

MiCollab Advanced Messaging Mitel TSW VM Serial Integration Technical Note

For version 9.0 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 MiCollab AM procedures and terminology. It also assumes that you are familiar with the features and programming of Mitel TSW.

This document describes how to integrate MiCollab AM with a Mitel TSW system using the Voice Mail integration, which is an outband data link integration.

The Mitel TSW Voice Mail interface is used to send calling-party and called-party information to MiCollab AM. Analog extensions are used for voice and DTMF signaling. When a call is sent to MiCollab AM, Mitel TSW sends a data packet with call type information over the RS-232 serial connection.

The data packet is matched with the associated ringing voice mail port and MiCollab AM answers the call with the appropriate dialog. Message-waiting indicator (MWI) operation is also performed through the RS-232 serial link.

Refer to the Mitel *Extra Facility Voice Mail*, VM description for complete details on the VM specifications.

Use this document in conjunction with the *System Installation and Configuration Guide*, the *System Administration Guide*, and with the MiCollab AM online help system.

References

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

Documentation

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

- **Developer Resources.** Contains programming guides and API references for developers for integrating the server clients and web applications with MiCollab AM.
- **Integration Technical Notes (ITN).** Contains a set of guides that describe the integration methods and instructions for a variety of phone systems to work with MiCollab AM. The ITNs are generally used by resellers or administrators who are experienced with MiCollab AM and familiar with the integration procedures and terminology.
- **Quick Reference Card (QRC).** Contains shortcuts and quick instructions telling subscribers how to access and use the messaging system.
- **Server Documentation.** Available as a PDF only. Contains administrative guides for administrators about installing, configuring, and administering the messaging system, and user guides for subscribers about accessing the messaging system and checking and sending messages.

- **Spare Parts Documentation.** Contains a set of guides that describe the instructions for installing and configuring hardware parts to work with MiCollab AM. These documents are written for Mitel certified MiCollab AM technicians who are experienced with MiCollab AM and familiar with the procedures and terminology.
- **Software Release Notice (SRN).** This notice introduces the new features, capabilities, and hardware/software requirements for the corresponding MiCollab AM version.

Documentation Updates

Documentation updates may be available from the following sources:

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

Help

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

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

Document Conventions

The following conventions are used in this document:

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

Example: **Enter**

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

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

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

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

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

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

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

Example: Type the password *voicemail*.

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

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

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

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

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

Features Supported by this Integration

Table 1. 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
Do Not Disturb	No

Table 2. Integration features supported for Mitel TSW VM

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

DNIS	No	
End-to-end DTMF, attendant console	Yes	
End-to-end DTMF, proprietary telephones	Yes	
Fax ports	Yes	Note 2
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 from personal greeting	Yes	
Transfers, blind	Yes	
Transfers, confirmed	Yes	
Transfers, fully supervised	Yes	
Transfers, monitored	Yes	
Trunk ID for call routing	No	

NOTES

1. Requires Mitel TSW software version BC10 or later
2. Requires separate industry standard analog lines
3. Third-party conferences are not allowed on an integrated VM port. To use this feature, you must have a separate non-integrated port.

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 Mitel TSW voice mail port number of each analog extension must be assigned correctly to each integrated MiCollab AM port. The integration cannot function if these entries are incorrect. The voice mail port numbers and format (POFMT) are programmable parameters and are defined during the initiation of the voice mail port of Mitel TSW.
- Program the instrument category (ICAT) of the analog EL6 extensions that serve MiCollab AM for enhanced global tones and loop current feed disconnect.
- The call screening feature requires T-type supervised transfers. To use this feature without having to remove diversion programming from the subscriber telephone, set the traffic matrix (TCMAP) and TRAF parameter of the extension category to restrict voice mail ports from calling other voice mail ports.
- The use of traffic-restricted voice mail ports is not compatible with blind transfers. Mitel recommends that you use the monitor transfer type unless the application requires a T-type supervised transfer.
- Do not enable any communication protocol such as XON/XOFF on the ICU port serial connection for MiCollab AM.
- If malicious call trace is enabled on the voice mail ports, no disconnect packet is sent to MiCollab AM from the ICU port.
- When using reason code diversions from subscriber telephones, diverted calls always go to the common diversion position. If MiCollab AM is chosen as the common diversion position (CDCOI), ICS calls are diverted to this position, even if individual diversion (CDINI) has been programmed to divert calls elsewhere.
- Station numbers cannot have a 0 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.

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 for MiCollab AM.

Telephone System Requirements

- Mitel TSW with system software version BC6 or later. For software versions prior to BC6, please consult Mitel for the software patches that may be required.
- One ICU or ICU2 port provides the RS-232 serial interface required. The recommended baud rate is 4800 on ICU boards. You can use 9600 baud on ICU2 boards and ICU boards; however, follow ICU port specifications for use on ICU boards.
- A TSR 902 0472/15000 cable for the RS-232 connection between the filter top and MiCollab AM
- One ELU29 analog extension board supports up to 16 analog MiCollab AM ports

MiCollab AM Requirements

- Properly configured system server platform running Windows Server 2008 R2 with Service Pack 1, Windows Server 2012 R2, or Windows Server 2016 (Server with Desktop Experience)
- MiCollab AM 9.0 – consult the Mitel web site for the current software patches and service pack information (see [References](#) earlier in this document).
- Mitel software key diskette or feature file with the Mitel TSW Analog RS232 integration enabled
- An available serial COM port
- One analog Dialogic port for each MiCollab AM voice port to be integrated
- An uninterruptible power supply and surge protection device (recommended)

Programming the Telephone System

Follow the recommendations and programming examples in this section to program Mitel TSW for integration with MiCollab AM. Programming examples show the commands and parameters of version BC9 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 software version or other software versions of Mitel TSW, refer to the appropriate *ASB Basic Exchange and Extra Facility* documentation and the Mitel TSW OEM country-specific documentation.

Initiating the Number Series for the Analog Extensions

Initiate extension numbers in Number Analysis for the MiCollab AM extensions. Use **EX** as the NUMTYP. Choose directory numbers that are appropriate for your numbering plan.

For example:

```
NANSI:NUMSE=1501&&1516,NUMTYP=EX;
```

To verify your work, type the following command:

```
NADAP;
```

Programming the Category for MiCollab AM Ports

To program the category for MiCollab AM Ports:

- 1 Set the Extension Category code for the MiCollab AM ports. Use a separate category for the MiCollab AM ports.
- 2 Program the TRAF parameter of CAT so that MiCollab AM ports are not restricted from calling each other unless the application requires a specific restriction.

For example:

```
EXCCS: CAT=1,TRAF=03151515,SERV=00001000,  
CDIV=000060000,ROC=000000,ADC=010000301;
```

To verify your work, type the following command:

```
EXCCP:CAT=1;
```

Initiating the Analog MiCollab AM Ports

Initiate the ELU29 analog extension ports and assign directory numbers for all of the MiCollab AM ports. Choose directory numbers that are appropriate for your numbering plan. ICAT=0015 assigns enhanced

global tones for call progress and loop current disconnect supervision to the ports. ICAT=0014 may also be used for voice ports.

For example:

EXTEL:DIR=1501&&1516,EQU=2-1-30-1, TYPE=EL6,CAT=1,ICAT=0015;

To verify your work, type the following command:

EXDDP:DIR=1501&&1516;

Initiating the Hunt Group

To initiate the Hunt Group:

- 1 Initiate a hunt group and assign the MiCollab AM extensions to the group. Specify the type as Longest Free Hunting and set Queuing to 10. Define the SEL parameter to allow overflow diversion when all ports are busy, if desired.

For example:

GHGRI:GRP=1500,LIM=1,SERV=1000,TRAF=15,SEL=110,QUE=10;

To verify your work, type the following command:

GHDAP:GRP=1500;

- 2 Assign the MiCollab AM directory numbers to the hunt group.

For example:

GHGMI:GRP=1500,DIR=1501&&1516;

To verify your work, type the following command:

GHDAP:GRP=1500;

- 3 You can program the MiCollab AM ports to divert when they are unavailable. For example, the following programming command diverts calls intended for MiCollab AM to the attendant, if all ports were busy or RNA.

For example:

CDINI:DIR=1500,DIV=00; (00=operator)

To verify your work, type the following command:

CDIDP:DIR=1500;

Initiating the Serial ICU Port Information Computer Function

To initiate the Serial ICU Port Information computer function:

- 1 Initiate the Information Computer Function for the Voice Mail serial port. Set the directory format length (DFMT) to match the directory number length of the extensions, set the update function (UPDFCN) to YES, and set the FILLER to 32 (space).

The recommended baud rate is 4800 on ICU boards. You can use 9600 baud on ICU2 boards and ICU boards; however, follow ICU port specifications for use on ICU boards.

```
ICFUI:IFCIND=0,EQU=1-1-40-0,RATE=9600,DFMT=4,  
UPDFCN=YES,PARITY=EVEN,CHECK=YES,TXC=NO,FILLER=32;
```

- 2 Enable MWI capability for the ICU port.

For example:

```
ICFUC:MWF=ALL;
```

To verify your work, type the following command:

```
ICFUP:IFCIND=0;
```

- 3 Initiate the message waiting data for the voice mail port. Define the system ID (SID) of the PBX, the DTXT, and group number (DIG) to be called when subscribers press the message-waiting button (MWC) to retrieve messages.

For example:

```
ICMWC:SID=01,KFCN=MWC,DIG=1500;
```

To verify your work, type the following command:

```
ICMWP:SID=1;
```

Initiating the Serial Port Voice Mail Function

To initiate the serial port voice mail function:

- 1 Initiate the Voice Mail function for the serial port. Set the port format (POFMT) to 3. Set the Voice Mail Functionality (VMF) to EXTN3 if ANI/CLI services is used. If ANI/CLI services are not required, set VMF to EXTN2.

```
VMFUI:IFCIND=0,VMF=EXTN2,POFMT=3;
```

To verify your work, type the following command:

```
VMFUP;
```

- 2 Initiate the voice mail port:

```
VMPOI:IFCIND=0,DIR=1501&&1516;  
VMPOI:GRP=1500;
```

To verify your work, type the following command:

```
VMPOP:IFCIND=0;
```

Programming Message Waiting for Subscriber Telephones

To program message waiting for subscriber telephones:

- 1 Digital subscriber telephones can have an MWI key assigned in addition to the message waiting display on their LCD telephones. Subscribers can press the lit MWI key to retrieve messages from MiCollab AM. Use the key system function key change command to assign an MWI key appearance on each subscriber telephone.

For example:

```
KSFKC:DIR=2001&&2299,KEY=2,FCN=MEW;
```

To verify your work, type the following command:

```
KSFKP:DIR=2001&&2299;
```

- 2 Analog subscriber telephones can receive a pling ring for MWI or a special dial tone. Use the ASPAC command to set either pling ring or special dial tone.

For example:

```
ASPAC:PARNUM=88,PARVAL=1;
```

(PARVAL=1 sets special dial tone and PARVAL=0 sets pling ring.)

NOTE When PARVAL=0 the *Message Waiting* text message on digital set displays is not available.

- 3 Program the time interval between pling rings when pling is used for message notification. The following example sets the pling interval to fifteen minutes.

For example:

```
ASPAC:PARNUM=45,PARVAL=90;
```

To verify your work, type the following command:

```
ASPAP:PARNUM=45;
```

Programming the Call Diversion for Subscriber Telephones

Assign the MiCollab AM hunt group as the diversion point for subscribers. Use the CDCOI command to create a common diversion to voice mail for subscribers or use the CDINI command to create individual diversions.

For example:

```
CDINI:DIR=2001&&2299,DIV=1500;
```

To verify your work, type the following command:

```
CDIDP:DIR=2001&&2299;
```

If call diversion is not programmed, subscribers must use the FOLLOW ME feature to divert calls to MiCollab AM.

NOTE If MiCollab AM is the common diversion position (CDCOI), then ICS calls are always diverted to this position, even if CDINI has been programmed to divert calls elsewhere. In other words, reason code diversion always goes to the common diversion position. Refer to the VIM online book for more information on programming reason code diversions.

Completing the Mitel TSW Programming

Verify that the programming is correct by using the print command related to each executable command.

Make sure that the following program units are installed in Mitel TSW in accordance with the Line Interface Module (LIM) disposition table, as follows:

- DIR
- MWP
- DIM
- IHAH
- ILP
- IDP
- IHH

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 **Mitel**.
 - d From the **Model** dropdown list, select **MiVoice MX-ONE**.
 - e From the **Integration Type** dropdown list, select **Analog RS232**.
- 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, configure the following options:
 - a In the **Local Integration Settings** section, select the **Communication Settings** view.
 - b In the **TCP/IP Port number** field, enter the port number programmed in Mitel TSW.
- 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 In the **Incoming Hunt Mode** field, enter the mode for this integration.
 - c In the **Hunt Group Access Code** field, enter the hunt group access code you configured previously in the section, [Initiating the Hunt Group](#). This is the pilot number that 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.

