

# MiCollab Advanced Messaging Avaya IP Office SIP Station Integration Technical Note

For version 9.1 and above

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# Contents

<b>Preface</b>	<b>5</b>
References	5
Documentation	5
Documentation Updates	6
Help	6
Document Conventions	6
Features Supported by This Integration	8
<b>Critical Application Considerations</b>	<b>10</b>
<b>Installation Requirements</b>	<b>12</b>
Telephone System Requirements	12
MiCollab AM Requirements	12
<b>Programming the Telephone System</b>	<b>13</b>
Starting IP Office Manager	13
Configuring the Layer 4 Protocol	13
Configuring the Voicemail Type	14
Creating SIP Extensions for MiCollab AM Lines	15
Creating Users for MiCollab AM Lines	16
Enabling Call Waiting	18
Configuring Line Appearances	19
Creating a Hunt Group for MiCollab AM	20
Disabling the Queuing Feature	21
Creating Short Codes for MWI and Voicemail Access	21
Creating a Short Code to Turn On Message Indicators	21
Creating a Short Code to Turn Off Message Indicators	22
Creating a Short Code for Direct Access to Voicemail	22
Programming Buttons on Subscriber Telephones	23
Configuring a Voicemail Button	23
Configuring a Do Not Disturb Button	24
Enabling Forwarding on Subscriber Telephones	25
Saving the Configuration	26

<b>Configuring MiCollab AM</b>	<b>28</b>
Configuring MiCollab AM for the Integration During Initial Installation	28
Configuring Existing MiCollab AM for the Integration	33
Configuring MiCollab AM for SIP Failover	39
<b>Changing the Network Binding Order on the MiCollab AM Platform</b>	<b>42</b>
Windows Server 2012 R2	42
Windows Server 2016 / 2019	43
<b>Configuring Quality of Service (QoS)</b>	<b>44</b>

# Preface

This Integration Technical Note (ITN) is written for dealers who are experienced with MiCollab Advanced Messaging (MiCollab AM) and who are familiar with its procedures and terminology. It also assumes that you are familiar with the features and functionality of the Avaya IP Office telephone system.

This document describes how to integrate MiCollab AM with an Avaya IP Office telephone system, using the Session Initiation Protocol (SIP) integration. The Avaya IP Office integration is a SIP Station integration. This integration operates exclusively over an IP-based network; it uses no analog or digital voice telephony ports, but passes voice communication and signaling information over the network.

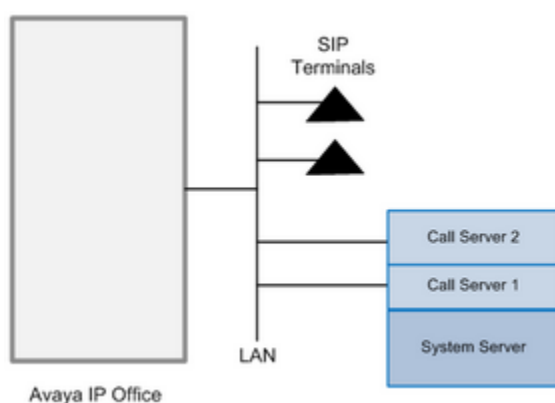


Figure 1. SIP Terminals

MiCollab AM registers its SIP ports as terminals or endpoints. The IP Office provides the hunting. The IP Office routes all incoming calls for MiCollab AM to the hunt-group pilot number. MiCollab AM sets and clears message-waiting indicators (MWIs) by dialing PBX feature access codes on lines configured to do MWI callouts.

This ITN documents the procedures for setting up the IP Office integration. The process consists of programming the Avaya IP Office telephone system, installing MiCollab AM software, and configuring MiCollab AM. This document also describes the critical application considerations with which you should be familiar before you begin work on the integration.

## 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 MiCollab AM Documentation Library includes the following documents and resources:

- **Administration Documentation.** Available as a PDF only. Contains the following:
  - **Administration Guides.** Available as a PDF only. Contains administrative guides for administrators about how to manage and configure the messaging system.
  - **Quick Reference Cards (QRC).** Contains shortcuts and quick instructions telling subscribers how to access and use the messaging system.
  - **User Guides.** Available as a PDF only. Contains user guides for subscribers about accessing the messaging system and checking and sending messages.
- **Server Documentation.** Available as a PDF only. Contains the following:
  - **Developer Resources.** Contains programming guides and API references for developers for integrating the server clients and web applications with MiCollab AM.
  - **Installation and Configuration.** Available as a PDF only. Contains installation and configuration guides for server administrators about how to install and configure the messaging system.
  - **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.
  - **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.

## 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: [www.mitel.com](http://www.mitel.com)

## Help

The primary source of information about MiCollab AM is the online help available within any of its administrative utilities. You can access **Help** by clicking the **Help** button in the dialog box or window in which you are working.

## 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** Titles of other documents are shown in italics.

Example: See the *System Installation and Configuration Guide*.

- **User Interface (UI) Element Names.** Names of UI elements such as dialog boxes, windows, screens, menu items, tabs, buttons, and icons are shown in bold.

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

- **User Input.** Information required to be typed 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 MiCollab AM 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.

For more detailed documents, refer to the following list of references:

Table 1. References

Document Type	Document Title
Administration Documentation	<i>System Administration Guide</i>
Server Documentation	<i>System Installation and Configuration Guide</i>
Online help	MiCollab AM online help system

For specific information about the Avaya IP Office telephone system, please refer to the Avaya IP Office documentation.

## Features Supported by This Integration

The following tables list the features supported using the Avaya IP Office integration.

Table 2. Call forward to personal greeting support for these common call types

Divert to MiCollab AM on	Supported	Notes
No Answer	Yes	
Busy	No	
Forward All	No	
Do Not Disturb	Yes	Note

**NOTE** When Unconditional Call Forwarding is enabled. For more information, refer to the [Configuring a Do Not Disturb Button](#) section.

Table 3. Integration features supported for Avaya IP Office SIP Station

Feature	Supported	Notes
Automatic subscriber logon	Yes	
ANI/CLI	Not tested	
Announce Busy greeting on forward busy calls	No	
Call screening	Yes	Note 1
Caller queuing	No	
DNIS	Not tested	
End-to-end DTMF, attendant console	Not tested	
End-to-end DTMF, proprietary telephones	Yes	
Fax Detection	Yes	
Internal calling party ID for reply	Yes	
Live record, integrated	No	
Live reply to sender	Yes	

Message notification callouts	Yes	
MWI, set/clear	Yes	
MWI, inband/outband	Outband	
Networking, analog	Not tested	
Overflow from MiCollab AM to attendant	Not tested	
Overflow to MiCollab AM from attendant	Not tested	
PBX-provided disconnect signaling	Yes	
Revert to operator	Not tested	
SRTP	Yes	Note 2
TLS	Yes	Note 2
Transfers, blind	Yes	
Transfers, confirmed	Yes	
Transfers, supervised	Yes	
Transfers, monitored	Yes	
Trunk ID for call routing	No	
Multiple Integrations	Yes	Note 3

## NOTES

1. Available only when using supervised transfers.
2. MiCollab AM supports negotiation for SRTP media streams using the Secure RTP profile defined in RFC 3711 with the offer/answer model defined in RFC 3264.  
 To enable SRTP, RTP, or both, see integration configuration options documentation for the switch. The default setting is RTP. Please note that MiCollab AM doesn't support RFC 5939 which is an extension of RFC 3264.  
 Also, please note that SRTP has not been qualified for this integration, and no switch programming is available for setting up SRTP on the switch side. However, SRTP may be enabled as described above, and technical support will be available on a best effort basis.  
 To create secure connections, use TLS 1.3 (recommended where available) or 1.2 for the System Server and Call Servers.
3. See [Critical Application Considerations](#).

# Critical Application Considerations

Known limitations or conditions within the telephone system and MiCollab AM that affect the integration performance are listed here. General recommendations are provided when ways to avoid these limitations exist.

**NOTE** In an IP Office Contact Center environment, the following occurs:

When an agent logs into their IPOCC client interface and associates the client with the extension at their location, all **Call Forwarding** settings are removed from that extension. This affects IP Office Systems that have an IPOCC server. The **Call Forwarding** settings are removed from the User (IPO side) as soon as the agent uses the extension in the User Interface. Contact your system administrator to rebuild/re-enable the **Call Forwarding** settings.

The following Voicemail Types were tested: **None**, **Group Voicemail**, and **Voicemail Lite/Pro**. IP Office offerings Server Edition and IP Office Select do not support Voicemail Types: **None** and **Group Voicemail**, they support Voicemail Type: **Voicemail Lite/Pro**.

An embedded voicemail type selection in the IP Office configuration will affect the behavior of the voicemail button on phones as well as visual voicemail access.

- You must populate Line extension numbers on the **Lines** tab before starting MiCollab AM or the integration will fail. The extension numbers are registered as SIP stations with the IP PBX during system startup.
- Configure the MiCollab AM **Incoming Hunt Mode** in the **Switch Section Options** dialog box. The hunt mode must match the type of hunting provided by the IP PBX. This helps to alleviate any *glare* conditions between the IP PBX and the Call Server. The default mode is Terminal.
- You must configure the **Hunt Group Access Code** in the **Switch Section Options** dialog box. This code cannot conflict with extensions.

**For example:**

You can use 6000 for the Hunt Group Access Code and start MiCollab AM extensions with 6001.

- On a MiCollab AM server with two or more NICs, the NIC that supports this integration must not occupy first place in the operating system's binding order. The primary (public) network interface card (NIC) must be the first network connection in the network binding order. MiCollab AM binds and communicates to other servers and subscribers on this network connection. For more information, refer to [Changing the Network Binding Order on the MiCollab AM Platform](#).
- MiCollab AM supports G.729a with support for annex b on the incoming audio stream only. MiCollab AM does not transmit annex b packets.
- When codec negotiation takes place between MiCollab AM and the PBX, MiCollab AM always offers the G.729a audio format as an option. You may configure G.729a as the preferred codec in MiCollab AM; however, the decision whether to use G.729a is always made by the PBX.
- The SIP IP address in the **Integration Options** dialog box must match the SIP Registrar IP address configured in the telephone system.

- MiCollab AM does not use the IP Office voicemail-forwarding feature; users must enable busy and RNA forwarding on their stations to the hunt group pilot number that is used to route calls to MiCollab AM.
- MiCollab AM 9.1 supports up to 10 integration types (i.e., licensed integrations) in total per system. However, the following limitations apply to each Call Server:
  - Limited to 3 integration types per Call Server
  - The 3 integration types can be any mix of TDM and SIP (e.g., 1 TDM and 2 SIP)
  - Limited to 1 Cisco UCM SCCP IP integration. Can be mixed with TDM, but not with SIP
  - Connect up to 10 telephone systems total per Call Server (e.g., 2 Avaya Communication Manager systems using SIP + 5 Avaya IP Office systems using SIP + 3 Siemens HiPath 4000 systems using Station Set Emulation)
  - SIP timers for Aastra EETS integrations are incompatible with other SIP integrations. Thus, it is not possible to have an EETS integration with any other SIP integration on the Call Server.
- The MiCollab AM **Integration Options** parameter, **Validate Remote Hosts for Media** validates each incoming audio packet and accepts it only if it is sent from a valid endpoint. The parameter is disabled by default. Enabling this parameter causes MiCollab AM to reject RTP packets from invalid endpoints, rejects MWI packets that timeout after a specified number of times, and overcomes port lockups when callers hang up while MiCollab AM is performing a blind transfer.

**IMPORTANT** Enabling this parameter causes processing overhead and should only be enabled when necessary.

- It is recommended to use Windows Server 2016 or later for Integrations that use Session Initiation Protocol (SIP) Transport Layer Security (TLS) when FIPS is enabled on MiCollab AM. Older versions of Windows use algorithms that are not FIPS compliant to export the certificate information used for TLS. Because of this, MiCollab AM will not be able to access certificate-related data.
- Starting with Avaya IP Office 11, a security enhancement has been added that will block extensions and IP addresses of member stations of the group extension when they do not come into service. To resolve this, the extensions on the IP Office need to have a supervisor extension password that is 8 digits or longer, and then any blocked extensions and/or IP addresses can be released from the Blacklisted Extensions or Blacklisted IP Addresses (under the Status menu in the Avaya IP Office System Monitor). For more information, refer to [Creating Users for MiCollab AM Lines](#).

# Installation Requirements

Review the following information before performing any of the procedures in this document. To install this integration successfully, you must meet the installation requirements for both the telephone system and MiCollab AM.

You may implement this integration on the following Avaya IP Office telephone systems:

## Telephone System Requirements

You can find more information about these products in the Avaya documentation.

- Avaya IP500V2 IP Office Manager **Basic**, **Essential**, or **Preferred** Edition
  - Version 11.0.0.0.0
  - Required minimums for Licenses:
    - SIP Trunk Channels
    - At least 2 SIP Endpoint Licenses
- One 3rd Party IP Endpoints license required for each MiCollab AM line

**NOTE** All five solutions IP500 based (Basic Edition, Essential Edition, Preferred Edition), VM based (Server Edition, and IP Office Select) are supported. An embedded voicemail selection in the IP Office configuration will affect the behavior of the voicemail button on phones as well as visual voicemail access.

## MiCollab AM Requirements

- MiCollab AM software version 9.1
- At least one 100 MB or 1000 MB network interface card and cable
- MiCollab AM software key diskette or feature file with the Avaya IP Office SIP integration enabled and one Virtual SIP and RTP license enabled for each port involved in the integration

# Programming the Telephone System

Follow the recommendations and programming examples in this section to program the telephone system for integration with MiCollab AM. Programming examples show commands and parameters that are necessary for integration. They do not represent PBX programming in its entirety.

The installing technician should be familiar with programming the Avaya IP Office telephone system using IP Office Manager. Refer to the Avaya IP Office documentation or the online help for specific information on programming the telephone system.

**NOTE** All programming examples assume that you are logged on to the IP Office Manager application.

## Starting IP Office Manager

To start IP Office Manager:

- 1 From the Window taskbar, select **Start > Programs > IP Office > Manager**.
- 2 Log on to the IP Office Manager.
- 3 In the main screen, select **File > Open Configuration**. The **Select IP Office** dialog box appears.
- 4 Locate the IP Office network, and then click **OK**.
- 5 Log on with the appropriate administrator credentials.

## Configuring the Layer 4 Protocol

Program the Layer 4 Protocol for the voicemail integration.

To configure the Layer 4 Protocol:

- 1 From the **IP Offices** tree menu, select **Your System Name > System**. The screen with your system name appears.
- 2 Select the **LAN 1** tab, and then the **VoIP** tab.
- 3 In the **SIP Registrar Enable** section, configure the following options:
  - In the **Layer 4 Protocol** section, select both **UDP** and **TCP** checkboxes.
  - In the **UDP Port** and **TCP Port** fields, leave the default value, **5060**.

The screenshot shows a configuration window with a top navigation bar containing tabs: System, LAN1, LAN2, DNS, Voicemail, Telephony, Directory Services, System Events, SMTP, SMDR, VCM, VoIP, VoIP Security, and Contact Center. Below this, there are sub-tabs: LAN Settings, VoIP, and Network Topology. The VoIP tab is active.

**LAN Settings**

- ☒ H.323 Gatekeeper Enable
  - ☐ Auto-create Extension ☐ Auto-create User
  - ☐ H.323 Remote Extension Enable
  - H.323 Signaling over TLS: Disabled
  - Remote Call Signaling Port: 1720

**SIP**

- ☒ SIP Trunks Enable
- ☒ SIP Registrar Enable
  - ☐ Auto-create Extension/User
  - ☒ SIP Remote Extension Enable
  - SIP Domain Name: blvu.avstlabs.local
  - SIP Registrar FQDN: blvu.avstlabs.local
- Layer 4 Protocol:
  - ☒ UDP: UDP Port 5060, Remote UDP Port 5060
  - ☒ TCP: TCP Port 5060, Remote TCP Port 5060
  - ☐ TLS: TLS Port 5061, Remote TLS Port 5061
- Challenge Expiration Time (sec): 10

**RTP**

- Port Number Range:
  - Minimum: 49152, Maximum: 53246
- Port Number Range (NAT):
  - Minimum: 49152, Maximum: 53246
- ☒ Enable RTCP Monitoring on Port 5005
  - RTCP collector IP address for phones: 0 . 0 . 0 . 0 . 0
- Keepalives:
  - Scope: Disabled, Periodic timeout: 0
  - Initial keepalives: Disabled

4 Click **OK**.

## Configuring the Voicemail Type

Select **Voicemail Type**. In the following example, **<None>** is specified as the **Voicemail Type** for the integration (refer to the following note).

To configure the voicemail type:

- 1 From the **IP Offices** tree menu, select **Your System Name** > **System**. The screen with your system name appears.
- 2 Select the **Voicemail** tab.

- 3 In the **Voicemail Type** field, select **None**.

**NOTE** The following Voicemail Types were tested: **None**, **Group Voicemail**, and **Voicemail Lite/Pro**. IP Office offerings Server Edition and IP Office Select do not support Voicemail Types: None and Group Voicemail, however, they do support Voicemail Type: Voicemail Lite/Pro with Voicemail IP Address pointed to MiCollab AM.

- 4 In the **Voicemail Destination** field, select the Group Line created.

**NOTE** In the example, the value is not set, but it could be site-specific.

- 5 Click **OK**.

## Creating SIP Extensions for MiCollab AM Lines

Create an extension number for each MiCollab AM line. Add a base extension. The extension ID is generated by IP Office and can be changed if desired. All other fields are set as default.

### To create extension numbers:

- 1 From the **IP Offices** tree menu, select **Your System Name**, and then right-click on **Extension**.
- 2 From the context menu, select and then select **New > SIP Extension**. The **SIP Extension** screen appears.

The screenshot shows a configuration window titled "SIP Extension: 8001". It has three tabs: "Extn", "VoIP", and "T38 Fax". The "Extn" tab is selected. The fields and their values are as follows:

Field	Value
Extension ID	8001
Base Extension	
Caller Display Type	On
Reset Volume After Calls	<input type="checkbox"/>
Device Type	Unknown SIP device
Location	Automatic
Module	0
Port	0
Force Authorization	<input checked="" type="checkbox"/>

At the bottom right, there are three buttons: "OK", "Cancel", and "Help".

- 3 In the **Extension ID** field, enter a physical ID of the extension port.
- 4 In the **Base Extension** field, enter the SIP extension number for the MiCollab AM line.
- 5 Click **OK**.
- 6 Repeat the procedure for each MiCollab AM line.

## Creating Users for MiCollab AM Lines

Create a user for each MiCollab AM line. Enter a user name and associated extension number. All other values are default.

### To create users:

- 1 From the **IP Offices** tree menu, select **Your System Name**, and then right-click on **User**.
- 2 From the context menu, select **New**. The **User** screen appears.

User	Voicemail	DND	Short Codes	Source Numbers	Telephony	Forwarding	Dial In	Voice Recording	Button Programming	Menu Programming	M
Name	<User0>										
Password											
Confirm Password											
Unique Identity											
Conference PIN											
Confirm Audio Conference PIN											
Account Status	Enabled										
Full Name											
Extension											
Email Address											
Locale											
Priority	5										
System Phone Rights	None										
Profile	Basic User										
	<input type="checkbox"/> Receptionist <input type="checkbox"/> Enable Softphone <input type="checkbox"/> Enable one-X Portal Services <input type="checkbox"/> Enable one-X TeleCommuter <input type="checkbox"/> Enable Remote Worker <input type="checkbox"/> Enable Communicator <input type="checkbox"/> Enable Mobile VoIP Client <input type="checkbox"/> Send Mobility Email <input type="checkbox"/> Web Collaboration <input type="checkbox"/> Exclude From Directory										

- 3 In the **Name** field, enter the name of the Voicemail.
- 4 In the **Password** and **Confirm Password** fields, enter a numeric password (such as 12345) that will be used for the SIP stations to register with the IP Office system. Make note of this password, as it will be used later in the programming of the IP Office and MiCollab AM systems.
- 5 In the **Extension** field, enter the SIP extension number used by Voicemail for this line.
- 6 Click on the **Telephony** tab, then select the **Supervisor Settings** sub-tab:

- 7 In the **Login Code** and **Confirm Login Code** fields, enter a numeric password.

**NOTE** Starting with Avaya IP Office 11, the value of the **Login Code** field and **Confirm Login Code** field must be equal to or longer than 8 digits. The digits can be a combination of two 4-digit strings (i.e., 12349876) but must not be repeating or sequential (i.e., 12345678).

- 8 Click **OK**.
- 9 Repeat the procedure for each MiCollab AM line.

## Enabling Call Waiting

You must enable the **Call Waiting** feature for each user in the integration. The Call Waiting on feature enables transfers on SIP extensions.

To enable Call Waiting:

- 1 In the **User** screen, select the **Telephony** tab, and then the **Call Settings** tab.

The screenshot shows the 'Call Settings' tab with the following configurations:

- Outside Call Sequence: Default Ring
- Inside Call Sequence: Default Ring
- Ringback Sequence: Default Ring
- No Answer Time (sec): System Default (15)
- Wrap-Up Time (sec): 2
- Transfer Return Time (sec): Off
- Call Cost Mark-Up: 100
- Advertise Callee State To Internal Callers: System Default (Off)
- ☒ Call Waiting On
- ☐ Answer Call Waiting On Hold
- ☐ Busy On Held
- ☐ Off-hook Station

- 2 Select the **Call Waiting On** checkbox.
- 3 Click **OK**.
- 4 Repeat the procedure for each MiCollab AM user.

## Configuring Line Appearances

You must remove all but the first line button appearance for each MiCollab AM line from Button Programming.

To remove line appearances:

- 1 In the **User** screen, select the **Button Programming** tab.

The screenshot shows the 'Button Programming' tab with a table of button configurations. Buttons 2 and 3 are highlighted for removal.

Button ...	Label	Action	Action Data
1		Appearance	a=
2		Appearance	b=
3		Appearance	c=
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

Buttons 2 and 3 are highlighted. The 'Remove' button is visible on the right side of the window.

- 2 Select **Button 2** and 3 (**Appearance b=** and **c=**), and then click **Remove**.

**IMPORTANT** MiCollab AM lines must have only one button appearance programmed.

- 3 Click **OK**.
- 4 Repeat the procedure for each MiCollab AM line.

## Creating a Hunt Group for MiCollab AM

Create a hunt group for the MiCollab AM lines.

To create the hunt group:

- 1 From the **IP Offices** tree menu, select **Your System Name**, and then right-click on **Group**.
- 2 On the context menu, select **New**. The **Sequential Group <Hunt Group>** screen appears.

The screenshot shows the 'Sequential Group <Hunt Group:0>' configuration window. The window has a title bar with standard icons and a menu bar with options: Group, Queuing, Overflow, Fallback, Voicemail, Voice Recording, Announcements, and SIP. The 'Group' tab is selected. The form contains the following fields and controls:

- Name:** A text field containing '<Hunt Group:0>'.
- Extension:** An empty text field.
- Ring Mode:** A dropdown menu set to 'Sequential'.
- Hold Music Source:** A dropdown menu set to 'No Change'.
- Ring Tone Override:** A dropdown menu set to 'None'.
- Agent's Status on No-Answer Applies To:** A dropdown menu set to 'None'.
- Profile:** A dropdown menu set to 'Standard Hunt Group'.
- Ex Directory:** An unchecked checkbox.
- No Answer Time (secs):** A dropdown menu set to 'System Default (15)'.
- User List:** A table with two columns, 'Extension' and 'Name', which is currently empty.

At the bottom right of the window are three buttons: 'OK', 'Cancel', and 'Help'.

- 3 In the **Name** field, enter a name for the hunt group.
- 4 In the **Extension** field, enter a voicemail hunt-group pilot number.

**NOTE** Choose an easily remembered number as this is the number users dial to reach MiCollab AM.

- 5 In the **Ring Mode** field, choose **Sequential** or **Rotary**.
  - **Sequential:** Each extension is rung in order each time, one after the other, starting from the first extension in the list.
  - **Rotary:** Each extension is rung in order, one after the other. However, the last extension used is remembered. The next call received rings the next extension in the list.
- 6 In the **User List** box, add the **Voicemail** extension numbers you created in the procedure, [Creating SIP Extensions for MiCollab AM Lines](#).
- 7 Click **OK** to save changes.

## Disabling the Queuing Feature

Disable the Queuing feature for the hunt group.

To disable queuing:

- 1 In the **Group** screen, select the **Queuing** tab.

The screenshot shows the 'Group' configuration screen with the 'Queuing' tab selected. The 'Queuing On' checkbox is unchecked. The 'Queue Length' is set to 'No Limit' and 'Normalize Queue Length' is checked. The 'Queue Type' is set to 'Assign Call On Agent Answer'. The 'Calls In Queue Alarm' section shows 'Calls In Queue Threshold' set to 1 and 'Analog Extension to Notify' set to '<None>'. The bottom buttons are OK, Cancel, and Help.

- 2 De-select the **Queuing On** checkbox.
- 3 Click **OK**.

## Creating Short Codes for MWI and Voicemail Access

Create a short code to turn on message-waiting indicators and a short code to turn off message-waiting indicators. Create another short code for direct access to voicemail.

**NOTE** It is best not to use # as part of a short code. The # character is a reserved character in SIP and is not passed to the phone system. Any codes containing this character will not be passed to MiCollab AM.

### Creating a Short Code to Turn On Message Indicators

To create a short code to turn on message indicators:

- 1 From the **IP Offices** tree menu, select **Your System Name**, and then right-click on **Short Code**.
- 2 On the context menu, select **New**. The **Short Code** screen appears.

Short Code

Code: \*80\*N\*

Feature: Display Msg

Telephone Number: N";MWL Msgs=1 OLD=0 Sav=0""

Line Group ID: 0

Locale:

Force Account Code: ☐

Force Authorization Code: ☐

OK Cancel Help

- 3 In the **Code** field, enter **\*80\*N\***.
- 4 In the **Feature** field, select **Display Msg** from the list.
- 5 In the **Telephone Number** field, enter **N";MWL Msgs=1 OLD=0 SAV=0""**.
- 6 Click **OK**.

## Creating a Short Code to Turn Off Message Indicators

To create a short code to turn off message indicators:

- 1 From the **IP Offices** tree menu, select **Your System Name**, and then right-click on **Short Code**.
- 2 On the context menu, select **New**. The **Short Code** screen appears.

Short Code

Code: \*80\*N\*

Feature: Display Msg

Telephone Number: N";MWL Msgs=0 OLD=0 Sav=0""

Line Group ID: 0

Locale:

Force Account Code: ☐

Force Authorization Code: ☐

OK Cancel Help

- 3 In the **Code** field, enter **\*81\*N\***.
- 4 In the **Feature** field, select **Display Msg** from the list.
- 5 In the **Telephone Number** field, enter **N";MWL Msgs=0 OLD=0 SAV=0""**.
- 6 Click **OK**.

## Creating a Short Code for Direct Access to Voicemail

To create a short code for direct access to voicemail:

- 1 From the **IP Offices** tree menu, select **Your System Name**, and then right-click on **Short Code**.
- 2 On the context menu, select **New**. The **Short Code** screen appears.

Short Code:0>: Dial\*

Code: \*82

Feature: Dial Extn

Telephone Number: E

Line Group ID: 0

Locale:

Force Account Code: ☐

Force Authorization Code: ☐

OK Cancel Help

- 3 In the **Code** field, enter \*82.
- 4 In the **Feature** field, select **Dial Extn** from the list.
- 5 In the **Telephone Number** field, enter E.
- 6 Click **OK**.

## Programming Buttons on Subscriber Telephones

To allow subscribers to call MiCollab AM with one button, assign the short code you created for direct access to voicemail to each subscriber station.

### Configuring a Voicemail Button

To configure a voicemail button on subscriber extensions:

- 1 From the **IP Offices** tree menu, select **Your System Name > User**.
- 2 Select an existing user from the list that is also a MiCollab AM subscriber, and then select the **Button Programming** tab.

Extn 1201: 1201\*

User Voicemail DND Short Codes Source Numbers Telephony Forwarding Dial In Voice Recording **Button Programming** Menu Programming Mobility

Button ...	Label	Action	Action Data
1		Appearance	a=
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

Remove Edit... Copy Paste

☒ Display all buttons

OK Cancel Help

- 3 Select an unused button, and click the **Edit** button. (**Button 8** is selected in this example.) The **Edit Button** screen appears.

Edit Button	
Button No.	8
Label	V-Mail
Action	Dial <span>...</span>
Action Data	*82

OK Cancel

- 4 In the **Label** field, enter a name that is common to your users such as **V-Mail**.
- 5 In the **Action** field, click the ... button.
- 6 From the list, select **Dial**.
- 7 In the **Action Data** field, enter the short code you created for direct access to voicemail in the previous procedure, [Creating a Short Code for Direct Access to Voicemail](#), for example, **\*82**.
- 8 Click **OK**.
- 9 Repeat the procedure for each MiCollab AM subscriber.

## Configuring a Do Not Disturb Button

To support call forwarding to MiCollab AM for subscribers desiring a Do Not Disturb (DND) feature, configure a Call Forwarding Unconditional button on subscriber telephones. Use the MiCollab AM hunt group pilot number as the target. When the feature is enabled, incoming calls to the subscriber are immediately diverted to MiCollab AM.

**IMPORTANT** The MiCollab AM hunt group number must be assigned as the subscriber's Forward Unconditional Number for this feature to work properly. For more information, refer to the next section, [Enabling Forwarding on Subscriber Telephones](#).

To configure a Do not Disturb button on subscriber telephones:

- 1 From the **IP Offices** tree menu, select **Your System Name > User**.
- 2 Select an existing user from the list that is also a MiCollab AM subscriber, and then select the **Button Programming** tab.

Button ...	Label	Action	Action Data
1		Appearance	a=
2			
3			
4			
5			
6			
7			
8	V-Mail	Dial	*82
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			

- 3 Select an unused button, and click the **Edit** button. (**Button 7** is selected in this example.) The **Edit Button** screen appears.

- 4 In the **Label** field, enter a name that is common to your users such as **DNDOn**.
- 5 In the **Action** field, click the button.
- 6 From the list, select **Advanced** > **Forward** > **Forward Unconditional On**.
- 7 Click **OK**.
- 8 Repeat the procedure for each MiCollab AM subscriber.

## Enabling Forwarding on Subscriber Telephones

Configure subscriber telephones to forward to MiCollab AM on ring-no-answer (RNA), busy, and do not disturb (DND).

To enable forwarding on subscriber extensions:

- 1 From the **IP Offices** tree menu, select **Your System Name** > **User**.
- 2 Select an existing user from the list that is also a MiCollab AM subscriber, and then select the **Forwarding** tab.

Extn 1201: 1201\*

User Voicemail DND Short Codes Source Numbers Telephony **Forwarding** Dial In Voice Recording Button Programming Menu Programming Mobility

Block Forwarding ☐

Follow Me Number

Forward Unconditional ☐

To Voicemail ☐

Forward Number

Forward Hunt Group Calls ☐

Forward Internal Calls ☒

Forward On Busy ☒

Forward On No Answer ☒

Forward Number

Forward Internal calls ☒

OK Cancel Help

- 3 Select the **Forward on Busy** checkbox.
- 4 Select the **Forward on No Answer** checkbox.
- 5 In the **Forward Number** field, enter a MiCollab AM hunt group number.
- 6 **(Optional)** If you configured a button for Do Not Disturb for subscribers from the previous procedure, [Configuring a Do Not Disturb Button](#), you must enter the MiCollab AM hunt group number in the **Forward Number** field from the **Forward Unconditional** area.


**IMPORTANT** Do not select the **Forward Unconditional** checkbox.

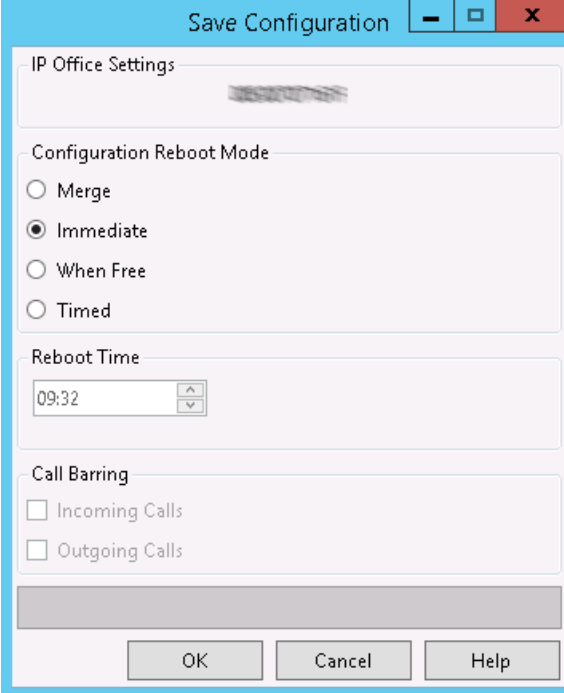
- 7 Click **OK**.
- 8 Repeat the procedure for each MiCollab AM subscriber.

## Saving the Configuration

Once you have completed programming the telephone system, save the configuration using the **Immediate** option to restart the switch.

To save the configuration:

- 1 From the toolbar, click the  **Save Configuration File** icon or from the menu, select **File > Save Configuration**. The **Save Configuration** dialog box appears.

A screenshot of a 'Save Configuration' dialog box. The dialog has a title bar with standard window controls. It contains several sections: 'IP Office Settings' with a text field; 'Configuration Reboot Mode' with four radio button options: 'Merge', 'Immediate' (which is selected), 'When Free', and 'Timed'; 'Reboot Time' with a time selection field showing '09:32'; and 'Call Barring' with two unchecked checkboxes for 'Incoming Calls' and 'Outgoing Calls'. At the bottom are three buttons: 'OK', 'Cancel', and 'Help'.

Save Configuration

IP Office Settings

Configuration Reboot Mode

☐ Merge

☒ Immediate

☐ When Free

☐ Timed

Reboot Time

09:32

Call Barring

☐ Incoming Calls

☐ Outgoing Calls

OK Cancel Help

- 2 In the **Configuration Reboot Mode** section, select **Immediate**.
- 3 Click **OK**. The configuration is saved and the switch restarts.

# Configuring MiCollab AM

Once the telephone system is programmed, you must configure MiCollab AM for the integration. There are two ways you can configure MiCollab AM: (1) Configuring MiCollab AM for the telephone system integration when you are installing MiCollab AM for the first time, or (2) Configuring the existing MiCollab AM with the new telephone system integration.

Click the appropriate steps that your system requires from below and follow the steps:

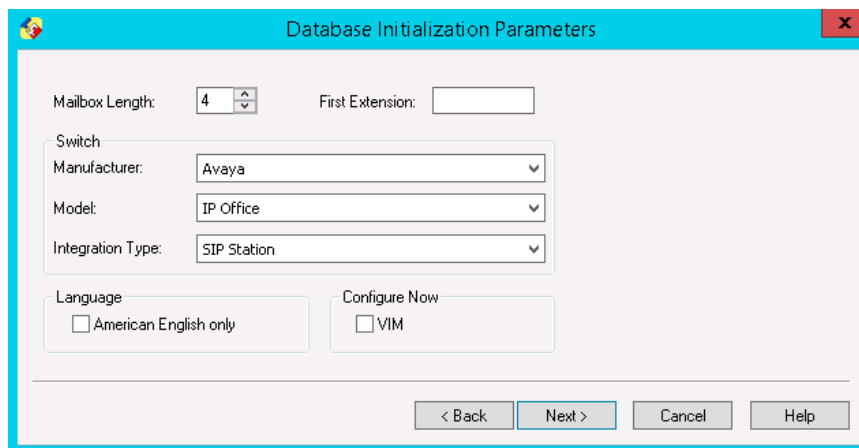
- [Configuring MiCollab AM for the Integration During Initial Installation](#): Integrate the telephone system while you install MiCollab AM for the first time.
- [Configuring Existing MiCollab AM for the Integration](#): Integrate a new telephone system on your exiting MiCollab AM system.

**NOTE** For general information on integrations, refer to the **Integrating MiCollab AM with the Telephone System** chapter in the *System Installation and Configuration Guide*, and the topic, **Integrating MiCollab AM with the Telephone System**, in the online help.

## Configuring MiCollab AM for the Integration During Initial Installation

To configure MiCollab AM with the integration for the first time:

- 1 In the **Database Initialization Parameters** dialog box, configure the following options:



The screenshot shows the "Database Initialization Parameters" dialog box. It includes the following fields and options:

- Mailbox Length:** A spinner box currently set to 4.
- First Extension:** An empty text input field.
- Switch Manufacturer:** A dropdown menu with "Avaya" selected.
- Model:** A dropdown menu with "IP Office" selected.
- Integration Type:** A dropdown menu with "SIP Station" selected.
- Language:** A checkbox labeled "American English only" which is currently unchecked.
- Configure Now:** A checkbox labeled "VIM" which is currently unchecked.
- Navigation Buttons:** "< Back", "Next >", "Cancel", and "Help".

- a In the **Mailbox Length** box, enter the mailbox length in digits.
- b In the **First Extension** box, enter first extension number for the first line. You can also leave the **First Extension** box empty.
- c From the **Manufacturer** drop-down list, select **Avaya**.

- d From the **Model** drop-down list, select **IP Office**.
  - e From the **Integration Type** drop-down list, select **SIP Station**.
- 2 Click **Next**. The **Board Options** dialog box displays for the virtual board configuration.

The **Board Options** dialog box is shown with the following settings:

- Board:** Virtual
- Manufacturer:** Virtual
- Model:** SIP STACK
- Name:** Virtual SIP STACK
- Protocol:** SIP IP RTP
- Number of Lines:** 24
- Available Lines (Licenses):** 24

Buttons on the right: OK, Apply, Cancel, Help.

- 3 In the **Board Options** dialog box, configure the following options:
- a From the **Manufacturer** drop-down list, select **Virtual**.
  - b From the **Model** drop-down list, select **SIP STACK**.
  - c In the **Name** field, the name for this board is automatically generated. Enter a new name if necessary.
  - d From the **Protocol** drop-down list, select **SIP IP RTP**.
  - e In the **Number of Lines** field, enter the number of lines this board uses. The total number of lines is limited by the capacity of the board and the number of **Available Line Licenses**.
- 4 Click **OK**. The **Switch Options** dialog box appears.

The **Switch Options** dialog box is shown with the following settings:

- Manufacturer:** Avaya
- Model:** IP Office
- System Switch:** - Create New -
- System Switch Settings:**
  - Switch Name:** Avaya IP Office
  - 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
  - Refresh Time of Day:** 12:00 AM
  - Initialize Mode:** None
  - 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** button

Name	Value
Disconnect Loop Current Length (ms)	150
Flash Hook Time (ms)	500
T1 Protocol	FXS
T1 Signaling	Immediate

Buttons on the right: OK, Apply, Cancel, Help.

- 5 If necessary, make any changes to the default settings your site requires in the **Switch Options** dialog box.

**NOTE** The settings related to the telephone system in the **Switch Options** dialog box are filled in automatically when you select the correct telephone system during setup.

If you need to customize settings on the **Switch Options** dialog box to meet requirements specific to your site, refer to the documentation accompanying the telephone system, the online help, and the *System Installation and Configuration Guide*.

- 6 Click **OK**. The **Integration Options** dialog box appears.

- 7 In the **Integration Options** dialog box, configure the following options:

- a In the **Local Integration Settings** section, select the **Required Parameters** view, and configure the settings as follows:

Table 4. Required Parameters View – Integration Options

Field	Value
SIP Server Address	Enter the IP address of the IP Office. <b>IMPORTANT</b> This value must match the configuration of the <b>SIP Registrar</b> .
SIP Server Port	Enter the port number on which the IP Office listens for SIP messages. This port must match the SIP registrar ports (TCP and UDP) configured in the procedure, <a href="#">Configuring the Layer 4 Protocol</a> . The default port number is <b>5060</b> .
Transport for outgoing SIP Messages	Select the transport protocol used for sending out SIP messages. The default value is <b>TCP</b> .

PBX Registration Password	Enter the same numeric password (such as 12345) previously assigned as the <b>Password</b> and <b>Login Code</b> when programming the <b>User</b> setup of the IP Office system.
Local IP Address to bind on	Select the local IP address of the MiCollab AM system that communicates with the IP Office. This is a drop-down box and displays all available local IP addresses.
SIP Local Connection Port	Enter the port MiCollab AM listens on for incoming SIP messages. The default value is <b>5060</b> .
SIP parser qualifier string	<ul style="list-style-type: none"> <li>• <b>Single SIP integration on the call server:</b> Enter the local IP address to which the integration is bound. This field is used by MiCollab AM to match SIP packets to the appropriate SIP integration.</li> <li>• <b>Multiple SIP integrations on the call server:</b> Use a string that is unique to each SIP integration.</li> </ul> <p><b>For example:</b></p> <p>The extension that will be used as the hunt number on the PBX followed by the @ symbol and the IP of the call server, such as <i>5000@172.16.4.202</i>.</p> <p>The hunt number must be unique across all IP integrations.</p> <p>The Fully Qualified Domain Name (FQDN) of the switch, such as <i>pbx1.sipdomain.com</i>.</p>
Media packet size (milliseconds)	<p>MiCollab AM sends/receives packets containing the number of milliseconds worth of audio data set here.</p> <p>The default value is <b>20</b>.</p>

**NOTE** This setting must match a string in the SIP header that is unique to this particular integration

- b** In the **Local Integrations Settings** section, select the **Message Waiting Settings** View.

Local Integration Settings

View: Message Waiting Settings Set Defaults

Name	Value
Max simultaneous MWI operations	1
Pause between MWI	250
Maximum MWI retries after a failure	1
MWI Retry Interval (min:sec)	00:10
Set MWI Dialing Template	*80* <i>X</i> *
Clear MWI Dialing Template	*81* <i>X</i> *
MWI notification destination address	
MWI notification destination port number	5060

- Verify the **Set MWI Dialing Template** and **Clear MWI Dialing Template** fields contain the same short codes you created in the procedure, [Creating Short Codes for MWI and Voicemail Access](#).

**IMPORTANT** You must use an **X** to represent the extension number in MiCollab AM. An **N** represents the extension number in the short code you created in the Avaya programming only.

For example:

The short code **\*80\*N\*** to set MWI becomes **\*80\*X\*** in MiCollab AM.

- c** In the **Local Integration Settings** section, select the **Integration Specific Parameters** View.

Name	Value
Populate User-Agent header	<input checked="" type="checkbox"/>
User-Agent header value	
Support Session Replacement	<input checked="" type="checkbox"/>
Maximum INVITE retransmissions	4
Maximum SIP request retransmissions	4
Parser filename	IPOfficeSIP
Incoming off hook delay	300
Outgoing off hook delay	0
On hook delay	300

---

Base ASR Sensitivity (Internal)	5
Base ASR Sensitivity (External)	5
Use Single Channel on Blind Transfers	<input checked="" type="checkbox"/>
Use Single Channel for Monitor Transfers	<input checked="" type="checkbox"/>
Type of call progress to use for external calls	Digital
Enable SIP server failover	<input type="checkbox"/>
Delay (in MS) between Failover attempts	1000
Enable fallback to primary SIP server	<input type="checkbox"/>
Rehome to Primary server timer (in MS)	90000

- Find **Populate User-Agent header**, and select the box to allow any transfers from MiCollab AM to work with the IP Office.
- Find **Type of Call Progress to use for External Calls** and set the value as how the gateway is used for the integration.
  - Digital:** Select if the gateway supports call progress through to the endpoint.
  - Media:** Select if the gateway reports early that the call is connected, such as before the phone rings or while the phone is ringing.

- 8** Click **OK**. The **Switch Section Options** dialog box appears.

Name	Value
Incoming Hunt Mode	Terminal
Hunt Group Access Code	

- 9 In the **Switch Section Options** dialog box, configure the following options.
  - a In the **Local Switch Settings** section, select **Required Parameters** View and configure the following options:
  - b In **Incoming Hunt Mode**, select **Terminal** or **Circular** according to how you configured the hunt group in the procedure, [Creating a Hunt Group for MiCollab AM](#).
  - c In **Hunt Group Access Code**, type the hunt group extension you created in the procedure, [Creating a Hunt Group for MiCollab AM](#).
  - d Click **OK**.
- 10 Continue through and complete the configuration. At the end of the configuration, a confirmation dialog box appears. Click **OK**.
- 11 If **MiCollab AM Configuration** does not open automatically after the configuration completes, open **MiCollab AM Configuration**, and select the **Lines** tab.
- 12 In the table from the **Lines** tab, enter the extension number of each integrated line on the Call Server.

**IMPORTANT** You must enter the PBX extension numbers that the Call Server is configured to answer or the integration will fail. The extension numbers are registered as SIP stations with the IP PBX during system startup.

- 13 Click **OK** to save all changes.

## Configuring Existing MiCollab AM for the Integration

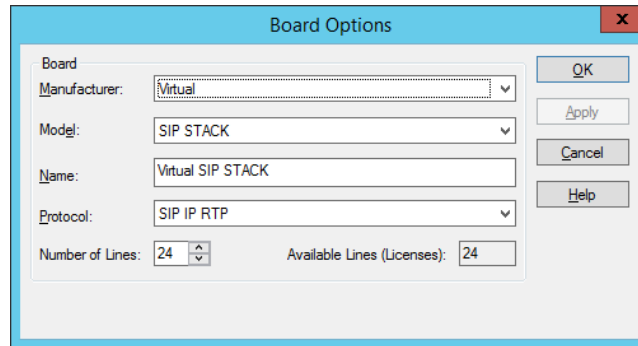
To configure exiting MiCollab AM for the telephone integration:

- 1 Open **MiCollab AM Configuration**, and go to the **Main** tab.

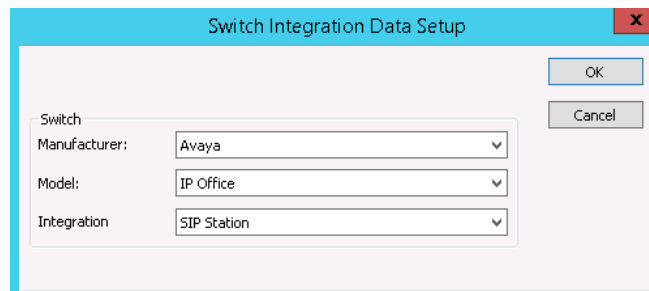
- 2 In the **Main** tab, click **Shutdown** to stop the system. Wait until the **Current Status** shows **Stopped**.

**NOTE** If you have not configured the virtual board with your MiCollab AM system yet, complete **Step 3**. If your MiCollab AM already has the virtual board configured, skip to **Step 4**.

- 3 **[Optional]** Select the **Boards** tab, and then click the **Add** button. The **Board Options** dialog box appears.



- a From the **Manufacturer** drop-down list, select **Virtual**.
  - b From the **Model** drop-down list, select **SIP STACK**.
  - c In the **Name** field, the name for this board is automatically generated. Enter a new name if necessary.
  - d From the **Protocol** drop-down list, select **SIP IP RTP**.
  - e In the **Number of Lines** field, enter the number of lines this board uses. The total number of lines is limited by the capacity of the board and the number of **Available Line Licenses**.
  - f Click **OK**.
- 4 Select the **Switch** tab and click the **Add** button. The **Switch Integration Data Setup** dialog box appears.



- a From the **Manufacturer** drop-down list, select **Avaya**.
  - b From the **Model** drop-down list, select **IP Office**.
  - c From the **Integration Type** drop-down list, select **SIP Station**.
- 5 Click **OK**. The **Switch Options** dialog box appears.

**Switch Options**

Manufacturer: Avaya  
 Model: IP Office  
 System Switch: - Create New -

OK  
 Apply  
 Cancel  
 Help

**System Switch Settings**

Switch Name: Avaya IP Office

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)	150
Flash Hook Time (ms)	500
T1 Protocol	FXS
T1 Signaling	Immediate

- 6 If necessary, make any changes to the default settings your site requires in the **Switch Options** dialog box.

**NOTE** The settings related to the telephone system in the **Switch Options** dialog box are filled in automatically when you select the correct telephone system during setup.

If you need to customize settings on the **Switch Options** dialog box to meet requirements specific to your site, refer to the documentation accompanying the telephone system, the online help, and the *System Installation and Configuration Guide*.

- 7 Click **OK**. The **Integration Options** dialog box appears.

8 The **Integration Options** dialog box, configure the following options.

- a In the **Local Integration Settings** section, select the **Required Parameters** view, and configure the settings as follows:

Table 5. Required Parameters View – Integration Options

Field	Value
SIP Server Address	Enter the IP address of the IP Office.
	<b>IMPORTANT</b> This value must match the configuration of the <b>SIP Registrar</b> .
SIP Server Port	Enter the port number on which the IP Office listens for SIP messages. This port must match the SIP registrar ports (TCP and UDP) configured in the procedure, <a href="#">Configuring the Layer 4 Protocol</a> . The default port number is <b>5060</b> .
Transport for outgoing SIP Messages	Select TCP if your configuration requires TCP. The default transport type is <b>TCP</b> .
PBX Registration Password	Enter the same numeric password (such as 12345) previously assigned as the <b>Password</b> and <b>Login Code</b> when programming the <b>User</b> setup of the IP Office system.
Local IP Address to bind on	Select the local IP address of the MiCollab AM system that communicates with the IP Office. This is a drop-down box and displays all available local IP addresses.
SIP Local Connection Port	Enter the port MiCollab AM listens on for incoming SIP messages. The default value is <b>5060</b> .
SIP parser qualifier string	In cases of a single SIP integration on the call server, enter the local IP address to which the integration is bound. This field is used by MiCollab AM to match SIP packets to the

appropriate SIP integration.

In cases where there are multiple SIP integrations on the call server, use a string that is unique to each SIP integration.

**For example:**

The extension that will be used as the hunt number on the PBX followed by the @ symbol and the IP of the call server, such as *5000@172.16.4.202*.

The hunt number must be unique across all IP integrations.

The Fully Qualified Domain Name (FQDN) of the switch, such as *pbx1.sipdomain.com*.

**NOTE** This setting must match a string in the SIP header that is unique to this particular integration

Media packet size  
(milliseconds)

MiCollab AM sends/receives packets containing the number of milliseconds worth of audio data set here.

The default value is **20**.

- b** In the **Local Integrations Settings** section, select the **Message Waiting Settings** View.

The screenshot shows the 'Local Integration Settings' dialog box with the 'View' dropdown set to 'Message Waiting Settings'. A 'Set Defaults' button is located to the right of the dropdown. Below the dropdown is a table with two columns: 'Name' and 'Value'.

Name	Value
Max simultaneous MWI operations	1
Pause between MWI	250
Maximum MWI retries after a failure	1
MWI Retry Interval (min:sec)	00:10
Set MWI Dialing Template	*80*X*
Clear MWI Dialing Template	*81*X*
MWI notification destination address	
MWI notification destination port number	5060

- Verify the **Set MWI Dialing Template** and **Clear MWI Dialing Template** fields contain the same short codes you created in the procedure, [Creating Short Codes for MWI and Voicemail Access](#).

**IMPORTANT** You must use an **X** to represent the extension number in MiCollab AM. An **N** represents the extension number in the short code you created in the Avaya programming only.

**For example:**

The short code **\*80\*N\*** to set MWI becomes **\*80\*X\*** in MiCollab AM.

- c** In the **Local Integration Settings** section, select the **Integration Specific Parameters** View.

Local Integration Settings

View: Integration Specific Parameters Set Defaults

Name	Value
Populate User-Agent header	<input checked="" type="checkbox"/>
User-Agent header value	
Support Session Replacement	<input checked="" type="checkbox"/>
Maximum INVITE retransmissions	4
Maximum SIP request retransmissions	4
Parser filename	IPOfficeSIP
Incoming off hook delay	300
Outgoing off hook delay	0
On hook delay	300

---

Base ASR Sensitivity (Internal)	5
Base ASR Sensitivity (External)	5
Use Single Channel on Blind Transfers	<input checked="" type="checkbox"/>
Use Single Channel for Monitor Transfers	<input checked="" type="checkbox"/>
Type of call progress to use for external calls	Digital
Enable SIP server failover	<input type="checkbox"/>
Delay (in MS) between Failover attempts	1000
Enable fallback to primary SIP server	<input type="checkbox"/>
Rehome to Primary server timer (in MS)	90000

- Find **Populate User-Agent header**, and select the box to allow any transfers from MiCollab AM to work with the IP Office.
- Find **Type of Call Progress to use for External Calls** and set the value according to the gateway configured for the integration as shown below:
  - If the gateway supports call progress through to the endpoint, set to **Digital**.
  - If the gateway reports early that the call is connected, such as before the phone rings or while the phone is ringing, set to **Media**.

9 Click **OK**. The **Switch Section Options** dialog box appears.

Switch Section Options

Local Switch: Avaya IP Office OK

System Switch Section: - Create New - Apply

System Switch Section Settings

Name: Avaya IP Office Section Cancel

Node Code:  Help

Location Code:

Location: Seattle

MWI Integration: Avaya IP Office SIP Station

Local Switch Section Settings

View: Required Parameters Set Defaults

Name	Value
Incoming Hunt Mode	Terminal
Hunt Group Access Code	

10 In the **Local Switch Settings** section, select **Required Parameters** View and configure the following options:

- a In **Incoming Hunt Mode**, select **Terminal** or **Circular** according to how you configured the hunt group in the procedure, [Creating a Hunt Group for MiCollab AM](#).
  - b In **Hunt Group Access Code**, type the hunt group extension you created in the procedure, [Creating a Hunt Group for MiCollab AM](#).
  - c Click **OK**.
- 11 In **MiCollab AM Configuration**, verify that the telephone system is properly added and configured in the **Switches**, **Switch Sections**, and **Integrations** tabs.
  - 12 Select the **Lines** tab.
  - 13 In the table from the **Lines** tab, enter the extension number of each integrated line on the Call Server.

**IMPORTANT** You must enter the PBX extension numbers that the Call Server is configured to answer or the integration will fail. The extension numbers are registered as SIP stations with the IP PBX during system startup.

- 14 Click **OK** to save all changes.

## Configuring MiCollab AM for SIP Failover

MiCollab AM can be configured for automatic failover to the secondary SIP server in the event of the primary/host SIP server failure. Use the instructions provided in this section to add or remove secondary SIP server(s) for failover.

### To add a SIP failover server:

- 1 From **MiCollab AM Configuration**, click the **Integrations** tab.
- 2 From the **Integrations** list, select your integration, and then click **Edit**.
- 3 In the **Integration Options** dialog box, go to the **Local Integration Settings** section.
- 4 From the **View** drop-down list, select **Failover Server Settings**.
- 5 Click the **Add Failover Server** button. Two new rows are added to configure the secondary SIP server.
- 6 In the **Secondary SIP Server Address** and **Secondary SIP Server Port** rows, enter the appropriate value as follows:

Table 6. Secondary SIP Server Address and the Secondary SIP Server Port example

Field	Value
Secondary SIP Server Address	Enter the TCP/IP address or an FQDN of the secondary node.  For example: The IP address 123.45.6.789 as displayed on the Review/Modify SIP Gateway screen.

**NOTE** This integration requires the machine name to be a fully qualified domain name. Therefore, use the Machine Name field as displayed on the Review/Modify SIP Gateway screen during the integration process.

**IMPORTANT** This value must match the configuration on the Gateway of the secondary node.

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Secondary SIP Server Port	Enter the port number of the secondary node. The default value is <b>5060</b> .
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7 From the **View** drop-down list, select **Integration Specific Parameters**. The **Integration Specific Parameters** view appears.

8 In the **Integration Specific Parameters** list, enter the information as shown in the following table:

**NOTE** The parameters in the following table is listed in alphabetical order. The actual Integration Specific Parameters on your system may not be listed in the same order presented in the table below.

Table 7. Integration Specific Parameters

Field	Value
Enable SIP server failover	Select this check box to allow for failover and to enable the failover server setting changes.
Delay (in ms) between Failover attempts	The delay in milliseconds before MiCollab AM attempts to register its port with the SIP server. The default is <b>1000</b> ms.
Incoming off hook delay	800
Outgoing off hook delay	0
On hook delay	300
Type of Call Progress to use for External Calls	How this should be set depends on the gateway used for the integration. <ul style="list-style-type: none"><li>• If the gateway supports call progress through to the endpoint, set to <b>Digital</b>.</li><li>• If the gateway reports early that the call is connected, such as before the phone rings or while the phone is ringing, set to <b>Media</b>.</li></ul>

9 Click **Apply** to save the changes.

10 To add another failover server repeat **Steps 4-9**.

- 11 Click **OK** to close the **Integration Options** dialog box.

### To remove a SIP Failover Server:

- 1 From **MiCollab AM Configuration**, click the **Integrations** tab.
- 2 From the **Integrations** list, select your integration, and then click **Edit**.
- 3 In the **Integration Options** dialog box, go to the **Local Integration Settings** section.
- 4 From the **View** drop-down list, select **Failover Server Settings**.
- 5 In the **Failover Server Settings** view, click the **Remove Failover Server** button.
- 6 At the confirmation prompt, click **Yes** to confirm the deletion.

**NOTE** If multiple servers are listed, the last server address and port pair on the list is deleted first.

- 7 Click **Apply** to save the changes, and then click **OK** to close the **Integration Options** dialog box.

# Changing the Network Binding Order on the MiCollab AM Platform

If your MiCollab AM server platform is a component of two or more local or wide area networks (LANs or WANs), you must make sure that this integration does not interfere with the normal network operation of the server.

By default, MiCollab AM uses the primary (public) network interface card (NIC) in the platform, the first NIC in the network binding order. If you want MiCollab AM to use a NIC other than the first one, you must make several required configuration changes. It is much easier to configure the Integration to use another NIC by simply setting the integration parameter Local IP Address to bind on to the address of the NIC connected to the PBX.


**NOTE** The operating system gives precedence to the first network connection in the list followed by the remaining connections based on their position in the list.

The instructions in this section ensure that the binding order is correct when you set up the integration. If you replace a NIC on the MiCollab AM server platform later, the platform's operating system registers the new adapter at the bottom of its binding order. Restoring the original binding order should correct any problems caused by the change.

**IMPORTANT** The following procedure shifts the binding order of the network interface cards. To determine which NIC is associated with a specific network connection, right-click the connection in the **Network Connections** window, and then select **Properties**.

## Windows Server 2012 R2

To change the binding order of multiple NICs:

- 1 From the taskbar, right-click **Start**, and then go to **Control Panel > Network and Internet > Network and Sharing Center**.
- 2 On the left pane of the **Network and Sharing Center** window, select **Change Adapter Settings**.
- 3 In the **Network Connections** window, press **Alt** to display the menu bar.
- 4 On the menu bar, select **Advanced**, and then click **Advanced Settings**.
- 5 On the **Adapters and Bindings** tab, click the network connection that serves MiCollab AM.
- 6 Click the  (Up Arrow) button to the right of the **Connections** list to move the selected connection to the top of the list.
- 7 Click **OK**, and then close the **Network Connections** window.

## Windows Server 2016 / 2019

To change the binding order of multiple NICs:

- 1 From the taskbar, select **Start > Control Panel**.
- 2 In the **Control Panel**, click **Network and Internet > Network and Sharing Center**.
- 3 On the left pane, select **Change Adapter Settings**.
- 4 Right-click the network connection that serves MiCollab AM and then select **Properties**.
- 5 On the **Networking** tab of the **Local Area Connection Properties** dialog box, select **Internet Protocol Version 4 (TCP/IPv4)**, and then click **Properties**.
- 6 On the **General** tab of the **Internet Protocol Version 4 (TCP/IPv4) Properties** dialog box, click the **Advanced** button.
- 7 On the **IP Settings** tab of the **Advanced TCP/IP Settings** dialog box, clear the **Automatic metric** check box and then type in a low value in the **Interface metric** field. The lower the value, the higher the priority.

**NOTE** For all Windows systems, the value 1 is reserved for the loopback adapter. It is recommended to use a value of 2 or higher for the network connection that serves MiCollab AM.

- 8 Click **OK** on all of the dialog boxes to save the settings, and then close the **Local Area Connection Properties** dialog box.
- 9 Repeat steps 4 through 8 to assign an Interface metric value to all other network adapters.

# Configuring Quality of Service (QoS)

As of version 6.0, MiCollab AM has no internal support for QoS. QoS must now be implemented externally via group policies as Policy-Based QoS. Refer to your operating system's documentation for details.

Table 8. QoS Configuration

Field	Setting
Application Name	At_TelephonyServer.exe
Protocol	Match the setting used for the integration UDP or TCP
Source Port	<p>MiCollab AM requires a range of ports for audio support. The MiCollab AM audio ports start at the Local Media Base UDP Port configured in the <b>Server</b> tab. Each MiCollab AM line reserves 10 ports. Hence, the port range starts from the number configured there, and goes to the last port of the last line. The formula for calculating the highest port number in the range is as follows:</p> $\text{BasePortNumber} + (\text{NumberOfCXPorts} * 10) - 1.$ <p>Hence, if the base port is 10000, and MiCollab AM has 8 lines, then the port range to use would be:</p> <p>10000:10079</p>
DSCP Value	46