

# MiCollab Advanced Messaging 23.2

## NEC NEAX 2000/2400 with MCI

### Integration Technical Note

For version 23.2 and above

## Notice

The information contained in this document is believed to be accurate in all respects but is not warranted by Mitel Networks™ Corporation (MITEL®). Mitel makes no warranty of any kind with regards to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The information is subject to change without notice and should not be construed in any way as a commitment by Mitel or any of its affiliates or subsidiaries. Mitel and its affiliates and subsidiaries assume no responsibility for any errors or omissions in this document. Revisions of this document or new editions of it may be issued to incorporate such changes.

No part of this document can be reproduced or transmitted in any form or by any means - electronic or mechanical - for any purpose without written permission from Mitel Networks Corporation.

## Trademarks

The trademarks, service marks, logos and graphics (collectively "Trademarks") appearing on Mitel's Internet sites or in its publications are registered and unregistered trademarks of Mitel Networks Corporation (MNC) or its subsidiaries (collectively "Mitel") or others. Use of the Trademarks is prohibited without the express consent from Mitel. Please contact our legal department at [legal@mitel.com](mailto:legal@mitel.com) for additional information. For a list of the worldwide Mitel Networks Corporation registered trademarks, please refer to the website: <http://www.mitel.com/trademarks>.

© Copyright 2023, Mitel Networks Corporation

All rights reserved

# Contents

<b>Preface</b>	<b>5</b>
References	5
Documentation	5
Documentation Updates	6
Help	6
Document Conventions	6
Features Supported by this Integration	7
<b>Critical Application Considerations</b>	<b>10</b>
Additional Considerations for NEAX 2000	10
Additional Considerations for NEAX 2400	10
Additional Considerations for NEAX 2400 with 4200 Software	11
Serial Integrations in a Multi-Box Call Server Environment	11
<b>Installation Requirements</b>	<b>13</b>
Telephone System Requirements	13
MiCollab AM Requirements	14
<b>Programming the NEC NEAX 2000 IVS</b>	<b>15</b>
Configuring the AP00 Card for the MCI Port	15
Programming the Analog VMS Ports for MiCollab AM	17
Programming the UCD Group for MiCollab AM Ports	18
Programming the Subscriber Stations	19
Completing the NEAX 2000 IVS Programming	20
<b>Programming the NEC NEAX 2400 IMX</b>	<b>21</b>
Configuring T1 Channels (Optional)	21
Configuring the I/O port for the MCI Link	22
Programming the MCI Port	22
Programming the MiCollab AM Ports	23
Programming the UCD Group	24
Programming the Subscriber Stations	24
Completing the NEAX 2400 IMX Programming	24
<b>Configuring MiCollab AM</b>	<b>25</b>

Configuring MiCollab AM for the Integration During Initial Installation 25

Configuring Existing MiCollab AM for the Integration 26

# 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. It also assumes that you are familiar with the features and programming of the NEC NEAX 2000 IVS or NEC NEAX 2400 IMX telephone system.

This document describes how to integrate MiCollab AM with a NEAX 2000 IVS or NEAX 2400 IMX telephone system using the Feature 2 application of the NEC Message Center Interface (MCI). The NEAX MCI integration is an outband data link integration.

The MCI link is an RS-232 serial data connection between the NEAX and MiCollab AM. It is used to send calling- and called-party information to MiCollab AM. Analog station or T1 ports programmed into a UCD hunt group and connected to MiCollab AM voice ports carry voice and DTMF signaling.

Incoming calls to MiCollab AM are directed to the UCD pilot number, the UCD reports the calling information to the MCI software, and a data packet with call type information is sent over the MCI link, while ringing is sent to the associated analog port.

MiCollab AM matches the data packet with the ringing analog port and answers the call with the appropriate dialog. Message-waiting indicator (MWI) operation is performed through the RS-232 serial link.

## References

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

## Documentation

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

- **Administration Documentation.** Available as a PDF only. Contains the following:
  - **Administration Guides.** Available as a PDF only. Contains administrative guides for administrators about how to manage and configure the messaging system.
  - **Quick Reference Cards (QRC).** Contains shortcuts and quick instructions telling subscribers how to access and use the messaging system.
  - **User Guides.** Available as a PDF only. Contains user guides for subscribers about accessing the messaging system and checking and sending messages.
- **Server Documentation.** Available as a PDF only. Contains the following:

- **Developer Resources.** Contains programming guides and API references for developers for integrating the server clients and web applications with MiCollab AM.
- **Installation and Configuration.** Available as a PDF only. Contains installation and configuration guides for server administrators about how to install and configure the messaging system.
- **Integration Technical Notes (ITN).** Contains a set of guides that describe the integration methods and instructions for a variety of phone systems to work with MiCollab AM. The ITNs are generally used by resellers or administrators who are experienced with MiCollab AM and familiar with the integration procedures and terminology.
- **Spare Parts Documentation.** Contains a set of guides that describe the instructions for installing and configuring hardware parts to work with MiCollab AM. These documents are written for Mitel-certified MiCollab AM technicians who are experienced with MiCollab AM and familiar with the procedures and terminology.
- **Software Release Notice (SRN).** This notice introduces the new features, capabilities, and hardware/software requirements for the corresponding MiCollab AM version.

## Documentation Updates

Documentation updates may be available from the following sources:

- Mitel-certified technicians can view or download documents and program files from our partner web site: [www.mitel.com](http://www.mitel.com)

## Help

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

## Document Conventions

The following conventions are used in this document:

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

Example: **Enter**

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

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

- **Reference to Document** Titles of other documents are shown in italics.

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

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

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

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

**Example:** Type the password *voicemail*.

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

**WARNING** A warning paragraph advises you of circumstances that can result in the loss of data, harm to the MiCollab AM System Server platform, or personal harm.

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

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

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

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

Table 1. References

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

## Features Supported by this Integration

The following tables list the features supported with the NEC NEAX MCI integration.

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

Divert to MiCollab AM on	Supported
No Answer	Yes
Busy	Yes

Divert to MiCollab AM on	Supported
Forward All	Yes
Do Not Disturb	Yes

Table 3. Integration features supported for NEAX MCI

Feature	Supported	Notes
Automatic subscriber logon	Yes	
ANI/CLI	Yes	Note 1
<i>Announce Busy</i> greeting on forward busy calls	Yes	
Call screening	Yes	
Caller queuing	Yes	
DNIS	Yes	Note 1
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	
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	No	
PBX-provided disconnect signaling	Yes	Note 3



Feature	Supported	Notes
Revert to operator	Yes	
Transfers, blind	Yes	
Transfers, confirmed	Yes	
Transfers, fully supervised	Yes	
Transfers, monitored	Yes	
Trunk ID for call routing	Yes	

#### NOTES

1. Using NEAX 2400 level 6200 version F or NEAX 2000 series 1700
2. Requires separate analog ports or fax server
3. When using loop-current disconnect provided by the PBX analog linecard

# 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.

- No error or alarm condition is generated on either the NEAX or the MiCollab AM system when the MCI data link is disrupted.
- Calls to stations in Do Not Disturb (DND) forward to MiCollab AM as busy forwarded calls. For this reason, subscribers should not use DND and the *Announce Busy* feature of MiCollab AM at the same time.
- MiCollab AM subscribers without telephone extension devices must not have the MWI feature enabled in their mailboxes.
- Calls to any UCD group within the same tenant are reported to the MCI serial link and to MiCollab AM. Data packets from non-MiCollab AM UCD groups generate errors in MiCollab AM. To avoid invalid UCD data being sent to MiCollab AM, program the UCD hunt group for MiCollab AM into a separate tenant of the telephone system.
- Use only analog PBX linecards that support open loop disconnect signaling.
- MiCollab AM voice ports must be members of the UCD group to receive calling- and called-party information from the MCI port.
- Do not enable the Message Waiting Set capability for station users—Message Waiting and Message Reminder Set features must be disabled. If both MiCollab AM and end users are able to set and clear message waiting (MW), conflict and confusion is the result.

## Additional Considerations for NEAX 2000

- The pilot number of the MiCollab AM UCD group may be a phantom number. However, if a phantom number is used, callers transferred from the attendant console to voice mail hears a prompt explaining that extension XXXX (the phantom pilot number) does not answer before playing the main greeting.

## Additional Considerations for NEAX 2400

- Do not assign a phantom number as the pilot number of the UCD group. Instead, assign the first port of the UCD group as the pilot number. Use of a phantom pilot number prohibits data transmission to the MCI port.
- Program the MCI interface to use the Feature 2 Application format.
- No data packet is sent to the MCI port on direct calls from the attendant console to MiCollab AM.

- A maximum of 20 ports may be included in any UCD group. If the MiCollab AM system you are installing has more than 20 ports, it is possible to create additional UCD groups as overflow groups. These groups can be associated using the AUOG command.
- Reorder tone is sent to any extension attempting to transfer a caller to the attendant in Night Mode, unless a station has been programmed in the PBX as the Attendant Night Transfer Target using the ASID command.
- If the attendant does not answer an unsupervised transfer within the predetermined time set for Transfer Call Recall, the call returns to the originating port and the caller hears the system greeting.

## Additional Considerations for NEAX 2400 with 4200 Software

- The MCI data link provides only one data packet per call. Program automated attendant ports and voice mail ports into separate UCD groups so that calls transferred from the automated attendant hunt group forward from stations to the UCD voice mail hunt group.
- Calls to MiCollab AM from a virtual extension appear to MiCollab AM as a call from the prime extension.
- Do not use blind transfers to the attendant console. Blind transfers to the operator are prohibited and are recalled immediately to the port attempting the transfer.

## 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 the telephone system and for MiCollab AM.

## Telephone System Requirements

These are the requirements for the **NEAX 2000 IVS** telephone system:

- NEAX 2000 series 1600 or later
- NEAX Message Center Interface (MCI)
- An available serial I/O port on a PN-AP00 card with NEC cable NR559037-107 for RS-232C connection between the MCI port and MiCollab AM
- One analog port for each MiCollab AM port to be configured
- Use PN-4LCD-A cards, or their equivalent, because of their ability to provide open loop-current disconnect signaling

These are the requirements for the **NEAX 2400 IMX** telephone system:

- One of the following PBX types:
  - NEAX 2400 UMG with release 4004 or later
  - NEAX 2400 MMG with release 4003 or later
  - NEAX 2400 IMG with release 5202 or later
  - NEAX 2400 SIM with release 5201 or later

**NOTE** SIM and IMG RDS configurations do not support the MCI Feature 2 Application.

- The NEAX Message Center Interface (MCI) using the Feature 2 Application mode of operation
- One available serial I/O port on a PA-IO02-A, PA-IO19, or PA-IO24 card for the MCI port.
- Use the appropriate NEC RS-232C cable for the I/O port you are connecting to MiCollab AM; NEC cables CA-1 or 68PH-S-2PORTS CA-A.
- One loop-start station for each MiCollab AM port to be configured
- Use 16LCQ or 16LCBE cards, or their equivalent, because of their ability to provide open loop-current disconnect signaling. The LCQ card provides a fixed 128-194 ms. open on disconnect and the LCBE card has a programmable open loop duration.

OR

- A PA-24DTR or comparable digital trunk interface configured as T1 loop-start stations

**NOTE** You can use a combination of analog and digital ports.

## 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 23.2 – consult the Mitel web site for the current software patches and service pack information.
- Mitel software key diskette or feature file with NEC NEAX 2000 or NEC NEAX 2400 MCI serial integration enabled
- An available serial COM port
- One Dialogic port or T1 channel for each MiCollab AM voice port to be integrated
- Uninterruptible power supply (UPS) and surge protection device (recommended)

# Programming the NEC NEAX 2000 IVS

Follow the recommendations and programming examples in this section to program the NEAX 2000 IVS for integration with MiCollab AM. Programming examples show commands and parameters that are necessary for integration; they do not represent PBX programming in its entirety.

The installing technician should be familiar with programming the telephone system. For detailed programming information on the NEAX 2000 IVS telephone system, refer to the appropriate NEC system command, data specification, and feature manuals for the NEAX 2000 IVS you are installing.

The programming examples in this section assume that you are programming the NEC 2000 IVS using the MOC command mode. If you are using the MAT terminal to program the PBX, then use the associated MAT-mode menu command for each corresponding MOC command. Refer to the appropriate NEC manual for specific information on hardware configuration, software commands, and system data specifications.

## Configuring the AP00 Card for the MCI Port

### To initialize the PN-AP00 card:

- 1 Initialize the PN-AP00 telephone system expansion card and assign data to provide the MCI for MiCollab AM. Refer to the *MCI System Manual, ND-45895* for complete details on configuring the MCI. Configure the switches on the PN-AP00 as follows:
  - a Set the Make Busy switch in the **OFF** (down) position to enable the card.
  - b Set the Rotary Sense Switch to match the assigned slot location.
  - c Set SW-0 DIPs 1, 2, and 3 to **OFF** and DIPs 4, 5, 6, 7, and 8 to **ON**.
  - d Set SW-1 DIP 1 to **ON** and DIPs 2, 3, and 4 to **OFF**.
- 2 Command Code CM05: Assign the card slot in software.  
ST+05+DE+SENSE WHEEL (slot no.)+DE+04 (PN-AP00) +EXE
- 3 Command Code CMD101: Load initial data on the PN-AP00.  
ST+D101+DE+0000+DE+CCC+EXE
- 4 On the PN-AP00 card, set the SW-1 DIPs 1, 2, and 3 to **ON** and DIP 4 to **OFF**. After changing SW-1, MP reset is required.

### To program the MCI data:

Use the commands listed below to program and define the MCI port data for VMS.

- 1 Command Code CM08:

ST+08+DE+025+DE+0+EXE (Provide MSG display message)

ST+08+DE+443+DE+0+EXE (Provide VMS with MCI)

ST+08+DE+444+DE+0+EXE (Provide MW control from VMS with MCI)

ST+08+DE+376+DE+0+EXE (Provide MW over CCIS if used)

- 2** Command Code CM90. Assign the data to provide the MW lamp on a Dterm, if required.

ST+9000+DE+My Line No. +, +Key No. DE+F1005+EXE

- 3** Command Code CMD000: Specify whether the message-waiting control text is sent to MiCollab AM when the PN-AP00 is reset.

ST+D000+DE+136+DE+0+EXE (To send)

- 4** Command Code CMD000: Specify the number of digits for the station number in the message format.

ST+D000+DE+137+DE+0+EXE (0=6 digits, 1=8 digits)

- 5** Command Code CMD000: Specify whether the MCI port is port 3 on the PN-AP00.

ST+D000+DE+138+DE+0+EXE (not to provide)

- 6** Command Code CM35. Provide sending of the ANI information from the network to the VMS with MCI.

ST+35+DE+138+DE+0+EXE (0=send ANI, 1=do not send ANI)

- 7** Command Code CMD001. Specify the message format sent to the VMS with MCI as Conventional or Expanded (with ANI) format.

ST+D001+DE+36+DE+1+EXE (0=Conventional, 1=Expanded)

- 8** Command Code CMD001: Assign the attribute data to the port used as the VMS port. The following table shows the data parameters to assign. This table uses port 0 with port attribute settings of 9600, 8, N, and 1 as an example.

ST+D001+DE+1st DATA+DE+2nd DATA+EXE

Table 4. Data Parameter assignments

First Data	Description	Second Data	Value
20	Baud	5	9600
21	Stop Bit	0	1
22	Data Length	1	8
23	Parity	0	None
80	Function	24	MCI



## Programming the Analog VMS Ports for MiCollab AM

Program extension numbers to the single-line ports used as MiCollab AM voice ports. Choose an easily remembered number for the pilot number of the UCD group that subscribers dial to reach MiCollab AM. Assign station numbers for the remaining ports in consecutive ascending order. Use the commands listed below to program and define the MiCollab AM station ports.

**IMPORTANT** You must perform these steps for each MiCollab AM port.

### To program the VMS ports:

- 1 Command Code CM10: Assign extension numbers to the line-circuit interface ports used for MiCollab AM. Refer to the NEC manual for slot location and LEN number when installing the station card.

ST+10+DE+LEN+DE+STATION NUMBER+EXE

- 2 Command Code CM12: Assign the features for each MiCollab AM station in Station Class-1. A typical MiCollab AM station has DTMF enabled and an unrestricted attribute in the Trunk Restriction Class. Program the ports in the tenant group you are using for MiCollab AM and assign them to a Service Restriction Class.

ST+1200+DE+STATION NUMBER+DE+3+EXE (DP/DTMF)

ST+1201+DE+STATION NUMBER+DE+11+EXE (Unrestricted)

ST+1202+DE+STATION NUMBER+DE+1515+EXE

(Assign Service Restriction Class A and B. Default=15)

ST+1203+DE+STATION NUMBER+DE+15+EXE

(Ordinary Telephone)

ST+1204+DE+STATION NUMBER+DE+01+EXE

(Tenant. Default=01)

ST+1205+DE+STATION NUMBER+DE+1+EXE

(No MiCollab AM line appearances on any multi-line telephone)

- 3 Command Code CM15: Modify the MiCollab AM Service Class Restriction group that programmed in CM12. It is not necessary to change default settings other than those listed in the following table.

ST+15YY/YYY+DE+SERVICE RESTRICTION CLASS A/B/C

(00-15)+DE+DATA (1 digit) +EXE

Table 5. Modifying the MiCollab AM Service Class Restriction group settings

First Data	Description	Second Data	Value
09	Exec Override	0	Restrict

First Data	Description	Second Data	Value
22	Trunk to trunk transfer (Note 1)	0	Restrict
24	MW reset from other stn.	0	Restrict
30	Account Code	0	Restrict
31	Authorization Code	0	Restrict
97	UCD Call Waiting	0	Restrict
98	UCD Call Waiting	1	Restrict
103	Call Monitoring	0	Restrict
104	Call Monitoring	0	Restrict

#### NOTE

1. Some applications may require trunk-to-trunk transfers. This capability can be a security risk for the customer.

#### 4 Command CM13: Assign VMS attributes to MiCollab AM stations.

ST+1303+DE+STATION NUMBER+DE+0+EXE

(Provide MW service for a station with a MW lamp)

ST+1304+DE+STATION NUMBER+DE+0+EXE

(Disable Howler tone)

ST+1310+DE+STATION NUMBER+DE+0+EXE

(Enable as VMS Station)

ST+1322+DE+STATION NUMBER+DE+0+EXE

(Provide momentary open on disconnect)

See Command Code CM41 function 08 for Momentary Open timer duration. The timer default is 256–384ms. The MiCollab AM default for loop-current disconnect is 100ms.

## Programming the UCD Group for MiCollab AM Ports

Create a UCD group, assign a UCD pilot number, and assign the MiCollab AM ports to the group in ascending order. If necessary, program the MiCollab AM UCD group into a tenant separate from all other

non-MCI UCD groups to prevent MiCollab AM from receiving invalid MCI packets from other non-related UCD groups in the same tenant. There is a maximum of sixty stations per UCD group. If your application requires more than sixty ports, it is possible to create an additional UCD group as an overflow group.

### To program the UCD group:

- 1 Command Code CM17: Specify a UCD Group from 0–15 and assign individual MiCollab AM stations to the UCD group.

ST+171+DE+STATION NUMBER+DE+1+EXE

(Pilot station)

ST+172+DE+STATION NUMBER+DE+00+EXE

(UCD Group number 00–15)

ST+173+DE+STN. NO. A+DE+STN. NO. B+EXE

(Add and display all members of the UCD group)

## Programming the Subscriber Stations

Program the subscriber stations for use with MiCollab AM. Allow forwarding types relevant to your application and enable Message Waiting/Message Reminder capability for each subscriber. To prevent conflicts and confusion, only MiCollab AM should have the set and clear message-waiting capability. Disable message-waiting set and clear capabilities on all subscriber stations.

### To program subscriber telephone extensions:

- 1 Command Code CM15. Allow Call Forward-No Answer, Call Forward-Busy, Call Forward-All, and MW reception for all MiCollab AM subscribers in the Service Restriction Class.

ST+15YY/YYY+DE+SERVICE RESTRICTION CLASS A/B/C

(00-15)+DE+DATA (1 digit) +EXE

- 2 Command Code CM13: Provide MW service to each subscriber station.

ST+1303+DE+STATION NUMBER+DE+0+EXE

- 3 Command Code CM90: Assign the data to provide the MW lamp on a Dterm, if required.

ST+9000+DE+PRIMARY EXT NUMBER+DE+KEY NO+F1005+EXE

- 4 Command Code CME6. Call Forwarding to MiCollab AM for each subscriber station can be set from the MAT terminal or from each subscriber station. To set Call Forward Busy/No Answer at the MAT terminal use 03 as the First Data with command E6.

ST+E603+DE+STN. NUMBER+DE+DEST (MiCollab AM UCD pilot) +EXE

## Completing the NEAX 2000 IVS Programming

Verify your work and that the programming is correct by listing or printing your programming changes. Test the stations for ringing, dial tone, and disconnect supervision. Verify that the MCI link can transmit and receive data packets with calls successfully to the MiCollab AM UCD group.

# Programming the NEC NEAX 2400 IMX

Follow the recommendations and programming examples in this section to program the NEAX 2400 IMX for integration with MiCollab AM. Programming examples show commands and parameters that are necessary for integration; they do not represent PBX programming in its entirety.

The installing technician should be familiar with programming the telephone system. For detailed programming information on the NEAX 2400 IMX telephone system, refer to the appropriate NEC system command, data specification, and feature manuals for the telephone system you are installing.

The programming examples in this section assume that you are programming the NEAX 2400 IMX from a MAT terminal. Refer to the appropriate NEC manual for specific information on hardware configuration, software commands, and system data specifications.

## Configuring T1 Channels (Optional)

If you are using a T1 span for the integration, configure the T1 card channels with the following settings:

- Negative logic for Send Signal A and Receive Signal A
- Send RMT possible
- 12-Multiframe
- Signaling system B8ZS
- ARTD fixed
- 64K INV
- Signaling Control ABAB (send and receive)
- No alarms transmitted when N-OPE lamp is on
- All 1 ALM transmitted when N-OPE lamp is on
- Idle code not transmitted
- Layer 2 signaling logic positive
- Zero suppression disabled

**NOTE** On the recommended PA-24DTR T1 interface card, DIP switches SW10, SW11, SW12, SW13, SW14, and SW15 control these settings. If you are using a different T1 interface card, consult the card's documentation for additional information.

## Configuring the I/O port for the MCI Link

Locate an available I/O port on an existing I/O card or install a new card in an appropriate slot in the PIM. Determine which port on the card is used and configure the card accordingly. Configure the I/O port for a baud rate of 9600, 8-bit word length, no parity, and 1 stop bit (**9600, 8, N, 1**). Do not enable controls.

Program the data format for the I/O port on the IO19 or IO24 cards with the AIOC command. Follow the recommendations in the following table for switch settings on the IO02 card. The switches you select are dependent on the I/O port you use as the MCI port.

Table 6. IO02 card switch setting recommendations

Switch 01 (port 0) / Switch 11 (port 1)							
1=OFF	2=ON	3=OFF	4=OFF	5=OFF	6=OFF	7=ON	8=ON
Value = 9600 baud, 8-bit word length, no parity, 1 stop bit							
Switch 02 (port 0) / Switch 12 (port 1)							
1=ON	2=ON	3=ON	4=ON	5=ON	6=ON	7=ON	8=OFF
No Controls Enabled							

## Programming the MCI Port

Use the **ASYD** command to assign system data necessary for the MCI port. Follow the recommendations in the following table to program the system data necessary to configure the MCI port for MiCollab AM.

Table 7. System data for configuring the MCI port for MiCollab AM

System Data	Index	Bits	Value	Description
SYS 1	27	7	0	Immediate Ring Back Tone Sending
SYS 1	28	0-4	0	MCI Guard Timer Not Required
SYS 1	28	5	1	Message Waiting by MCI
SYS 1	29	0-5	1	Assign to the I/O Port associated with MCI

System Data	Index	Bits	Value	Description
SYS1	34	1-4	0	RS-232C parity and stop bits
SYS 1	60	3	0	UCD Queuing
SYS 1	61	5	1	Call Waiting Display UCD in service
SYS 1	68	0	0	Operating Method for Busy Stations
SYS 1	70	0	1	Called Number Display when fwd to ATT-CON
SYS 1	70	6	1	Separate UCD Announcement
SYS 1	78	0&1	1	Display Station Numbers
SYS 1	117-121	0	1	Assign MCI Data for Printer (see <i>Index 29</i> )
SYS 1	246	3	0	MCI Expansion 0=Normal 1=Expanded
SYS 2	3	0	1	SMDR In Service
SYS 2	6	0	1	MCI Service when Terminating to UCD Group
SYS 2	7	1	0	MCI Service when Terminating to ATT-CON

## Programming the MiCollab AM Ports

Install, or locate in the PBX, the analog station card that used to service the MiCollab AM stations.

- Use the **ASDT** command to assign station numbers to the station card.

- Assign the Telephone Equipment Class (TEC) as 3 and assign a default Service Feature Class and Restriction Class to each port.
- Choose an easily remembered number for the first station number because it is the pilot number of the UCD group that subscribers dial to reach MiCollab AM.
- Assign station numbers for the remaining ports in consecutive ascending order. You must perform these steps for each MiCollab AM port.

## Programming the UCD Group

Use the **ASHU** command to assign the MiCollab AM ports to a UCD station hunt group. If necessary, program the MiCollab AM UCD group into a tenant separate from all other non-MCI UCD groups to prevent MiCollab AM from receiving invalid MCI packets from other non-related UCD groups.

A maximum of 20 ports may be included in any UCD group. If the MiCollab AM system you are installing has more than 20 ports, it is possible to create additional UCD groups as overflow groups. Associate these groups using the **AUOG** command. Add the MiCollab AM stations to the UCD group in ascending order.

The first MiCollab AM station number is the pilot number of the hunt group.

## Programming the Subscriber Stations

Program the subscriber extension system data using the **ASYD** command, the Service Restrictions using the **ASFC** command, and the subscriber stations using the **ASDT** command.

Allow Call Forwarding-Don't Answer, Call Forwarding-Busy and Call Forwarding-All for all MiCollab AM subscribers. Allow subscribers to receive MW from MiCollab AM and disallow subscribers the ability to send MW from their stations.

It may be necessary to adjust transfer recall timers and call forward timers in system data to meet the requirements of each individual application.

## Completing the NEAX 2400 IMX Programming

Verify your work and that the programming is correct by listing or printing your programming changes. Test the stations for ringing, dial tone, and disconnect supervision. Verify that the MCI link can successfully transmit and receive data packets with calls to the MiCollab AM UCD group.



# 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 **NEC**.
  - d From the **Model** dropdown list, select **NEAX 2400**.
  - e From the **Integration Type** dropdown list, select **MCI 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, select the **Communication Settings** view from the **Local Integration Settings** section, and then verify the values are correct.
- 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 parameter.
  - c In the **Hunt Group Access Code** field, enter the hunt group access code you configured previously in the section, [Programming the NEC NEAX 2000 IVS](#) or [Programming the NEC NEAX 2400 IMX](#). 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 **Board** 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 **NEC**.
  - b** From the **Model** dropdown list, select **NEAX 2400**.
  - c** From the **Integration Type** dropdown list, select **MCI 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, select the **Communication Settings** view from the **Local Integration Settings** section, and then verify the values are correct.
- 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 parameter.
  - c** In the **Hunt Group Access Code** field, enter the hunt group access code you configured previously in the section, [Programming the NEC NEAX 2000 IVS](#) or [Programming the NEC NEAX 2400 IMX](#). This is the pilot number that users dial to reach MiCollab AM.
  - 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, 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.