

MiCollab Advanced Messaging
Alcatel-Lucent Enterprise
OmniPCX 4400 E1
Integration Technical Note

For version 9.0 and above

Notice

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Contents

Preface	5
References	5
Documentation	5
Documentation Updates	6
Help	6
Document Conventions	7
Features Supported by This Integration	8
Critical Application Considerations	10
Installation Requirements	12
Telephone System Requirements	12
MiCollab AM Requirements	12
Programming the Telephone System	13
Installing the Interface Card	13
Creating the Entity	13
Creating the Trunk Group	14
Modifying the Trunk Group Settings	14
Allocating the Trunk Group to the Card	16
Configuring the Physical Link	16
Setting up the Prefix Plan	17
Setting up the Network Routing Table	17
Configuring the Connection Category	18
Enabling Path Replacement (Route Optimization)	18
Configuring the Re-Directing Number	19
Assigning the Hunt Group Access Number	19
Programming Subscriber Extensions for Voice Mail	20
Completing the OmniPCX Programming	20
Installing the Aculab and Dialogic Software Support Components	21
About Aculab Cards	22
Installing the Aculab PCI Digital Access Card	22
Installing the Aculab Prosody X PCI Express Card	22

Adding the Aculab Card to MiCollab AM	22
Configuring MiCollab AM	23
Configuring MiCollab AM for the Integration During Initial Installation	23
Configuring Existing MiCollab AM for the Integration	26
Adding the Aculab PCI and Dialogic Linecards to the Boards Tab	29
Adding the Aculab Prosody X PCI or PCIe Linecards to the Boards Tab	30
Adding Analog Lines to MiCollab AM for Message Waiting Functionality	30

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 Alcatel-Lucent Enterprise OmniPCX 4400 systems.

This document describes how to integrate MiCollab AM with the Alcatel-Lucent Enterprise OmniPCX 4400 system using the E1 Q.sig interface. Critical application considerations are documented, as well as installation and programming procedures necessary to integrate MiCollab AM with the Alcatel-Lucent Enterprise OmniPCX 4400 telephone system, referred to throughout this document as OmniPCX 4400.

The E1 Q.sig integration is a outband digital integration. Each E1/PRI (ISDN) physical interface is a single 2.048-MB 32-channel interface that provides up to 30 digital trunks or voice channels. Q.sig is a signaling protocol that enables the interconnection of PBXs and other equipment that support it over a public or private network. In this integration, the telephone system deals with MiCollab AM as another PBX that is connected over a private network.

The E1 Q.sig connection is established at the Call Server platform through an Aculab E1/T1 Digital Network Access card or an Aculab Prosody X E1/T1 telephony linecard. The Aculab Digital Network Access card is the interface between the E1 trunk ports on the PBX and the Dialogic media linecards on the Call Server platform. Aculab Prosody X linecards do not require Dialogic linecards as a media interface.

The PBX sends calls to MiCollab AM over the E1 Q.sig link; MiCollab AM parses the accompanying calling party and called-party information and answers with the appropriate dialog. Message-waiting indicator (MWI) operation is not supported by this Q.sig interface. Separate analog lines must be used to perform MWI operation.

Use this document in conjunction with the *System Installation and Configuration Guide*, *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.

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

Table 1. References

Document Type	Document Title
Server Documentation	System Installation and Configuration Guide – <i>Removing Dialogic and Aculab Software Components Chapter</i>
Spare Parts Documentation	Aculab PCI E1/T1 Digital Access Linecard Installation and Replacement
Spare Parts Documentation	Aculab Prosody X PCI Express (PCIe) Linecard Installation and Replacement
Spare Parts Documentation	Dialogic PCI Express and Euro PCI Express Linecards Installation and Replacement
Spare Parts Documentation	Dialogic PCI and Euro PCI Linecards Installation and Replacement

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

The following tables list the features that the OmniPCX 4400 E1 Q.sig integration supports.

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

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

Table 3. Integration Features supported for OmniPCX 4400 E1 Q.sig

Feature	Supported	Notes
Automatic subscriber logon	Yes	
ANI/CLI	Yes	
Announce Busy greeting on forwarded calls	Yes	
Call screening	Yes	
Caller queuing	Yes	Note 1
DNIS/DDI	Yes	
End-to-end DTMF, attendant console	Yes	
End-to-end DTMF, proprietary telephones	Yes	
Fax Tone Detection	Yes	
Internal calling party ID for reply	Yes	
Live record, integrated	No	
Live reply to sender	Yes	
Message notification callouts	Yes	

MWI, set/clear	Yes	
MWI, inband/outband	Inband	Note 2
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	Yes	
Transfers, blind	Yes	
Transfers, confirmed	Yes	
Transfers, fully supervised	Yes	
Transfers, monitored	Yes	
Trunk ID for call routing	No	

NOTES

1. 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 the [Critical Application Considerations](#) section.
2. Requires separate analog ports.

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.

- Path replacement is recommended when integrating MiCollab AM with an E1 Q.sig interface. Because the Q.sig interface is an external trunk route, all transfer actions require an additional Q.sig channel to initiate and complete the call. When path replacement is enabled in the PBX, the additional channel will release after the transfer is completed or after a period of time set within the PBX. When path replacement is not used, this second channel is used for the duration of the transferred call.
- The first Aculab PCI E1/T1 card is the master clock on the SCbus; it must be set as the Resolved Primary Master FRU of the Dialogic TDM bus in Dialogic Configuration Manager. For information about configuring the Aculab card, consult the *Aculab E1/T1 PCI Installation and Replacement* spare parts document.
- Aculab cards can be restarted only by restarting the Call Server. This may be required following a loss of synchronization or clock signal with the PBX over the E1 interface. Alternatively, synchronization problems with the Q.sig interface can be corrected at the PBX by blocking traffic to the E1 board, restarting the board, and then unblocking traffic.
- Aculab does not provide BNC connectors on their PCI type boards. These boards are supplied with RJ45 connectors only. An Aculab RJ45 to BNC converter may be used to convert the connection to BNC.
- The MiCollab AM parameter, **Phone Line Default** audio format in the **Integration Specific Parameters** view of this integration applies only to Aculab Prosody X linecards. The parameter has no effect on legacy Aculab PCI Digital Access linecards. To change the A-Law/mu-Law audio format of an Aculab High Capacity Digital Access PCI linecard you must change the value of the media card inside the Dialogic Configuration Manager utility.
- The E1 DS1 interface is a 32-channel interface that supports 30 voice channels. Channels 0 and 16 are used for synchronization and signaling on each E1 interface. Do not program channel 0 or 16 as voice channels. Configuring channel 0 or 16 as a voice channel causes MiCollab AM ports to fail intermittently, i.e., dropped calls or out of service.
- The parameter **Busy telephone line when closed** on the **Lines** tab of the MiCollab AM Configuration utility is not applicable to this integration.
- There is a maximum *rings to wait* value of four rings on a supervised (T-type) transfer. MiCollab AM is unable to monitor call progress during a transfer because the digital Q.sig trunk does not provide an audio path until a connection is made to the called party. MiCollab AM assumes a six-second ring cycle during transfer.
- MiCollab AM does not display the line status of calls using path replacement channels for transfer purposes. Verify from the PBX that all E1 channels are idle before shutting down MiCollab AM.

- The Alcatel-Lucent Enterprise OmniPCX 4400 Q.sig interface does not have the capability to set and clear message waiting indicators (MWI) over the E1 interface. MWI operation must be performed over analog lines using the feature access codes of the PBX to set and clear indicators. A separate analog Dialogic card must be used for MWI operation. Additional port licenses must include all ports of the digital interface plus the analog ports.

For example:

A 30 port digital interface and 4 port analog card would require a port license count of 36 ports. The additional two port licenses are required to ignore or hop over the two D channels of the 32 channel E1 interface.

- Analog lines used for MWI purposes and D-Channel lines must not be configured for the Q.sig integration. Analog lines and D-channel lines must be defined in a separate integration and switch section. On the **Lines** tab, change the integration type to non-integrated on all unused (D-channels) and analog lines.
- 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.

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

- Alcatel-Lucent Enterprise OmniPCX 4400
- One E1 Interface Card: BPRA2 (P/N 3BA23074) provides 30 channels
- One 75-Ohm cable with BNC connectors for the low-impedance connection to the Aculab card, or One 120-Ohm cable with RJ45 connector for the high-impedance connection to the Aculab card

MiCollab AM Requirements

- MiCollab AM version 9.0
- MiCollab AM software key diskette with the Alcatel-Lucent Enterprise OmniPCX 4400 E1 Q.sig integration enabled
- One analog Dialogic port for each MiCollab AM port designated for MWI operations (Use Dialogic D/41or D/120 linecards)
- One or more Aculab Prosody X PCI Express single-port, dual-port, or quad-port linecards

Programming the Telephone System

Follow the recommendations and programming examples in this section to program the OmniPCX for integration with MiCollab AM. Programming examples show commands and parameters of version R4.1 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. Programming is done from the OmniPCX-programming terminal. For detailed programming information on this software version or other OmniPCX software versions, refer to the appropriate *Alcatel-Lucent Enterprise OmniPCX 4400* documentation.

Installing the Interface Card

The E1 Q.sig interface card must be installed in an appropriate card slot of the OmniPCX and the interface cable connected to the Call Server before PBX programming can be done.

Creating the Entity

Create a unique entity as in the example below. The parameters in boldface are critical to the integration. The entity created for MiCollab AM must point to the correct Discriminator Group that the ports use for outbound calls. This entity is referred to later when modifying the trunk group settings.

NOTE The entity must not contain either an Installation Number or Supplementary Installation Number. Otherwise a 0 (zero) will be prefixed to numbers called by MiCollab AM.

```
Mgr/Consult/Modify: Entities
Node Number (reserved)      : 1
Entity Number                : 10
Name                        : MiCollab AM
Attendant Group Manager     : -1
Priority                     + NO
Traffic Overflow             + Disallowed
Installation No. (ISDN)      : -----
Supplement.Install.No (ISDN) : -----
Caller ID.Secret            + Send
Adv. Of Charg. 2 requests (AOC2) + NO
Adv. Of Charg. 3 requests (AOC3) + NO
Auto. Locking                : 0
Voice Mail Box No. for attendt : -----

                                Calls Distribution
Overflow Routing No.         : -----
Forward on routing           + YES
1st Night Routing           : -----
```

Creating the Trunk Group

Configure a trunk group for the Q.sig channels as shown. The parameters in boldface are critical to the integration:

- Set the Trunk Group Type parameter to **+T2**.
- The Remote Network parameter must not be set to 15; in the following example, a value of **3** is used.
- The Private Trunk Group parameter must be set to **True**.
- Configure the Q931 signal variant to **ABC-F** in order to support Protocol Type Q.sig-GF when the Network Routing Table is configured.
- The Number of Digits to Send value must be **20** to allow digit-by-digit dialing.
- The DDI Transcoding value must be set to **False**.

The following is an example of Trunk Group programming:

```
Mgr/Consult/Modify: Trunk Groups
Node Number (reserved)      : 1
Trunk Group ID              : 39
Trunk Group Type            + T2
Trunk Group Name            : Q.sig_39
Number Compatible With      : -1
Remote Network              : 3
Shared Trunk Group          + False
Special Services            + Nothing
Node number                 : 1
Transcom Trunk Group        + False
Auto.reserv.by Attendant    + False
Overflow trunk group No.    : -1
Tone on Seizure             + False
Private Trunk Group         + True
Security Patrol             + False
Q931 signal variant         + ABC-F
SS7 signal variant          : No variant
Number of Digits to Send    : 20
Channel selection type      : Quantum
Auto.DTMF dialing on outgoing call + YES
T2 specificity              : None
Public Network Category     : 0
DDI Transcoding             + False
Can support UUS in SETUP    + True
```

Modifying the Trunk Group Settings

Once the trunk group is created, the following default parameters must be modified as shown in boldface:

- The Entity Number parameter must match that previously configured, such as 10 in this example.
- A DTMF end-to-end signal value of YES enables DTMF for calls on this trunk.

- A Nb of digits unused (ISDN) value of 0 specifies no digits will be truncated.
- Setting B Channel Choice to YES selects the PBX as the master.
- The Number to be Added parameter must be left blank so that no digits will be added.
- Setting Charge Calling and ADN Creation to YES sends the calling party number to MiCollab AM.

The following is an example of Trunk Group Settings programming:

```
Mgr/Trunk Groups/Go down hierarchy/Consult/Modify: Trunk Group
Node Number (reserved)           : 1
Trunk Group ID                   : 39
Instance (reserved)              : 1
Trunk Group Type                  + T2
Public Network Ref.               : -----
VG for non-existent No.          + YES
Entity Number                    : 10
Supervised by Routing            + NO
VPN Cost Limit for Incom.Calls    : 0
Immediate Trk Listening For VPNCall + YES
VPN TS %                         : 50
CSTA Monitored                   + NO
Max.% of trunks out CCD          : 0
Ratio analog.to ISDN tax         : -----
TS Distribution on Accesses       + YES
Quality profile for voice on IP   + Profile #1
IP compression type              + Default
Use of volume in system          + YES
Dialling end to end              + NO
DTMF end to end signal           + YES
Trunk group used in DISA         + NO
DISA Secret Code                 + -----
Routing to Executive              + NO
Trunk Category ID                : 18
Nb of digits unused (ISDN)       : 0
B Channel Choice                 + YES
Channels Reserved by Attend.     : 0
Dissuasion for ACD               + NO
DTO Joining                      + NO
Enquiry Call on B Channel        + NO
Automated Attendant              + NO
Calling part Rights category     : 0
TS Overflow                      + YES
Number to be Added               : -----
Charge Calling and ADN Creation   + YES
Logical channel                  : 1_15 & 17_31
Use Split Access                 + NO
Heterogeneous Remote Network     + NO
Barring Mode                     + Not Barred
ARS class of service             : 31
```

Allocating the Trunk Group to the Card

Allocate the trunk group previously configured to the E1 Q.sig interface card as shown in the following example of Trunk Group Allocating.

```
Mgr/Trunk Groups/Go down hierarchy/Trunk Group/Go down hierarchy/Create:
T2 Access
Node Number (reserved)      : 1
Trunk Group ID              : 39
Instance (reserved)         : 1
Physical Address             : 0-6-1   (dependent on Card Position)
Access Type                  + T2
Access Cluster ID           : -1
Time Slots T2               : 01111111111111101111111111111111
```

Configuring the Physical Link

The following parameters must be set to establish the physical connection between the OmniPCX and the MiCollab AM server.

- A Synchronization Priority parameter value of **255** specifies the PBX as the Layer 1 Master.
- Setting the Network Mode value to **+YES** specifies the PBX as the Layer 2 Master.
- Setting the Tie Line Mode to **+YES** indicates a connection as with Back to Back Master Function.
- Setting the Access Type T2 to **+YES** indicates activation of Layers 1 and 2.

NOTE Re-initialize the board once you have completed this procedure.

The following is an example of Physical Link programming:

```
Mgr/Shelf/Go down hierarchy/Go down hierarchy/Consult/Modify: Digital Access
Node Number (reserved)      : 1
Shelf Address                : 0
Board Address                : 6
T0/T2 Access No.            : 0
Access Type                  + T2
Synchronisation Priority     : 255
Network Mode                 + YES
Max Nb Of Used B Channels    : 30
Max_Nb_Of_Compressed_B_Channels : 0
Tie Line Mode                + YES
Access Type T2               + YES
Reserved1                    + YES
Reserved2                    + YES
Network Date Time Update     + NO
CRC4                         + YES
```


Setting up the Prefix Plan

Make the following modifications to the Prefix Plan.

- Setting the Prefix Meaning parameter to + Routing No. points to the network number programmed in the trunk group created earlier (3 in this example).
- The Number of Digits value must be set to the combined sum of digits in the prefix and the extension.

For example:

A 2-digit access code and 3-digit dialing to MiCollab AM would require this parameter be set to 5.

The following is an example of Prefix Plan programming:

```
Mgr/Translator/Create: Prefix Plan
Node Number (reserved)           : 1
Instance (reserved)              : 1
Number                           : 39
Prefix Meaning                    + Routing No.
Network Number                   : 3
Node Number/ABC-F Trunk Group    : 39
Number of Digits                 : (Sum of prefix + extension)
Number with Sub Address (ISDN)    + NO
Default X25 ID.pref.             + NO
```

Setting up the Network Routing Table

The following modifications to the Routing Table are required.

- A Rank of First Digit to be Sent parameter value of 3 indicates that only the DDI and not the access code (39) will be transmitted.
- Setting the Protocol Type to +Q.sig-GF refers to advanced features such as Redirected Number (Add-On to Q.sig Basic Call).

The following is an example of Network Routing programming:

```
Mgr/Translator/Consult/Modify: Network Routing Table
Node Number (reserved)           : 1
Instance (reserved)              : 1
Network Number                   : 3
Rank of First Digit to be Sent    : 3
Incoming Identification Prefix     : -----
Protocol Type                    + Q.sig-GF
Numbering Plan Descriptor ID      : 11
ARS Route List                   : -1
Schedule Number                  : -1
ATM address id                   : -1
Network call prefix               : -----
```

Configuring the Connection Category

This example uses Trunk Category ID 18, which makes the Connection Category 5 by default. Therefore, in configuring the Connection Category, an ID of **5** must be enabled as follows:

```
Mgr/Categories/Consult/Modify: Connection Category
```

```
Node Number (reserved)      : 1
```

```
Instance (reserved)         : 1
```

```
Connection Category ID      : 5
```

Connection Rights

```
Category 0                  : 1
```

```
Category 1                  : 1
```

```
Category 2                  : 1
```

```
Category 3                  : 1
```

```
Category 4                  : 1
```

```
Category 5                  : 1
```

```
Category 6                  : 1
```

```
Category 7                  : 1
```

```
Category 8                  : 1
```

```
Category 9                  : 1
```

```
Category 10                 : 1
```

```
Category 11                 : 1
```

```
Category 12                 : 1
```

```
Category 13                 : 1
```

Enabling Path Replacement (Route Optimization)

The access code, specified in the Number parameter as shown in the following example, must be present and must be unique for each node (PBX) within the network. This access code cannot be dialed. Instead, it enables calls to MiCollab AM, which are transferred, to be rerouted on connection by the PBX that releases MiCollab AM from the call.

IMPORTANT To ensure calls do not take two lines for the duration of a call, make sure you are using the ISO standard on the PBX.

The following example of Path Replacement programming:

```
Mgr/Translator/Create: Prefix Plan
```

```
Node Number (reserved)      : 1
```

```
Instance (reserved)         : 1
```

```
Number                      : (site specific) #88 in this case
```

```
Prefix Meaning              + Local Features
```

```
Local Features              + Pabx address in DPNSS
```

Configuring the Re-Redirecting Number

When re-directing a telephone to a mailbox, the PBX passes either the called number or the calling number. You must configure it to pass the called number. Configure the setting as: the Public NPD id and NPD for External Forward parameters to **18** as shown in the following example.

```
Mgr/Trunk Groups/Go down hierarchy/Create: Trunk Group NPD selector
Node Number (reserved)      : 1
  Trunk Group ID             : 39
  Instance (reserved)       : 1
  Public NPD id              : 18
  Private NPD id             : 0
  Management Mode            + Automatic
  Public DDI Transcoding     + False

Mgr/System/Go down hierarchy/Other System Param./Go down hierarchy/Consult/Modify:
External system parameters

  Allow Delete non empty mailboxes
  Redirecting Number Used
  Key number for external recording
  Security Dynamics
  Accounting Ticket to User Node
  Acc. Ticket to User Node Duration Met.
  NPD for external forward

Consult/Modify: New Facilities
Node Number (reserved)      : 1
Instance (reserved)         : 1
System_Option               + Redirecting Number Used
Redirecting Number Used     + True

Consult/Modify: New Facilities
Node Number (reserved)      : 1
Instance (reserved)         : 1
System_Option               + NPD For External Forward
NPD For External Forward    : 18
```

Assigning the Hunt Group Access Number

Assign the hunt group access number (4000 in the following example) to the MiCollab AM ports. Leave all values not listed below at default.

```
Mgr/Short Numeration/Go down hierarchy/Create: Direct Short Numeration
Node Number                  : 2
  Instance                   : 1
  Short prefix                : 4000
Long Number                   : 394000
```

Programming Subscriber Extensions for Voice Mail

Program subscriber extensions for voice mail according to the following example of subscriber extension programming.

```
Mgr/Translator/Consult/Modify: Prefix Plan
Node Number (reserved)       : 1
Instance (reserved)          : 1
Number                        : *60
Prefix Meaning                + Terminal Facilities
Terminal Facilities           + Immediate Forward
```

Program the remaining codes as follows. Use these codes at the handset to activate or deactivate their associated features.

*60 Immediate Forward

*61 Forward Busy

*62 Forward RNA

*63 Forward Busy/RNA

*64 Cancel All Forwarding

Completing the OmniPCX Programming

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

Installing the Aculab and Dialogic Software Support Components

The Aculab and Dialogic software support components are installed in conjunction with the MiCollab AM Server software when you select the components as part of the installation package. If you have previously installed MiCollab AM software, you must re-install it to install the Aculab and Dialogic software support components. Be sure to exit any running Windows programs before starting the Setup program.

IMPORTANT If this is an existing MiCollab AM system with a previous version of Dialogic or Aculab software installed, you must remove it and any Dialogic point release software before you install MiCollab AM Server software and the Dialogic and Aculab Software Support Components on the Call Server platform.

If the MiCollab AM InstallShield Wizard detects an existing version of Dialogic software during the setup process, the installation is aborted and a message displays to un-install all Dialogic software first.

For more information on removing previous versions of Dialogic software, refer to the online help or the *Removing Dialogic Aculab Software Support Components* chapter from the *System Installation and Configuration Guide*.

About Aculab Cards

MiCollab AM supports several types of Aculab linecards. This section briefly describes the three types.

Installing the Aculab PCI Digital Access Card

The Aculab PCI E1/T1 Digital Access card provides the network CAS interface between the PBX E1 or T1 network card and MiCollab AM. The Aculab PCI Digital Access card interfaces to MiCollab AM through an H.100 bus connected to one or more Dialogic cards that supply the media component for each MiCollab AM line. A single-port E1 Aculab card supports 30 voice channels, a dual-port E1 Aculab card supports 60 voice channels, and a quad-port E1 Aculab card supports 120 voice channels.

For detailed instructions on the installation of the Aculab card, refer to *the Aculab E1 PCI Installation and Replacement* spare parts document.

Installing the Aculab Prosody X PCI Express Card

The Aculab Prosody X PCI Express E1/T1 linecard is a full media TDM telephony linecard with on-board DSP that provides call and signaling control of an E1 or T1 telephony interface. The Prosody X PCI Express E1/T1 linecard integrates MiCollab AM with a telephone system using the CAS or the Q.SIG signaling protocols. An Aculab Prosody X PCI Express linecard supports 1-4 ports, 30 voice channels per port. The Aculab Prosody X card has an H.100 (CTbus) connector that cables to the H.100 connector of any other telephony linecard in the system with an H.100 ribbon cable.

For detailed instructions on the installation of the Aculab Prosody X PCI Express linecard, refer to the *Aculab Prosody X PCIe Installation and Replacement* spare parts document.

Adding the Aculab Card to MiCollab AM

The Aculab Digital Network Access linecard and the Aculab Prosody X PCI Express linecard must be configured in MiCollab AM before they can be used in the Call Server. The cards are configured quite differently – each card type requires a unique set of steps to configure and add it to MiCollab AM. Refer to the spare parts document for the type of Aculab card you are installing.

Configuring MiCollab AM

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

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

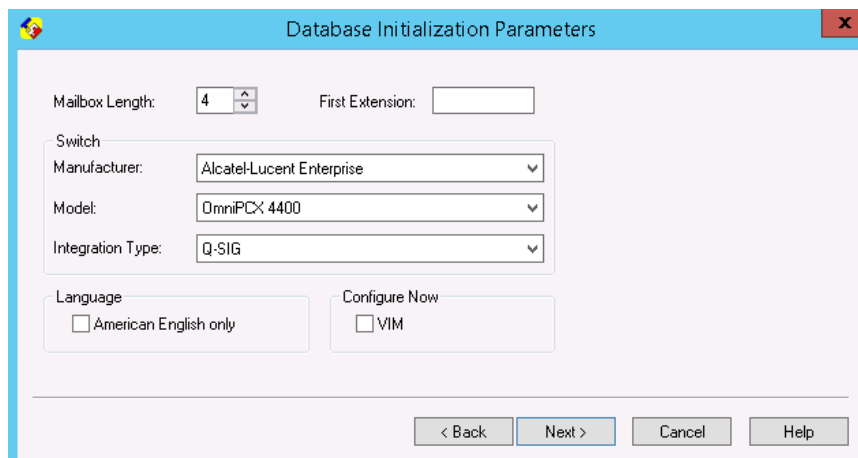
- [Configuring MiCollab AM for the Integration During Initial Installation](#): Integrate the telephone system while you install MiCollab AM for the first time.
- [Configuring Existing MiCollab AM for the Integration](#): Integrate a new telephone system on your exiting MiCollab AM system.

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



Database Initialization Parameters

Mailbox Length: 4 First Extension:

Switch

Manufacturer: Alcatel-Lucent Enterprise

Model: OmniPCX 4400

Integration Type: Q-SIG

Language

☐ American English only

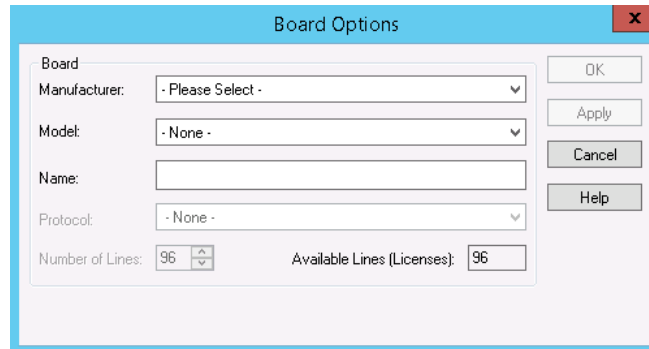
Configure Now

☐ VIM

< Back Next > Cancel Help

- a In the **Mailbox Length** box, enter the mailbox length in digits.
- b In the **First Extension** box, enter first extension number for the first line. You can also leave the **First Extension** box empty.

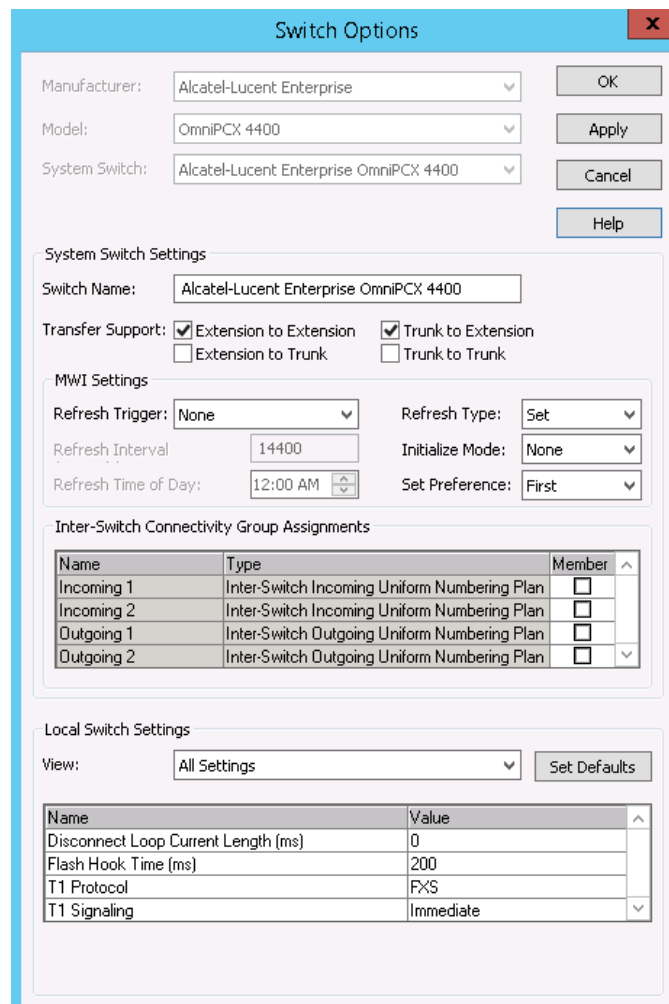
- c From the **Manufacturer** dropdown list, select **Alcatel-Lucent Enterprise**.
 - d From the **Model** dropdown list, select **OmniPCX 4400**.
 - e From the **Integration Type** dropdown list, select **Q-SIG**.
- 2 Click **Next**. The **Board Options** dialog box appears.



The **Board Options** dialog box contains the following fields and controls:

- Board** section:
 - Manufacturer: - Please Select -
 - Model: - None -
 - Name: (text input)
 - Protocol: - None -
 - Number of Lines: 96 (spin box)
 - Available Lines (Licenses): 96 (spin box)
- Buttons: OK, Apply, Cancel, Help

- 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.



The **Switch Options** dialog box contains the following sections and controls:

- Manufacturer:** Alcatel-Lucent Enterprise
- Model:** OmniPCX 4400
- System Switch:** Alcatel-Lucent Enterprise OmniPCX 4400
- Buttons: OK, Apply, Cancel, Help
- System Switch Settings** section:
 - Switch Name:** Alcatel-Lucent Enterprise OmniPCX 4400
 - Transfer Support:**
 - ☒ Extension to Extension
 - ☒ Trunk to Extension
 - ☐ Extension to Trunk
 - ☐ Trunk to Trunk
- MWI Settings** section:
 - Refresh Trigger:** None
 - Refresh Interval:** 14400
 - Refresh Time of Day:** 12:00 AM
 - Refresh Type:** Set
 - Initialize Mode:** None
 - Set Preference:** First
- Inter-Switch Connectivity Group Assignments** section:

Name	Type	Member
Incoming 1	Inter-Switch Incoming Uniform Numbering Plan	<input type="checkbox"/>
Incoming 2	Inter-Switch Incoming Uniform Numbering Plan	<input type="checkbox"/>
Outgoing 1	Inter-Switch Outgoing Uniform Numbering Plan	<input type="checkbox"/>
Outgoing 2	Inter-Switch Outgoing Uniform Numbering Plan	<input type="checkbox"/>
- Local Switch Settings** section:
 - View:** All Settings
 - Buttons: Set Defaults
 - Table:

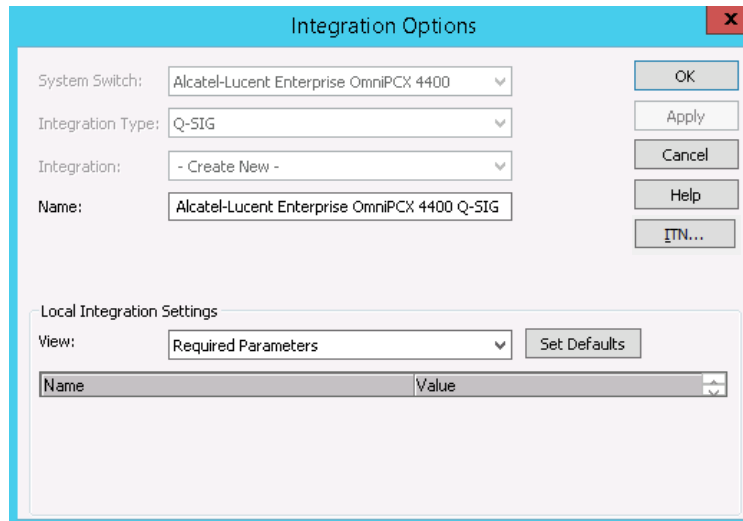
Name	Value
Disconnect Loop Current Length (ms)	0
Flash Hook Time (ms)	200
T1 Protocol	FXS
T1 Signaling	Immediate

- 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.

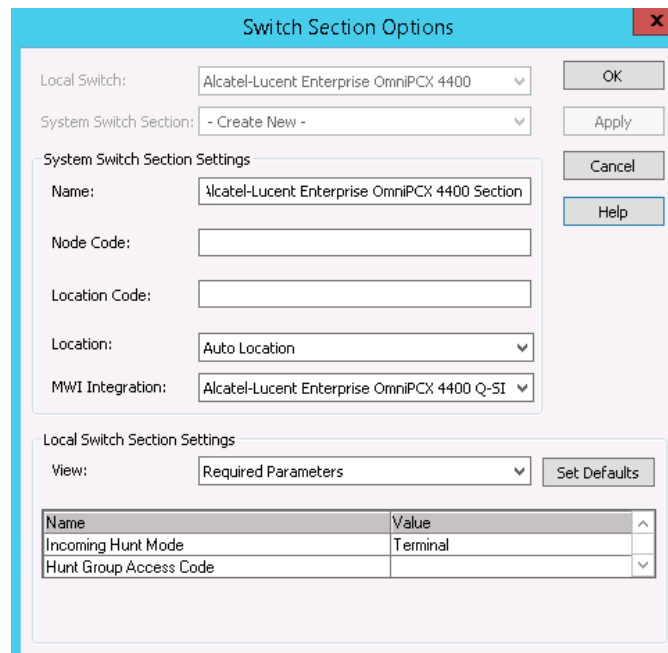


The **Integration Options** dialog box is shown. It has a title bar with a close button (X). The main area contains the following fields and buttons:

- System Switch:** Alcatel-Lucent Enterprise OmniPCX 4400 (dropdown)
- Integration Type:** Q-SIG (dropdown)
- Integration:** - Create New - (dropdown)
- Name:** Alcatel-Lucent Enterprise OmniPCX 4400 Q-SIG (text field)
- Buttons:** OK, Apply, Cancel, Help, ITN...
- Local Integration Settings:**
 - View:** Required Parameters (dropdown)
 - Set Defaults** (button)
 - Table:** A table with two columns: Name and Value. The table is currently empty.

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

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



The **Switch Section Options** dialog box is shown. It has a title bar with a close button (X). The main area contains the following fields and buttons:

- Local Switch:** Alcatel-Lucent Enterprise OmniPCX 4400 (dropdown)
- System Switch Section:** - Create New - (dropdown)
- System Switch Section Settings:**
 - Name:** Alcatel-Lucent Enterprise OmniPCX 4400 Section (text field)
 - Node Code:** (text field)
 - Location Code:** (text field)
 - Location:** Auto Location (dropdown)
 - MWI Integration:** Alcatel-Lucent Enterprise OmniPCX 4400 Q-SI (dropdown)
- Buttons:** OK, Apply, Cancel, Help
- Local Switch Section Settings:**
 - View:** Required Parameters (dropdown)
 - Set Defaults** (button)
 - Table:** A table with two columns: Name and Value. The table contains the following data:

Name	Value
Incoming Hunt Mode	Terminal
Hunt Group Access Code	

- 9 In the **Switch Section Options** dialog box, configure the following options:
 - a Go to the **Local Switch Section Settings**, and then select the **Required Parameters** view.
 - b In the **Hunt Group Access Code** field, enter the hunt group access code you configured previously in the section, [Assigning the Hunt Group Access Number](#).
This is the pilot number or destination code that users dial to reach MiCollab AM.
 - c Click **OK**.
- 10 Continue through and complete the configuration. At the end of the configuration, a confirmation dialog box appears. Click **OK**.
- 11 If **MiCollab AM Configuration** does not open automatically after the configuration completes, open **MiCollab AM Configuration**, and select the **Lines** tab.
- 12 In the table from the **Lines** tab, configure callouts for the application. For information on configuring callout settings, see the topic *Configuring Callout Settings*, in the online help system.
- 13 Click **OK** to save all changes.

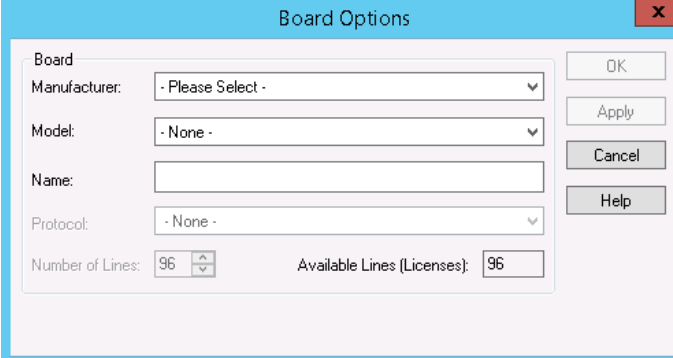
Configuring Existing MiCollab AM for the Integration

To configure exiting MiCollab AM for the telephone integration:

- 1 Open **MiCollab AM Configuration**, and go to the **Main** tab.
- 2 In the **Main** tab, click **Shutdown** to stop the system. Wait until the **Current Status** shows **Stopped**.

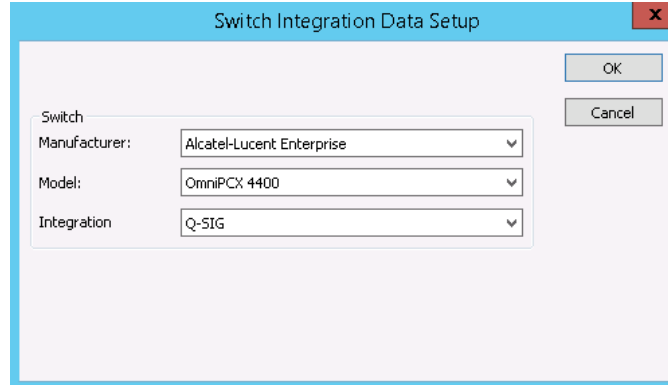
NOTE If you have not configured the virtual board with your MiCollab AM system yet, complete **Step 3**. If your MiCollab AM already has the virtual board configured, skip to **Step 4**.

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



- a Depending on the type of Aculab card you have installed, configure the board options. Refer to the appropriate Spare Parts document for more information on the Aculab card you are installing.
- b Click **OK**.

- 4 Select the **Switches** tab and click the **Add** button. The **Switch Integration Data Setup** dialog box appears.

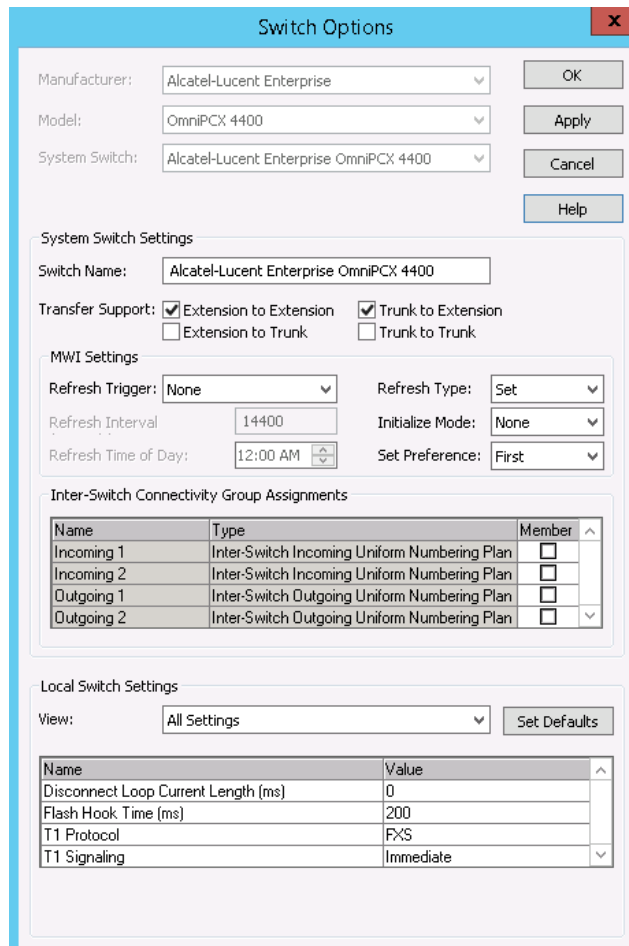


The **Switch Integration Data Setup** dialog box contains three dropdown menus under the **Switch** section:

- Manufacturer:** Alcatel-Lucent Enterprise
- Model:** OmniPCX 4400
- Integration:** Q-SIG

Buttons for **OK** and **Cancel** are located in the top right corner.

- a From the **Manufacturer** dropdown list, select **Alcatel-Lucent Enterprise**.
 - b From the **Model** dropdown list, select **OmniPCX 4400**.
 - c From the **Integration Type** dropdown list, select **Q-SIG**.
- 5 Click **OK**. The **Switch Options** dialog box appears.



The **Switch Options** dialog box contains the following sections and settings:

- Manufacturer:** Alcatel-Lucent Enterprise
- Model:** OmniPCX 4400
- System Switch:** Alcatel-Lucent Enterprise OmniPCX 4400
- System Switch Settings**
 - Switch Name:** Alcatel-Lucent Enterprise OmniPCX 4400
 - Transfer Support:**
 - ☒ Extension to Extension
 - ☐ Extension to Trunk
 - ☒ Trunk to Extension
 - ☐ Trunk to Trunk
- MWI Settings**
 - Refresh Trigger:** None
 - Refresh Interval:** 14400
 - Refresh Time of Day:** 12:00 AM
 - Refresh Type:** Set
 - Initialize Mode:** None
 - Set Preference:** First
- Inter-Switch Connectivity Group Assignments**

Name	Type	Member
Incoming 1	Inter-Switch Incoming Uniform Numbering Plan	<input type="checkbox"/>
Incoming 2	Inter-Switch Incoming Uniform Numbering Plan	<input type="checkbox"/>
Outgoing 1	Inter-Switch Outgoing Uniform Numbering Plan	<input type="checkbox"/>
Outgoing 2	Inter-Switch Outgoing Uniform Numbering Plan	<input type="checkbox"/>
- Local Switch Settings**
 - View:** All Settings
 - Set Defaults** button

Name	Value
Disconnect Loop Current Length (ms)	0
Flash Hook Time (ms)	200
T1 Protocol	FXS
T1 Signaling	Immediate

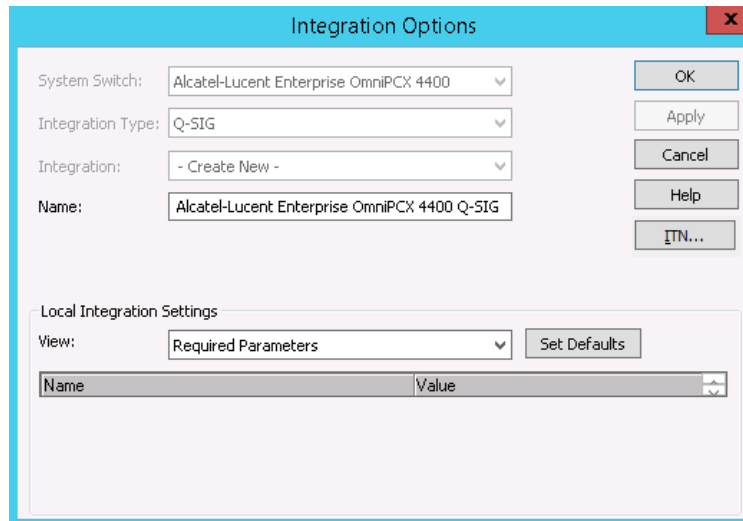
Buttons for **OK**, **Apply**, **Cancel**, and **Help** are located in the top right corner.

- 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.

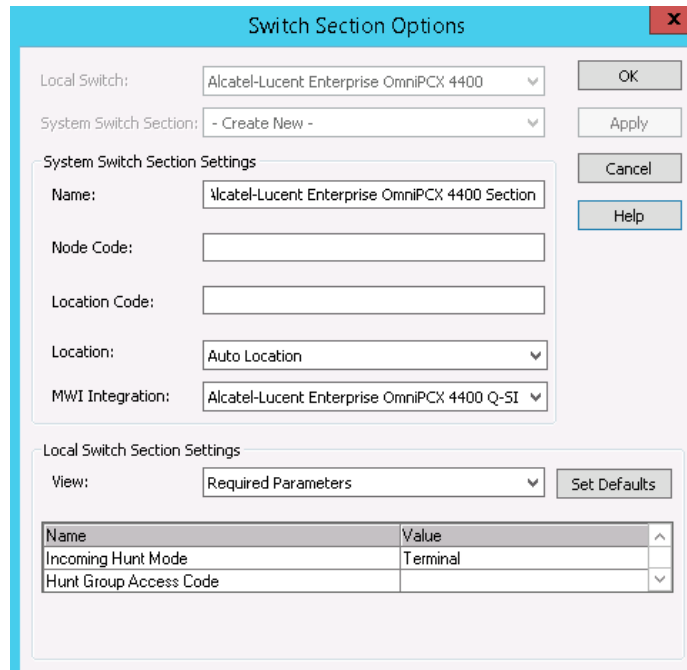


The **Integration Options** dialog box is shown. It has a title bar with a close button (X). The main area contains the following fields and buttons:

- System Switch:** Alcatel-Lucent Enterprise OmniPCX 4400 (dropdown)
- Integration Type:** Q-SIG (dropdown)
- Integration:** - Create New - (dropdown)
- Name:** Alcatel-Lucent Enterprise OmniPCX 4400 Q-SIG (text field)
- Buttons:** OK, Apply, Cancel, Help, ITN...
- Local Integration Settings:**
 - View:** Required Parameters (dropdown)
 - Set Defaults** (button)
 - Table:** A table with two columns: Name and Value.

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

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



The **Switch Section Options** dialog box is shown. It has a title bar with a close button (X). The main area contains the following fields and buttons:

- Local Switch:** Alcatel-Lucent Enterprise OmniPCX 4400 (dropdown)
- System Switch Section:** - Create New - (dropdown)
- System Switch Section Settings:**
 - Name:** Alcatel-Lucent Enterprise OmniPCX 4400 Section (text field)
 - Node Code:** (text field)
 - Location Code:** (text field)
 - Location:** Auto Location (dropdown)
 - MWI Integration:** Alcatel-Lucent Enterprise OmniPCX 4400 Q-SI (dropdown)
- Buttons:** OK, Apply, Cancel, Help
- Local Switch Section Settings:**
 - View:** Required Parameters (dropdown)
 - Set Defaults** (button)
 - Table:** A table with two columns: Name and Value.

Name	Value
Incoming Hunt Mode	Terminal
Hunt Group Access Code	

- 10 In the **Switch Section Options** dialog box, configure the following options:
 - a Go to the **Local Switch Section Settings**, and then select the **Required Parameters** view.
 - b In the **Hunt Group Access Code** field, enter the hunt group access code you configured previously in the section, [Assigning the Hunt Group Access Number](#).

This is the pilot number or destination code that users dial to reach MiCollab AM.
 - c Click **OK**.
- 11 In **MiCollab AM Configuration**, verify that the telephone system is properly added and configured in the **Switches**, **Switch Sections**, and **Integrations** tabs.
- 12 Select the **Lines** tab.
- 13 In the table from the **Lines** tab, 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.

Adding the Aculab PCI and Dialogic Linecards to the Boards Tab

The first Aculab PCI telephony interface linecard is the clock source for all Dialogic cards installed in the Call Server, so all of the Aculab and Dialogic cards installed in the system must be connected to the same H.100 bus.

Before the Dialogic service can be started, the Aculab card must be installed, configured, and running in the system. Once the Aculab software is installed, the Aculab card is automatically configured in the Call Server. You must configure the correct integration in the **Integrations** tab of the **MiCollab AM Configuration** utility and run the **Auto Detect** wizard in the **Boards** tab.

To Auto-Detect the Aculab PCI and Dialogic linecards in the Boards tab:

- 1 In the **MiCollab AM Configuration**, go to the **Boards** tab.
- 2 Click the **Auto Detect** button.
- 3 The **Auto-Detect** wizard starts, and then finds each Aculab and Dialogic linecard that is installed.
- 4 When the wizard prompts you to select the type of interface,
 - Click **Yes** if you are connecting to a **T1** interface.
 - Click **No** if you are connecting to an **E1** interface.
- 5 The system adds any new boards not previously found and automatically configures the Aculab card in the Dialogic Configuration Manager with the correct settings.
- 6 Click **OK** when you are finished.

Adding the Aculab Prosody X PCI or PCIe Linecards to the Boards Tab

Once the Prosody X linecard has been successfully configured in the **Aculab Configuration Tool** and the linecard displays on the **ACT Prosody X** Page as **In Service**, and also displays in the Card List, you can add it to the **Boards** tab in the **MiCollab AM Configuration** using the **Auto-Detect** wizard.

To Auto-Detect the Prosody X PCI linecard:

- 1** In the **MiCollab AM Configuration**, go to the **Boards** tab and perform the following steps:
 - a** Click the **Auto Detect** button.
 - b** The **Auto-Detect** wizard starts, and then finds each Prosody X linecard that is installed, and In Service.
 - c** When the wizard prompts you to select the type of interface,
 - Click **Yes** if you are connecting to a **T1** interface.
 - Click **No** if you are connecting to an **E1** interface.
 - d** The Prosody X PCI or PCIe linecards are added to the **Boards** list.

If there are other boards previously assigned, the Prosody X cards are assigned line numbers based on existing boards in the system.
- 2** Go to the **Integrations** tab and perform the following steps:
 - a** From the **Integrations** list, select **Alcatel-Lucent Enterprise OmniPCX 4400 Q-SIG**, and the click **Edit**. The **Integration Options** dialog box appears.
 - b** In the **Local Integration Settings** section, select the **Integration Specific Parameters** view.
 - c** Find **Phone Line Default audio format** and set the value as **ALaw** or **MuLaw**, the format used on the PBX. The default setting is **ALaw**.

NOTE This parameter has no effect when using an Aculab PCI E1/T1 card.

- d** Click **OK** when you are finished.

Adding Analog Lines to MiCollab AM for Message Waiting Functionality

The Alcatel-Lucent Enterprise OmniPCX 4400 Q.sig interface does not have the capability to set and clear Message Waiting Indicators (MWI) over the E1 interface. MWI indicators must be set and cleared over analog lines using the feature access codes of the PBX. Once you have completed the setup program, you can add analog lines to set and clear Message Waiting Indicators (MWI) for subscriber stations. Follow these steps to configure MWI ports.

To add Analog Lines to MiCollab AM:

IMPORTANT You must install an analog Dialogic linecard prior to configuring the MWI ports. Refer to the spare parts document for the type of Dialogic card you are installing.

- 1 In the **MiCollab AM Configuration**, go to the **Switch Sections** tab and perform the following steps:
 - a Click the **Add** button to add a new switch section for the analog ports. The **Switch Section Options** dialog box appears.
 - b From the **Local Switch** dropdown list, select **Alcatel-Lucent Enterprise OmniPCX 4400**.
 - c In the **Name** field, enter a distinct name for this switch section to avoid confusion.
 - d Click **OK**.
- 2 Go to the **Integrations** tab to create a new integration and perform the following steps:
 - a Click the **Add** button. The **Integration Options** dialog box appears.
 - b From the **System Switch** dropdown list, select **Alcatel-Lucent Enterprise OmniPCX 4400**.
 - c From the **Integration Type** dropdown list, select **Non-Integrated**.
 - d In the **Name** field, enter a distinct name for this integration.
 - e In the **Local Integration Settings** section, select the **Message Waiting Settings** view.
 - f For the **Set MWI Dialing Template** and **Clear MWI Dialing Template** parameter values, enter the MWI set and MWI clear feature codes found in the PBX.
 - g Click **OK**.
- 3 Go to the **Lines** tab and perform the following steps:
 - a From the **Switch Integration Name** column, change all analog lines and unused (D-channel) lines to the new **Non-Integrated** integration.
 - b From the **Section** column, change the **Switch Section** to the new switch section defined for the analog ports.
 - c Select the **Callouts** checkbox to enable callouts for each analog port used for MWI purposes.
 - d Click **Apply** to save the changes.
- 4 Go back to the **Switch Sections** tab and configure the following options:
 - a In the **Local Switch Section Settings** section, select the **Incoming Call Settings** view.
 - b In the **Incoming Line Reserve** field, enter 0 (zero).
 - c Select the **Callout Limit Settings** view.
 - d In the **Maximum Callouts** and **Maximum MWI Callouts** fields, enter the number of MWI ports used.

IMPORTANT Analog lines used for MWI purposes and D-Channel lines must not be configured for the Q.sig integration or the integration will fail. Analog lines and D-channel lines must be defined in a separate integration and switch section.

In the **Lines** tab, change the integration type to **Non-Integrated** on all unused digital (D-channel) and analog lines.

e Click **OK**.

5 In the **MiCollab AM Configuration**, click **OK**.