

For example:

If the identified minimum CPU requirement is a 2.27 GHz quad-core Intel Xeon E5520 CPU, the Hypervisor administrator must allocate at least an equivalent amount of CPU resources to the MiCollab AM virtual machine.

- **Memory:** Allow at least 4 Gb for each virtualized MiCollab AM Call/System server, or the same amount of memory as the component's hardware server, whichever is greater. Do not enable Dynamic Memory.

Tuning

Install the desired MiCollab AM components and monitor the virtual machine performance counters. When the virtual machine is under heaviest load, resource utilization should be at or near the following baseline values.

- CPU usage should be at 70% or less.
- Available RAM should be at or near 25%.
- Hard disk free space should be at least 15%.

NOTE Adjust the VM's resources to meet these thresholds if indicated.

Using AnywhereUSB®

AnywhereUSB network-attached USB hubs are manufacturer-approved for use in Hyper-V or VMware virtualization environments.

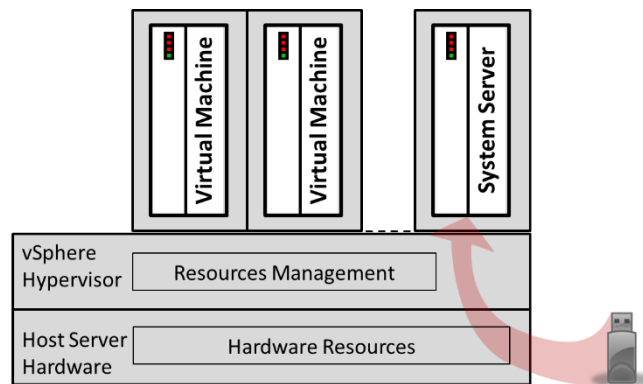


Figure 46. Virtual Machine Setup with AnywhereUSB

For solution description and configuration details, see [Appendix C: VMware and Virtual Servers](#).

AnywhereUSB network attached USB hubs are also supported in single System Server topologies

Use the Digi installation and configuration instructions to setup the AnywhereUSB network appliance and install the necessary drivers on the MiCollab AM System Server VM. If using hardware licensing, Digi AnywhereUSB may be used for connecting the MiCollab AM USB dongle to the System Server via the customer network:

If using software licensing, follow the procedure in the [Licensing the Messaging System](#) section to license the system.

AnywhereUSB devices are not sold by Mitel and are not supported by Mitel Technical Support.