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CallPilot

AMIS Networking Implementation and Administration Guide

Product release 2.02 Standard 1.0 October 2003

NORTEL NETWORKS™

CallPilot

AMIS Networking Implementation and Administration Guide

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chapter 1

About CallPilot

This chapter introduces CallPilot, the powerful multimedia messaging system from Nortel Networks. CallPilot offers a single solution for managing many types of information, including voice mail, fax-mail, e-mail, telephone calls, conferencing, calendars, directories, and call logs.

CallPilot enables you to get all the information you need from one source, whether through display-based telephone sets, your wireless set, your Windows desktop computer, a speech recognition interface, or another personal communications device.

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Overview

Introduction

The *AMIS Networking Implementation and Administration Guide* provides the information and procedures that are necessary to implement the Audio Messaging Interchange Specification (AMIS) Networking.

Assumptions

This guide assumes that the Meridian Application Server has been correctly installed and is operational. If the application has not been installed, then install it before proceeding. For installation instructions, refer to the hardware installation guide appropriate to your server type.

If the server has been installed but is not operational, refer to the *Maintenance and Diagnostics Guide* for information on troubleshooting your system.

Skills you need

Introduction

You need certain skills and knowledge to use this guide effectively.

Nortel Networks product knowledge

Knowledge of, or experience with, the following Nortel Networks products will assist you:

- previous releases of CallPilot
- Meridian Mail

PC experience or knowledge

Knowledge of, or experience with, the following PC products will be of assistance. This guide does not document the following functionality:

- Microsoft Windows NT
- Microsoft Windows 95
- Microsoft Windows 2000

Other experience or knowledge

Other types of experience or knowledge that may be of use include the following:

- switch configuration and operation (especially trunk group access restrictions [TGARs] and network classes of service [NCOS])
- network management
- client-server systems
- flowcharting
- troubleshooting

How this guide is organized

Introduction

The *AMIS Networking Implementation and Administration Guide* is organized in the sequence of tasks required to successfully implement AMIS Networking for CallPilot. Start at the beginning of the guide and work your way through it until all required tasks are completed.

Contents

This guide contains the following chapters.

Chapter title	Description
Chapter 1, About CallPilot	This chapter describes how to work with the CallPilot interface and how to use this guide.
Chapter 2, Getting started	This chapter provides an overview of AMIS Networking. This chapter describes the features supported by AMIS Networking and how AMIS Networking works. This chapter also provides a high-level overview of the tasks that are performed during implementation.
Chapter 3, Modifying the switch configuration	This chapter explains how to configure the switch for AMIS Networking.
Chapter 4, Configuring CallPilot for AMIS Networking	This chapter describes how to configure CallPilot for AMIS Networking. This chapter describes every box that must be completed and provides detailed procedures.

Chapter title	Description
Chapter 5, Testing and backing up AMIS Networking	This chapter describes how to test the implementation of AMIS Networking to ensure that it is properly configured. This chapter also describes how to perform a backup of the system.
Chapter 6, Maintaining AMIS Networking	This chapter explains how to perform both regularly scheduled maintenance tasks and as-required maintenance tasks.
Chapter 7, Troubleshooting AMIS Networking	This chapter provides information to identify and solve problems with AMIS Networking.

Related information products

Introduction

The following CallPilot technical documents are stored on the CD-ROM that you receive with your system. The documents are also available from the following sources:

- CallPilot Manager
- My CallPilot
- the Nortel Networks Partner Information Center (PIC) at http://my.nortelnetworks.com

  You require a user ID and a password to access the PIC. If you do not have a PIC account, click Register to request an account. It can take up to 72 hours to process your account request.

You can print part or all of a guide, as required.

Note: To order the documents that are available in printed format, contact your Nortel Networks sales representative.

Planning and migration guides

Use these guides before you install CallPilot to help plan your system, or to plan a migration of data from Meridian Mail to CallPilot:

Document title	NTP number
Installation and Configuration Planner	—
Planning and Engineering Guide	555-7101-101
What's New Guide	555-7101-901

Installation and configuration guides

The following guides describe how to install the following:

- CallPilot server hardware and software
- desktop messaging and My CallPilot software

Document title	NTP number
Desktop Messaging and My CallPilot Installation Guide	555-7101-505
Installation and Configuration Guide for your server model This is a binder that contains the following five documents: ■ *Part 1: Installation and Maintenance Overview* ■ *Part 2: <Server model> Server Hardware Installation* ■ *Part 3: <Switch name> and CallPilot Server Configuration* ■ *Part 4: Software Installation and Maintenance* ■ *Part 5: <Server model> Server Maintenance and Diagnostics*	Refer to the *CallPilot Installation and Configuration* binder for NTP numbers.

Administration guides

The following guides provide specialized information to help you configure administer and maintain CallPilot, and use its features:

Document title	NTP number
Administrator's Guide	555-7101-301
Reporter Guide	555-7101-310
Application Builder Guide	555-7101-325

Document title	NTP number
Desktop Messaging and My CallPilot Administration Guide	555-7101-503
Meridian Mail to CallPilot Migration Utility Guide	555-7101-801

Networking guides

The following guides describe how to plan, install, set up, and troubleshoot the CallPilot networking services:

Document title	CallPilot release	NTP number
Networking Enhancements Guide	2.0	555-7101-507
Networking Planning Guide	1.0	555-7101-100
NMS Implementation and Administration Guide	1.0	555-7101-302
AMIS Networking Implementation and Administration Guide	1.0	555-7101-303
Enterprise Networking Implementation and Administration Guide	1.0	555-7101-304
Integrated AMIS Networking Implementation and Administration Guide	1.0	555-7101-305
VPIM Implementation and Administration Guide	1.0	555-7101-306

Note: For instructions on how to configure the networking services on CallPilot, refer to the CallPilot Manager online Help.

End user guides

The following guides are intended for CallPilot end users, such as telephone set users and desktop messaging users:

Document titles
Unified Messaging Quick Reference Card
Unified Messaging Wallet Card
Unified Messaging What's New Card
Command Comparison Cards
Menu Interface Quick Reference Card
Alternative Command Interface Quick Reference Card
Multimedia Messaging User Guide
Speech Activated Messaging User Guide
Desktop Messaging User Guides
My CallPilot User Guide

Troubleshooting

The *CallPilot Troubleshooting Reference* describes symptoms that can appear on all CallPilot server platforms, and describes ways to resolve them.

The *CallPilot Troubleshooting Reference* is intended for Nortel Networks distributors and technical support representatives; therefore, it is not part of the customer documentation package. Nortel Networks continually updates the *CallPilot Troubleshooting Reference*, which is available from the Nortel Networks Partner Information Center (PIC) at http://my.nortelnetworks.com.

You require a user ID and a password to access the PIC. If you do not have a PIC account, click Register to request an account. It can take up to 72 hours to process your account request.

Note: If you are not a Nortel Networks distributor, then contact your Nortel Networks technical support representative for assistance.

Using online sources

CallPilot administration online Help

The CallPilot Manager and CallPilot Reporter software contain administration online Help areas that provide access to

- technical documentation in Acrobat PDF format
- online Help topics in HTML format

To access online information, use either of the following methods:

- Click the orange Help button at the top of any page to access the Administration Help area.
- Click the grey Help button on any page to display a topic that relates to the contents of the page.

For more information about using these Help systems, access the CallPilot Manager Help, open the Getting Started book, and click “Navigating CallPilot Manager Help.”

The Application Builder software contains a Windows Help system as well as context-sensitive Help (available by clicking the ? button and then a field or label).

CallPilot end-user online Help

The My CallPilot software contains a Useful Information area that provides access to the end-user guides in PDF format.

To access online Help for the currently selected My CallPilot tab, click the Help button on the upper-right corner of the My CallPilot page.

Desktop messaging provides product-specific Windows Help for groupware clients (Microsoft Outlook, Novell GroupWise, and Lotus Notes). The stand-alone version of CallPilot Player also provides addressing and troubleshooting information for Internet mail clients.

Contacting technical support

Contact your distributor's technical support organization to get help with troubleshooting your system.

Conventions

Commands documented in procedures

As in many other Windows-based applications, in CallPilot you can execute a command in several ways. For example, to copy text you can choose any of the following methods:

- Select Copy from the Edit menu.
- Click the Copy button on the toolbar.
- Type the keyboard shortcut Control + C.

The procedures in this guide use only the first method: selecting a command from a menu.

Navigation information in procedures

A **Getting there** statement precedes each procedure in this guide. This statement summarizes the steps you must take to navigate to the window or tab where you carry out the procedure.

All **Getting there** statements start at the Nortel System Management Interface (SMI) window. This assmues that you logged on and selected the appropriate system. Eac item mentioned after the Nortel SMI window represents an icon, window or tab that makes up the path to the final destination.

Example

To define special mailboxes, such as the broadcast mailbox, you must be on the Mailboxes tab.

Getting there Nortel SMI > Meridian Application Server > CallPilot > Message Administration

After you double-click Messaging Administration, the Message Administration Properties sheet displays. Click the Mailboxes tab.

Finding your way around CallPilot

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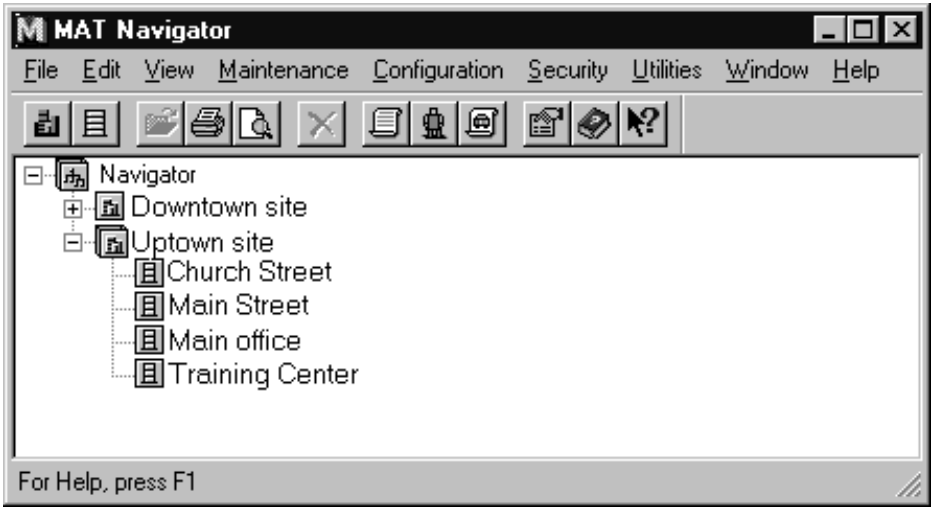
Connecting to CallPilot

Introduction

To perform administrative tasks, or to build or work with CallPilot applications, you must first connect to the Meridian Application Server (the MAS server). The MAT Navigator and the System Management Interface (SMI) work together to give you access to your system and sites.

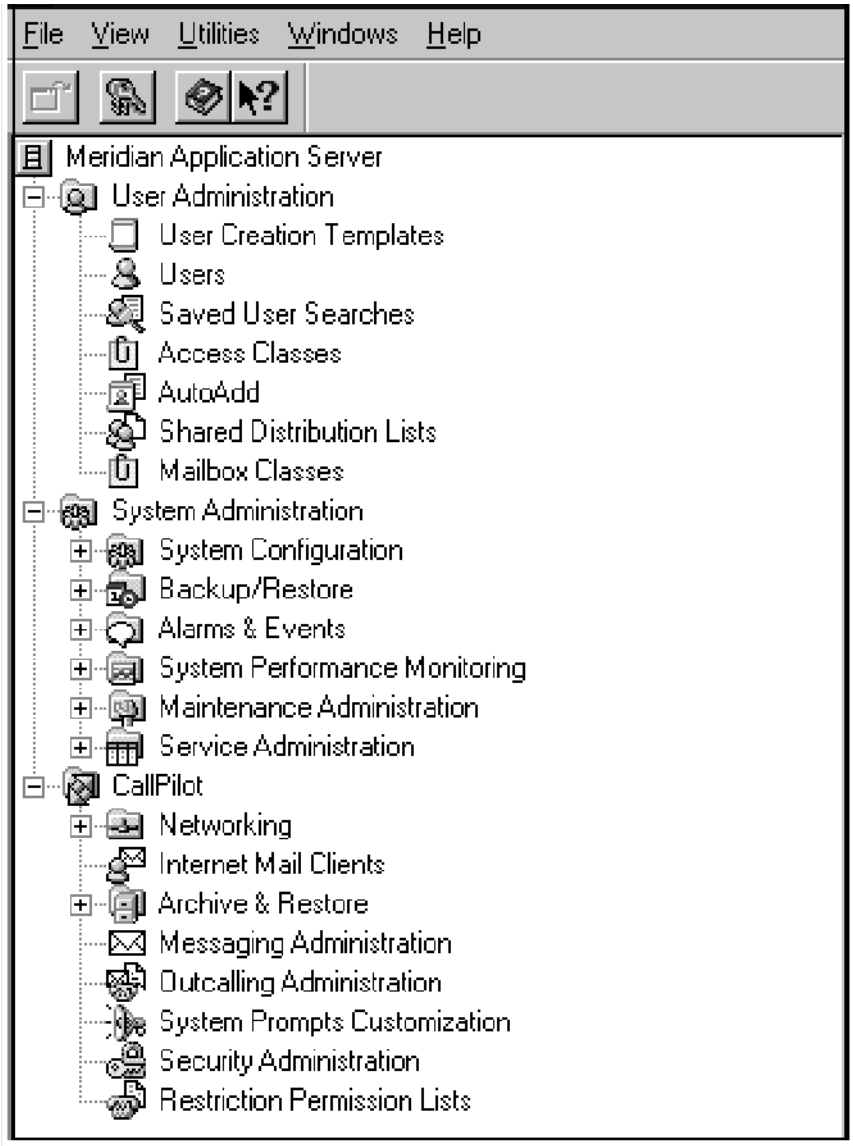
Selecting a system-the MAT Navigator

The first step in logging in is to launch the MAT Navigator, which has its own password. The MAT Navigator connects your administration client to the MAS server. It displays all your sites and systems and enables you to select one to work on.



Selecting a program—the System Management Interface (SMI)

When you select a system from the MAT Navigator, you are prompted for a second password. At this point, the SMI window for the selected system or site displays.



The SMI gives you quick and easy access to your system or sites. The SMI uses a navigation tree to display the system's hierarchy. In the tree, icons represent the folders and programs. Double-click a folder icon to view its contents. Folders can contain programs and other folders. Double-click a program icon to run the associated program.

Selecting an object-list views

When you launch certain programs, the first thing you see is a list view. The list view displays all the objects of a certain type (such as mailbox classes) that are currently defined in the system. The list view includes predefined objects as well as those defined by an administrator. From the list view window, you can select a specific object to work on.



Viewing and changing properties

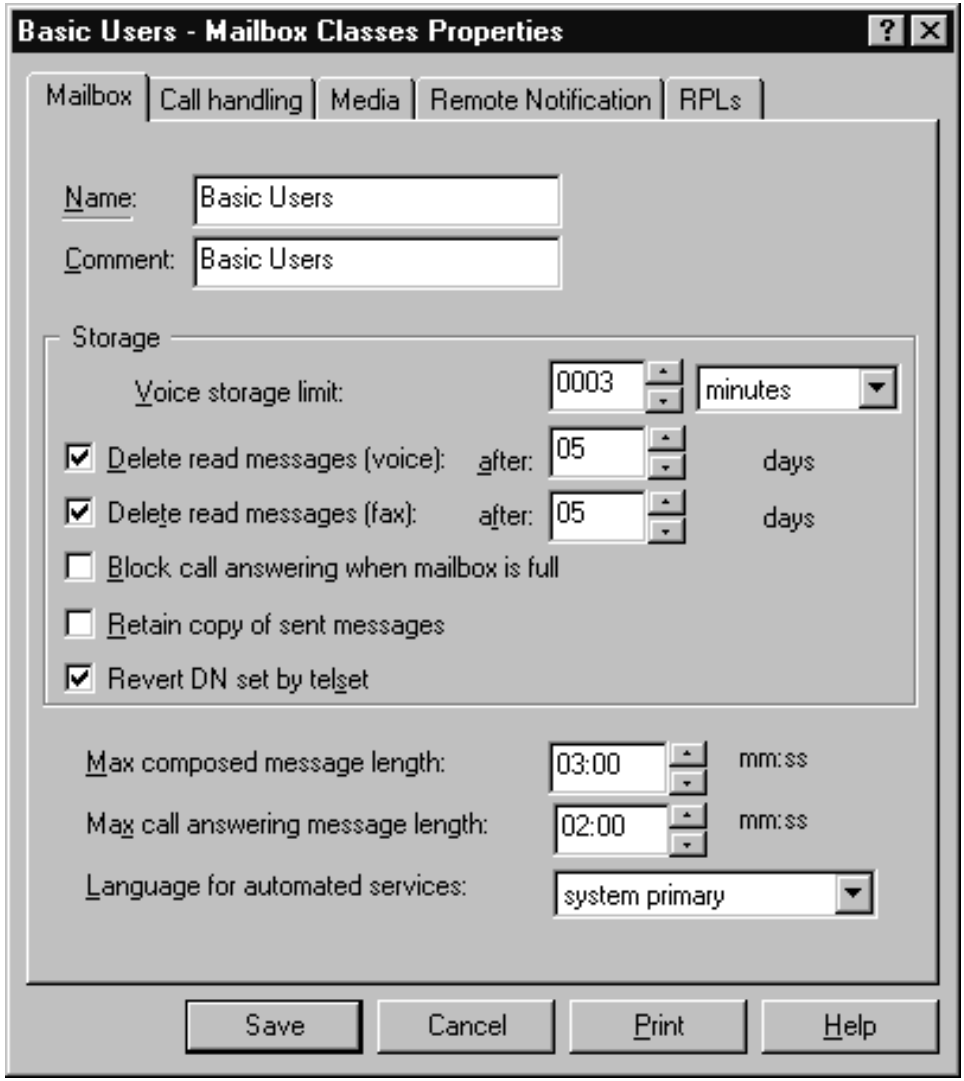
Select an object and display its properties by

- double-clicking it or
- single-clicking it and selecting Properties from the File menu
- right-clicking it and selecting Properties from the popup menu

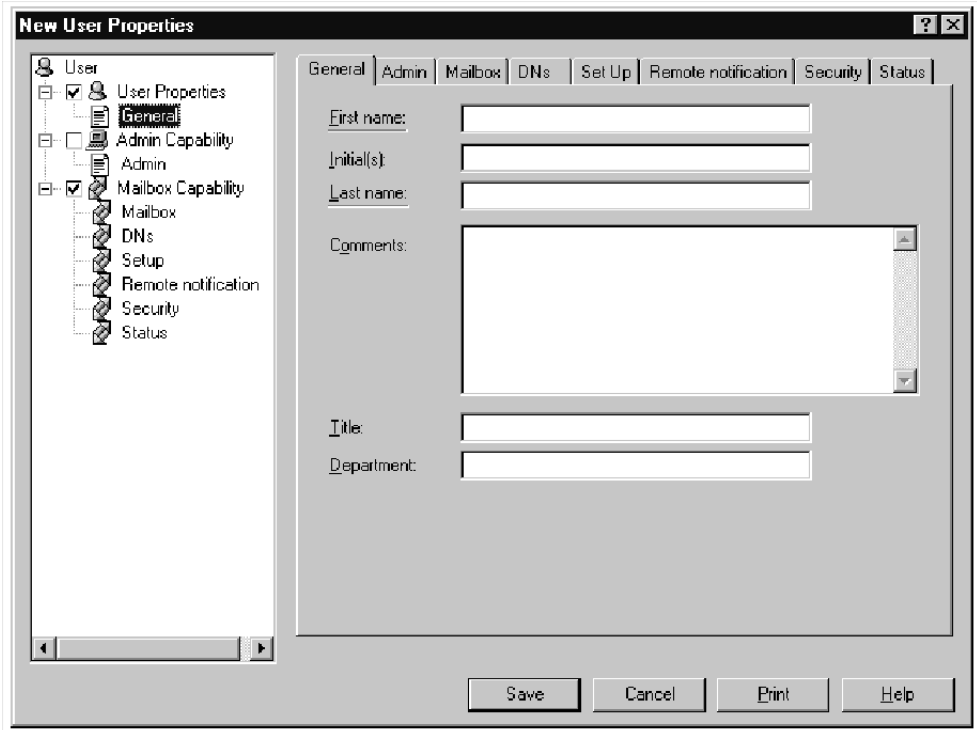
Entering data and choosing options-property sheets

A property sheet is displayed when you view an object selected from a list view. Certain programs, such as Messaging Administration, display a property sheet immediately after launching. Property sheets have one or more tabs. Each tab has fields, referred to as boxes, in which you can type data or from which you can select options.

Most CallPilot property sheets look like the following:



Some property sheets are divided into two panes. When a box is checked in the left pane, the selected capabilities are enabled and you can access the associated tabs. Select a tab by clicking its name in the left pane or by clicking the tab in the right pane. These property sheets look like this:



Mandatory boxes

If the name of a box is underlined, the box is mandatory, and you must fill it in. You cannot save if any mandatory boxes are empty.

Common buttons

The following buttons appear on most property sheets:

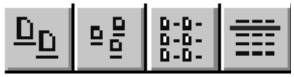
Button	Description
Save	Saves all changes made on any of the tabs in a property sheet and closes the property sheet. Therefore, save only when you have made the necessary changes on all tabs.
Cancel	Closes the property sheet without saving any changes.
Print	Prints the contents of all tabs in the property sheet.
Help	Displays Help for the current tab. From this overview Help topic, you can access other Help topics, the index, and the search function.

Using the toolbar buttons

For easier access, some of the more common tasks, such as Print and Save, are represented as buttons on the toolbar.

The following buttons are used throughout CallPilot. Buttons or icons specific to certain CallPilot functions, such as backups and archives, are documented in the relevant chapters.

Toolbar button	Description
	Saves any changes you have made and then transfers all the application's data to the server.
	Opens the Print dialog box and prints the active file or the objects you specify.
	Deletes the object you select.

Toolbar button	Description
	Displays the properties of the object you select.
	Displays the Help topics window.
 	Explains the next menu item or screen object you click. In a window, there is an arrow. On tabs or in dialog boxes, there is no arrow.
 	Opens the New dialog box, where you identify the properties of the object you are creating. The button looks different in different applications.
 	Displays the Open dialog box, where you select an object to open. The button is different in different applications.
	Reloads the current page and displays the changes you have made.
	Enables you to select how the system displays icons.

Multi-administrator access

Introduction

You can create multiple administrator accounts to make administering CallPilot easier and more efficient. Multiple accounts enable administration responsibilities to be distributed among a number of people. Therefore, certain administrators can specialize in certain tasks, such as maintaining users, performing backups, analyzing reports, or creating multimedia services.

Access classes

For security reasons, administrators should be given access only to those parts of the system that relate to their role. For example, an administrator who is responsible only for creating multimedia services should have access only to Application Builder and the Service Directory Number Table.

Each administrator account is assigned an access class. An access class is a list of the parts of the system and the level of access allowed. The access levels are as follows:

- create/delete (enables an administrator to delete objects such as users and services)
- edit
- view
- none

For example, an administrator may be able to create or delete objects in Application Builder but only view User Templates.

Simultaneous access

Multiple administrators can log in to CallPilot at the same time without overwriting other work.

If you are the first to log in to a particular resource, such as a specific mailbox class or user profile, and another administrator tries to access the same resource, a dialog box appears to inform you of the other administrator. At this point, you can do one of the following:

- Keep editing.
- Save your changes, and release the resource to the other administrator.
- Cancel your changes, and release the resource to the other administrator.

If you do not respond to this prompt within two minutes—because you are away from the terminal, for example—the system releases the resource so that others can access it. If this happens, all your unsaved changes are lost.

An administrator who accesses a resource that is currently being edited sees a read-only view of the property sheet in which all boxes are dimmed. This indicates that the resource is currently locked. The administrator is not notified when the resource is released, but must try to access the property sheet again to see whether its status has changed.

If a user tries to log on to a mailbox while an administrator is changing the profile, the user is unable to log on and receives a message that says the mailbox is in use.

Refreshing screens

Because multiple administrators can access the same database at the same time, a Refresh command is available from the View menu to ensure that the view you are seeing is the most up-to-date.

For example, if you are viewing a list of users when another administrator deletes a user, the only way to see the change is to refresh the screen. You should, therefore, refresh the screen regularly.

Error handling in property sheets

Introduction

If you make certain types of errors while entering data, you are not able to save your changes until you correct the errors. For example, if you leave a mandatory box empty, you receive a message prompting you to fix it.

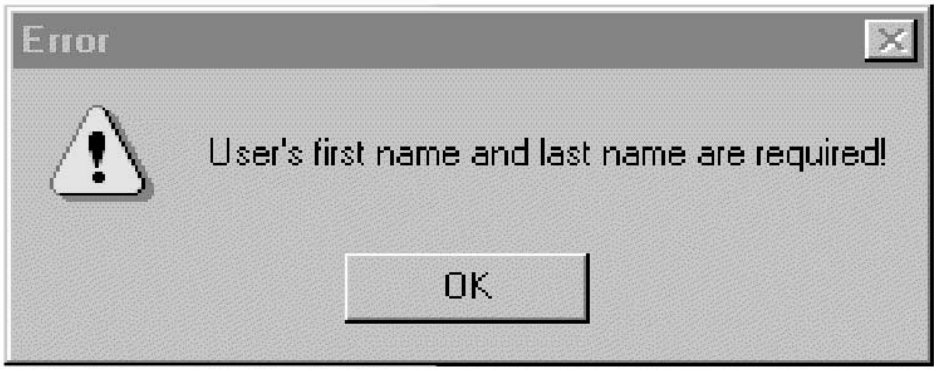
Note: These errors do not show up in the Event Browser or Alarm Monitor because the errors relate only to data entry and are not operational problems.

How error handling works

There are two types of error messages.

Type 1

If you get this type of error message, click OK, and then fix the problem described in the message before you try to save again.

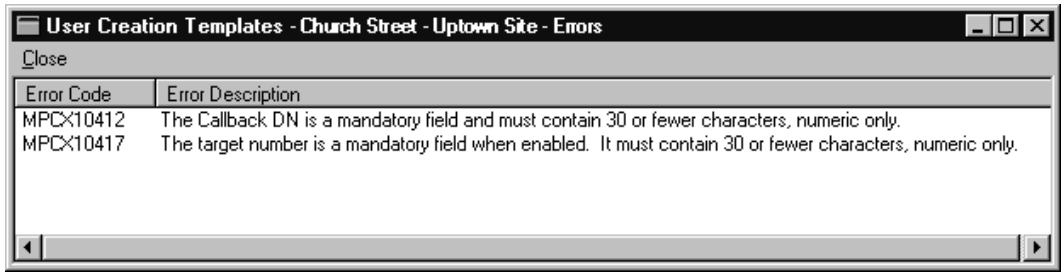


Type 2

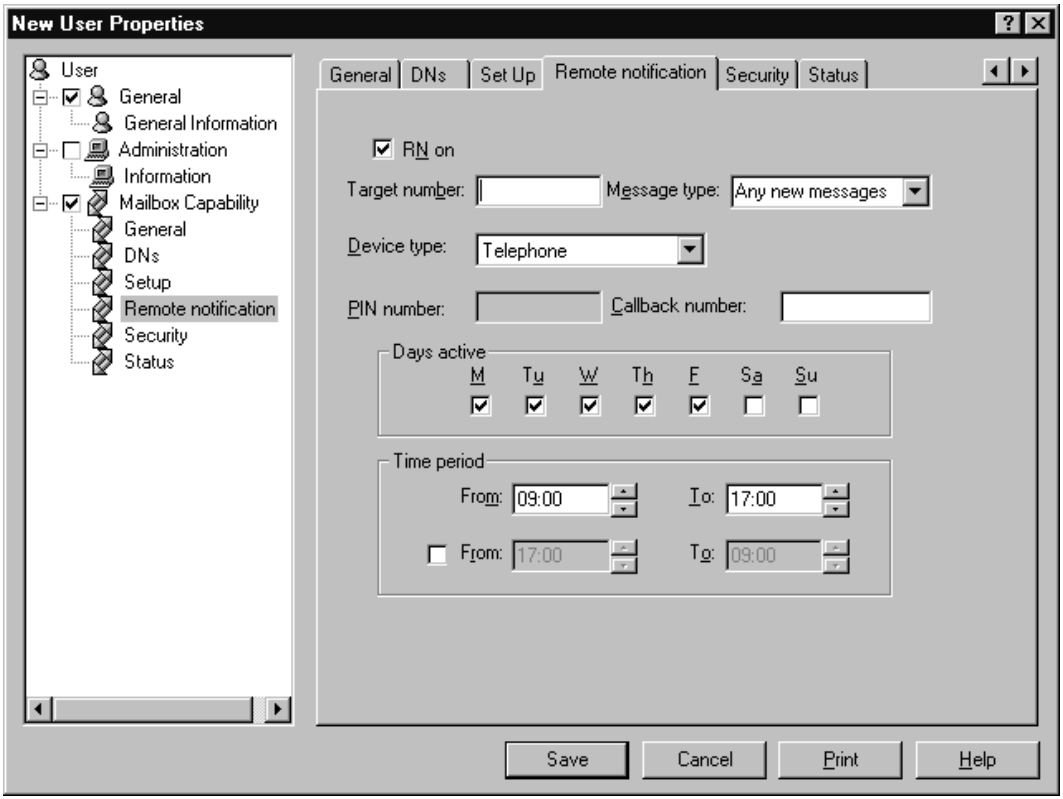
If you get this type of error message, click OK to see a list of errors.



Double-click an error from the list. Your cursor is automatically placed in the box where the error was made so that you can correct it.



For example, if you double-click the second error, the Remote notification tab is displayed, with the cursor in the Target number box.



Using the online Help

Introduction

While administering or maintaining CallPilot, you may have questions about the purpose of certain boxes and buttons, or need more information about completing certain tasks. Online Help provides brief answers to the questions "What's this?" and "How do I...?"

Context-sensitive Help

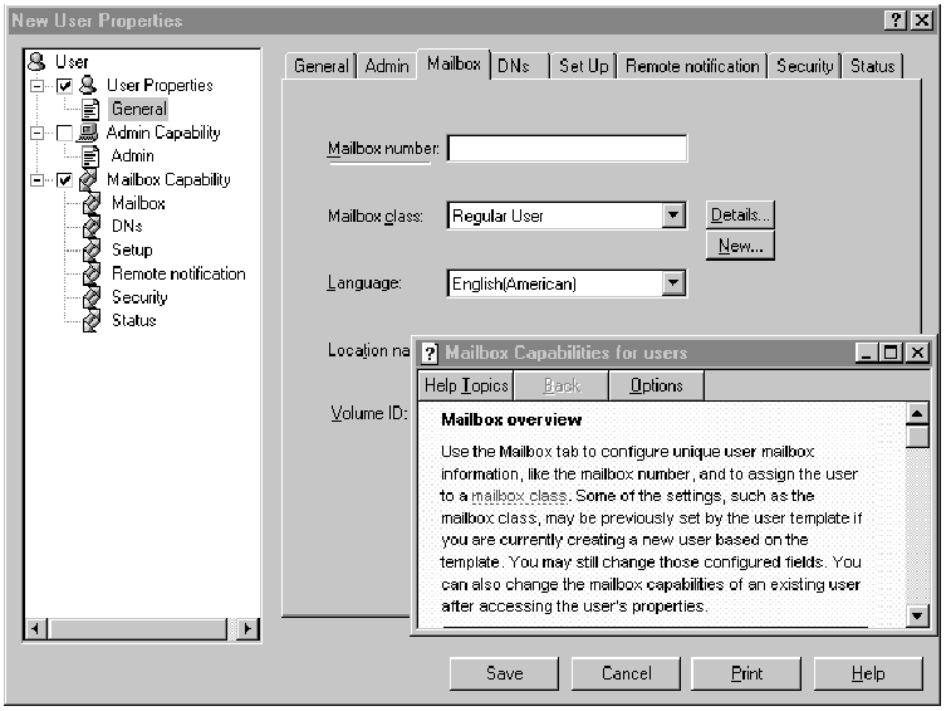
If you need to know the purpose of a particular box or button, use context-sensitive Help.

To access context-sensitive Help

1 Click the  icon in a window or the  icon on a tab or in a dialog box.

2 Point to the box or button for which you want more information, and click.

Result: A pop-up description of the selected object is displayed.



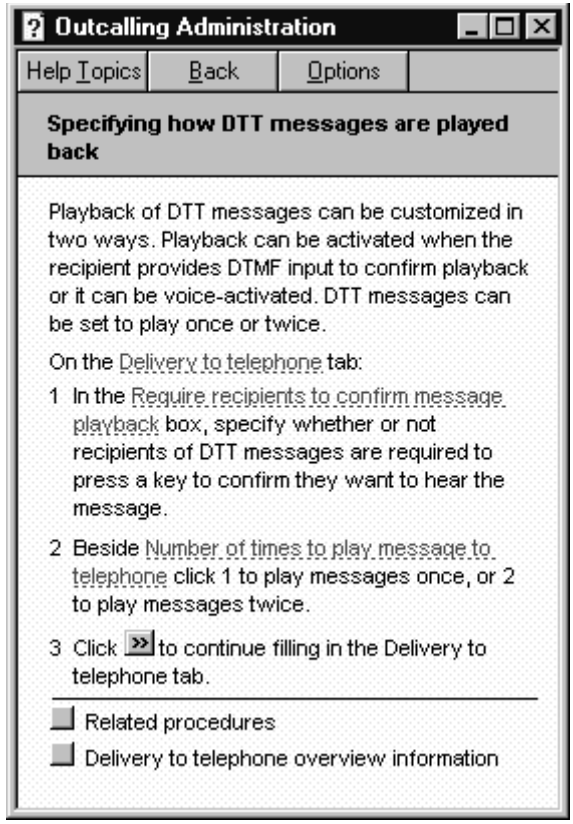
Procedures

If you need to know how to do something, you can access procedures to lead you through a task.

High-level tasks

In some cases, high-level tasks take you through longer procedures. These tasks also provide you with navigation to the step-by-step procedures they include.

For example, setting up Delivery to Telephone requires several procedures. The high-level task summarizes these procedures. You click the gray buttons within the task to open the step-by-step procedures. The high-level task remains on your screen so that you can continue to use it to move through the procedures.



Overview topics

Overview topics provide brief descriptions of tabs, features, and the tasks carried out from the tabs. However, the online guides contain more detailed feature descriptions.

To access overview topics

Click the Help button on a tab.

To find information in Help

You can look up procedures and overview topics in the following ways:

1 From the Help menu, select Help Topics.

Note: You can also press F1 on the keyboard.

2 Go to one of the following tabs:

- To see the table of contents of all the Help topics, select the Contents tab.
- To look up a subject alphabetically, select the Index tab.
- To do a full-text search to find topics that contain the words you enter, select the Find tab.

chapter 2

Getting started

AMIS Networking is one of the networking solutions offered by CallPilot. AMIS Networking uses the industry-standard AMIS analog protocol to exchange messages with all AMIS-compliant messaging systems.

This chapter introduces AMIS Networking and provides a basic overview of the AMIS Networking implementation process.

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Overview

Introduction

AMIS Networking is one of the networking solutions offered by CallPilot. This chapter introduces AMIS Networking and provides a basic overview of its implementation process.

You must be familiar with the basic concepts of messaging networks and protocols. To review these concepts, consult the *Networking Planning Guide*.

Definition: AMIS Networking

AMIS Networking uses the Audio Messaging Interchange Specification—Analog (AMIS-A) protocol. This protocol is an industry standard for the transmission of voice messages between messaging systems.

You can use AMIS Networking to communicate with any remote sites that support the AMIS protocol. These remote sites can be within a private switch network or within the public switch network.

Note: There are both analog and digital versions of the AMIS protocol, but CallPilot uses only the analog version. Therefore, AMIS refers to AMIS-Analog throughout this guide.

AMIS protocol

AMIS is an industry-standard protocol for analog messaging. Therefore, AMIS Networking users can exchange messages with users at other sites that have AMIS-compliant messaging systems.

Message transmitted using AMIS

A transmitted message that uses the AMIS protocol is made up of two parts:

- a message header consisting of
  - the mailbox numbers of both the sender and the recipient
  - the return system access number (SAN) of the sender
  - an indication of whether the message is a regular message or a non-delivery notification (NDN) message

- the recorded message

Message headers are sent and received by dual-tone multifrequency (DTMF) tones.

The recorded message itself is played by the sending site and recorded by the receiving site.

Terminology

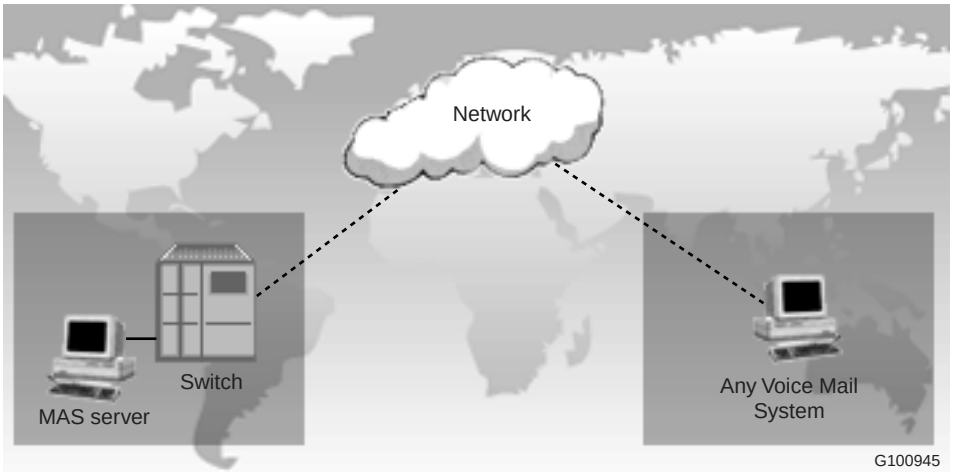
The following terms are used throughout this guide:

Term	Definition
Open	■ Not defined in the network database ■ Not part of the private messaging network
Integrated	■ Defined in the network database ■ Part of the private messaging network
Network administrator	Individual responsible for implementing and maintaining a site in the private messaging network

Note: The term “virtual node,” which was used in Meridian Mail documentation, is replaced by the term “integrated site.”

AMIS Networking

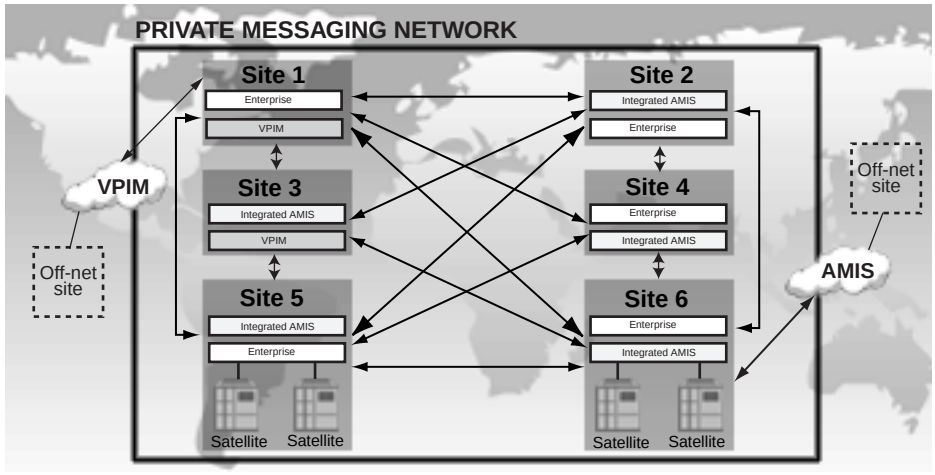
The following diagram is a conceptual illustration of AMIS Networking.



Messaging network with AMIS Networking

You can implement AMIS Networking within a complex network that combines several CallPilot networking solutions.

The following diagram illustrates a complicated network that includes all CallPilot networking solutions: Network Message Service (NMS), VPIM Networking, Enterprise Networking, Integrated AMIS Networking, and AMIS Networking.



G101139.e

In this example, Site 6 requires the functionality of AMIS Networking to exchange messages with open sites that use the AMIS protocol.

Site 6, however, also uses the AMIS protocol to exchange messages with integrated sites and open sites. Therefore, Site 6 implements Integrated AMIS Networking, which also contains AMIS Networking.

Integrated AMIS Networking

AMIS Networking and Integrated AMIS Networking are distinct networking solutions that are implemented separately.

When you implement Integrated AMIS Networking on a site, you must add information about every remote site that you want to exchange messages with using the AMIS protocol.

When you implement AMIS Networking, you do not add any information about the remote sites because they are usually open sites. An open site is not part of your messaging network.

Usually, you do not use AMIS Networking to send messages within a private messaging network. Instead, you use Integrated AMIS Networking, which provides more capabilities, such as simplified addressing.

Every site that has Integrated AMIS Networking installed automatically has AMIS Networking installed.

However, every site that has AMIS Networking installed does not automatically have Integrated AMIS Networking installed. Integrated AMIS Networking is available only if your CallPilot system has both the AMIS and the Networking Sites keycodes enabled.

If you intend to use both Integrated AMIS Networking and AMIS Networking, implement Integrated AMIS Networking only.

For information on the Integrated AMIS Networking implementation process, consult the *Integrated AMIS Networking Implementation and Administration Guide*.

AMIS initiator tone

The AMIS protocol uses dual-tone multifrequency (DTMF) tones to transfer messages. CallPilot establishes a connection with another AMIS-compliant messaging system by placing a call to that system's AMIS system access number.

The originating system sends an initiation tone (the DTMF C tone). The receiving system responds with a confirmation tone (the DTMF D tone). A message is transferred only after this initial contact, often called handshaking, is completed.

CallPilot and AMIS Networking

Introduction

The AMIS protocol works with all AMIS-compliant voice messaging systems, regardless of size, complexity, or vendor.

To be universal, AMIS Networking gives up some advanced messaging functionality. Therefore, AMIS Networking does not support some of the advanced features of CallPilot.

Additional features

CallPilot compensates for some of the shortcomings of the AMIS protocol. For example, the AMIS protocol allows only one recipient for a message. CallPilot enables users to send a message to more than one AMIS recipient by sending the message to each recipient in turn.

AMIS Networking features

The following table lists the CallPilot features that are supported by AMIS Networking.

For detailed information about CallPilot features, consult the *Advanced Administration Guide*.

CallPilot feature	Supported	Notes
Call Sender	No	
Names Across the Network	No	
Name Addressing	No	
Name Dialing	No	
Personal Distribution Lists	Yes	AMIS addresses can be included in a user's PDL.
Shared Distribution Lists	No	

CallPilot feature	Supported	Notes
Multiple Recipients	Yes	When a message is sent to more than one recipient, a separate message is transmitted for each AMIS recipient.
Reply To	Yes	Restriction/Permission Lists can be set up to block return messages to certain sites, such as international long-distance sites.
Reply All	No	AMIS messages contain information only about the originator of a message, not all recipients of the message.
User's Actual Personal Verification	No	
Administrator-Recorded Personal Verification	No	
Remote Site Spoken Names	No	
Private Tag	No	AMIS does not support private message tags. For this reason, messages tagged as private are returned to the sender with a non-delivery notification.
Acknowledgment Tag	Yes	Acknowledgment tags indicate that the message was delivered to the remote site, not that it was listened to.
Urgent Tag	No	Users can tag a message as urgent, and the system treats it as urgent for the prioritizing delivery. However, the recipient of an urgent message does not know it was tagged as urgent.

CallPilot feature	Supported	Notes
Economy Tag	Yes	Users can tag a message as economy, and the system treats it as economy for the prioritizing delivery. However, the recipient of an economy message does not know it was tagged as economy.
Received Time Announced	Yes	The time when the message was deposited into the mailbox is announced to the recipient.
Sent Time Announced	No	
120-Minute Messages	No	Message body length is limited to eight minutes. Messages longer than eight minutes are not sent, and a non-delivery notification is sent to the originator.
Sender's Name (Text)	No	
Recipient's Name (Text)	No	
Message Subject (Text)	No	
Sender's Department	No	
Timed Delivery	Yes	

Implementing AMIS Networking

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Overview

Introduction

Planning is critical to successfully implement AMIS Networking. Before you begin to implement AMIS Networking, you must understand the basic implementation process and know what information to provide.

The process for planning the implementation of a CallPilot networking solution is described in detail in the *Networking Planning Guide*. The following overview assumes that you are familiar with this description.

Before you begin

AMIS Networking is implemented incrementally onto your CallPilot system after other parts of the system are in place and tested.

The following assumptions are made:

- A switch is installed and configured.
- The CallPilot server is installed and configured, except for AMIS Networking.
- If implemented on the local site, Network Message Service (NMS) is fully implemented and tested.
- Sufficient trunks that connect the switch to a public switch are available.
- If the installation is an upgrade from Meridian Mail, all configuration information is available.
- Information is collected from at least one remote system that will communicate with the local system. This information is used to test the system.

Implementation steps

You must complete the following steps:

- Modify the configuration of the switch.
- Configure the CallPilot server for AMIS Networking.
- Coordinate with other AMIS systems.

- Test and back up the system.

Modify the switch configuration

You must properly configure the switch for AMIS Networking.

While you implement AMIS Networking, you must check several settings on the switch and modify the configuration by adding one additional setting.

Configure CallPilot

Installing AMIS Networking requires additional configuration of CallPilot.

To configure CallPilot for AMIS Networking, you must provide the information that CallPilot uses to deliver AMIS Networking messages, such as the local system access number and the scheduling parameters.

Coordinate AMIS systems

The use of an industry-standard protocol in an open network can enable different systems to communicate. However, systems that want to communicate using AMIS Networking require some coordination between them.

To use AMIS Networking, the users on one system must know of users on another system. The two systems must also agree to use AMIS Networking.

AMIS Networking gains access to a remote system through the remote system access number (SAN). To send a message using AMIS Networking from a local site to a remote site, the local user must know the remote system access number, not the remote user's telephone number.

Your local system does not contain the system access number of the remote system within its network database. Instead, a local user must know the system access number and enter it manually. The local user can get the system access number from the intended recipient at the remote site or from the system administrator for more frequently called sites.

Example 1: Howard Snyder, a local marketing manager at Widget Company, knows that his major customer, Acme Tool and Die, has an AMIS-compliant voice messaging system. Howard decides to send a message to Maria, the product manager at Acme. He checks her card and composes a message to her mailbox. The message is returned with a non-delivery notification (NDN).

Howard knows that he should be able to send messages to Maria. He asks his CallPilot administrator to fix the problem. The administrator realizes that Howard does not know Acme's system access number. The administrator phones Acme's administrator and gets the system access number. The CallPilot administrator prints out this information and distributes it locally so that all users at Widget can send messages to Acme.

Example 2: A company in Toronto conducts extensive business with a small company in New York. Although the companies use voice messaging systems from different vendors, both systems are AMIS-compliant. When a user at the Toronto office wants to send a message to a user at the New York office, the message cannot be sent directly to the number that is printed on the recipient's business card. Instead, the user must dial the AMIS system of the New York office and then enter the recipient's mailbox number.

Test the network

When you complete the configuration of AMIS Networking, you perform a test suite. This test suite ensures that the configuration is correct and that AMIS Networking is working properly. You need the system access number of at least one remote receiving site to complete the test suite.

Back up the network

When you successfully complete the test suite, you perform a backup. The backup ensures that no configuration information is lost in the event of a system failure.

Keep records

As you plan and implement AMIS Networking, it is important to keep records about your site.

These records

- Provide a source of information for support personnel.
- Share information about the site with other network administrators.

Implementation in a complex messaging network

Introduction

AMIS Networking is often part of a complex messaging network that combines several CallPilot networking solutions.

Order of implementation

If you are implementing any other CallPilot networking solutions on your site, you will make the process easier to understand and manage by following the correct order of implementation.

The implementation of each networking solution builds upon earlier implementations. Information is often configured only once, and all subsequent networking solutions that are implemented use this configuration.

Recommended order

The recommended order for implementation is

1. Network Message Service (NMS)
2. AMIS Networking
3. Integrated AMIS Networking
4. Enterprise Networking
5. VPIM Networking

Even if you are installing only some of the solutions, you should follow this recommended order. For example, if you are installing only AMIS Networking, Enterprise Networking, and NMS, you should install NMS first.

Integrated AMIS Networking

If your local site exchanges messages with both integrated sites and open sites, implement Integrated AMIS Networking only. Integrated AMIS Networking also contains the functionality of AMIS Networking.

If the local site exchanges messages with integrated sites, follow the procedures in the *Integrated AMIS Networking Implementation and Administration Guide*. Instructions for enabling the AMIS Networking functionality are also contained in that guide.

How AMIS Networking works

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About AMIS Networking messages

Introduction

You use AMIS Networking to exchange messages with open sites that are not in the local network database. When you implement AMIS Networking, you configure the system to handle these messages in a particular way.

An understanding of the basic components of a message makes the implementation process and configuration of CallPilot easier to understand.

AMIS Networking message

Every AMIS Networking message contains two parts:

- a message header
- the message body

Message header

The message header contains the following information:

- the sender's address, including the system access number
- the recipient's address
- the message type (regular, acknowledgment, or non-delivery notification)
- the time and date when the message was sent
- the message tag, if applied (private, urgent, or economy)

Message body

The message body is played over the voice channel of the sending site and is recorded by the receiving site.

An AMIS Networking message can consist of voice only; it cannot include any attachments. Therefore, the message body consists of a voice message.

Message priorities

The sender can assign a message priority tag to an AMIS Networking message. There are three priorities:

- economy
- standard
- urgent

One message priority, usually standard, is the default. Users must assign another message priority manually.

Configuration required for each message priority

The message priority tag that is assigned to a message determines how CallPilot handles the message.

When you implement AMIS Networking, you configure the scheduling parameters that determine how messages with different message priority tags are handled.

In general, you send economy messages during lower long-distance toll charge periods. You send urgent messages quickly, with the emphasis on speed rather than cost.

About AMIS Networking parameters

Introduction

When you implement AMIS Networking, you enter information into the network database about how the system uses the AMIS protocol.

This information works with settings in CallPilot to control how AMIS Networking works.

Before you begin the implementation process, you must understand these parameters and decide on their settings.

Parameters set during implementation

CallPilot uses the following settings and parameters for AMIS Networking:

- the AMIS compose prefix
- the local system access number
- scheduling parameters
  - stale times
  - batch threshold and holding time
  - economy message delivery times
  - AMIS delivery times

Parameter default values

CallPilot provides default settings for all scheduling parameters. The default values are based on typical requirements.

To ensure a quick implementation process, use these default values.

After your system is operational, monitor usage to determine if the default settings are serving the needs of local users. You can modify the scheduling parameters whenever users' needs change.

AMIS compose prefix

You use an AMIS compose prefix to address a message to another AMIS user. The prefix tells the CallPilot system that the numbers entered next are for an AMIS destination.

Although a user enters the AMIS compose prefix before entering the address, it is an internal number used by CallPilot. Like all dialing prefixes, this internal number qualifies the information that follows, but does not become part of the address itself.

When you enter the AMIS compose prefix, CallPilot prompts the user to enter the address of the intended recipient.

The AMIS compose prefix must be unique. This prefix cannot be the same as any other prefix used at your site. For example, if your system uses 9 as the compose prefix to address messages to users outside of your messaging network, then you cannot use 9 as the AMIS compose prefix.

Local system access number

The destination system uses the local system access number (SAN) to identify the source system of the message. The system access number is included in the header of all outgoing messages.

When a recipient of an AMIS Networking message uses the Reply feature or its equivalent to contact the originator of the message, the caller uses the system access number to send a reply to the originating system.

You can use AMIS Networking with two types of local system access number:

- **Public system access number** You need this type of local system access number if you use AMIS Networking to send messages to remote sites outside of your private messaging network.
- **Private system access number** You need this type of local system access number if you use AMIS Networking only to send messages within your private network.

Public system access number

If you use AMIS Networking to send messages to remote sites outside of your private messaging network, you need a public system access number. This means that if you send messages both within and outside of your private network, you must use a public system access number.

The public system access number consists of the following:

- the country code of the local site (up to four digits long)
- the area/city code of the local system (up to eight digits long)
- the directory number of the voice service (the exchange code and the directory number) that will accept AMIS Networking calls

Example

- The country code is 1, the area/city code is 416, and the number to send an outbound AMIS Networking message is 5553653.
- The system access number sent with the message consists of 14165553653.

Note: The actual system access number in the header is 1#416#5553653. The system inserts the pound (#) symbols.

Private system access number

Usually you use AMIS Networking to send messages to remote sites outside of a private messaging network, and therefore you require a public system access number.

However, if you use AMIS Networking to send messages only within your private messaging network, you can use a private system access number.

The private system access number is made up of the dialing plan prefix and the SDN for AMIS Networking (for example, the ESN prefix 6338, and the SDN 7707).

The private system access number must be dialable from all sites in the messaging network.

Scheduling parameters

CallPilot uses scheduling parameters to determine when messages are sent to remote systems. There are several scheduling parameters:

- stale time for economy, standard, and urgent messages
- economy delivery start and stop times
- AMIS delivery times

Another scheduling parameter, holding time, is computed automatically from the stale time. CallPilot uses this parameter internally to determine when to send messages.

Scheduling parameter default values

CallPilot provides default settings for all scheduling parameters. The default values are based on typical requirements.

To simplify the process of implementing AMIS Networking, use the default values. These values enable you to implement AMIS Networking more quickly.

After your system is operational, monitor usage to determine if the default settings are serving the needs of your users. Modify the scheduling parameters whenever users' needs change.

Stale time

Stale time determines how long CallPilot will attempt to deliver a message before it declares the message stale and returns a non-delivery notification (NDN) to the originator. During this period, CallPilot makes repeated attempts to deliver the message.

You set stale times independently for economy, standard, and urgent messages. Typically, the stale time for a standard message is longer than the stale time for an urgent message, because it may be critical for a user to know that an urgent message was not delivered.

Parameter	Default
Stale time for urgent messages	60 minutes
Stale time for standard messages	2 hours
Stale time for economy messages	23 hours, 59 minutes

Batch threshold and holding time

The batch threshold is the number of standard and urgent messages that are held in queue waiting for delivery to a single remote site. It is more efficient to queue messages and send them in a batch.

A batch threshold parameter controls how many messages are held in the queue before transmission. To ensure that messages awaiting delivery are not held too long in the queue, the holding time overrides the batch threshold. A message is held in a batch until either the batch threshold is reached or the holding time for the message class is reached.

The batch threshold only applies to standard and urgent messages.

Parameter	Default
Batch threshold	4
Holding time for standard messages	40 minutes (calculated internally, based on stale time setting) ■ 1/3 of stale time
Holding time for urgent messages	6 minutes (calculated internally, based on stale time setting) ■ 1/10 of stale time

The following examples are based on an AMIS Networking site that uses the current default values.

Example 1: Milo Feinstein sends a standard message. His message is held in queue awaiting the arrival of three more messages. However, when the message has waited in queue for 40 minutes (the holding time for standard messages), it is sent even though the stale time was not reached.

Example 2: Ronnie Prakesh and Philippe Dumont are users at the same site. Ronnie sends three standard messages to users at the remote site in Newmarket. Her messages are held in the queue. Philippe sends a message to a user at the same remote site. The batch threshold is reached, and all four messages are sent.

Example 3: Barney Gumbolski sends an urgent message. It is held in queue. No other messages for the same remote site arrive within six minutes (the holding time for urgent messages). Barney’s urgent message is sent.

Economy delivery start and stop times

Economy messages receive different treatment than standard and urgent messages. Economy messages are collected and are sent only during designated times, rather than held in queues.

The delivery start and stop times determine when the system sends economy messages to their destinations.

Economy messages often have a start time set to the beginning of the lower-rate telephone services, and a stop time set to the resumption of regular rates.

The economy message start and stop times must not conflict with other AMIS Networking scheduling parameters. For example, you may have to adjust the economy delivery start and stop times if you also configure the legal AMIS delivery times.

Parameter	Default
Economy delivery start time	6:00 p.m.
Economy delivery stop time	6:00 a.m.

The following example is based on an AMIS Networking site that uses the current default values.

Example: At 8:00 a.m., Marge Sampson sends an economy message to a remote site. The message is held in queue until the economy delivery start time, for a total of 10 hours. The economy message stale time is large enough to take this length of time into account.

AMIS delivery times

You can also set the AMIS Networking delivery times for business and nonbusiness days of the week. The AMIS delivery times setting regulates the delivery of urgent, standard, and economy messages.

This setting may have legal ramifications. Many countries allow computer-generated calls, including AMIS messages, only during set times of the day. If your country has these regulations in place, configure AMIS Networking to comply with the regulations.

The Open AMIS delivery times setting can complicate the setting of other scheduling parameters. Therefore, if your country does not have these regulations, do not change the Open AMIS delivery times default setting.

The legal AMIS delivery times must not conflict with the economy delivery start and stop times. The economy delivery start and stop times must always fit within the legal delivery times.

Parameter	Default
Business days	Monday, Tuesday, Wednesday, Thursday, Friday
Nonbusiness days	Saturday, Sunday
Business day hours	9:00 a.m.–5:00 p.m.
Nonbusiness hours	5:00 p.m.–9:00 a.m.

Example

If it is legal to send computer-generated messages only between 9:00 p.m. and 1:00 a.m., the economy delivery times cannot be set to 6:00 p.m. and 6:00 a.m. In this example, the economy delivery time must be set within the legal hours (for example, 9:30 p.m. and 12:30 a.m.).

Selecting AMIS Networking parameters

The selection of AMIS Networking parameters can become complicated because many of the parameters interact. Configure fairly open AMIS Networking parameters to ensure that the CallPilot system can deliver AMIS Networking messages at all times.

How AMIS Networking handles messages

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Overview

Introduction

The networking parameters that you set during the implementation process work with internal CallPilot networking settings that are controlled by

- Message Transfer Agent (MTA)
- Analog Networking Agent (ANA)

This brief overview provides you with a general understanding of how AMIS Networking handles messages to help you interpret Alarm and Event reports.

MTA responsibilities

The MTA provides many of the basic maintenance functions required by CallPilot networking. The MTA is responsible for the following services:

- Queue outgoing network messages.
- Determine when to begin sending messages to a remote system.
- Receive incoming messages for delivery to local users.
- Collect networking traffic operational measurements (OMs).

ANA responsibilities

The ANA sends AMIS messages to and from remote systems.

There is one ANA for every active port used during an AMIS Networking session.

Main steps of message transfer

There are three main steps in the message transfer process:

- The Message Transfer Agent determines if the message is ready for transfer.
- The Analog Networking Agent completes a communication process, known as handshaking, with the receiving site.
- The message, which consists of the message header and the message body, is transferred.

AMIS Networking scenarios

Introduction

The following scenarios show how the message delivery configuration and the internal settings work together. These scenarios offer a high-level overview of how users use AMIS Networking and how the system handles AMIS Networking messages.

How a user sends a message to a remote AMIS user

1. The user logs on to CallPilot.
2. The user enters **75** to compose a message.
3. The user enters the AMIS compose prefix.

   Example: 13

   The prefix alerts the system that the message is intended for an AMIS Networking user.
4. The user enters the number as it normally would be dialed from the system, followed by **#**.

   Example: 914165553333#

   The # symbol indicates the end of the system access number.
5. The user enters the mailbox number of the intended remote recipient, followed by **#**.

   Example: 8123#

   The system responds with the following message: `Open network user <mailbox number> at <system access number>`.
6. The user enters **#** and **5** to record the message, records the message, and enters **#** to stop the recording.
7. The user enters **79** to send the message.
8. The user logs out of CallPilot and hangs up.

How CallPilot handles the message

Here is a simplified overview of the process that transfers an AMIS message to a remote user.

The MTA periodically checks for new outgoing messages. When the MTA detects an AMIS recipient, it starts a queue for the recipient site. The message may be held for a period of time, depending on scheduling parameters.

When the message is ready for delivery, the ANA calls the remote system and establishes the AMIS protocol to transmit the message. The MTA is notified of the success or failure of transmission. If a failure occurs, the MTA retries the delivery a number of times. If the message cannot be delivered, or if the stale time is reached for the message class, the MTA generates a non-delivery notification and sends it to the originator.

Successful delivery results in an acknowledgment if the message was so tagged. An acknowledgment to an AMIS message is sent when the message is transmitted, not when it is listened to.

How a remote user replies to an AMIS message

A remote user at a CallPilot site can easily reply to an AMIS message.

1. While within the received message, the remote user enters **71** to reply to the message.
2. The user enters **5** to record the message, records the message, and then enters **#** to stop the recording.
3. The user enters **79** to send the message.

How the remote system handles the message reply

The remote system uses the system access number contained in the header of the original message to return the call. However, when using the public switch telephone network, the original system access number does not include a network dialing prefix. The missing prefix indicates to the system that the reply is an external call.

The remote system must add the network dialing prefix to the system access number.

Example

- The system access number of the original message = 14167779898.
- The remote system adds a dialing prefix (for example, 9) to allow dialing out from the switch.

Coordinating with the system administrator

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Assigning a Restriction/Permission List for AMIS Networking messages 79

Overview

Introduction

If you allow local users to send messages to open sites, you must establish user access.

You must carefully control and monitor user access, because long-distance toll charges may be incurred when messages are sent to open sites.

Levels of control

There are two basic levels of control:

- When you define message delivery parameters, you define general system-wide controls over AMIS Networking messages.
- However, when you define different classes of users with basic administration, you define the access level that individual users have to AMIS Networking.

Basic administration

Basic administration tasks include setting up the following:

- users
- mailboxes
- mailbox classes
- Restriction/Permission Lists

See also

For detailed information on each basic administration task, consult the *Basic Administration Guide*.

Purpose of basic administration

With basic administration, you can be more precise about how you want AMIS Networking to be used.

This precision is important because AMIS Networking can send messages outside of the private messaging network, which may result in long-distance toll charges. Therefore, controlling the access of users can result in considerable cost savings.

Example: Basic administration settings

You implement Integrated AMIS Networking and enable AMIS Networking as well. You configure your site to send and receive AMIS Networking messages. However, you restrict this ability to specific groups of users only.

Mailbox class settings

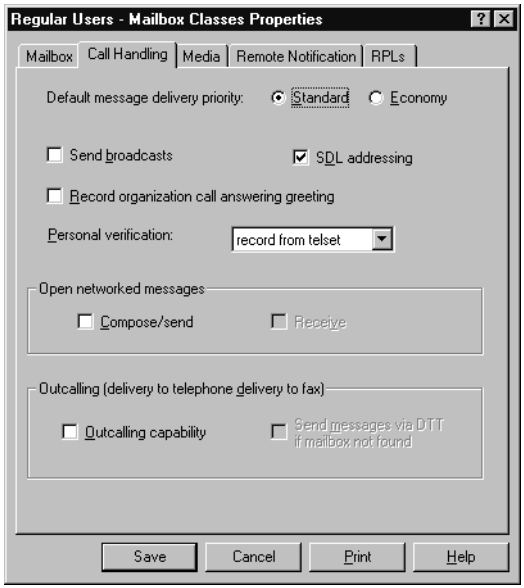
You control a user's access to AMIS Networking, in part, by the mailbox class to which the user is assigned.

The following options for each mailbox class are available only if AMIS Networking is implemented:

- default message priority—standard or economy
- permission for exchange of messages with open sites
- Restriction/Permission List for open messages, if you allow users to send messages to open sites

You must set the AMIS Networking options for each mailbox class.

Getting there Nortel SMI > Meridian Application Server > User Administration > Mailbox Classes > Call Handling tab



To set the default message priority

To set the default message priority as standard, select Standard.

To set the default message priority as economy, select Economy.

To control the exchange of open networked messages

1. To enable this mailbox class to send messages to open sites, select the Compose/send check box.
2. To enable this mailbox class to receive messages from open sites, select the Receive check box.
3. If you have enabled this mailbox class to send messages to open sites, set the Restriction/Permission List.

   Note: For information on how to set the Restriction/Permission List, see Assigning a Restriction/Permission List for AMIS Networking messages on page 79.

Assigning a Restriction/Permission List for AMIS Networking messages

Introduction

If you allow local users to exchange messages with open sites, create any necessary Restriction/Permission Lists for AMIS Networking. A Restriction/Permission List defines any restrictions to access and also lists any exceptions to these restrictions.

Example

Local users can send messages to open sites. However, you want to ensure that different classes of users can send messages only to specific sites. Users with a manager-level mailbox class can send messages to any site. Users with a summer student mailbox class can send messages to any open site that does not incur long-distance toll charges.

Purpose

A Restriction/Permission List provides additional security and prevents unauthorized long-distance toll charges.

Creating a Restriction/Permission List

Usually, you will assign a pre-existing Restriction/Permission List. However, if no pre-existing list satisfies your requirements for AMIS protocol messages, you can create a new list.

See also

For detailed procedures on creating a Restriction/Permission List, consult the *Basic Administration Guide*.

chapter 3

Modifying the switch configuration

This chapter describes how the switch must be configured when AMIS Networking is implemented. The chapter introduces the concepts that are necessary to understand the configuration process.

This chapter also provides detailed configuration procedures, and reference information for all administered boxes.

In this chapter

Overview 83

Phantom DNs and AMIS Networking 84

Overview

Introduction

The switch provides the call handling required for CallPilot.

When you implement AMIS Networking, the switch is already installed and configured, and is operational. The switch is ready for the implementation of AMIS Networking.

You must make one modification to the existing switch configuration to enable CallPilot to handle AMIS Networking calls.

How the switch treats an AMIS Networking message

The switch treats an AMIS Networking message from a local site to a remote site like any other outbound telephone call.

The switch is already configured to handle outbound telephone calls.

AMIS Networking requirements

Like all services, however, AMIS Networking needs a route that connects the Meridian Application Server and the switch.

AMIS Networking needs only one additional configuration for the switch. A phantom directory number (DN) is required.

See also

For detailed information about the Meridian switch, consult the relevant switch documentation.

For information about how CallPilot works with the Meridian switch and how the switch must be configured, consult the *Basic Administration Guide*.

Phantom DNs and AMIS Networking

Introduction

AMIS Networking requires a phantom DN on the Meridian switch.

Controlled directory number queues

To access a CallPilot service, a user enters a unique dialable number. The switch uses this number to route the call to the requested service.

For example, a user dials 7505 to access Remote Notification.

All dialable numbers that are used to access a service correspond to a setting on the switch. To handle calls in sequence of arrival, the system places calls in a queue, depending on the call type.

The switch can have up to three queues, known as controlled directory number (CDN) queues. You use CDN queues for calls to the following types of services:

- voice
- fax
- speech recognition

Although you can assign AMIS Networking to any of these queues, it generally uses voice.

Each CDN queue is associated with a dialable number known as the CDN. A user can dial the service directly by entering the CDN.

Example

The CDN of Multimedia Messaging is 7400. A user can dial 7400 to reach Multimedia Messaging. The call is placed into the queue.

Phantom DNs

While there are queues for three types of services, CallPilot users usually have more services available for use.

To offer more than three services that are dialable, the switch uses phantom DNs.

A phantom DN is a unique dialable number that is routed to one of the CDN queues.

Selection of a phantom DN

A phantom DN is not a randomly selected number. There is a direct correspondence between the local system access number for AMIS Networking and the phantom DN.

Example: If the local system access number for AMIS Networking is 567-7575, the phantom DN is 7575.

Example: The phantom DN for Express Messaging is 7401. A user dials 7401 to reach the requested service. The switch routes the phantom DN to the appropriate CDN queue (in this case, Voice Messaging).

AMIS Networking phantom DN

AMIS Networking needs a phantom DN.

However, unlike other phantom DNs, an AMIS Networking phantom DN is not dialed by a local user when sending an AMIS Networking message.

A remote system uses the phantom DN when it sends a message to the local system.

How the phantom DN is defined

There are two ways to establish a phantom DN for AMIS Networking on the switch:

- Define a new phantom DN.
- Share an existing phantom DN.

See also

For a detailed discussion of the switch configuration and phantom DNs, and how they are used, defined, and configured, consult the *Advanced Administration Guide*.

chapter 4

Configuring CallPilot for AMIS Networking

This chapter describes how to configure CallPilot to implement AMIS Networking. The chapter introduces the concepts that are necessary to understand the configuration process, and provides detailed configuration procedures and reference information for all administered boxes.

In this chapter

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About the SDN Table and AMIS Networking 90

Adding and configuring SDNs for AMIS Networking 96

About configuring AMIS Networking 100

Message delivery parameters—AMIS 1 tab 103

Message delivery parameters—AMIS 2 tab 107

Configuring the message delivery parameters 110

About configuring CallPilot

Configuring CallPilot

The implementation of AMIS Networking requires additional configuration of CallPilot. This configuration defines how AMIS Networking sends and receives messages.

There are two main steps to configuring CallPilot:

- Add AMIS Networking to the Service Directory Number (SDN) Table.
- Define AMIS Networking information.

ATTENTION!

You must perform each step in the configuration process in the order presented.

Before you begin

Complete the switch configuration before you configure CallPilot.

About the SDN Table and AMIS Networking

Definition: SDN

A service directory number (SDN) is a number that enables a user to access a CallPilot service. Each SDN must be unique so that CallPilot can identify the requested service and play the appropriate prompts.

SDN Table

The Service Directory Number Table is created during the original installation of CallPilot on the server. The SDN Table lists all SDNs and details about their settings.

CallPilot uses the SDN Table to map directory numbers (DNs) to services. The SDN Table lists both inbound and outbound SDNs.

Inbound and outbound SDNs

You must manually add an inbound SDN. An outbound SDN is created automatically if AMIS Networking is installed. Both the inbound and the outbound SDNs need additional configuration.

Inbound SDNs

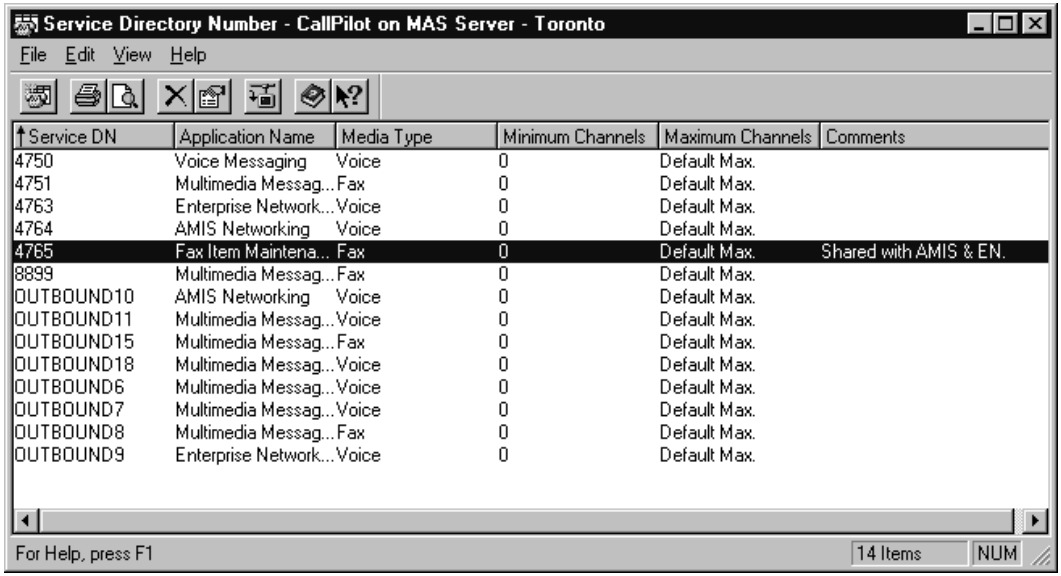
For most services, an inbound SDN is a number that a user enters to access services. However, the AMIS Networking inbound SDN is not a number that is directly dialable by a user. A remote system dials this SDN when it delivers an AMIS message.

Outbound SDNs

CallPilot uses an outbound SDN to make the requested service available. An outbound SDN is specified by the term OUTBOUND and a number.

Example: SDN Table

The following illustration shows an SDN Table that lists both inbound and outbound AMIS Networking SDNs.



Service DN	Application Name	Media Type	Minimum Channels	Maximum Channels	Comments
4750	Voice Messaging	Voice	0	Default Max.	
4751	Multimedia Messag...	Fax	0	Default Max.	
4763	Enterprise Network...	Voice	0	Default Max.	
4764	AMIS Networking	Voice	0	Default Max.	
4765	Fax Item Maintena...	Fax	0	Default Max.	Shared with AMIS & EN.
8899	Multimedia Messag...	Fax	0	Default Max.	
OUTBOUND10	AMIS Networking	Voice	0	Default Max.	
OUTBOUND11	Multimedia Messag...	Voice	0	Default Max.	
OUTBOUND15	Multimedia Messag...	Fax	0	Default Max.	
OUTBOUND18	Multimedia Messag...	Voice	0	Default Max.	
OUTBOUND6	Multimedia Messag...	Voice	0	Default Max.	
OUTBOUND7	Multimedia Messag...	Voice	0	Default Max.	
OUTBOUND8	Multimedia Messag...	Fax	0	Default Max.	
OUTBOUND9	Enterprise Network...	Voice	0	Default Max.	

If another service shares the inbound Integrated Networking SDN, that service appears in the SDN Table.

When you review an SDN Table, the only way you know if an SDN is shared is by its description. For this reason, the comments should mention that the SDN is shared with the inbound AMIS Networking SDN.

How AMIS Networking uses inbound and outbound SDNs

The following examples describe a network that consists of two sites, and show how the inbound and outbound AMIS SDNs provide services. At the Chicago site, the inbound AMIS SDN is shared with the Voice Menu SDN, which is set to act on an AMIS initiator tone. At the Philadelphia site, the inbound AMIS SDN is not shared with any other service.

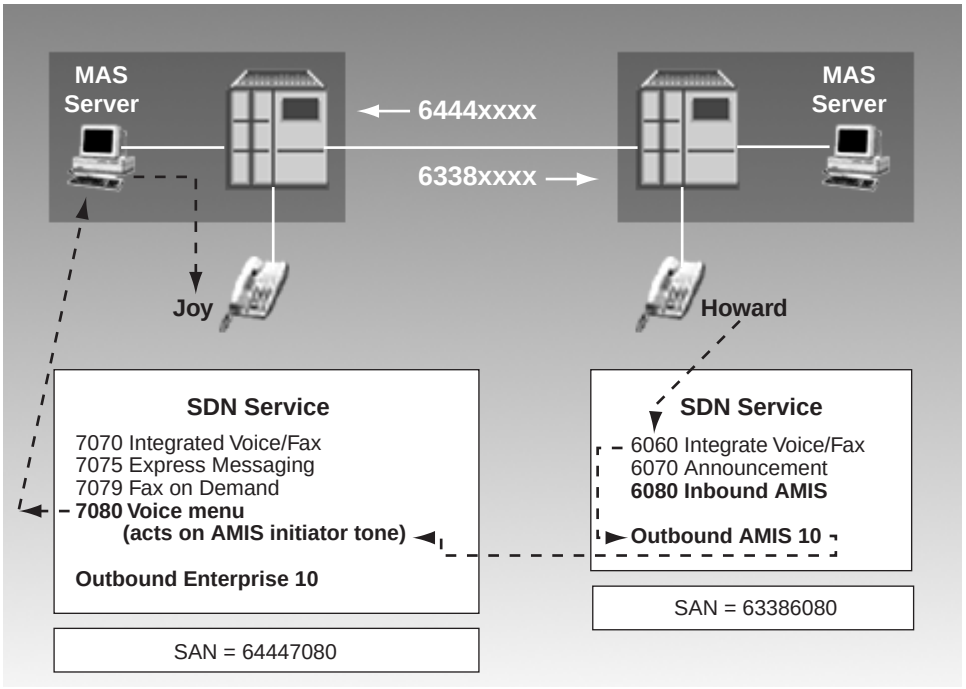
In these examples, it is important to distinguish between calls made by users, messages sent by users, and calls made by the CallPilot system itself.

Example 1: How a shared inbound SDN is used

Howard wants to send a message to Joy in Chicago. He logs in to Integrated Voice/Fax (IVF) messaging. He then addresses and sends a message to an AMIS address by entering the AMIS compose prefix, the system access number of the remote site (64447080) followed by a #, and the destination mailbox number. The request is directed to CallPilot, which routes it to the outbound AMIS SDN.

The system in Philadelphia calls the remote SAN of the system in Chicago (64447080). At that system, 7080 is the Voice Menu SDN, which is shared with the inbound AMIS SDN. The Voice Menu SDN is set to act on receiving an AMIS initiator tone. The two systems complete the required identification process, known as handshaking, before the message is transferred.

The message is directed to Joy's mailbox.



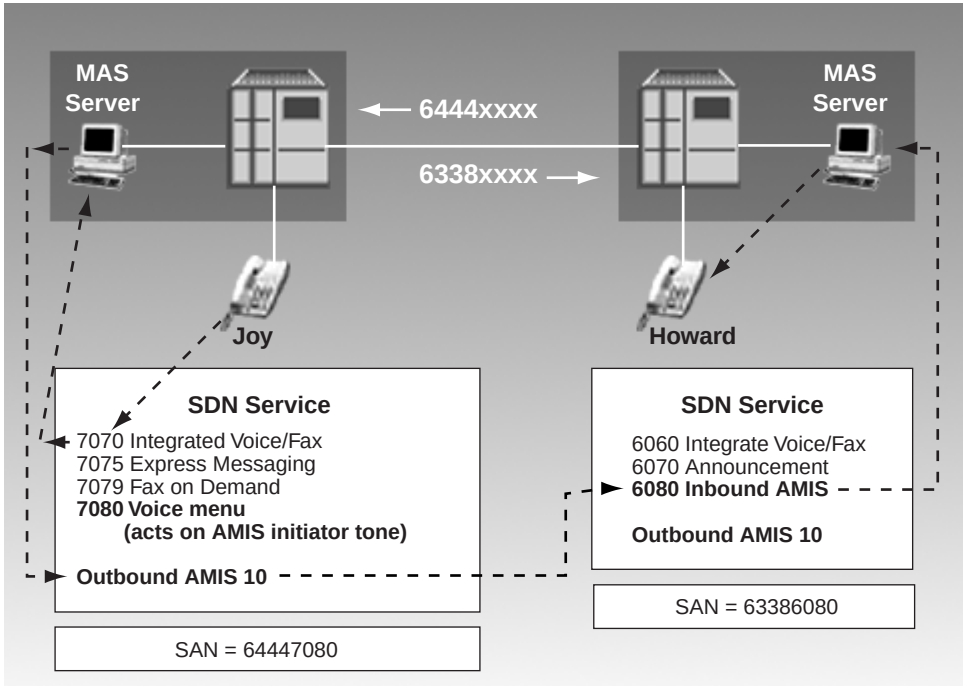
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Example 2: Inbound AMIS SDN that is not shared

Joy wants to send a message to Howard Loomis in Philadelphia. She logs in to IVF messaging. She then addresses and sends a message to the AMIS address by entering the AMIS compose prefix, the SAN of the remote site (63386080) terminated by #, and Howard's mailbox number. The system starts an AMIS session to deliver the message to the remote system.

The system in Chicago calls the remote SAN of the system in Philadelphia (63386080). At the Philadelphia system, 6080 is the inbound AMIS SDN. The two systems complete the required identification process, known as handshaking, before the message is transferred.

The message is directed to Howard's mailbox.



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SDN numbers

An SDN must be unique, but it is not randomly selected. CallPilot uses SDNs to map numbers to services. There are also important relationships between the SDN and other numbers used by the system.

Relationship of SDN to other numbers

The CallPilot SDN setup echoes the DN settings on the switch.

An important relationship exists between the inbound SDN and the local system access number (SAN), and the phantom DN on the switch. For example:

- The inbound AMIS Networking SDN = 7400.
- The AMIS Networking local SAN = 1-416-555-7400.
- The phantom DN for AMIS Networking = 7400.

The AMIS inbound SDN on CallPilot must correspond to the AMIS phantom DN on the switch. Before you create an SDN for AMIS Networking, confirm the phantom DN on the switch.

To view the phantom DN setting consult the printout of switch information.

Phantom DNs

There are two ways to create an AMIS Networking phantom DN on the switch:

- Define a new phantom DN for AMIS Networking.
- Share an existing phantom DN of specific services.

Media type

To process a call, AMIS Networking must have access to a channel. A channel provides a connection between the switch and the Digital Signal Processor (DSP) cards on the CallPilot server.

CallPilot supports three channel types. Each type corresponds to different media:

- voice
- fax
- speech recognition

AMIS Networking can use all three types of channels. However, it is recommended that you use a voice channel. By default, CallPilot automatically assigns a voice port to AMIS Networking.

Minimum and maximum channels

Choose the channel resources for both the inbound and the outbound AMIS Networking SDNs.

Every service, including AMIS Networking, needs channel resources to process calls. Channel resources are the number of channels that AMIS Networking has available. Channel resources are set as minimum and maximum values. The minimum value is the number of channels that is always reserved for the exclusive use of the service.

This setting is important because, if channel resources are incorrectly allocated, users may experience delays in reaching requested services.

For example, if the minimum is the same as the total number of channels on the system, then other services cannot use these channels. This results in delays in acquiring these other services.

Note: If Integrated AMIS Networking is also installed on your system, its SDN and, therefore, channel allocation, are shared with AMIS Networking. Therefore, when calculating the allocation it is important to consider the total anticipated AMIS and Integrated AMIS traffic.

Example: Channel allocation

Your system has 96 channels available. You decide to dedicate a minimum of 5 and a maximum of 30 channels to AMIS Networking. If the system handles only 5 AMIS Networking calls each day, this allocation is not appropriate. A more appropriate allocation is a minimum of 0 and a maximum of 5.

See also

For detailed information on SDNs and SDN Tables, consult the *Advanced Administration Guide*.

Adding and configuring SDNs for AMIS Networking

AMIS Networking SDNs

AMIS Networking requires an outbound SDN and an inbound SDN.

Outbound SDN

An outbound SDN is created automatically when AMIS Networking is installed. You can modify the default channel resource allocation.

Inbound SDN

An inbound SDN is not created automatically. There are two ways to set up an inbound SDN:

- Create a new inbound SDN.
- Share an inbound SDN with certain other services.

The choice depends on your administrative requirements.

Do this	If
Create new SDNs.	Operational Measurement reports must be precise for each service.
Share SDNs with other services.	a shortage of DNs exists or is likely to exist.

Note: If an AMIS inbound SDN already exists in your SDN Table, then Integrated AMIS Networking is already installed. AMIS Networking and Integrated AMIS Networking share the same inbound SDN.

Services that can share an inbound SDN with AMIS Networking

AMIS Networking can share its inbound SDN with the following services:

- Announcement Service
- Enterprise Networking

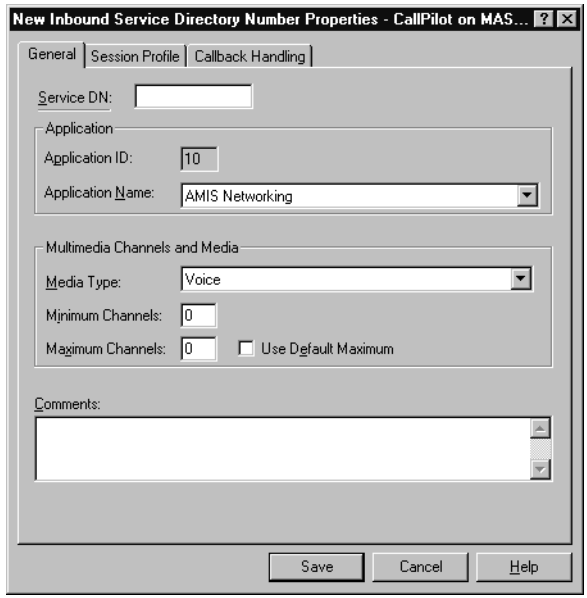
- Fax Information Service
- Voice Menu
- Time of Day Controller
- Thru-Dial

Getting there Nortel SMI > Meridian Application Server > System Administration > Service Administration > Service Directory Number

To add and configure a new inbound SDN

1 From the SDN Table, select New from the File menu.

Result: The New Inbound Service Directory Number Properties dialog box appears.



2 On the General tab, enter the SDN number in the Service DN box.

Note: This number must correspond to a CDN or phantom DN on the switch.

3 Select an application from the Application Name list.

Result: The corresponding application ID appears above the application name in the Application ID box.

4 Select the type of channel required by the service in the Media Type list.

5 If you want to reserve a minimum number of channels for the service, enter the number in the Minimum Channels box.

6 Do one of the following:

- Select the Use Default Maximum box.

  Note: This is the recommended option.

- Enter the maximum number of channels that a service can use at one time in the Maximum Channels box.

Note: The maximum number of channels cannot exceed the total number of channels available on the server. If you enter a number larger than the total number of channels, a warning box appears asking you to change the number.

7 Enter any comments in the Comments box.

8 Click Save to add the SDN to the SDN Table.

To share an existing inbound SDN with AMIS Networking

1 Select an existing inbound SDN that can be shared with AMIS Networking from the SDN Table.

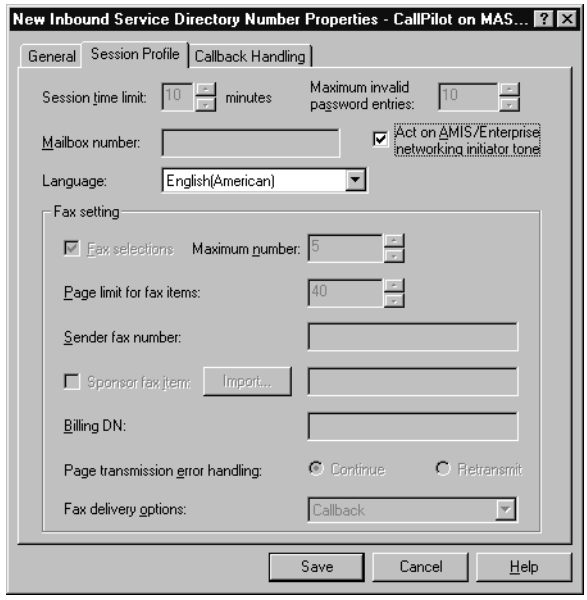
2 On the File menu, click New.

Result: The New Inbound Service Directory Number Properties dialog box appears.

3 On the General tab, in the Comments box, insert a brief comment that the SDN is shared with AMIS Networking.

Tip: This comment appears in the final column of the SDN Table and is the easiest way to determine which SDN is shared with AMIS Networking.

4 Click the Session Profile tab.



5 Select the Act on AMIS/Enterprise networking initiator tone.

Note: You select this option only for the SDN that is being shared with the inbound AMIS SDN.

6 Click Save to add the shared SDN to the SDN Table.

About configuring AMIS Networking

Introduction

The AMIS Networking information determines how AMIS Networking handles messages.

You provide this information on two tabs of the Message Delivery Configuration dialog box:

- AMIS 1
- AMIS 2

Required information

When you complete the AMIS 1 and AMIS 2 tabs, the following are required:

- outgoing and incoming AMIS Networking enabled
- local AMIS system access number defined
- batch threshold
- stale times
- Open AMIS compose prefix
- economy delivery times
- legal delivery times

Note: You also complete items on these tabs if Integrated AMIS Networking is installed on the system.

See also

For a general overview of how AMIS Networking uses this information, see the section How AMIS Networking works on page 59.

Integrated AMIS boxes

While you configure AMIS Networking message delivery configuration information, you also configure several boxes for Integrated AMIS Networking.

Note: Do not confuse the AMIS boxes, which are used to implement Integrated AMIS Networking, with the Open AMIS boxes, which are used to implement AMIS Networking.

Defaults

CallPilot provides default settings for the message delivery configuration. The default values are based on typical requirements.

To simplify the process of implementing AMIS Networking, use the default values. After your system is operational, monitor usage and performance to determine if the default settings are sufficient. You can modify the settings whenever users' needs change.

Parameter	Current default
Batch threshold	4 messages
Stale time for standard messages	2 hours
Holding time for standard messages	40 minutes (calculated internally, based on stale time)
Stale time for urgent messages	60 minutes
Holding time for urgent messages	6 minutes (calculated internally, based on stale time setting)
Stale time for economy messages	6 hours
Delivery start time for economy messages	6:00 p.m.
Delivery stop time for economy messages	11:00 p.m.

Suggested process

You should read through this entire section and decide on the setting for your system before you begin to implement AMIS Networking. The settings that you select determine how efficiently your system handles AMIS Networking messages.

Ideally, know how you are going to complete the required information before you begin the configuration.

AMIS Networking and Integrated AMIS Networking

You use many of the boxes on the AMIS 1 and AMIS 2 tabs to configure both AMIS Networking and Integrated AMIS Networking. If a box name specifies Open AMIS, it applies only to AMIS Networking. A box name that does not specify Open or Integrated applies to both networking solutions.

If Integrated AMIS Networking is already implemented on your local system, all shared boxes are also completed. You must configure only the Open AMIS boxes and check the current configuration.

Before you begin

You must properly configure the inbound and outbound SDNs for AMIS Networking before you configure AMIS Networking.

Message delivery parameters—AMIS 1 tab

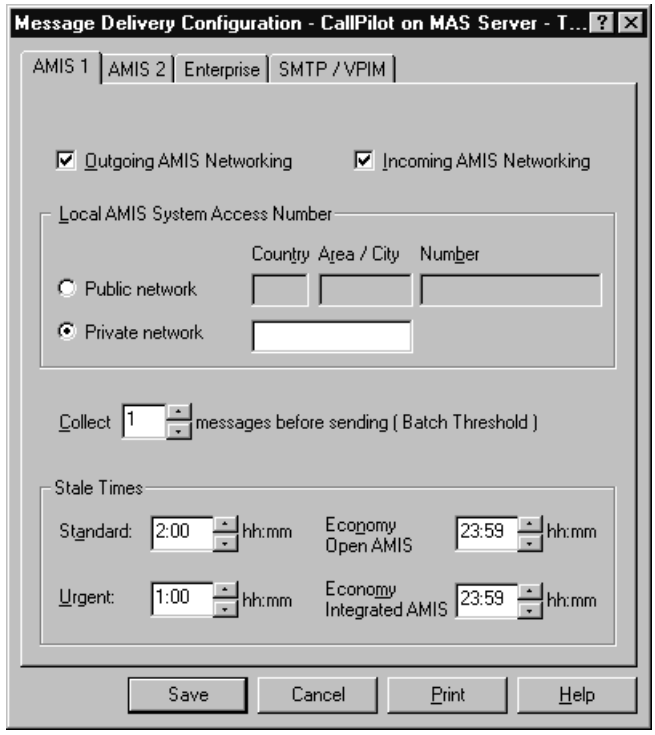
Introduction

To implement AMIS Networking, you must set the parameters that CallPilot uses to deliver messages.

These parameters are set on the Message Delivery Configuration AMIS 1 and AMIS 2 tabs. You must complete all Open AMIS fields when you configure AMIS Networking.

AMIS 1 tab

The following shows the Message Delivery Configuration—AMIS 1 tab.



Outgoing and incoming AMIS Networking

If AMIS Networking is installed on the system, the following boxes are enabled by default:

- Outgoing AMIS Networking
- Incoming AMIS Networking

These boxes restrict the use of AMIS Networking.

If you do not want any local users to send outbound AMIS Networking messages, clear the Outgoing AMIS Networking check box.

If you do not want any local users to receive inbound AMIS Networking messages, clear the Incoming AMIS Networking check box.

To completely disable AMIS Networking, clear both options.

Local AMIS system access number

The local AMIS system access number (SAN) identifies the local system to other AMIS systems. It is included in the header of all outgoing AMIS messages sent from the local system.

The local system access number is more than an identifier. When a remote user replies to an AMIS message, the system access number combines with the dialing information to create a dialable number.

Similarly, when you receive a message from a remote AMIS system, the message contains the remote SAN. If the local user wants to reply to the message, the remote system access number combines with the dialing information to create a dialable number.

AMIS Networking can send messages within either a private telephone network or the public telephone network.

Public network system access number

The AMIS system access number is a public number if you send AMIS Networking messages within the public telephone network.

Private network system access number

The AMIS system access number is a private number if you send AMIS Networking messages within a private telephone network.

Batch threshold

When you batch messages, you send messages that are intended for a single destination in a group. This method makes more efficient use of the system than if you send each message separately.

The batch threshold defines the maximum number of messages intended for a single destination that can be queued before CallPilot begins to send the messages.

The batch threshold applies only to standard and urgent message types.

Stale times for standard, urgent, and economy messages

Stale time is the period of time that CallPilot holds a message before it considers the message undeliverable and returns it to the sender with a non-delivery notification. In the period before a message is considered stale, CallPilot makes repeated attempts at delivery.

Stale times are expressed as time periods, such as 5 hours and 30 minutes.

Separate stale times are set for standard and urgent messages. Usually, the stale time for an urgent message is shorter than the stale time for a standard message.

Stale times settings affect holding times

Stale times affect how long messages are held by CallPilot while waiting for other messages to the same remote site.

- The holding time for an urgent message is one-tenth of the urgent stale time.
- The holding time for a standard message is one-third of the standard stale time.

Economy delivery stale time

The economy delivery stale time is usually longer than the standard and urgent stale times. It is expressed as a time period, such as 23 hours.

To calculate an appropriate stale time, you must consider other scheduling parameters. The economy stale time that you set must allow for the length of time a message may be held due to the settings for the economy delivery start and stop times, as well as the AMIS delivery times.

The default economy delivery stale time is 23:59 (hh:mm).

ATTENTION!

It is strongly recommended that you use the default. The default ensures that messages will not go stale before they are eligible for delivery, regardless of how you set other scheduling parameters.

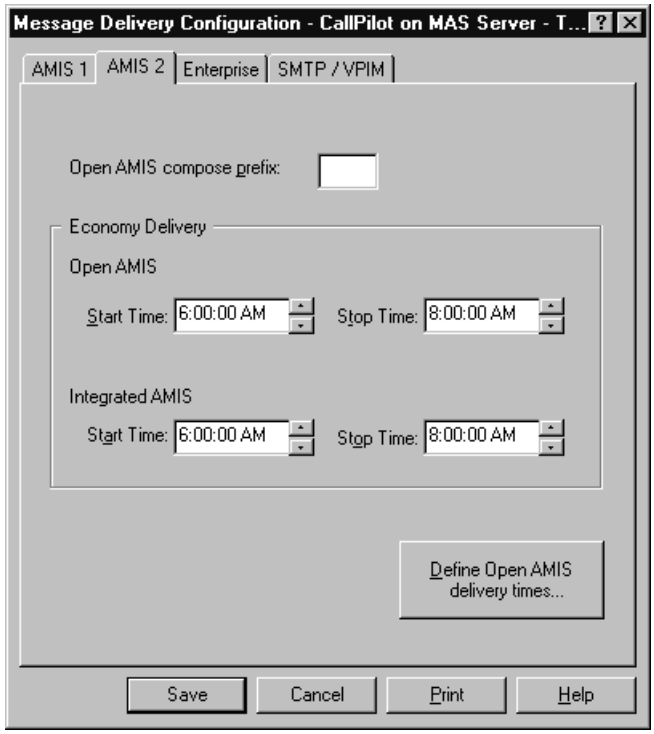
Example: If an economy message can only be delivered starting at 6:00 p.m., and an economy message is sent at 8:00 a.m., the stale time must be at least 10 hours. If an hour is allowed for retries, then the minimum stale time is 11 hours.

Message delivery parameters—AMIS 2 tab

Introduction

You complete the configuration of the AMIS Networking message delivery parameters on the AMIS 2 tab.

Complete this tab for both AMIS Networking and Integrated AMIS Networking. You must complete all Open AMIS fields when you configure AMIS Networking.



Open AMIS compose prefix

The Open AMIS compose prefix is made up of one or more digits. The prefix alerts CallPilot that the rest of the digits to be entered are an AMIS address.

The Open AMIS compose prefix must not conflict with any other prefixes used in the system, such as the name dialing prefix or the VPIM prefix.

Example

A local user logs in to CallPilot and enters 75 to compose a message. The user enters the AMIS compose prefix (in this example, 13). The system is alerted that this is an AMIS address. To complete the address, the user enters the system access number, followed by #.

AMIS economy delivery times

Set two delivery times for economy messages:

- start time
- stop time

Economy delivery start and stop times

CallPilot holds all economy delivery messages until the start time, and begins to hold them again at the stop time.

- The economy delivery start time usually corresponds to the beginning of the lowest available telephone rate period.
- The economy delivery stop time usually corresponds to the resumption of higher telephone rates.

Example

Throughout the day, as users compose and send economy AMIS messages, the system does not actually send the messages from the local site. Instead the system gathers the messages and waits until the economy send time before it sends the messages. The result is considerable savings on long-distance charges.

If the telephone rate is 80 percent lower between 11:00 p.m. and 6:00 a.m., set the start time at 11:00 p.m. and the stop time at 6:00 a.m.

Note: You may have to adjust the economy delivery start and stop times if you also configure the Open AMIS delivery times.

Open AMIS delivery times

You can add further specifications for AMIS Networking delivery times. These delivery times determine how AMIS Networking messages are handled during business and nonbusiness days.

You can also set the AMIS delivery times for business and nonbusiness days of the week. In some countries, these settings have legal ramifications.

This setting is necessary because with Open AMIS messages, unlike Integrated AMIS messages, a user specifies the telephone number. If an incorrect system access number is entered, an unintended recipient could be disturbed.

For this reason, many countries legally allow computer-generated calls, including AMIS messages, only during set times of the day.

If your country has these regulations in place, configure AMIS Networking to conform to the regulations. If your country does not have these regulations, do not complete the AMIS delivery times dialog box.

Scheduling parameters for economy messages

It is complicated to set the scheduling parameters for AMIS Networking economy messages because three scheduling parameters interact.

The AMIS economy delivery start and stop times must have some overlap with Open AMIS delivery times for both business and nonbusiness days. If there is no overlap, delivery will not be attempted. Allow at least one hour of overlap to allow for retries.

Example

It is legal to send computer-generated messages only between 8:00 p.m. and 1:00 a.m. on business days, and between 10:00 a.m. and 8:00 p.m. on nonbusiness days. The economy delivery times are set to between 6:00 p.m. and 6:00 a.m. The economy messages will be delivered only between 6:00 p.m. and 1:00 a.m. on business days, and between 6:00 p.m. and 8:00 p.m. on nonbusiness days.

Note: The stale times for economy messages, if altered from the default values, should allow for the maximum noneligible time period. For this example, therefore, on nonbusiness days allow for 8:00 p.m. to 6:00 p.m. the following day, plus one hour for retries (that is, 23 hours).

Configuring the message delivery parameters

Introduction

You must configure the parameters that determine how your system handles AMIS Networking messages.

These parameters are configured on the Message Delivery Configuration AMIS 1 and AMIS 2 tabs.

Getting there Nortel SMI > Meridian Application Server > CallPilot > Networking > Message Delivery Configuration

To configure AMIS Networking parameters

1. To enable your site to send outgoing AMIS messages, ensure the Outgoing AMIS Networking check box is selected.
2. To enable your site to receive incoming AMIS messages from remote sites, ensure the Incoming AMIS Networking check box is selected.
3. Enter the AMIS system access number for your site:
   - If your site uses the public network for its local AMIS system access number, enter the country code, area/city code, and local number of the voice service that accepts AMIS Networking calls.
   - If your site uses the private network only, enter the private SAN.
4. Enter the batch threshold in the Collect (number of) messages before sending (Batch Threshold) box.
5. Enter the stale times for each message type:
   - Standard
   - Economy Open AMIS
   - Urgent

   Note: You complete the Economy Integrated AMIS stale time box when you implement Integrated AMIS Networking.
6. To continue the configuration, click the AMIS 2 tab.
7. Enter the compose prefix in the Open AMIS compose prefix box.

8 Enter the Open AMIS delivery start and stop times for economy messages in the Start Time and Stop Time boxes.

9 To define the days of the week and the times of day that the local system can send AMIS messages, click the Define Open AMIS delivery times button.

Result: The Delivery Times dialog box appears.



To complete the Delivery Times dialog box

1 In the Business Days column, select the days of the week that are normal business days for your organization.

2 In the Non Business Days column, select the days of the week that are nonbusiness days for your organization.

3 Enter the business days delivery start and stop times in the from: and to: boxes.

4 Enter the nonbusiness days delivery start and stop times in the from: and to: boxes.

5 Click Save.

Result: You return to the AMIS 2 tab.

6 Click Save to add the configuration information to the network database.

Validation of information

CallPilot validates the information that you entered while you configured AMIS Networking. Validation ensures that the information does not conflict with any other information in the network database.

When you click the Save button on a tab of the Message Delivery Configuration dialog box, you automatically validate the information.

If there are no problems with the configuration, the Message Delivery Configuration dialog box closes and the information is added to the network database.

If there are problems with the configuration, you must correct the problems before you can add information to the network database.

chapter 5

Testing and backing up AMIS Networking

This chapter describes how to test the configuration of AMIS Networking. The test suite ensures that AMIS Networking works properly both locally and with remote sites.

This chapter also describes how to create a backup of your system to ensure that the configuration is not lost due to system failure.

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AMIS Networking test suite

Introduction

After you configure CallPilot for AMIS Networking, test the system.

The AMIS Networking test suite tests every aspect of the system. If any test fails, resolve the problem and retry the test before you continue.

Note: These tests are not intended to validate the AMIS compliance of a third-party system. The tests assume that any system that you communicate with is AMIS-compliant.

Test suite

Each test in the AMIS Networking test suite checks a different aspect of the system.

This test	Determines if
call routing test	■ the local system can make outbound calls to other sites in the network. ■ the local system cannot make outbound calls to restricted sites on the network.
local or quick SDNs test	ports on CallPilot are working properly, and SDNs are defined correctly.
end-to-end test	a remote system can receive messages from the local system.

Before you begin

You must configure AMIS Networking on the CallPilot messaging server.

You must have an AMIS Networking SAN for a remote system so that you can test your system.

Recommended process

Follow the AMIS Networking test suite in the order presented.

Note: The local SDN test and the quick SDN test are interchangeable. Perform only one.

For quick results

Most networking tests involve sending messages to another site. These test messages are treated like any other message. To ensure speedy handling, tag all test messages as urgent.

Note: An urgent test message is handled according to set scheduling parameters. For example, if the hold time for an urgent message is five minutes, you may have to wait five minutes for results.

Call routing test

Introduction

The call routing test determines if the local system

- can make outbound calls to other sites in the AMIS network
- cannot make outbound calls to restricted numbers that are configured on the system

Before you begin

Ask the switch technician for the ACD/UCD agent and trunk printouts for the switch.

To perform the call routing test

1. Using the ACD/UCD agent and trunk printouts, select an ACD/UCD agent.
2. Program a telephone to use the same NCOS and TGAR as the agent.

   Note: For instructions, consult your switch documentation.
3. Dial a network address.
4. Repeat steps 1–3 for a number that you know should be restricted.

   Example: Attempt to access a trunk directly.

Evaluating test results

The call routing test is successful if an outbound call goes through to the allowed system.

If the test is not successful

If the call routing test fails or produces unexpected results, a switch technician must check the switch settings that control routing and restrictions on calls.

What's next?

After you successfully complete the call routing test, perform the local SDN test.

Local SDN test

Introduction

The local SDN test verifies that the local system can receive messages from a remote system. This test confirms that the SDN for AMIS Networking is correctly configured in the SDN Table.

To perform the local SDN test, have a message sent from a remote site to your local site.

Note: You can perform the quick SDN test instead of the local SDN test.

Before you begin

Before performing the local SDN test, coordinate with a remote network administrator. Provide the administrator with all SDNs used by AMIS Networking.

To perform the SDN test

The remote network administrator must do the following:

1. Log in to CallPilot.
2. Compose and send a test message to an SDN used by AMIS Networking.

   Note: The message should be tagged as urgent.
3. Repeat for each SDN used by AMIS Networking.

Evaluating test results

The SDN test is successful if the local system receives messages from remote systems.

The SDN test is unsuccessful if the sender receives a non-delivery notification.

If the test is not successful

If the SDN test is not successful, check the AMIS Networking SDN in the SDN Table. Review the SDN setup requirements and make any necessary adjustments.

For detailed information on setting up SDNs, consult the *Advanced Administration Guide*.

What's next?

After you successfully complete the local SDN test, perform the end-to-end test.

Quick SDN test

Introduction

The quick SDN test verifies that the local system can receive messages. This test confirms that AMIS Networking is correctly configured in the SDN Table.

The quick SDN test does not require the participation of a remote network administrator.

Note: You can perform the local SDN test instead of the quick SDN test.

To perform the quick SDN test

1. Log in to CallPilot.
2. From your local telephone, enter the local SDN for AMIS Networking.
3. Listen for the system to answer the call.
4. Repeat these steps for every SDN used by AMIS Networking.

Evaluating test results

The quick SDN test is successful if the system answers and waits for a C-tone. The system times out after approximately 20 seconds.

The test is not successful if any prompts are heard.

If the test is not successful

If the quick SDN test is not successful, check the AMIS Networking SDNs in the SDN Table. Review the SDN setup requirements and make any necessary adjustments.

For detailed information on setting up SDNs, consult the *Advanced Administration Guide*.

What's next?

After you successfully complete the quick SDN test, perform the end-to-end test.

End-to-end test

Introduction

The end-to-end test verifies that users of a remote system can receive messages from users on the local system.

To perform the end-to-end test, compose and send a message to a mailbox on a remote system.

Before you begin

Coordinate with the network administrator of an Open AMIS site. Ask for the system access number of the site and a test mailbox number.

To perform the end-to-end test

1. Log in to CallPilot.
2. Compose and address a message to the open site.

   Note: Tag the message as urgent.
3. Send the message.
4. Call the network administrator of the open site and ask if the call was received.

Evaluating test results

The test is successful if the message is delivered to the remote system.

The test is unsuccessful if you receive a non-delivery notification.

If the test is not successful

If the end-to-end test fails or produces unexpected results, check the following:

- Was the message correctly addressed?
- Does the mailbox on the remote system exist?
- Does the remote system use the AMIS protocol, and is the remote system enabled to receive inbound AMIS messages?
- Are the Restriction/Permission Lists for AMIS Networking set properly?

- Is AMIS Networking disabled for outgoing messages?

What's next?

The end-to-end test is the final test in the AMIS Networking test suite. When you successfully complete the end-to-end test, perform a backup of your system.

Backing up AMIS Networking

Introduction

When all tests of the system are successfully completed and AMIS Networking is working properly, perform a backup.

The backup ensures that the configuration is not lost due to system failure.

Backup schedule

Perform a manual backup as the final step in the AMIS Networking installation.

Note: You must perform a manual backup even if the system is configured to perform an automatic backup.

In the unlikely event that the system experiences a disk failure before the automatic backup takes place, the networking configuration could be lost.

Perform a backup whenever you modify AMIS Networking information.

System backup components

A system backup consists of two parts:

- switch backup
- CallPilot backup

Switch backup

For detailed instructions on how to perform a switch backup, consult your switch documentation.

CallPilot backup

You can perform a full or partial backup of your CallPilot server. For detailed instructions on how to perform a CallPilot backup, consult the *Basic Administration Guide*.

chapter 6

Maintaining AMIS Networking

After you complete the AMIS Networking implementation, you only need to perform regular maintenance.

This chapter describes the maintenance procedures that must be performed regularly. The chapter also describes maintenance procedures that you perform only when required.

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About maintaining AMIS Networking

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Overview

Introduction

After you successfully install and test AMIS Networking, you need to perform two types of maintenance tasks:

- regularly scheduled
- as required

Regularly scheduled tasks

Regularly scheduled tasks include

- checking the network status
- reviewing Operational Measurement (OM) reports

Although you can perform regularly scheduled tasks at any time, perform them at least once a week. Since these tasks do not interfere with the operation of AMIS Networking, you can schedule them for a convenient time.

If you monitor the performance of your messaging network, you avoid future problems. Careful monitoring shows bottlenecks in the system and indicates how the system can be improved.

Monitoring can also help you to plan and forecast future messaging network requirements.

As-required tasks

Perform as-required tasks as needs arise. These tasks include

- modifying networking parameters
- disabling and enabling AMIS Networking
- modifying the AMIS Networking configuration

When to perform as-required tasks

Since as-required tasks may affect the entire system, perform these tasks when the system is not in heavy use.

Modifications to the configuration may be necessary for the following reasons:

- New legal delivery times are announced for computer-generated calls.
- The system performance suggests that adjustments to the parameters are required.
- The system access number is changed.

ATTENTION! Because as-required tasks may affect the performance of the entire system, schedule them for off-peak hours.

Perform a backup following maintenance

Perform a backup of the system whenever you modify the network parameters as part of your maintenance.

Maintain a network history

Introduction

Keep detailed records of your network's history. These records can

- Indicate significant performance or equipment issues that real-time monitoring cannot detect.
- Provide a background for comparing with the current information.
- Contain information needed during support calls.

Information to record

A network history should contain the following types of information:

- installation dates and descriptions
- contact information for all key personnel involved in the system installation and configuration
- details of software installed on the messaging server, including versions
- installation process and results, including tests
- diagrams of the initial and subsequent network configurations
- any problems encountered and their solutions
- hardware and software changes
- changes to the messaging network layout

Where to keep the records

Make the records of your messaging network easy to access and easy to read. Graphics, including hand-drawn sketches, can be very useful.

Keep records in a log or online. Note, however, that keeping records online may result in difficulties if the system crashes and you cannot access the records.

See also

For a detailed description of messaging network histories, consult the *Networking Planning Guide*.

Printing configuration information

Introduction

Printouts of the system configuration are often included in a network history. You can print all configuration information contained in your local network database.

To print configuration information, you must open the relevant Properties dialog box. For example, to print an item in the Messaging Network Configuration tree view, you must open the Properties dialog box of the item.

If a Properties dialog box consists of more than one tab, the contents of all tabs are printed.

Note: You cannot print the tree view of the messaging network contained in the Messaging Network Configuration dialog box.

When to print configuration information

Although configuration information is always available in the most recent backup of your network database, you may find it convenient to make printouts as well.

Printouts of the configuration information are especially useful in the following situations:

- You must fax information to a remote network administrator.
- You are keeping a network history.
- You are planning to change a configuration or delete an item from the Messaging Network Configuration tree view, and you want a hard copy of the original configuration.

Getting there Nortel SMI > Meridian Application Server > CallPilot > Networking > Message Delivery Configuration or Messaging Network Configuration

To print the configuration information

1. Open the dialog box that you want to print.
2. With the dialog box open, click the Print button.

   Result: The contents of the dialog box print. The printout includes the contents of all tabs.

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Reviewing OM reports and alerts

Introduction

Operational Measurement (OM) reports show how much of the CallPilot system is being used by AMIS Networking.

Three OM reports provide AMIS Networking information:

This OM report	provides
Open Networking Activity	information about open networking activity over a specified time interval.
Network Usage Bill-back	information to bill back the cost of users' networking activities.
Failed Networking Sessions alert	notification that the number of networking failures equals or exceeds the total number of networking attempts.

Although you can review OM reports at any time, you should review these reports at least weekly.

Access to OM reports is restricted

The generation of OM reports is a restricted activity that is determined by access level. If you do not have the necessary access, you must ask your system administrator to generate the reports.

The OM report request screens let you choose the reports that you want to view and print. For many reports, you can also customize the displayed results so that you receive the information in a format that best suits your needs.

See also

For additional information on OM reports, including how to interpret them, consult the *Reporter Guide*.

As-required maintenance tasks

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Overview

Introduction

You may need to modify the AMIS Networking configuration, including

- whether the system can send or receive AMIS messages
- the time periods when outgoing messages are allowed to be sent during business and nonbusiness days
- the minimum and maximum port allocation for AMIS Networking
- how many messages to transmit in each AMIS Networking session
- the scheduling parameters

Scheduling parameters

The scheduling parameters that may be modified are

- economy message send time
- stale times for economy, standard, and urgent messages
- batch threshold
- delivery days and times

Identifying required modifications

Changes to the AMIS Networking configuration may be required if

- Message delivery scheduling is not performing as anticipated.
- There are changes to the long-distance charge period or to delivery days and times.
- There are changes to network traffic to and from Open AMIS sites.

Example 1

When you originally configured the system, you set the economy delivery start time to 8:00 p.m. and the stale time to 4 hours. Users find that many of their messages are going stale and are being returned with non-delivery notifications.

A coordination problem exists between the two scheduling parameters. If you compose an economy message in the morning, it may go stale before the delivery time begins. Therefore, you must reconfigure the stale time to 20 hours, for example. This reconfiguration ensures that messages can be composed throughout the business day and will not go stale before the delivery begins.

Example 2

When you originally configured AMIS Networking, the lower rates for long distance came into effect at 11:00 p.m. Therefore, you set the economy delivery start time to 11:00 p.m.

However, the telephone company has announced new periods for lower long-distance toll rates. Lower rates now begin at 8:00 p.m. Therefore, you change the economy delivery start time to 8:00 p.m.

Example 3

You originally configured the AMIS Networking delivery times to business days only, to correspond to current legislation for the delivery of computer-generated calls. However, recent changes to legislation allow weekend delivery. Therefore, you change the Open AMIS message delivery times.

Modifying the AMIS Networking configuration

Introduction

If you need to modify the AMIS Networking configuration, follow these general guidelines.



CAUTION!

Risk of loss of functionality

Changes to the networking configuration should be done during hours when users are not logged on. Making changes to the configuration while users are logged on may result in loss of messaging functionality.

Getting there Nortel SMI > Meridian Application Server > CallPilot > Networking > Message Delivery Configuration > AMIS 1 or AMIS 2 tab

To modify the AMIS Networking configuration

1. Review Chapter 4, Configuring CallPilot for AMIS Networking, to ensure that you understand the impact of the changes.
2. Enter all required modifications on the AMIS 1 and AMIS 2 tabs.
3. Click Save.

   Result: The system validates the modifications and, if they are valid, puts the modifications into operation immediately.

Announce some modifications

Most of the modifications that you make to the AMIS Networking configurations are transparent to your users. Although modifications may affect system performance, they do not require any new input from users.

However, if you modify the AMIS compose prefix, you must announce this change to all local users.

If you modify the SAN, you must notify remote callers about this change. Also remind your local users to tell users at the open sites about the changes.

Perform a backup

After you modify the configuration of AMIS Networking, perform a backup to ensure that these changes are not lost.

Also record the changes in your network history.

Disabling and enabling AMIS Networking

Introduction

You may need to disable AMIS Networking occasionally. When you disable AMIS Networking, users cannot compose, send, or receive AMIS messages.

You might disable AMIS Networking to

- Prevent system abuse.
- Temporarily suspend outgoing or incoming messages, or both.

Messages sent while system is disabled

When you disable outbound AMIS Networking, your local users can continue to compose and send messages. The messages composed by your local users are held in queue until the option is enabled or the message becomes stale.

When you disable inbound AMIS Networking, messages from remote systems are rejected. The remote system that sends the message is informed of the status, and messages are not accepted. The way the remote system handles this information depends on the system. For example, if the remote system is CallPilot, the sender receives a non-delivery notification that states that the system of the intended recipient is not accepting messages. AMIS-compliant systems from other vendors may handle this scenario differently.

Getting there Nortel SMI > Meridian Application Server > CallPilot > Networking > Message Delivery Configuration > AMIS 1 tab

To disable and enable AMIS Networking

1 Do the following:

IF you want to	THEN
disable your system from receiving AMIS messages	clear the Incoming AMIS Networking check box.
disable your system from sending AMIS messages	clear the Outgoing AMIS Networking check box.
enable your system to receive AMIS messages	select the Incoming AMIS Networking check box.
enable your system to send AMIS messages	select the Outgoing AMIS Networking check box.

2 To save your settings, click Save.

Other ways to disable and enable AMIS Networking

There are several ways to disable and enable AMIS Networking. Use the most appropriate method, depending on the circumstances.

In addition to the Message Delivery Configuration method, the following methods are available:

IF you want to	THEN
disable sending and receiving of AMIS Networking messages by user class of service	set this option in Basic Administration.
disable or restrict the sending of AMIS Networking messages to specific or all SANs by a user	change the AMIS Restriction/Permission List for the user.

IF you want to	THEN
disable the sending of messages to any remote site, using any protocol, by the local server	clear the Send Messages to all other Servers option in the Messaging Network Configuration dialog box for the local server. **Note:** This option is available only if additional networking solutions are installed on your local system.
disable the sending of messages, using the defined protocol, to a specific remote site	clear the Send Messages to all other Servers option in the Messaging Network Configuration dialog box for the remote server. **Note:** This option is available only if additional networking solutions are installed on your local system.

Modifying message delivery parameters

Introduction

Message delivery parameters control when and how AMIS Networking sends messages. You can modify the following message delivery parameters as required:

- batch threshold
- stale times
- AMIS compose prefix
- economy delivery start and stop times
- AMIS delivery times

Impact of modifications

The message delivery parameters are closely interrelated. Modifications to one parameter may necessitate changes to others. Therefore, carefully plan modifications in advance.

You must test and monitor the performance of the system after you make any modifications to ensure that the modifications have the desired effect and no unplanned side effects.

Note: Before you modify the message delivery parameters, review the previous discussion of how these parameters are set. Review Chapter 4, Configuring CallPilot for AMIS Networking.

Getting there Nortel SMI > Meridian Application Server > CallPilot > Networking > Message Delivery Configuration > AMIS 1 and AMIS 2 tabs

To modify message delivery parameters

1. Modify the delivery parameters on both tabs as required.
2. Review the changes to ensure that there are no conflicts among the parameters.

3 Click Save.

Perform a backup

After any modification to the configuration, perform a backup to ensure that the modification is not lost.

Modifying the channel resource allocation

Introduction

When you implemented AMIS Networking, you set the minimum and maximum channel resource allocation for both the inbound and the outbound AMIS Networking SDNs. The channel resources determine how efficiently services are accessed.

Balance channel resources

You must carefully balance channels for each service when you allocate channel resources. You must allocate enough channels to ensure that users can access the service. However, you must not overallocate channels so that users are unable to access other services.

Determine if modifications are necessary

To determine if modifications to the channel resource allocation are necessary, monitor service usage. After AMIS Networking is in service for a period of time, use the Reporter feature to determine how services are being used.

Reporter provides the following statistics:

- the number of calls queued for a service
- the average wait time for queued calls
- the maximum wait time for queued calls
- the number of callers who abandoned the queue

If you are dissatisfied with the performance of AMIS Networking after analyzing these statistics, modify the resource allocation. However, remember that modifications to the resource allocation for one service may affect the performance of other services.

Getting there Nortel SMI > Meridian Application Server > System Configuration > Service Administration > Service Directory Number > Service Directory Number Table

To modify an SDN

1. In the SDN Table, select the SDN you want to modify.
2. On the File menu, select Properties.

   Result: The Edit Service Directory Number Properties dialog box appears.
3. Make the necessary modifications.
4. Click Save.

chapter 7

Troubleshooting AMIS Networking

Although testing and regular maintenance ensure that AMIS Networking is working properly, the working system may experience occasional problems.

This chapter describes how to diagnose and correct these problems.

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About troubleshooting AMIS Networking

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Overview

Introduction

If you are experiencing problems with AMIS Networking, this chapter will help you to identify and solve these problems.

Common causes of AMIS Networking problems include the following:

- AMIS Networking is disabled.
- The status of a remote site prevents it from receiving messages from the local site.
- Networking configuration is incorrect or incomplete.
- The switch is configured incorrectly.
- There are hardware problems.

Identifying the source of the problem

To identify the source of the problem, first determine if AMIS Networking is disabled.

If AMIS Networking is properly enabled, then review the following:

- appropriate Alarm and Event reports
- network status
- Operational Measurement (OM) reports

Configuration errors

Configuration errors may include the following:

- incorrect connection DNs
- message transfer protocols that do not match between the remote and local sites
- incorrect dialing plan information, including ESN prefixes and CDP steering codes
- scheduling parameters that need to be modified

Site status errors

A site can be either intentionally disabled or put into error status.

A remote site may be put into error status because of unsuccessful attempts by the local site to deliver messages to the remote site. Failed message delivery can happen for the following reasons:

- The remote site is experiencing hardware or software problems.
- There are site configuration errors.

Switch-related problems

If you are unable to identify the problem using CallPilot, the error may be switch-related. You can perform the call trace test.

Call trace

Call trace helps you to determine if network calls are being blocked for one or more of the following reasons:

- Digit manipulation is performed incorrectly. Either not enough or too many digits are inserted or deleted.
- Class of service restrictions are either too stringent or too loose.
- Dialing is incorrect. More digits are required by the trunks or trunk routes.

On the switch, you can perform a call trace on a phoneset or on a trunk and a trunk route.

Hardware problems

If you are unable to locate the problem in the CallPilot networking configuration or in the switch, your system may be experiencing hardware problems that are not related to networking.

Perform a basic hardware check. Examine all connections.

Determining if AMIS Networking is disabled

Introduction

You must enable AMIS Networking to receive incoming AMIS messages and to deliver outgoing AMIS messages.

Begin any troubleshooting session by determining if AMIS Networking is properly enabled.

There are several methods to disable and enable the sending and receiving of AMIS Networking messages.

IF	THEN
the system does not receive incoming messages	check that Incoming AMIS messages is enabled.
the system does not deliver outgoing messages	check that Outgoing AMIS messages is enabled.

To determine if AMIS Networking has been disabled from receiving incoming messages or sending outgoing messages, or both, check the settings on the AMIS 1 tab of the Message Delivery Configuration dialog box.

Getting there Nortel SMI > Meridian Application Server > CallPilot > Networking > Message Delivery Configuration > AMIS 1 tab

To determine if AMIS Networking is disabled

1. Check the settings of the Outgoing AMIS Networking and Incoming AMIS Networking check boxes. Ensure that these check boxes are selected as required for your system.
2. Click Save to exit and save any changes that you made.

Reviewing Alarm and Event reports

Alarm and Event reports

Alarm and Event reports track and report system errors and unusual events. These reports can be viewed on screen or printed, or both.

Reports related to AMIS Networking

The following reports are useful for monitoring Enterprise Networking:

- Networking Activity report
- Network Usage Bill-back report
- Failed Networking Sessions alert

See also

For instructions on reviewing and interpreting Alarm and Event reports, consult the *Reporter Guide*.

Reviewing Operational Measurement reports

Introduction

Operational Measurement (OM) reports contain detailed information on how the system is functioning. When you attempt to locate problems with AMIS Networking, review these reports.

Understanding OM reports

When you review the OM reports, consider the following:

This OM result	suggests
large number of accesses	the holding time may be too low, or the batch threshold is too small.
excessive “Failed to Send” messages	the remote system may be down, or the dialing translations are incorrectly configured, or the call maximum number is too small.
high number of NDNs	users are entering incorrect addresses, or mailboxes do not exist on the remote system.
networking traffic is excessive	an unusual or cyclical event affected the system, or the number of channels used by AMIS Networking is too small, or the number of channels available to AMIS Networking is too small.
failures	the remote system does not support the AMIS protocol, or the number of channels is too small.

See also

For detailed instructions on producing, reviewing, and interpreting Operational Measurement reports, consult the *Reporter Guide*.

Determining if problems are switch-related

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Switch-related problems

AMIS Networking problems and the switch

If you cannot identify the cause of the AMIS Networking errors using CallPilot, the problem may be switch-related.

The following tests identify switch-related problems:

- call trace
- link diagnostic

Call trace test

Purpose

If you cannot identify the AMIS Networking problem using CallPilot, calls may be blocked by the switch. The call trace test determines

- if calls are blocked
- why calls are blocked

Why calls are blocked

A network call can be blocked for one or more of the following reasons:

- Digit manipulation is performed incorrectly. Not enough or too many digits are inserted or deleted.
- Class of service restrictions are too stringent or too loose.
- Dialing is incorrect. More digits are required by the trunks or card trunk routes.

Where a call trace is performed

On the switch, you can perform a call trace on a telephone or on a trunk and trunk route.

Before you begin

To interpret the results of a call trace test, you need to understand

- how the switch processes calls
- how to interpret the results of a call trace session

Note: A switch technician should perform the call trace test and interpret the results.

The information that is required to perform the call trace test varies for each type of switch. However, the following information is usually required:

- your customer number
- the directory number that will be tested

- the type of telephone and key number (for multiline telephones)
- the terminal number (loop, shelf, card, unit) of the telephone or trunk that will be tested
- the route type and trunk number of the trunk and trunk route that will be tested

To perform the call trace test

Follow the instructions in your switch documentation.

To interpret the results

For guidelines on how to interpret the results of the call trace test, consult your switch documentation.

Link diagnostic test

Purpose

If you cannot identify the cause of the networking problem on CallPilot or by performing the call trace test, the problem may not be related to networking.

The link diagnostic test determines if the link between the switch and the Meridian Application Server is working.

Note: The link diagnostic test must be performed by a switch technician.

To perform the link diagnostic test

Follow the instructions in your switch documentation.

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CallPilot

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