

MiCollab Advanced Messaging 9.3

Dialogic DMG1008 for

Avaya/Nortel Meridian or CS1000

Integration Technical Note

For version 9.3 and above

Notice

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Preface

This Integration Technical Note (ITN) is written for dealers who are experienced with MiCollab Advanced Messaging (MiCollab AM) and are familiar with its procedures and terminology. This document assumes that you are familiar with the features and programming of the Avaya/Nortel Meridian or CS1008 telephone system and the Dialogic 1008 Media Gateway.

This document describes how to integrate MiCollab AM with an Avaya/Nortel telephone system through the Dialogic 1008 Media Gateway (DMG), using the Session Initiation Protocol (SIP) integration. This integration operates exclusively over a TCP/IP-based network; it uses no analog or digital voice telephony ports between the Dialogic 1008 Media Gateway and MiCollab AM, but passes voice communication and signaling information over the network. MiCollab AM can thus be located anywhere within the LAN or WAN.

Critical application considerations are documented, as well as installation and programming procedures necessary to integrate MiCollab AM with the Dialogic 1008 Media Gateway, referred to throughout this document as DMG.

The DMG1008 integration consists of three major components: the telephone system, the Dialogic DMG1008, and MiCollab AM. The telephone system passes all signaling to MiCollab AM through the DMG. The DMG acting as a bridge between the telephone system and MiCollab AM converts the signaling of the telephone system into the Session Initiation Protocol (SIP) for transmission over the network to MiCollab AM.

Each Dialogic DMG1008 supports eight telephone extension lines of the telephone system and provides a network connection to MiCollab AM. These lines are programmed in the telephone system as digital station ports, and as such provide a station set emulation integration to the DMG.

The DMG reads calling-party and called-party data from the LCD display, and then converts the digits and audio stream into the SIP/RTP protocol and delivers it to MiCollab AM through the network interface.

The DMG integration is a SIP trunk integration. The MiCollab AM ports are configured as SIP trunks and uses static SIP endpoints to communicate with the corresponding gateway endpoints of the DMG.

The incoming data is matched with the ringing extension, and MiCollab AM answers with the appropriate dialog. The DMG routes all outgoing calls from MiCollab AM to the telephone system. Message waiting indicator (MWI) operation is also performed through the DMG.

This ITN documents the procedure for setting up the integration. The process consists of programming the telephone system, programming the DMG, and configuring MiCollab AM.

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>
Spare Parts Documentation	<i>Dialogic DMG1008 Digital Media Gateway Installation and Replacement</i>
Spare Parts Documentation	<i>Dialogic DMG2000 Series Media Gateway Installation and Replacement</i>
External Resource at www.dialogic.com	<i>Dialogic® 1000 and 2000 Media Gateway Series Getting Started Guide</i>
External Resource at www.dialogic.com	<i>Dialogic® Media Gateway Installation and Configuration Integration Notes</i>
Online help	MiCollab AM online help system

Features Supported by This Integration

The following tables list the features supported using the Dialogic DMG1008 for Avaya/Nortel Meridian or CS1000 SIP Trunk integration.

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

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

Table 3. Integration Features Supported for Dialogic DMG1008 for Avaya/Nortel Meridian or CS1000 SIP Trunk

Feature	Supported	Notes
Automatic subscriber logon	Yes	
ANI/CLI	Yes	
Announce Busy greeting on forwarded calls	Yes	
Call screening	Yes	Note 1
Caller queuing	Yes	Note 2
DNIS	Yes	

End-to-end DTMF, attendant console	Yes	
End-to-end DTMF, proprietary telephones	Yes	
End-to-end DTMF, joined calls	No	
Fax Tone Detection	Yes	
Internal calling party ID for reply	Yes	
Live record, integrated	No	Note 3
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	
Overflow to MiCollab AM from attendant	Yes	
PBX-provided disconnect signaling	Yes	
Revert to operator	Yes	
SRTP	No	Note 4
TLS	No	Note 4
Transfers, blind	Yes	
Transfers, confirmed	Yes	
Transfers, fully supervised	Yes	
Transfers, monitored	Yes	
Trunk ID for call routing	Yes	
Multiple Integrations	Yes	Note 5

NOTES

1. Only available when using supervised transfers

2. Caller Queuing is specific to each local Call Server. Call Servers within the system are unaware of queued calls to the same subscriber on other Call Servers. For more information, refer to [Critical Application Considerations](#).
3. Live Record is not supported with this SIP integration.
4. 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.
5. 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.

DMG/MiCollab AM Related Critical Application Considerations

- 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](#).
- If you make changes to the parameters on the **Integrations Options** dialog box of the Call Server, you must restart the Call Server to update the DMG configuration. The DMG is configured remotely, during startup of MiCollab AM.
- The network interface card (NIC) supporting the DMG integration must be a 100MB full duplex link or greater. The G.711 PCM codec requires approximately 80kbps for one-way conversation, or 160kbs per MiCollab AM port.
- Use the G.711 protocol is used to communicate with the DMG. MiCollab AM does not support the G.729AB protocol.
- Dialogic software assigns any Dialogic linecards in the system to the first ports in the system. If MiCollab AM is configured for both Dialogic cards and a TCP/IP integration, the Dialogic cards are automatically assigned to the first ports. If this configuration is unacceptable, you can manually re-assign ports using the Boards tab of the MiCollab AM Configuration utility.
- The Dialogic DMG1008LS Inband Analog Media Gateway supports eight ports. Assign each 8-port DMG to a separate integration in MiCollab AM. MiCollab AM must have a unique integration configured for each Dialogic DMG1008LS Inband Analog Media Gateway.
- A unique name must be entered in the SIP Parser Qualifier String field for each integration supporting a DMG device. This is a required parameter in the MiCollab AM **Integrations Options** dialog box. If you configure the DMG with a FQDN (Fully Qualified Domain Name), enter the FQDN of the DMG device in the SIP Parser Qualifier String field. Otherwise, enter a unique name, such as DMG_1, that distinguishes SIP messages generated by one DMG device from any other DMG device in the system. This allows MiCollab AM to handle incoming calls associated with each DMG device correctly.
- Each DMG must be running version firmware version 6.0 SU7 or later. Previous versions of firmware are not supported.

- 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.
- The Call Queuing feature does not transcend the Call Server. Calls may be queued on multiple Call Servers for the same subscriber but Call Servers do not have knowledge of calls in the queue on other Call Servers within the system. Callers may be prompted with specific information about their place in the queue; however, the information pertains to the specific Call Server on which their call is queued.
- MiCollab AM 9.3 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.

Telephone System/DMG Related Critical Application Considerations

- Non-numeric DTMF tones cannot be used as any character in the station number, nor can zero be used as a leading number of the extension. The maximum length of a station number is 10 digits.
- Telephone numbers in the name fields of either subscriber stations or MiCollab AM ports prevent forwarded calls to MiCollab AM from integrating correctly.
- If you plan to use supervised transfers (T-type), we recommend installing the Music on Hold (MOH) feature to assure callers of proper call handling and system operation. Otherwise, callers being transferred to a station by MiCollab AM experience a period of silence and might misunderstand what is happening to their calls.
- The telephone system allows a maximum of 30 hunting steps in each hunt group.

- For Meridian releases prior to version 16.65, the attendant console requires an external DTMF generator for transferring callers to voice mail and logging on to MiCollab AM.
- Overflow from an operator goes to a specific extension number only; it does not overflow past the lead extension number of the MiCollab AM hunt group.
- PBX stations that support the Dialogic DMG cannot be configured as automatic call distribution (ACD) stations. DMG ports must be assigned to a hunt group.
- No display name may be more than 23 characters long. This is the largest text string that Meridian 2616 extension sets can display. Overflow characters can block integrated MiCollab AM operation from stations set with names exceeding this limit.
- For release 18 Meridian software or later, in addition to the programming information provided in this document, add or activate the call-party-name display, option 95. In addition, in the Class of Service (CLS) for MiCollab AM ports, allow Call Party Name Display (CNDA) and Dialed Name Display (DNDA).
- To use camp-on or callback in the telephone system, set hunting denied (HTD) in the station class of service.

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

- Avaya/Nortel CS1000 release 7.6 or prior, or Meridian version 1011 release 14.0 or later
- One M2616 station port for each DMG port; use either a NT8D02AB, QPC578 linecard, or NTDK16BA 48 DLC
- DDSP digit display, option 19
- Enhanced end-to-end (EES) signaling, option 10
- Message Waiting Center (MWC), option 46
- To enable M2616 sets, options ARIE 170 and DSET 88
- To overflow incoming calls from the operator to automated attendant, Attendant Overflow Position (AOP), option 56
- For Release 18 and later, Calling Party Name Display, option 95
- For releases prior to 16.65, the attendant console requires an external DTMF generator for transferring callers to subscriber mailboxes and logging on to MiCollab AM

Dialogic 1008 Media Gateway Requirements

- One Avaya/Nortel m2616 digital station port for each DMG port.
- Each Dialogic Digital Media Gateway 1008 model DMG1008DNIW supports eight m2616 digital stations
 - The Dialogic Digital Media Gateway DMG1008LS model DMG1008LSW must be running DMG firmware version 6.0 SU7 or later. To upgrade the DMG, visit the Mitel Connect website: connect.mitel.com/connect.

NOTE The DMG firmware version 6.0 SU7 can be uploaded from the MiCollab AM Installation Media version 9.3. The firmware update is located in the Utilities folder of the installation media. The path on the media is: \Utilities\Dialogic_DMG\DMG1008DNIW\6.0\SU7. For more information on installing or upgrading the DMG, refer to the *Dialogic 1008 Digital Media Gateway Installation and Replacement* spare parts document.

IMPORTANT Verify that the DMG1008DNIW you are installing is compatible with the upgrade to version 6.0 SU7 before you upgrade it. The serial number of the DMG must be IP006669 or greater. If it is not, contact Mitel Technical Support.

- Consult the Mitel Connect web site for current Dialogic DMG software upgrades and parser file updates

MiCollab AM Requirements

- MiCollab AM version 9.3
- A MiCollab AM software key diskette or feature file with the Dialogic Media Gateway integration enabled and one Virtual SIP and RTP license enabled for each port involved in the integration.
- One or two 100 MB, or 1000 MB (gigabit) network interface cards (NIC) with cables. The NIC used to communicate with the DMG must be a 100MB full duplex card or greater and must be separate and distinct from other network cards in the system.

Programming the Telephone System

Follow the recommendations and programming examples in this section to program the Avaya/Nortel PBX for integration with DMG. 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 telephone system. For detailed programming information on this PBX, refer to the appropriate Avaya/Nortel documentation.

The installing technician should be familiar with programming the telephone system. For detailed information on programming and installing the telephone system, refer to the *Meridian Integrated Services Network, Features Description & Operation Manual*. The Northern Telecom Practice (NTP) library also provides additional information.

Programming the DMG Ports in a Hunt Group

Follow these guidelines to program the telephone system for ports connecting to MiCollab AM in a hunt group arrangement. The information provided here is for Generic X11, Release 14.0 and later.

To program the DMG ports in a hunt group:

- Spread connections to the DMG across the digital station cards in different loops to avoid possible blocking problems in high-traffic situations.
- Program one M2616 terminal number (TN) for each DMG port and configure each TN as a new digital display set.
- Program the extensions into a hunt group. When all DMG ports are busy, the last number in this group should hunt to another extension, which can then forward to the operator or receptionist. (If calls consistently go to the overflow extension, this indicates that you might need to add more lines, an additional DMG, and additional MiCollab AM lines.)
- The PBX allows a maximum of 30 hunt steps.
- NCOS software must be set at a level compatible with your NARS/BARS. If you are allowing long-distance callouts from MiCollab AM, set the NCOS level accordingly.
- Make sure that the message center is allowed in LD 15.
- The class of service (CLS) must contain FBD, WTA, MTD, FNA, HTA, ADD, HFD, MWA, and CNDA.
- Set LHK to 0 for all DMG ports to prevent hunting up the keys.
- The default values CPTA and CPFA allow camp-on to another extension. You must disable the camp-on feature on all DMG ports. To turn this option off, specify CPTD and CPFD (camp-on denied) in the CLS field.
- Specify FITD in the CLS field if flexible incoming tones are enabled in the telephone system. If this option is not enabled, do not specify FITD.

To provide outside trunk access to MiCollab AM:

- If you have direct inward dialing (DID) trunks, assign the first extension on the DMG (the stations programmed in LD 11) as a DID station number. The other stations can be set up as internal extension numbers.
- If you do not have DID service, build an auto terminate route for the combination trunks you want directed to MiCollab AM. Also, in LD 16, the Route Data Block (RDB), answer Yes to the AUTO prompt.
- In LD 14, the Trunk Data block, at the ATDN prompt, specify the extension number of the first line in the DMG. Do this for each trunk you want in the auto terminate route directed to MiCollab AM.

Program the key assignment as shown in the following example. Assign Keys 00 through 15 the functions shown. For Key 00, YYYY represents the DMG's port DN number. In the Hunt field, XXXX represents the extension number (DN) of the next assigned port in the linear hunt group. Be sure to insert the appropriate extension number for your installation. The following is an example of station programming for DMG ports.

IMPORTANT Program the Key assignments as shown. Deviating from these assignments causes the integration to fail.

Table 4. Example programming for DMG ports (LD 11)

Field	Value
TN	
TYPE	2616
CDEN	8D
CUST	0
FDN	
TGAR	0
LDN	NO
NCOS	7
RNPG	0
SCI	0
SSU	
CLS	FBD, WTA, MTD, FNA, HTA, ADD, HFD, MWA, CNDA, CPFD, CPTD
HUNT	XXXX
LHK	0
KEY	00 SCR YYYY (Call Appearance) 07 PROGRAM

13 **MIK** (Message Indication)

14 **MCK** (Message Cancellation)

15 **TRN** (Transfer)

Creating Multiple Subscriber Hunt Group

The telephone system allows a maximum of 30 hunting steps in each hunt group. Thus, to support more than 30 ports, you must establish multiple hunt groups within the telephone system. To distribute call traffic among the hunt groups you create, we recommend the following practices:

To create multiple subscriber hunt groups:

- Divide the subscribers at the site into groups.
 - For example:
You might designate specific floors, buildings, or departments as subscriber groups.
- Instruct the subscribers in each group to forward their phones to the associated hunt group.
- Program speed dial access keys on each subscriber's telephone to connect to MiCollab AM and retrieve messages at the associated hunt group's lead extension number, or instruct the subscribers in each group to dial that number to log on to MiCollab AM.
- In systems that handle automated attendant call traffic, dedicate one or more separate hunt groups for that traffic.

Programming Subscriber Extensions for Voice Mail

Program the subscriber stations to forward to the MiCollab AM pilot number. The type of forwarding depends on the needs of each subscriber. Follow these conditional guidelines for programming subscriber telephones to MiCollab AM.

To program subscriber extensions for voice mail:

- Program Call Forwarding to MiCollab AM from each subscriber station for internal calls, external calls, or both
- In the FDN and Hunt field, specify the lead extension number of the hunt group.
- Class of service (CLS) must contain FNA, MWA, CFTA, and SFA. In addition, if you use blind transfers, HTA must be enabled. If you use monitored or supervised T-type transfers, do not enable HTA.
- To enable the Announce Busy feature of MiCollab AM on Call-Forward Busy calls, program the following parameters in LD 95:

RESN=Yes

HUNT=Busy
- Optionally, you can assign a programmable key to retrieve messages through the MWK response to the KEY prompt.

Table 5. Example programming for a subscriber station (LD 11)

Field	Value
TN	
TYPE	2008
CDEN	4D
CUST	0
FDN	4500
TGAR	0
LDN	NO
NCOS	3
RNPG	0
SCI	0
SSU	
CLS	UNR FBD WTD LPR MTD FNA HTA ADD CFTA MWA SFA AAD IMD XHD IRD NID OLD VCE POD CCSD SWD LND CNDA* DNDA* CFTD SFD MRD DDV CNID ICDD MCTD GPUD DPUD DNDA CFXA ARHD *=Rel 18 or later
HUNT	4500
LHK	0
KEY	00 SCR YYYY 01 TRN 02 A06 03 CFW 4 04 MSB 05 ADL 16 06 MWK 4500

NOTES

1. Station forwards to group 4500 on RNA.
2. Station hunts to group 4500 on busy.

Programming the Dialogic 1000 Media Gateway

Follow the recommendations and programming examples in this section to program the Dialogic 1008 Media Gateway via the DMG Web interface for integration with MiCollab AM. Consult the documentation that shipped with the DMG or go online to download the *Dialogic® 1000 and 2000 Media Gateway Series Getting Started Guide* and the *Dialogic® Media Gateway Installation and Configuration Integration Notes* for more information on programming the DMG.

The DMG ships with a default TCP/IP address and requires initial setup to communicate over the same LAN as MiCollab AM. This section assumes you will use the administration console of the Call Server to initialize the DMG for service with MiCollab AM.

IMPORTANT The Dialogic 1008 Media Gateway must have an TCP/IP address that MiCollab AM can communicate with over the network. If you do not know this information, consult your network administrator for the correct address information required for installing both the DMG and MiCollab AM.

Configuring the TCP/IP Address

The initial programming mode of the DMG can be accessed in either of two ways—through the serial port on the rear panel of the DMG or through the DMG Web interface. Choose one of the following procedures to configure the IP address.

To configure the TCP/IP address through the serial port:

- 1 Connect the serial port of the DMG to a serial COM port of the MiCollab AM server with a DB9 serial cable.
- 2 Select **Start > Programs > Accessories > Communications > HyperTerminal**.
- 3 Enter a value such as DMG in the **New Connection** dialog box, and then click OK.
- 4 In the **Connect To** dialog box, select the COM port to communicate to the DMG, and then click **OK**.
- 5 In the **COM port** dialog box configure the COM port to the following settings:
 - Baud Rate = 38400
 - Parity = None
 - Data Bits = 8
 - Stop Bits = 1
 - Hardware Flow Control = Off
- 6 Press the **Enter** key until the prompt PIMG> appears.

- 7 At the PIMG> prompt type **pwd**.
- 8 Type the default password, *lpodAdmin*, and then press **Enter**.
- 9 At the PIMG> prompt type **quickcfg**, and then press **Enter**. You are prompted to enter the following information:
- 10 Enter a new TCP/IP address in the Client IP address box.
- 11 Enter a new subnet mask in the Client Subnet Mask box.
- 12 Enter the TCP/IP address of the default network gateway in the Default Network Gateway Address box.

NOTE The DMG **must** be restarted for the changes to take effect.

- 13 At the PIMG prompt> type **restart**. You should now be able to connect using the Web interface of the DMG through the LAN connection.
- 14 Proceed to the section, *Configuring MiCollab AM*.

To configure the IP address through the Web Interface:

NOTE All DMGs have the same default TCP/IP address at initial startup. If you are installing more than one Dialogic 1008 Media Gateway you must connect them to the network one at a time to avoid TCP/IP address conflicts

- 1 Connect the DMG to the LAN MiCollab AM is currently operating on.
- 2 You must temporarily change the TCP/IP address of the Call Server to access the DMG. The default IP address of the DMG is 10.12.13.74. Change the Call Server TCP/IP address so it communicates on the same subnet as the DMG. For example, 10.12.13.75
- 3 Start the web browser on the Call Server, and then enter the following address: <http://10.12.13.74>.
- 4 When the **System Login** dialog box appears, enter the default user name, *admin*, and then enter the default password, *lpodAdmin*.
- 5 Click **OK**.
- 6 Select the **Configuration > IP** web page from the main menu. Change the unit's TCP/IP address from the default address by entering the new TCP/IP address in the Client TCP/IP address box.
- 7 Enter a new subnet mask in the Client Subnet Mask box.
- 8 Enter the TCP/IP address of the default network gateway in the Default Network Gateway Address box.
- 9 Click the **Apply Changes** button to save the configuration in the database.
- 10 Click **Restart**, or select **System > Restart** from the main menu. When the Restart Web page appears, click **Restart Unit Now**.

NOTE The DMG **must** be restarted for the changes to take effect.

- 11 Change the temporary Call Server TCP/IP address back to the previous working TCP/IP address. You should now be able to connect to the DMG Web interface using the new IP address.

12 Proceed to the section, [Configuring MiCollab AM](#).

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. You can also leave the **First Extension** box empty.
 - c From the **Manufacturer** dropdown list, select **Avaya / Nortel**.
 - d From the **Model** dropdown list, select **CS 1000** or **Meridian 1**.
 - e From the **Integration Type** dropdown list, select **DMG SSE**.
- 2 Click **Next**. The **Board Options** dialog box appears.

- a From the **Manufacturer** dropdown list, select **Virtual**.
 - b From the **Model** dropdown 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** dropdown 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**.
- 3 Click **OK**. The **Switch Options** dialog box appears.
 - 4 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*.

- 5 Click **OK**. The **Integration Options** dialog box appears.
- 6 In the **Integration Options** dialog box, configure the options as follows:
 - a In the **Local Integration Settings** section, select the **Required Parameters** view, and configure the following parameters:

Table 6. Required Parameters View – Integration Options

Field	Value
Telephony Switch Type	M1
SIP Server Address	Enter the TCP/IP address or FQDN of the DMG device.
SIP Server Port	Enter the SIP port on which the DMG device is listening for SIP messages. The default value is 5060 .
SIP Domain Name	Enter the TCP/IP address of MiCollab AM

Transport for outgoing SIP messages	Enter the transport protocol used for sending SIP messages to the DMG device. Enter UDP or TCP. The default value is UDP .
SIP Device Name	<p>Enter the hunt group number for the integration. This must match the hunt group number set in the switch section associated with this integration.</p> <p>NOTE This field is used when MiCollab AM makes outgoing calls. The hunt group number is displayed on the caller's phone (instead of the MiCollab AM port number) during outgoing calls.</p>
Local IP Address to Bind On	Select the local TCP/IP address of the MiCollab AM machine. This is a drop-down box and displays all available local TCP/IP addresses.
SIP Local Connection Port	The TCP port MiCollab AM listens for incoming SIP messages. The default value is 5060 .
SIP parser qualifier string	<ul style="list-style-type: none"> • 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. • Multiple SIP integrations on the call server: Use a string that is unique to each SIP integration. <p>For example:</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 5000@172.16.4.202. <i>The hunt number must be unique across all IP integrations.</i></p> <p>The Fully Qualified Domain Name (FQDN) of the switch, such as pbx1.sipdomain.com.</p> <p>NOTE This setting must match a string in the SIP header that is unique to this particular integration</p>
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 Integration Settings** section, select the **Dialogic Media Gateway Settings** view and configure the following parameters:

Table 7. Dialogic Media Gateway Settings Parameters for Integration Options

Field	Value
DMG Model	Select Digital as the type of DMG device used for this integration. The default value is Analog .
Administrator Name*	Enter the administrator user name configured on the DMG device. The default value is admin .
Administrator Password*	Enter the administrator password configured on the DMG device. The default value is IpodAdmin .

* **NOTE** Requires the Administrator name and password of the DMG device to configure the device for the integration.

c In the **Local Integration Settings** section, select the **Integration Specific Parameters** view and configure the following option:

- Set the **Type of Call Progress to use for External Calls** value. How this should be set depends on the gateway used for the integration as follows:
 - **Digital:** Select Digital if the gateway supports call progress through to the endpoint.
 - **Media:** Select Media if the gateway reports early that the call is connected, such as before the phone rings or while the phone is ringing.

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

8 In the **Switch Section Options** dialog box, configure the following options:

- a** In the **Local Integration Settings** section, select the **Required Parameters** view.
- b** In the **Incoming Hunt Mode** field, enter the mode for this integration.

NOTE Select the hunt mode that matches the hunt mode type in IP PBX programming.

c In the **Hunt Group Access Code** field, type the code that was programmed in the telephone system.

d Click **OK**.

9 Continue through and complete the configuration. At the end of the configuration, a confirmation dialog box appears. Click **OK**.

10 If **MiCollab AM Configuration** does not open automatically after the configuration completes, open **MiCollab AM Configuration**, and select the **Lines** tab.

11 In the table from the **Lines** tab, enter the extension numbers on the Lines in which they appear. Verify that the line numbers match the hunt group member DNs defined in the telephone system programming.

For information on configuring callout settings, see the topic *Configuring Callout Settings*, in the online help system.

12 Click **OK** to save all changes.

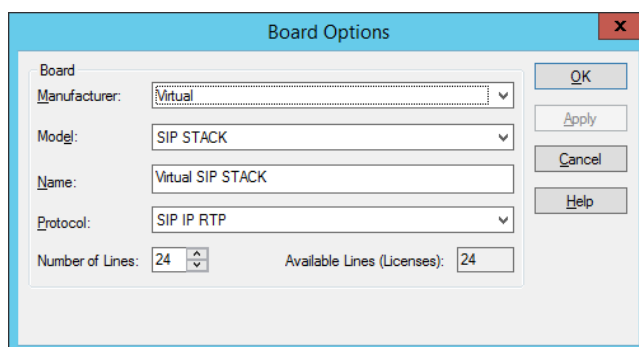
Configuring Existing MiCollab AM for the Integration

To configure existing 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** dropdown list, select **Virtual**.
 - b From the **Model** dropdown 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** dropdown 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 **Switches** tab and click the **Add** button. The **Switch Integration Data Setup** dialog box appears.
 - a From the **Manufacturer** dropdown list, select **Avaya / Nortel**.
 - b From the **Model** dropdown list, select **CS 1000** or **Meridian 1**.
 - c From the **Integration Type** dropdown list, select **DMG SSE**.
 - 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, configure the options as follows:

- a In the **Local Integration Settings** section, select the **Required Parameters** view, and configure the following parameters:

Table 8. Required Parameters View – Integration Options

Field	Value
Telephony Switch Type	M1
SIP Server Address	Enter the TCP/IP address or FQDN of the DMG device.
SIP Server Port	Enter the SIP port on which the DMG device is listening for SIP messages. The default value is 5060 .
SIP Domain Name	Enter the TCP/IP address of MiCollab AM
Transport for outgoing SIP messages	Enter the transport protocol used for sending SIP messages to the DMG device. Enter UDP or TCP. The default value is UDP .
SIP Device Name	Enter the hunt group number for the integration. This must match the hunt group number set in the switch section associated with this integration. NOTE This field is used when MiCollab AM makes outgoing calls. The hunt group number is displayed on the caller's phone (instead of the MiCollab AM port number) during outgoing calls.
Local IP Address to Bind On	Select the local TCP/IP address of the MiCollab AM machine. This is a drop-down box and displays all available local TCP/IP addresses.
SIP Local Connection Port	The TCP port MiCollab AM listens for incoming SIP messages. The default value is 5060 .
SIP parser qualifier string	<ul style="list-style-type: none">• 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.• 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 .
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- b** In the **Local Integration Settings** section, select the **Dialogic Media Gateway Settings** view and configure the following parameters:

Table 9. Dialogic Media Gateway Settings Parameters for Integration Options

Field	Value
DMG Model	Select Digital as the type of DMG device used for this integration. The default value is Analog .
Administrator Name*	Enter the administrator user name configured on the DMG device. The default value is admin .
Administrator Password*	Enter the administrator password configured on the DMG device. The default value is IpodAdmin .

*** NOTE** Requires the Administrator name and password of the DMG device to configure the device for the integration.

- c** In the **Local Integration Settings** section, select the **Integration Specific Parameters** view and configure the following option:

- Set the **Type of Call Progress to use for External Calls** value. How this should be set depends on the gateway used for the integration as follows:
 - Digital:** Select Digital if the gateway supports call progress through to the endpoint.
 - Media:** Select Media if the gateway reports early that the call is connected, such as before the phone rings or while the phone is ringing.

- 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** In the **Incoming Hunt Mode** field, enter the mode for this integration.

NOTE Select the hunt mode that matches the hunt mode type in IP PBX programming.

- c** In the **Hunt Group Access Code** field, type the code that was programmed in the telephone system.
 - d** Click **OK**.
- 11** In **MiCollab AM Configuration**, verify that 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 numbers on the Lines in which they appear. Verify that the line numbers match the hunt group member DNs defined in the telephone system programming.
- For information on configuring callout settings, see the topic *Configuring Callout Settings*, in the online help system.
- 14** Click **OK** to save all changes.

Testing the TCP/IP Connection

To verify communication between MiCollab AM and to determine if changes have been accepted by the DMG, open the Event Viewer on the system server.

- 1 Select **Start**, right-click My Computer, and then click **Manage**.
- 2 In the **Computer Management** dialog box, click **Event Viewer**, and then double-click **Application**.

Look for three event types of messages in the Event Viewer. The source is always AT_SysCfg. The three event types are:

- SUCCESS/INFORMATIONAL
- ERRORS
- WARNINGS

The SUCCESS/INFORMATIONAL entries state the DMG was updated successfully either with or without a device restart. They are:

- DMG device successfully updated (no restart required)
- DMG device successfully updated and restarted

The ERRORS entries state the DMG failed to update or failed to restart, if a restart was required. These Event Viewer entries are generated because of a communication problem between MiCollab AM and the DMG or MiCollab AM was not shut down prior to making changes in the **Required Parameters** section of the **Integration Options** dialog box. They are:

- DMG device update failed
- DMG device successfully updated, restart failed (if required)

The WARNING entry is generated when the DMG requires an update but the user purposely chose to not upload configuration data. The entry is:

- DMG device requires update (user selected not to upload configuration data)

Once the DMG is updated successfully, continue with the completion of the MiCollab AM installation.

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 document ensure that the binding order is correct when you set up the integration. However, 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, click **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 Press **Alt** to display the menu bar.
- 5 On the menu bar, select **Advanced**, and then click **Advanced Settings**.
- 6 On the **Adapters and Bindings** tab of **Advanced Settings**, click the network connection that serves MiCollab AM.
- 7 Click the up arrow button to the right of the **Connections** list as many times as needed to move the connection to the top of the list.
- 8 Click **OK**, and then close the **Network Connections** window and the **Control Panel**.

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 10. 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 Server 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