

MiCollab Advanced Messaging 9.4 Cisco Unified Communications Manager with SMDI

Integration Technical Note

For version 9.4 and above

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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 Cisco Unified Communications Manager (CallManager) and the Simplified Message Desk Interface (SMDI) protocol.

This document describes how to integrate a MiCollab AM Call Server with a Cisco Unified Communications Manager system using SMDI. Critical application considerations are documented, as well as installation and programming procedures necessary to integrate the unified communications server with Cisco Unified Communications Manager, referred to throughout this document as Unified CM.

Unified CM is the software-based call-processing component of the Cisco IP telephony solution. The SMDI integration is an outband data link integration using an RS-232 serial connection as the link.

Originally used with Centrex, SMDI is now an industry-standard protocol that supplies calling and called-party identification, as well as message-waiting indicator (MWI) set and clear functions through an RS-232 data link. The RS-232 interface carries calling and called-party information to MiCollab AM. Analog single-line stations carry voice and DTMF signaling between the caller and MiCollab AM. When a call is sent to MiCollab AM, the Unified CM sends an accompanying data packet with call-type information over the RS-232 serial connection to MiCollab AM. The data packet is matched with the associated ringing voice mail port and MiCollab AM answers the call with the appropriate dialog.

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

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 Unified CM, please refer to the appropriate Cisco documentation or the Cisco web site, www.cisco.com.

For specific information about SMDI, please refer to the *Simplified Message Desk Interface* technical reference produced by Telcordia® Technologies, formerly known as Bell Communications Research (Telcordia part numbers GR-283 and TR-NWT-000283-SUP01).

Features Supported by This Integration

The following tables list the features supported using the Cisco Unified CM with SMDI integration.

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

Divert to MiCollab AM on	Supported
No Answer	Yes
Busy	Yes
Forward All	Yes
Follow Me	Yes

Table 3. Integration features supported for Cisco Unified CM with SMDI

Feature	Supported	Notes
Automatic subscriber logon	Yes	
ANI/CLI	Yes	
Announce Busy greeting on forward busy calls	No	
Call screening	No	
Caller queuing	No	
DNIS	No	
End-to-end DTMF, attendant console	Yes	
End-to-end DTMF, proprietary telephones	Yes	
Fax ports	Yes	Note 1
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	Yes	
Overflow from MiCollab AM to attendant	Yes	

Feature	Supported	Notes
Overflow to MiCollab AM from attendant	Yes	
PBX-provided disconnect signaling	Yes	Note 2
Revert to operator	Yes	
Transfers, blind	Yes	
Transfers, confirmed	No	
Transfers, fully supervised	No	
Transfers, monitored	No	
Trunk ID for call routing	No	

NOTES

1. Requires separate analog ports or a separate fax server
2. The VG248 and WS-X6624 analog gateways support positive disconnect signaling. Other analog gateways provide reorder or dial tone only.

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.

- The correct message desk terminal number must be assigned to each integrated port for all SMDI integrations. The integration does not function if these entries are incorrect. Assign terminal numbers using the **Lines** tab. Do not enter the actual extension numbers of the ports in this tab; instead, enter their associated terminal numbers. The terminal numbers must be consecutive, starting with port 1. Typically, this number is 0001, unless previously modified in Unified CM programming.
- Blind transfers are the only transfer type that Unified CM with SMDI supports. Because of this limitation, the caller queuing and call screening features of MiCollab AM are not available.
- Positive disconnect supervision is available only on VG248 and WS-X6624 analog gateways. On other Cisco analog gateways, you must configure Unified CM to provide dial tone to MiCollab AM ports when the caller disconnects.
- Unified CM begins each call with ringing, then changes call progress after determining the actual condition of the line.
- Station numbers cannot have a zero as the leading digit. Non-numeric DTMF tones cannot be used as any character in the station number. The maximum length of a station number is ten digits.
- Do not use the MiCollab AM immediate notification feature to any station programmed to forward to voice mail. If MiCollab AM attempts an immediate message notification callout to a station programmed to forward to MiCollab AM, and that station is busy or ring-no-answer (RNA), the callout forwards to the subscriber's mailbox.
- The Cisco Messaging Interface (CMI) software functions in a Cisco Unified CM cluster, but should reside only on the publisher server.
- For Media Gateway Control Protocol (MGCP) gateways to function properly, the MGCP Domain Name configured in Unified CM must match the hostname configured on the gateway device.

Serial Integrations in a Multi-Box Call Server Environment

In a multi-box environment, it is possible that a single serial link connection may need to service two or more Call Servers. The serial link can be terminated on any Call Server or System Server with Call Services within the system. The data is then distributed to the correct Call Server or Call Servers through the network interface of the MiCollab AM system.

- Use the **Link Integration mode** parameter on the **Integration Options** dialog box of the server to configure each server in the system as:

- Normal – the serial link is connected to this server's COM port, and is not passing serial data through the network to other Call Servers
- Link Client – The serial link is connected to another server in the system and is receiving integration data through the network
- Link Server – The serial link is connected to this server and is passing serial data through the network to other Call Servers
- MWI Only – The server is only sending/receiving MWI data to the switch
- If you are terminating the serial link at the System Server, the System Server must have Call Services enabled. It is not required to have lines enabled on the System Server.
- If you use the System Server to perform only MWI operation for the integration, the System Server must have Call Services enabled. It is not required to have lines enabled on the System Server.
- To send serial data independently to multiple Call Servers in the system, use the Perle IOLAN DS1 and TruePort software to configure each participating server in the system. See the *Installing the Perle™ IOLAN™ DS1 Serial to Ethernet Converter* spare parts document for information on the DS1 device and installation instructions.

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.

Telephone System Requirements

NOTE Please refer to the Cisco web site, www.cisco.com, for the current part numbers of the telephone system components in the following list.

- Cisco Media Convergence Server (MCS)
- Cisco Unified CM software version 4.1(3)sr3a
- One analog FXS port for each integrated MiCollab AM line. Use multiple gateways such as those described in Table 4 to provide the number of ports needed for the integration.
- If using a VG248 gateway, one RJ-45-to-RJ-45 rollover serial cable and either an RJ-45-to-DB9 adapter or an RJ45-to-DP25 adapter for SMDI connectivity between the Unified CM server and MiCollab AM
- If using an MGCP gateway such as the VG200, one DB9-to-DB9 null modem serial cable for SMDI connectivity between the Unified CM server and MiCollab AM

Table 4. Analog FXS Port Capacity of Common Voice Gateways

Gateway Model	Analog FXS Ports
VG248	48
Catalyst 6000 FXS Gateway WS-X6624	24
VG200	4

MiCollab AM Requirements

- Properly configured system server platform running Windows Server 2012 R2, Windows Server 2016 (Server with Desktop Experience), Windows Server 2019 (Server with Desktop Experience), or Windows Server 2022 (Server with Desktop Experience)
- MiCollab AM version 9.4 – consult the Mitel Connect web site for the current software patches and service pack information.
- One Dialogic port for each MiCollab AM voice port to be integrated
- One available serial COM port
- Mitel feature file with Cisco Unified CM SMDI Serial Port Integration enabled

- Uninterruptible power supply (UPS) and surge protection device (recommended)

Programming the Telephone System

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

The installing technician should be familiar with programming Unified CM through the Cisco Unified CM Administration application. Refer to the *Cisco Unified CM 4.1(X) SMDI Voice Mail Integration Note* or the online help for specific information on programming the telephone system or gateway devices.

This section of the document provides separate programming instructions for the two classes of voice gateway that this integration currently supports. To start programming your telephone system, proceed as shown in the following table.

Table 5. Programming the Telephone System

If the site uses ...	Then follow the procedures in the section ...
A VG248 voice gateway	Configuring MiCollab AM Ports on a VG248 Voice Gateway
An MGCP voice gateway such as a VG200	Configuring MiCollab AM Ports on an MGCP Gateway

Configuring MiCollab AM Ports on a VG248 Voice Gateway

The procedures in this section describe how to configure station ports in a Cisco VG248 voice gateway platform to support the SMDI integration.

Connecting the Voice Gateway to MiCollab AM

For the physical connection between a MiCollab AM Call Server platform and the VG248 voice gateway, use one adaptor cable that connects to a DB-9 serial connector on the server platform and an RJ-45 modular connector on the voice gateway.

Each VG248 platform has two RJ-45 connectors dedicated to RS-232 asynchronous serial communications. These connectors are labeled ASYNC 1 and ASYNC 2. In a system that incorporates only one VG248 platform, the RS-232 link between the MiCollab AM platform and Cisco Unified CM should be connected to ASYNC 1.

To add the Voice Gateway:

The process of adding voice mail ports to Unified CM consists of two main tasks:

- Adding the voice gateway to Unified CM
- Configuring individual station ports

The following procedure describes how to perform these tasks.

NOTE Before you add the voice gateway to Unified CM, you must retrieve its MAC address. To find this address, select **Display** from the main menu on the VG248 administration console, then select **System Status** from the Display menu.

- 1 On the Device menu in Cisco Unified CM Administration, click **Add a New Device**.
- 2 From the Device Type list, select **Gateway**.
- 3 From the Gateway Type list, select **Cisco VG248 Gateway**.
- 4 Click **Next** to continue.
- 5 In the MAC Address box, type the last ten digits of the gateway's MAC address.
- 6 Accept or modify the description shown in the Description box.
- 7 Click **Insert** to save the voice gateway information.

To configure the individual station ports:

The following procedure assigns a button template and deactivates call waiting on station port 01, then configures all higher-numbered ports on the gateway with the same settings. When the procedure is complete, each of these ports is assigned a directory number (DN).

NOTE This procedure does not configure port 00, which is reserved for MWI operations.

- 1 Click port **01**.
- 2 In the Device Pool list, select **Default**.
- 3 In the Phone Button Template list, select **Standard VGC Phone**.
- 4 Click **Insert** to create a definition for the port.
- 5 When asked if you want to add a directory number for line 1 of this telephone now, click **OK**.
- 6 In the Directory Number box, type the first directory number in the range that you want these ports to occupy.

For example:

If you want the voice gateway to support extensions 3001 through 3048, type **3001** in this box.
- 7 In the Directory Number Configuration form, verify that the Maximum Number of Calls field is set to the default value of **2**.
- 8 Verify that the Busy Trigger field is set to the default value of **1**.
- 9 Click **Add** to save the directory number definition.
- 10 Click **Configure all ports like Port 1** to copy the definition of Port 01 to the higher-numbered ports and generate directory numbers for those ports.

- 11 When asked if you want to configure all ports on the gateway list just as the first port is configured, click **OK**.

To create the Line Group:

- 1 On the Route Plan menu, point to **Route/Hunt**, and then click **Line Group**.
- 2 Click **Add a New Line Group**.
- 3 In the Line Group Name box, type a descriptive name (such as MiCollab AM) for the line group.
- 4 In the Distribution Algorithm list, select **Longest Idle Time**.
- 5 In the Available DN/Route Partition list, select the directory numbers you want to add to the line group. To select more than one number at a time, hold down the Shift key while selecting the numbers you want to add.
- 6 Click **Add to Line Group** to add the selected directory numbers to the line group.
- 7 To modify the order in which the directory numbers in the group should appear while the telephone system is hunting for an available line, select a directory number.
- 8 Click the up and down arrows at the left of the list to move the selected number up or down. The closer the number is to the top of the list, the earlier it appears in the hunt sequence.
- 9 Repeat steps 7 through 8 as needed for the remaining directory numbers you want to move.
- 10 Click **Insert** to save the line group definition.

To create the Hunt List:

The following procedure defines a hunt list based on the line group you have just defined.

- 1 On the Route Plan menu, point to **Route/Hunt**, and then click **Hunt List**.
- 2 Click **Add a New Hunt List**.
- 3 In the Hunt List Name field, type a descriptive name (such as MiCollab AM) for the hunt list.
- 4 In the Cisco Unified CM Group list, select the group containing the telephone system you are integrating with MiCollab AM.

NOTE The designation of this group varies from one site to another.

- 5 Click **Insert**, and then click **OK**.
- 6 On the Hunt List Configuration form, verify that the **Enable this Hunt List** check box is selected.
- 7 Click **Add Line Group** to display the Hunt List Detail Configuration form.
- 8 From the Line Group list, select the line group that you defined in the previous procedure.
- 9 Click **Insert**, and then click **OK**, to add the line group to the hunt list.
- 10 In the Hunt List Configuration form, click **Reset**.

To create the Hunt Pilot:

The following procedure assigns a pilot number to the hunt list you have created.

- 1 On the Route Plan menu, point to **Route/Hunt**, and then click **Hunt Pilot**.
- 2 Click **Add a New Hunt Pilot**.
- 3 In the Hunt Pilot box, type the number that subscribers should dial within the system to log on to their subscriber mailboxes (the internal logon number).
- 4 In the Description box, type a descriptive label (such as MiCollab AM) for the hunt pilot.
- 5 In the Hunt List box, select the hunt list that you created in the previous procedure.
- 6 Clear the **Provide Outside Dial Tone** check box.
- 7 Click **Insert** to save the hunt pilot definition.

To create the Voice Mail Pilot port:

The following procedure associates the hunt pilot you have defined with a voice mail system such as MiCollab AM.

- 1 On the Feature menu, point to **Voice Mail**, and then select **Voice Mail Pilot**.
- 2 Click **Add a New Voice Mail Pilot**.
- 3 In the Voice Mail Pilot Number box, type the number you assigned to the hunt pilot in step 3 of the previous procedure.
- 4 In the Calling Search Space list, select the appropriate space for your site.
- 5 Click **Insert** to save the voice mail pilot port.

To create the Voice Mail Profile:

The following procedure defines the voice mail pilot port you have created as the forwarding destination for unanswered calls in the telephone system.

- 1 On the Feature menu, point to **Voice Mail**, and then select **Voice Mail Profile**.
- 2 Click **Add a New Voice Mail Profile**.
- 3 In the Voice Mail Profile Name box, type a descriptive label (such as MiCollab AM) for the new profile.
- 4 From the Voice Mail Pilot list, select the voice mail pilot port you created in the previous procedure.
- 5 Click **Insert** to save the voice mail profile.

To create the Message Waiting set and clear numbers:

MWI operations in Cisco Unified CM involve three directory numbers: one each for the clear and set actions and one for voice gateway port 00, which is reserved for MWI use. The following procedure creates the directory numbers for the clear and set actions.

- 1 On the Feature menu, point to **Voice Mail**, and then click **Message Waiting**.

- 2 Click **Add a New Message Waiting Number**.
- 3 In the Message Waiting Number box on the Message Waiting Configuration form, type the directory number to be used to clear MWIs.
- 4 In the Description box, type **MWI Clear**.
- 5 In the Message Waiting Indicator group, click **Off**.
- 6 From the Calling Search Space list, select the search space containing the telephones to which this number should apply.
- 7 Click Insert, and then click **Add a New Message Waiting Number**.
- 8 In the Message Waiting Number box, type the directory number to be used to set MWIs.
- 9 In the Description box, type **MWI Set**.
- 10 In the Message Waiting Indicator group, click **On**.
- 11 From the Calling Search Space list, select the same search space that you selected in step 6.
- 12 Click **Insert**.

To add the MWI Port to Unified CM:

The following procedure creates the directory number for gateway port 00.

- 1 On the Device menu, click **Gateway**.
- 2 Search for and select the VG248 voice gateway.
- 3 Click Port **00**.

IMPORTANT In the following step, you must use a number that is not already in use by the Clear and Set actions or by any existing line port.

- 4 In the Directory Number box, type the number that MiCollab AM should use to clear and set MWIs.
- 5 Click **Update** to save your changes.

To configure the Voice Gateway:

The following three procedures describe the settings that you must apply to update the VG248 voice gateway for the changes you have made to Unified CM and to prepare the voice gateway for the integration. All of these settings must be made at the voice gateway's administration terminal.

- 1 On the main menu, click **Configure**.
- 2 On the configuration menu, click **Voice mail**.
- 3 In the voice mail menu, select the settings in the following table and configure them with the values shown.

Table 6. Voice Gateway Configuration

Setting	Value
Voice mail protocol	SMDI
Pilot directory number	The hunt pilot number you created earlier
Number of voice mail ports	The number of lines integrated to MiCollab AM
First voice mail port number	1 (the default)
Forward MWIs to Unified CM	Yes
Forward MWIs to Async 2	No
Unified CM MWI on DN	The directory number you created earlier for the MWI set action
Unified CM MWI off DN	The directory number you created earlier for the MWI clear action

To configure the serial communication settings on the Voice Gateway:

- 1 From the main menu, select **Configure**.
- 2 From the configuration menu, select **Voice mail**.
- 3 In the voice mail menu, select **Async port serial settings**.
- 4 In the async port serial settings menu, select the settings in the following table and configure them with the values shown.

Table 7. Voice Gateway Configuration

Setting	Value
Async port speed	9600 bps
Async 1 data bits	8
Async 1 parity	None
Async 1 stop bits	1

To configure the SMDI settings on the Voice Gateway:

- 1 From the main menu, select **Configure**.
- 2 From the configuration menu, select **Voice mail**.
- 3 From the voice mail menu, select **SMDI settings**.
- 4 From the SMDI settings menu, select the settings in the following table and configure them with the values shown.

Table 8. SMDI setting configuration

Setting	Value
Message desk number	The value in the First Extension box for this integration in MiCollab AM Configuration, without any leading zeros (a value of 1 here corresponds to a First Extension value of 001 or 0001 in MiCollab AM)
Voice mail number length	The same length specified for PBX station numbers in MiCollab AM
Truncate number if too long	No
DN length	The same length specified for extension numbers in MiCollab AM
Forward INV responses to Async 1	No (the default)
Disconnect notification	Yes

Configuring MiCollab AM Ports on an MGCP Gateway

The procedures in this section describe how to configure FXS ports in a Cisco MGCP voice gateway platform to support the SMDI integration.

To install the Cisco Messaging Interface:

MGCP voice gateways rely on the Cisco Messaging Interface (CMI) to support their SMDI data links.

- 1 From the Application menu in Cisco Unified CM Administration, select **Cisco Unified CM Serviceability**.
- 2 From the Tools menu in Cisco Unified CM Serviceability, select **Service Activation**.
- 3 From the appropriate server, select the **Cisco Messaging Interface** box, and then click **Update**.
- 4 From the Application menu, select **Cisco Unified CM Administration**.

NOTE CMI can function in a Unified CM cluster, but can only reside on a single server within the cluster.

To configure the FXS Ports:

Follow these steps to configure the MGCP gateway for all of the analog FXS ports for MiCollab AM.

- 1 On the Device menu within Cisco Unified CM Administration, click **Add a New Device**.
- 2 From the Device type list, select device type **Gateway**, and then click **Next**.
- 3 From the Gateway type list, select a gateway type such as **Cisco VG200**, and then click **Next**.
- 4 In the Domain Name field, enter the hostname configured on the gateway device (see the section, [Programming the Telephone System](#)).
- 5 In the Description field, enter a description such as MiCollab AM for the gateway.
- 6 From the Cisco Unified CM Group list, select the appropriate group if applicable.
- 7 From the Module in Slot 1 list, select the module type installed (for example, **NM-2V**), and then click **Insert**.
- 8 Select the voice interface card(s) installed (for example, **VIC-2FXS**), and then click **Update**.
- 9 Click the **Endpoint Identifiers** link to configure each individual port.
- 10 Select the appropriate device pool, and then click **Insert**.
- 11 Repeat steps 9 and 10 for each port to be used for MiCollab AM.
- 12 Reset the gateway for the changes to take effect.

NOTE Although the Add DN link appears next to each POTS line, this step is not required, as the POTS lines form a Route Pattern from which the DN are derived later.

To configure the Route Group:

Follow these steps to configure a route group, which contain the FXS ports previously configured for MiCollab AM.

- 1 On the Route Plan menu within Cisco Unified CM Administration, point to **Route/Hunt**, and then click **Route Group**.
- 2 Click the **Add a New Route Group** link.
- 3 Give the new route group for MiCollab AM a name such as Seattle MiCollab AM-GW.
- 4 From the Available Devices list, select the name of the device that contains the first POTS line you want to add to the group.

IMPORTANT In the following step, do not accept the default value of All. This setting causes the integration to fail.

- 5 From the Port(s) list, select **1**, and then click **Add to Route Group**.

- 6 Repeat steps 4 through 5 for each FXS port used for MiCollab AM.
- 7 Click **Insert** to complete this task.

To configure the Route List:

Complete the following steps to create and configure the route list, which contain the route group configured in the previous section.

- 1 On the Route Plan menu, point to **Route Plan > Route/Hunt**, and then click **Route List**.
- 2 Click the **Add a New Route List** link.
- 3 Give the new route list for MiCollab AM a name such as SeattleMiCollab AM and provide a description. Select the appropriate Cisco Unified CM Group, if necessary.
- 4 Click **Insert** to continue.
- 5 Click **Add Route Group** and select the previously configured route group (SeattleMiCollab AM-GW) to add to the route list (SeattleMiCollab AM).
- 6 Click **Insert** to complete this task.

To configure the Route Pattern:

Complete the following steps to create and define the route pattern. This number serves as the pilot number for the MiCollab AM hunt group.

- 1 From the Route Plan menu, point to **Route/Hunt**, and then select **Route Pattern**.
- 2 Click the **Add a New Route Pattern** link.
- 3 Enter a route pattern number that conforms to the customers dialing plan.

NOTE The route pattern number is the number subscribers dial to log on to their mailboxes, so choose a number that they can remember easily.

- 4 Select the appropriate numbering plan type.
For example:
If you are installing in North America, select **North American Numbering Plan**.
- 5 Select the appropriate Gateway or Route List (SeattleMiCollab AM).
- 6 Clear the **Provide Outside Dial Tone** box to prevent subscribers from receiving secondary dial tone after entering the first digit.
- 7 Click **Insert** to complete this task.

To configure the Cisco Messaging Interface (CMI):

Complete the following steps to configure the critical settings in the Cisco Messaging Interface (CMI), including the serial communication parameters for the RS-232 link between Unified CM and either MiCollab AM.

- 1 On the Service menu, click **Service Parameters**.

- 2 From the Server list, select the server that has the CMI software installed.
- 3 From the Service list, select **Cisco Messaging Interface**.
- 4 Set the Voice Mail DN parameter to the previously defined route pattern number.
- 5 Fill in the values for the Unified CM Name and Backup Unified CM Name parameters.
- 6 In the Serial Port field, type **COM1**.
- 7 From the Baud Rate list, select **9600**.
- 8 From the Parity list, select **Even**.
- 9 From the Data Bits list, select **7**.
- 10 From the Stop Bits list, select **1**.
- 11 Click **Update** to save the changes.

To create the Voice Mail Pilot port:

The following procedure associates the route pattern you have defined with a voice mail system such as MiCollab AM.

- 1 On the Feature menu, point to **Voice Mail**, and then click **Voice Mail Pilot**.
- 2 Click **Add a New Voice Mail Pilot**.
- 3 In the Voice Mail Pilot Number box, type the number you assigned to the route pattern earlier in this section.
- 4 In the Calling Search Space list, select the appropriate space. This value varies from one site to another.
- 5 Click **Insert** to save the voice mail pilot port

To create the Voice Mail profile:

The following procedure defines the voice mail pilot port you have created as the forwarding destination for unanswered calls in the telephone system.

- 1 On the Feature menu, point to **Voice Mail**, and then click **Voice Mail Profile**.
- 2 Click **Add a New Voice Mail Profile**.
- 3 In the Voice Mail Profile Name box, type a descriptive label (such as MiCollab AM) for the new profile.
- 4 From the Voice Mail Pilot list, select the voice mail pilot port you created in the previous procedure.
- 5 Click **Insert** to save the voice mail profile.

To program the Voice Gateway:

You must program the analog gateway devices before you can use them with Unified CM. Use the following procedure from the Command Line Interface (CLI), perform the following steps to complete this programming.

- 1 Set the hostname to match the MGCP Domain Name previously defined in Unified CM in the section *Configuring the FXS Ports on an MGCP Gateway*.
- 2 Enable generic MGCP support by entering the command **mgcp** in global configuration mode.
- 3 Define the IP address of the MGCP Call-Agent (Unified CM).
- 4 Enter the command **mgcp dtmf-relay codec all mode out-of-band** to enable regeneration of DTMF tones at the remote endpoints.
- 5 Enable support for Unified CM within MGCP by entering the command **ccm-manager MGCP**.
- 6 If applicable, define the IP address of the CCM-Manager Redundant-Host (Backup Unified CM) and the switchback type.
- 7 Enable IP routing and define the default IP route.
- 8 Configure the dial-peer voice ports to be controlled by MGCP by entering the command **application MGCPAPP** in dial-peer configuration mode.
- 9 Save the programming changes and exit the programming interface.

Programming Subscriber Telephones for Voice Mail

The following procedure associates a subscriber telephone with the voice mail profile you have created. The subscriber telephone inherits the voice mail number from the profile.

To program subscriber telephones for voice mail:

- 1 On the Device menu, click **Phone**.
- 2 Search for and select the telephone you want to configure (either a Cisco IP Phone or an analog telephone connected to the voice gateway).
- 3 From the Directory Numbers list, select the number you want to associate with the selected telephone.
- 4 From the Voice Mail Profile list, select the voice mail profile you created in the procedure *To create the Voice Mail Profile*.
- 5 Under Forward Busy, select both **Internal** and **External**.
- 6 Under Forward No Answer, select both **Internal** and **External**.
- 7 Click **Update** to save your changes.
- 8 Repeat steps 2 through 7 for the remaining subscriber telephones you want to program.

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 existing 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 the Telephony Server with the Telephone System**, in the online help.

Configuring MiCollab AM for the Integration During Initial Installation

To configure MiCollab AM for the integration during the initial installation:

- 1 In the **Database Initialization Parameters** dialog box, configure the following options:
 - 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.
SMDI requires a message desk terminal number, not the actual directory number. Typically, **0001** is the first terminal number.
 - c From the **Manufacturer** dropdown list, select **Cisco**.
 - d From the **Model** dropdown list, select **Unified Communication Manager**.
 - e From the **Integration Type** dropdown list, select **SMDI Serial Port**.
- 2 Click **Next**. The **Board Options** dialog box appears.
- 3 Depending on the type of Aculab card you have installed, configure the board options. Refer to the appropriate Spare Parts document for more information on the Aculab card you are installing.
- 4 Click **OK**. The **Switch Options** dialog box appears.
- 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, verify that the following parameters correctly match the Unified CM settings.
 - a In the **Local Integration Settings** section, select the **Communication Settings** view and verify that the parameters match the settings.
 - b Select the **Integration Specific Parameters** view and verify that **Message Desk number**, **Length of PBX Station Numbers**, and **Length of Extensions** are correct.

IMPORTANT If these values are not correct, the integrations will not function.

- 8 Click **OK**. The **Switch Section Options** dialog box appears.
- 9 In the **Switch Section Options** dialog box, configure the following options:
 - a In the **Local Integration Settings** section, select the **Required Parameters** view.
 - b For the **Incoming Hunt Mode** value, select the mode for this integration.
 - c In the **Hunt Group Access Code** field, enter the route pattern number you configured previously in the [Programming the Telephone System](#) section. This is the number users dial to reach 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, configure callouts for the application. For information on configuring callout settings, see the topic *Configuring Callout Settings*, in the online help system.
- 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 Depending on the type of Aculab card you have installed, configure the board options. Refer to the appropriate *Spare Parts document* for more information on the Aculab card you are installing.
 - b Click **OK**.
- 4 Select the **Switches** tab, and click the **Add** button. The **Switch Integration Data Setup** dialog box appears.
 - a From the **Manufacturer** dropdown list, select **Cisco**.
 - b From the **Model** dropdown list, select **Unified Communication Manager**.
 - c From the **Integration Type** dropdown list, select **SMDI Serial Port**.
- 5 Click **OK**. The **Switch Options** dialog box appears.
- 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 In the **Integration Options** dialog box, verify that the following parameters correctly match the Unified CM settings.
 - a In the **Local Integration Settings** section, select the **Communication Settings** view and verify that the parameters match the settings.
 - b Select the **Integration Specific Parameters** view and verify that **Message Desk number**, **Length of PBX Station Numbers**, and **Length of Extensions** are correct.

IMPORTANT If these values are not correct, the integrations will not function.

- 9 Click **OK**. The **Switch Section Options** dialog box appears.
- 10 In the **Switch Section Options** dialog box, configure the following options:
 - a In the **Local Integration Settings** section, select the **Required Parameters** view.
 - b For the **Incoming Hunt Mode** value, select the mode for this integration.
 - c In the **Hunt Group Access Code** field, enter the route pattern number you configured previously in the [Programming the Telephone System](#) section. This is the number users dial to reach MiCollab AM.
 - d 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, configure callouts for the application. For information on configuring callout settings, see the topic *Configuring Callout Settings*, in the online help system.
- 14 Click **OK** to save all changes.

Subscriber Mailbox Configuration for SMDI

Configure the SMDI prefix for all Subscriber mailboxes. Using the MiCollab AM Admin utility, you can modify the SMDI configuration settings in individual mailboxes or use the Template Edit feature to modify them over a range of Subscriber mailboxes. In addition, you can create default SMDI settings and apply them to groups of subscribers through MiCollab AM class of service mailboxes.

SMDI prefix (Answering tab)

Enter the prefix the SMDI interface uses to pad the extension number to a valid packet length. This is necessary to form a standard SMDI data packet. For instance, if you are using a 7-digit SMDI packet and a 4-digit extension number, the SMDI prefix is 000 (where 0 is a prefix digit). For ANI, a 10-digit SMDI packet would require an SMDI prefix of 000000 for the same 4-digit extension number. All subscriber mailboxes within the same switch section must have the same SMDI prefix length. Do not leave this field blank unless the mailbox length matches the length of SMDI packet.

Primary extension number length (Main tab)

Apply the extension number length uniformly to all Subscriber mailboxes in MiCollab AM. In each Subscriber mailbox, the Primary extension field must contain a number having the same length as the extension numbers of the switch.

Alternate extension number length (Answering tab)

Define the alternate extension number length for secondary voice or fax applications as the complete 7- or 10-digit number. This number is the SMDI prefix plus the extension number length: 000XXXX or 000000XXXX (where 0 is the prefix digit and X is the extension digit).