555-7001-241

Meridian Mail
Networking Planning Guide

Product Release 12 Standard 1.0 January 1998

NORTEL
NORTHERN TELECOM

Meridian Mail
Networking Planning Guide

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Publication history

January 1998

This is the Standard 1.0 release of the *Networking Planning Guide* for Release 12 of Meridian Mail.

This guide provides descriptive information and instructions for deciding which networking service a customer should implement.

Contents

Chapter 1

Overview of this guide

In this chapter

What is this document about?

Introduction

The purpose and scope of the *Networking Planning Guide* is explained.

Purpose

The *Networking Planning Guide* provides descriptive information and instructions for deciding which networking service a customer should implement.

Available networking services

This guide provides planning information for the following networking services available for Meridian Mail:

- Meridian Mail Networking, which includes
  - — Meridian Networking (networking with modems)
  - — Enterprise Networking (networking without modems)
- AMIS Networking (networking with the AMIS protocol)
- Virtual Node AMIS Networking (a combination of Meridian Mail Networking and AMIS Networking)
- Network Message Service (available on Meridian 1 systems only). NMS also works on SL-100 and DMS switches which are connected to or in tandem with an M1.

Contents of this guide

This guide contains the following chapters.

Chapter	Description
1	This chapter describes the following about this manual: • purpose • audience • conventions used in cross-references to other information • the names of other related documents

Chapter	Description
2	This chapter contains Site Survey Checklist forms for • collecting information about what an existing customer already has installed • identifying the customer's long term expectations for the network It also provides instructions for completing those forms.
3	This chapter explains how to create a picture of the customer's current network. This picture will help you to quickly identify what networking service would be suitable between any two sites in the network.
4	This chapter describes each of the networking services that are available for Meridian Mail. It also • provides a comparison of features for each networking service • describes how networking interacts with other Meridian Mail features • explains the limitations of each networking service (if any) • explains transmission times for messages and Names Across the Network • describes the compatibilities between each networking service and Meridian Mail features and platforms • describes how networking services interact with each other
5	This chapter helps the planning engineer to decide which networking service(s) will best suit the customer's needs.
6	This chapter explains what hardware and software needs to be purchased in order to implement the chosen networking services.
Index	The Index is an alphabetical list of topics that will help you to locate information quickly. Use it with, or instead of, the Table of Contents.

Who should read this document

Introduction

The intended audience for the *Networking Planning Guide* is described.

Sales and planning engineers

When a customer inquires about networking for Meridian Mail, this guide is used by sales and planning engineers:

- as an information-gathering tool to collect information from the customer
- as a decision-making tool to determine the best networking service for the customer

Skills required

Sales engineers should have good interviewing skills and a good understanding of networking. Probing questions will help identify what the customer wants the networking service to accomplish.

Planning engineers must

- be able to analyze the customer's traffic needs
- be familiar with Nortel (Northern Telecom) products and services (including networking)
- be able to recommend the networking service that will best suit the customer's needs
- have experience in networking

Existing customers

The *Networking Planning Guide* is also used by existing customers who have already implemented a particular networking service and are considering implementing another.

Typographic conventions

Introduction This topic explains how cross-references to other chapters or documents are presented in this guide.

Cross-references The following table describes how cross-references to other sources of information are presented.

For a reference to text	the text appears	Example
in the same chapter of this Guide	surrounded by double quotation marks, with the name of the topic under which the required text is located.	For information about what this Guide contains, see "What is this document about?" on page 1-2.
in another chapter of this Guide	surrounded by double quotation marks, with the name of the chapter, and, if necessary, the name of the topic where the required text is located.	For information about what switch software is needed for Network Message Service, see Chapter 6, "Identifying the customer's hardware and software requirements", "Section E: Switch software required for NMS".
in another manual	in italics, giving the title and Northen Telecom Publication (NTP) number of the manual where the text is located.	For instructions on how to configure Meridian Mail for Meridian Networking, refer to the *Meridian Networking Installation and Administration Guide* (NTP 555-7001-244).

Related documents

Introduction

This topic lists other documents where information related to networking for Meridian Mail can be found.

Networking documents

The following table lists documents that explain how to implement networking for Meridian Mail.

NTP name	NTP number
AMIS Networking Installation and Administration Guide	555-7001-242
Network Message Service Installation and Administration Guide	555-7001-243
Meridian Networking Installation and Administration Guide	555-7001-244
Virtual Node AMIS Networking Installation and Administration Guide	555-7001-245
Enterprise Networking Installation and Administration Guide	555-7001-246

System administration documents

The following table lists documents that explain how to configure Meridian Mail.

NTP name	NTP number
System Administration Guide (M1)	555-7001-301
System Administration Guide for Multi-Customer Systems (M1)	555-7001-302
System Administration Guide (Modular Option GP)	555-7001-307
System Administration Guide for Multi-Customer Systems (Modular Option GP)	555-7001-308
System Administration Guide (MSM)	557-7001-301
Administration Guide for Multi-Customer Systems (MSM)	557-7001-302

Switch documents

The following table lists documents that explain how to configure the switch. Documents that explain how to implement dialing plans have also been listed in case they are needed.

NTP name	NTP number
Meridian 1	
X11 input/output guide	553-3001-400
Basic and Network Alternate Route Selection description	553-2751-100
Coordinated Dialing Plan description	553-2751-102
Base and Network Authorization Code description	553-2751-103
Flexible Numbering Plan	553-2751-105
ESN engineering (signaling guidelines)	309-3001-180
ESN transmission guidelines	309-3001-181
Meridian 1 (for Network Message Service only)	
ISDN Primary Rate Interface description and administration	553-2901-100
ISDN Primary Rate Interface installation	553-2901-200
ISDN Primary Rate Interface maintenance	553-2901-500

Chapter 2

Gathering information from the customer

In this chapter

Overview of this chapter

Introduction

This chapter provides forms and procedures for identifying the types of voice messaging systems and switches that the customer has now (if any). This information will be used later by the planning engineer to prepare a proposal for the customer.

Who should read this chapter

Sales representatives and engineers who have received an inquiry about networking for Meridian Mail should read this chapter.

If you are a customer who is beginning to implement a particular networking service, see the "Gathering information for the network" chapter in one of the manuals listed in the following table.

If you are implementing	See the	NTP number
Network Message Service	*Network Message Service Installation and Administration Guide*	555-7001-243
Meridian Networking	*Meridian Networking Installation and Administration Guide*	555-7001-244
Virtual Node AMIS	*Virtual Node AMIS Networking Installation and Administration Guide*	555-7001-245
Enterprise Networking	*Enterprise Networking Installation and Administration Guide*	555-7001-246

Note: The AMIS Networking feature does not need dialing plans to be configured on the switch. Therefore, you do not need to gather information for an AMIS network.

Sites that use the AMIS protocol are defined in the Meridian Mail network database (known as virtual nodes), and are subject to the same dialing plan requirements as Meridian Networking and Enterprise Networking. Refer to the *Virtual Node AMIS Networking Installation and Administration Guide* (NTP 555-7001-245).

Identifying the equipment the customer has now

Introduction

This topic explains how to identify the types of voice messaging systems and switches the customer may already have.

When to use this procedure

Use this procedure whenever you receive from a customer an inquiry about networking for Meridian Mail.

Why the information is important

The information is needed in order to decide which networking services (if more than one is required) the customer will need to purchase.

How the information is gathered

The information is gathered from the customer by completing one or both of the following forms:

- Form NWP-001(A): Networking Site Survey Checklist—Voice Messaging Systems Information form (For a sample, see page 2-8).
- Form NWP-001(B): Networking Site Survey Checklist—Switch Information form (for a sample, see page 2-11).

Procedure

To gather the information, follow these steps:

Step	Action
1	Obtain a working copy of one or both of the following forms: • NWP-001(A) • NWP-001(B) Copies of the forms can be found in Appendix A. The forms may be photocopied.
2	Complete the Customer Information section. Ensure that you include the area codes for the customer's telephone and fax numbers.
3	Complete the Site Information section. Did you run out of "site information" spaces? • If yes, repeat steps 1 to 3. • If no, go to step 4.

Step	Action
4	Complete the Page ____ of ____ field at the top of each form.
5	Complete the Sales Representative and Date fields in the For Nortel/Distributor use only section.
6	See "What to do next" for the next step.

What to do next

The next step is to determine what the customer wants and expects from the network. This information is recorded on form NWP-002, Customer's Networking Requirements and Expectations.

For instructions, see "Identifying the customer's long-term expectations for the network" on page 2-5.

Identifying the customer's long-term expectations for the network

Introduction

This topic provides some guidelines for identifying what the customer expects and wants from the network.

Use this procedure whenever you receive from a customer an inquiry about networking for Meridian Mail.

Why the information is important

The information is needed in order to decide which networking services (if more than one is required) the customer will need to purchase.

How the information is gathered

The information is gathered from the customer by asking leading questions and recording the customer's responses on form NWP-002, Customer's Networking Requirements and Expectations.

Procedure

To gather the information, follow these steps:

Step	Action
1	Obtain a working copy of form NWP-002, Customer's Networking Requirements and Expectations. Copies of the forms can be found in Appendix A. The forms may be photocopied.
2	Complete the Customer Information section. Ensure that you include the area codes for the customer's telephone and fax numbers.
3	Review the questions on the next page. Using these questions as a basic guideline, try to identify • what the customer wants to achieve with the network • the customer's long-term plans or expectations for the network
4	Record the customer's responses in the Notes section. If you run out of space, complete additional pages.
5	Complete the Page ____ of ____ field at the top of the form.

Step	Action
6	Complete the Sales Representative and Date fields in the For Nortel/Distributor use only section.
7	Attach this form to forms NWP-001A and NWP-001B. You now have the beginning of the customer's networking information package.
8	Give the package to a planning engineer for analysis.

Questions to ask the customer

The following are some questions that you can ask the customer to help you get the conversation started. Add your own questions as appropriate.

1. Does the customer intend to connect all sites in the network with ISDN?
2. Does the customer intend to consolidate any sites?
3. What is the customer's long term growth expectation?
4. How will this growth affect different sites?
5. How much money can the customer spend on the networking solution?
6. If there isn't much money now, will the customer want to expand or modify the network as more money becomes available in the future?
7. When does the customer want or expect the networking solution to be implemented?

   Note: This question identifies the urgency of the customer's inquiry.

What to do next

The next step is to draw a diagram of the customer's network. For instructions, see Chapter 3, "Converting the information into a diagram".

Note: The diagram can be drawn by either the sales representative or the planning engineer. It's your choice.

The Networking Site Survey Checklist for Voice Messaging Systems Information form

Description

The Networking Site Survey Checklist for Voice Messaging Systems Information form NWP-001(A) is used to identify the types of voice messaging systems the customer wants to network.

A sample is shown on page 2-8. Fields are also described on page 2-8.

Why this form is important

The voice messaging systems the customer has will determine what type of networking service the customer will need.

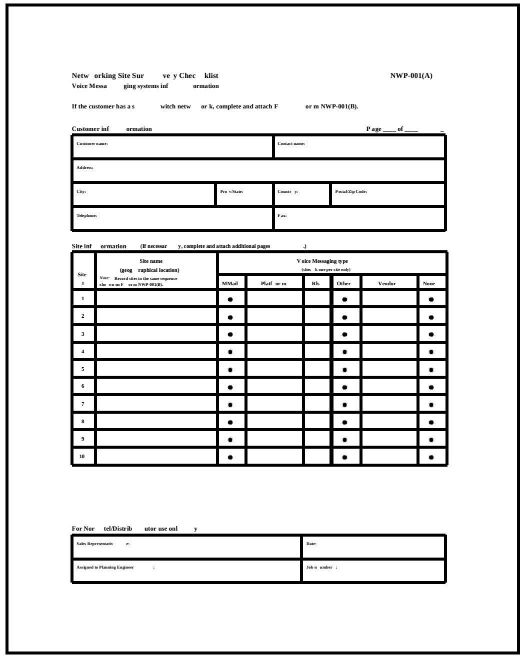
Example

If the customer wants to network Meridian Mail systems with voice messaging systems from other vendors, then AMIS Networking will definitely be required.

Where to get a working copy

Copies of the forms can be found in Appendix A. The forms may be photocopied.

Form sample



Networking Site Survey Checklist NWP-001(A)
Voice Messaging systems information

If the customer has a switch network, complete and attach Form NWP-001(B).

Customer information Page ____ of ____

Customer name:	Contact name:
Address:	
City: / Prov/State:	Country: / Postal/Zip Code:
Telephone:	Fax:

Site information (If necessary, complete and attach additional pages.)

Site #	Site name (geographical location) *Note:* Record sites in the same sequence shown on Form NWP-001(B).	Voice Messaging type (check one per site only) MMail	Platform	Rls	Other	Vendor	None
1		•			•		•
2		•			•		•
3		•			•		•
4		•			•		•
5		•			•		•
6		•			•		•
7		•			•		•
8		•			•		•
9		•			•		•
10		•			•		•

For Nortel/Distributor use only

Sales Representative:	Date:
Assigned to Planning Engineer:	Job number:

Customer information

Descriptions of customer information fields follow.

Field	**Description**
Customer name	The name of the company that is making the inquiry
Contact name	The name of the person within the company which is making the inquiry
Address	The company’s street address, including suite number
City	The city in which the company is located
Prov/State	The province or state in which the company is located
Postal/Zip Code	The company’s postal or zip code
Telephone	The contact person’s telephone number
Fax	The contact person’s fax number

Site information

Descriptions of site information fields follow.

Field	Description	
Site #	Line number on which the site information is recorded. If you are also completing form NWP-001(B), ensure that both forms contain the same site name on the same line. That is, site 1 on form NWP001(B) should be the same as site 1 on this form.	
Site name	The name the company uses to refer to the site. This could be the name of the geographical area where the site is located.	
Voice Messaging type	**IF the site**	**THEN**
	has a Meridian Mail system installed	• record a check mark in the MMail check box • record the platform name • record the software release used by the system
	has another vendor's voice messaging system installed	• record a check mark in the Other check box • record the vendor's name
	does not have a voice messaging system installed	• record a check mark in the None check box

For Nortel/Distributor use only

Descriptions of Nortel/Distributor fields follow.

Field	Description
Sales representative	The name of the sales representative who received the inquiry
Date	The date on which the inquiry was received
Assigned to planning engineer	The name of the planning engineer who will analyze the customer's requirements
Job number	The job number

The Networking Site Survey Checklist for Switch Information form

Description

The Networking Site Survey Checklist for Switch Information form NWP-001(B) is used to identify the switches the customer wants to include in the Meridian Mail network.

A sample is shown on page 2-11. Fields are also described on page 2-12.

Why this form is important

The switches the customer has will determine what type of networking service the customer will need.

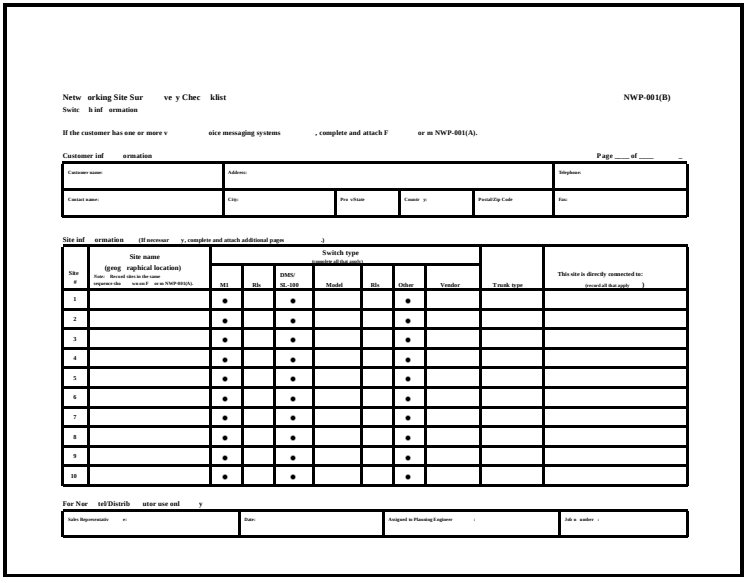
Example

If the customer wants to share one Meridian Mail system with several Meridian 1 switches, then Network Message Service will definitely be required.

Where to get a working copy

Copies of the forms can be found in Appendix A. The forms may be photocopied.

Form sample



Netw orking Site Sur ve y Chec klist NWP-001(B)
Switc h inf ormation

If the customer has one or more v oice messaging systems , complete and attach F or m NWP-001(A).

Customer inf ormation Page ____ of ____

Customer name:	Address:				Telephone:
Contact name:	City:	Pro vince	Countr y:	Postal/Zip Code	Fax:

Site inf ormation (If necessar y, complete and attach additional pages.)

Site #	Site name (geog raphical location) Note: Record sites in the same sequence cho sen in F or m NWP-001(A).	Switch type (provide all that apply)						Trunk type	This site is directly connected to: (record all that apply.)
		M1	Rls	DMS/ SL-100	Model	Rls	Other	Vendor	
1		●		●			●		
2		●		●			●		
3		●		●			●		
4		●		●			●		
5		●		●			●		
6		●		●			●		
7		●		●			●		
8		●		●			●		
9		●		●			●		
10		●		●			●		

For Nor tel/Distrib utor use onl y

Sales Representativ e:	Date:	Assigned to Planning Engineer :	Job n umber :

Customer information Descriptions of customer information fields follow.

Field	Description
Customer name	The name of the company that is making the inquiry
Address	The company's street address, including suite number
Telephone	The contact person's telephone number
Contact name	The name of the person within the company which is making the inquiry
City	The city in which the company is located
Prov/State	The province or state in which the company is located
Postal/Zip Code	The company's postal or zip code
Fax	The contact person's fax number

Site Information

Descriptions of site information fields follow.

Field	Description	
Site #	Line number on which the site information is recorded. If you are also completing form NWP-001(A), ensure that both forms contain the same site name on the same line. That is, site 1 on form NWP-001(A) should be the same as site 1 on this form.	
Site name	The name the company uses to refer to the site. This could be the name of the geographical area where the site is located.	
Switch type	**IF the site**	**THEN**
	has a Meridian 1	• record a check mark in the M1 check box • record the M1 software release used by the system
	has a DMS family or SL-100 switch	• record a check mark in the DMS check box • record the model number • record the DMS switch software release used by the system
	has another vendor's switch installed	• record a check mark in the Other check box • record the vendor's name

Field	Description
Trunk type	Trunk type used by the switch. Choices are • ISDN • TIE • WATS (Wide area telecom service) • FX • Central office • DID
This site is directly connected to	The names of all sites to which this site is directly connected

For Nortel/Distributor use only

Descriptions of Nortel/Distributor fields follow.

Field	Description
Sales Representative	The name of the sales representative who received the inquiry
Date	The date on which the inquiry was received
Assigned to Planning Engineer	The name of the planning engineer who will analyze the customer's requirements
Job number	The job number

The Customer's Networking Requirements and Expectations form

Description

The Customer's Networking Requirements and Expectations form (NWP-002) is used to identify the following:

- what the customer wants to achieve with the network
- the customer's long-term plans and expectations for the network

A sample is shown on page 2-16. Fields are also described on page 2-16.

Why this form is important

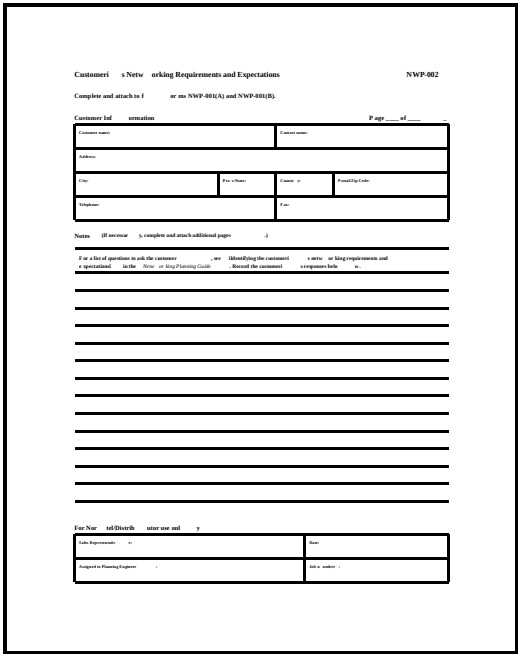
The information ensures that the right networking solution is chosen for the customer. The right networking solution is one that

- fits the customer's budget
- is suitable for the customer's current needs
- allows for future modification and expansion

Where to get a working copy

Copies of the forms can be found in Appendix A. The forms may be photocopied.

Form sample



Customeri s Netw orking Requirements and Expectations NWP-002

Complete and attach to f or ms NWP-001(A) and NWP-001(B).

Customer Inf ormation P age ____ of _____

Customer name:	Contact name:		
Address:			
City:	Prov /State:	Country:	Postal/Zip Code:
Telephone:		Fax:	

Notes (If necessar y, complete and attach additional pages .)

F or a list of questions to ask the customer , see Identifying the customeri s netw or king requirements and e xpectations in the *Netw or king Planning Guide* . Record the customeri s responses belo w.

For Nor tel/Distrib utor use onl y

Sales Representativ e:	Date:
Assigned to Planning Engineer :	Sale s number :

Customer information

Descriptions of customer information fields follow.

Field	Description
Customer name	The name of the company that is making the inquiry
Contact name	The name of the person within the company which is making the inquiry
Address	The company's street address, including suite number
City	The city in which the company is located
Prov/State	The province or state in which the company is located
Postal/Zip Code	The company's postal or zip code
Telephone	The contact person's telephone number
Fax	The contact person's fax number

Notes

Refer to "Questions to ask the customer" on page 2-6, and record the customer's responses.

Ensure that you ask other questions as appropriate.

For Nortel/Distributor use only

Descriptions of Nortel/Distributor fields follow.

Field	Description
Sales Representative	The name of the sales representative who received the inquiry
Date	The date on which the inquiry was received
Assigned to Planning Engineer	The name of the planning engineer who will analyze the customer's requirements
Job number	The job number

Chapter 3

Converting the information into a diagram

In this chapter

Overview of this chapter

Introduction

This chapter

- explains how to create a diagram of the customer's network
- provides network diagrams that you can use as examples of what your diagram should look like when it is finished

Who should read this chapter

This chapter should be read by

- sales representatives who have gathered the customer's equipment information, networking requirements, and expectations
- planning engineers who are using the information to prepare a networking solution proposal for the customer

Note: The diagram can be created by either the sales representative or the planning engineer.

If you are a customer who is beginning to implement a particular networking service, see the "Gathering information for the network" chapter in one of the manuals listed in the following table.

If you are implementing	See the	NTP number
Network Message Service	*Network Message Service Installation and Administration Guide*	555-7001-243
Meridian Networking	*Meridian Networking Installation and Administration Guide*	555-7001-244
Virtual Node AMIS	*Virtual Node AMIS Networking Installation and Administration Guide*	555-7001-245
Enterprise Networking	*Enterprise Networking Installation and Administration Guide*	555-7001-246

Who should read this chapter (continued)

Note: The AMIS Networking feature does not need dialing plans to be configured on the switch. Therefore, you do not need to gather information for an AMIS network.

Sites that use the AMIS protocol are defined in the Meridian Mail network database (known as virtual nodes), and are subject to the same dialing plan requirements as Meridian Networking and Enterprise Networking. Refer to the *Virtual Node AMIS Networking Installation and Administration Guide* (NTP 555-7001-245).

Drawing a diagram of the proposed network

Introduction

This topic explains how to use the information recorded on the Networking Site Survey Checklist forms to create a diagram of the customer's network. The diagram will help you to understand, at a glance, what the customer's network looks like.

Before you begin

Before you can draw a diagram of the customer's network, you need to complete one or both of the following forms:

- Form NWP-001(A): Networking Site Survey Checklist—Voice Messaging Systems Information
- Form NWP-001(B): Networking Site Survey Checklist—Switch Information

For form samples and completion instructions, see Chapter 2, "Gathering information from the customer."

For two examples of what your completed diagram should look like, see the following:

- "Diagram: a simple network" on page 3-6
- "Diagram: a more complicated network" on page 3-7

Procedure

To draw a diagram of the network, refer to the Networking Site Survey Checklist forms and follow these steps:

Step	Action
1	On a blank sheet of paper draw a symbol that represents each site. The symbol can be a circle, square, or rectangle.
2	Label each site with its site number and name. ***Note:*** For the site number, refer to the line number on the form.
3	Connect each pair of sites with a line that represents the trunk connection.
4	Label the trunk connection with the trunk type.

Step	Action
5	Inside each site symbol, do the following: • Draw a rectangle that represents the voice messaging system located at that site (if applicable). • Draw a rectangle for each switch located at that site.
6	Label each voice messaging system with one of the following: • the platform and software release (if Meridian Mail) • the vendor's name (if other vendor's voice messaging system)
7	Label each switch with the following: • the model and software release (if Nortel switch) • the vendor's name (if other vendor's switch)
8	Record the customer's name and telephone number somewhere on the diagram.
9	Include the diagram in the customer's information package.
10	See "What to do next" for the next step.

What to do next

The next step is to prepare a networking solution proposal for the customer. To do this, you need to

- become familiar with the networking service features, what they can and cannot do, and how they interact with other networking features or features of Meridian Mail. Read Chapter 4, "What you should know about networking."
- decide which networking solution is best for the customer. Read Chapter 5, "Deciding which networking service to use."
- identify what software and hardware need to be purchased in order to implement the recommended networking service. Read and follow the procedures in Chapter 6, "Identifying the customer's hardware and software requirements."

Examples of network diagrams

Introduction

This topic shows two examples of what the customer's network diagram should look like.

Diagram: a simple network

The following diagram shows an example of a simple network. The characteristics of a simple network are as follows:

- The network contains only a few sites.
- Each site contains similar equipment (that is, a Meridian Mail system and one switch).
- Each pair of sites is connected by a trunk type that is similar to trunks connecting other pairs of sites.
- Usually one networking service can be recommended and implemented for the network.

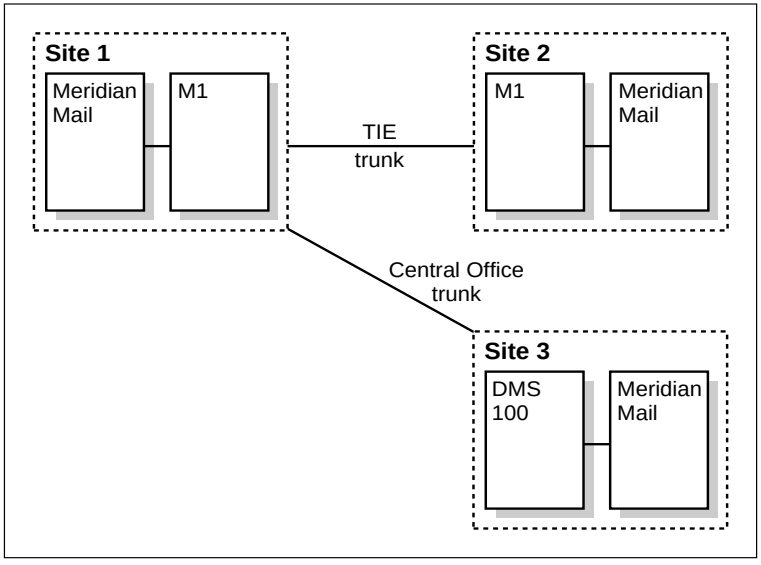


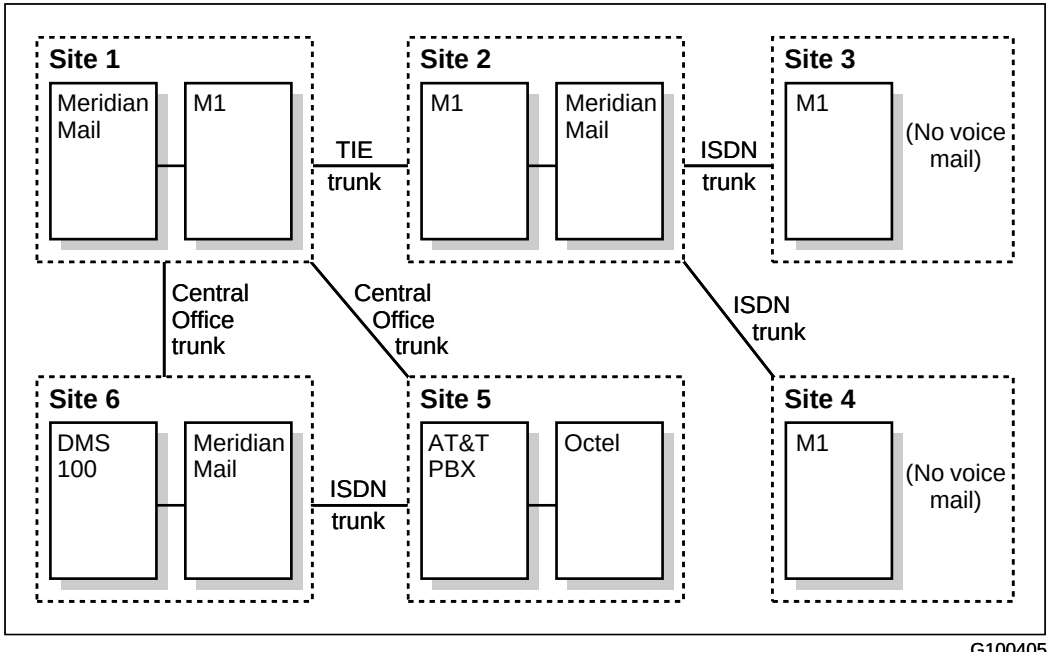
Diagram: a more complicated network

The following diagram shows an example of a more complicated network. The characteristics of this type of network are as follows:

- The network contains many sites.
- Different equipment is located at each site.

  Not all sites have a Meridian Mail system, or even have a voice messaging system.
- Different types of trunks are used.

  Sites connected by ISDN will require Network Message Service if they are to be included in the network.
- It is possible that the customer will need to implement more than one type of networking service.



Chapter 4

What you should know about networking

In this chapter

Overview of this chapter

Introduction

This chapter provides information that is important to know before choosing a particular networking service.

Who should read this chapter

The following people should read this chapter:

- sales and planning engineers who are processing an inquiry about networking for Meridian Mail
- customers who have already implemented one or more networking services and are thinking about implementing another

Section overviews

The following table briefly explains what this chapter contains.

Section	Description
A	This section describes • the five types of networking that are available • how networking services are packaged with Meridian Mail • Meridian Mail features that are available to end users; some features can be made available only when certain conditions are met
B	This section describes how networking interacts with the following features of Meridian Mail • Personal Distribution Lists • RVU Propagation • Meridian ACCESS applications • Message Trigger Mailbox • Bulk Provisioning • Call Answering

Section	Description
C	This section describes the limitations that apply to networking. Some examples of limitations discussed are • number of sites • PTT and conference beep regulations • VMUIF support • platforms supported • signaling and dialing plan requirements • maximum combinations of sites and locations, translation tables, and exchange codes
D	This section describes • message transmission times • transmission times for messages with text information • transmission times for messages with RVU Propagation information
E	This section describes • compatibilities between networking services and Meridian Mail platforms • compatibilities between networking services and other Meridian Mail features • how networking services interact with each other

Section A: Networking—what is it?

In this section

Overview of this section

Introduction

There are five different types of networking. They are

- Meridian Networking (networking with modems; also referred to as *proprietary networking*)
- AMIS Networking (also referred to as *Open AMIS* or *AMIS-A*)
- Virtual Node AMIS (also referred to as *Integrated AMIS*)
- Network Message Service (NMS) (also known in the field as *Centralized Mail*)
- Enterprise Networking (networking without modems; may sometimes be referred to as *modem-free proprietary networking*)

What this section is about

This section

- provides a brief description of each type of networking
- explains what networking features must be purchased in order to acquire a particular type of networking
- identifies the features that are available to end users; the features are presented in an “at a glance” comparison table

Five types of networking—a descriptive overview

Introduction

This topic provides a very brief description of the following networking services that are available for Meridian Mail:

- Enterprise Networking
- Meridian Networking
- AMIS Networking
- Virtual Node AMIS
- Network Message Service

Description: Enterprise Networking

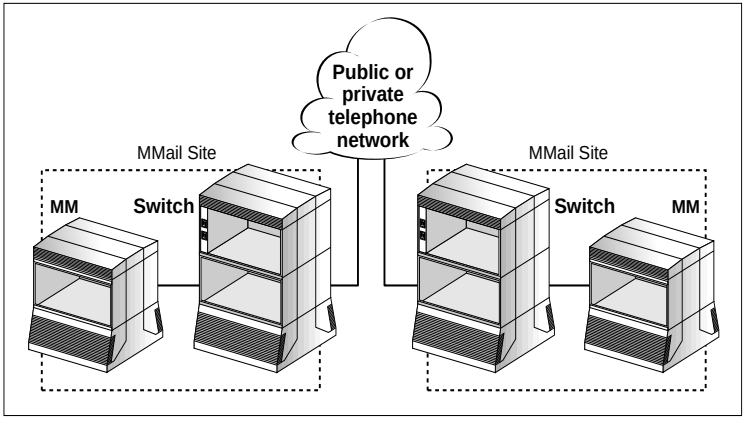
Enterprise Networking is a Meridian Mail networking protocol that permits one or more Meridian Mail systems to send and receive messages for users. It uses the following:

- a network database to define local and remote sites
- DTMF signaling based on proprietary extensions (customized by Nortel) to the AMIS protocol, instead of modems to transmit messages between sites

Enterprise Networking may be used outside of North America because it uses DTMF signaling. This is a global standard that passes signals through voice compression with no distortion.

Diagram: Enterprise Networking

The following diagram shows an example of a network using Enterprise Networking.



Description: Meridian Networking

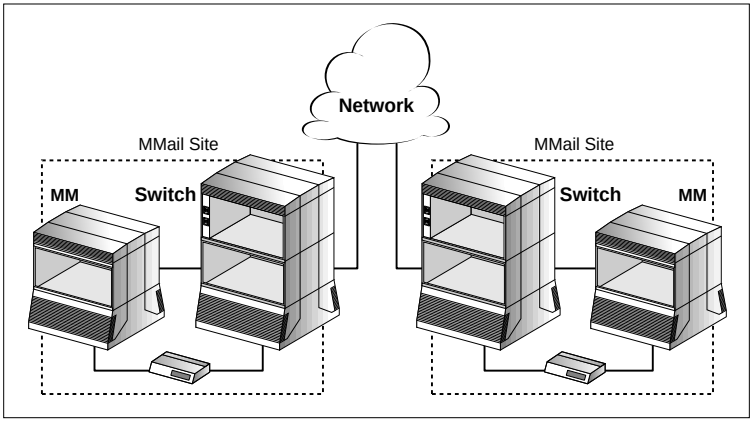
Meridian Networking is a Meridian Mail networking protocol that permits one or more Meridian Mail systems to send messages to and receive messages from users at other sites. It uses the following:

- a network database to define local and remote sites
- a hybrid analog and digital transmission scheme
- modems to transmit control passwords, message header information, and message delivery acknowledgments between sites

Meridian Networking is also known as *proprietary networking*. It is restricted to North America due to the modem regulations and conference beep requirements in most countries.

Diagram: Meridian Networking

The following diagram shows an example of a network that uses Meridian Networking.



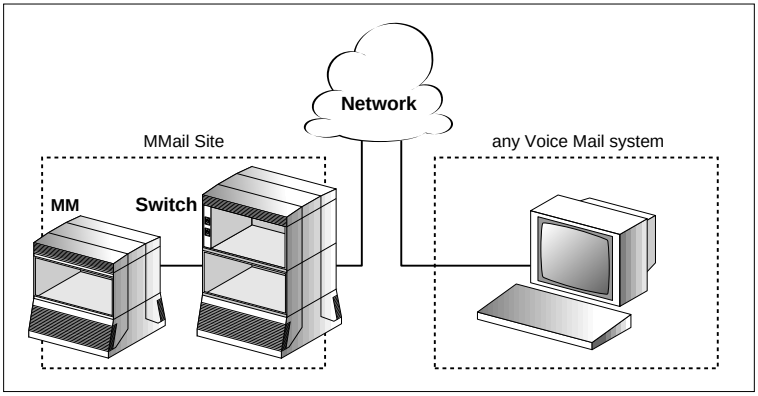
Description: AMIS Networking

AMIS Networking uses the analog Audio Messaging Interface Specification (AMIS) protocol. This protocol permits messages to be sent to, or received from, users of other voice messaging systems (not necessarily Meridian Mail) that support the AMIS protocol.

AMIS does not require special hardware or passwords. It does however, generate dual-tone multi-frequency (DTMF) tones and uses in-band DTMF signaling.

Diagram: AMIS Networking

The following diagram shows an example of a network using AMIS Networking.



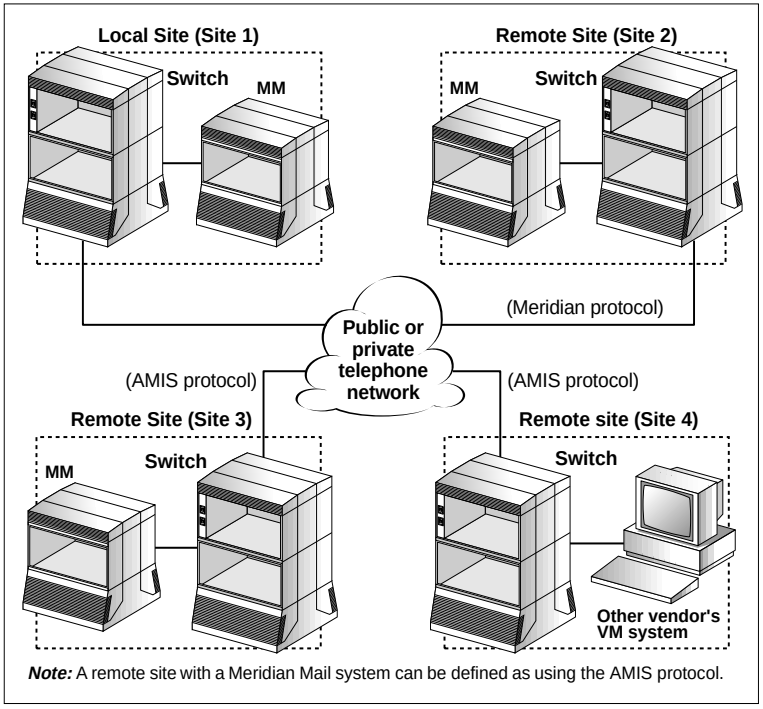
Description: Virtual Node AMIS

Virtual Node AMIS is a combination of Meridian Mail Networking and AMIS Networking. Meridian Mail Networking provides the ability to define local and remote sites that are defined as using the AMIS protocol. Sites that use the AMIS protocol are called virtual nodes and may or may not have a Meridian Mail system installed.

Virtual Node AMIS uses the AMIS protocol to deliver messages. As a result, Virtual Node AMIS messages are restricted to the same functionality as the AMIS protocol. See “Features available to end users” on page 4-13.

Diagram: Virtual Node AMIS

The following diagram shows an example of a Virtual Node AMIS network.



Description: Network Message Service

Network Message Service is a Meridian Mail feature that permits one Meridian Mail system to provide voice messaging services to users in a network of Meridian 1 switches that are interconnected by ISDN PRA trunks.

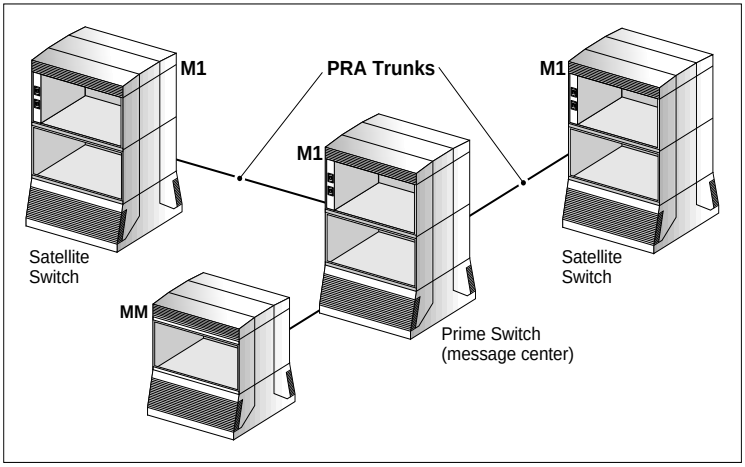
Note: There are actually two types of Network Message Service:

- Network Message Service—Meridian Mail (NMS-MM) is the feature described above.
- Network Message Service—Message Center (NMS-MC) is a Meridian 1 feature that permits one message center (which could be a live attendant) at one location to provide message center services to users at other Meridian 1 locations.

When Network Message Service is discussed in the Meridian Mail networking suite of documentation, it means Network Message Service—Meridian Mail.

Diagram: Network Message Service

The following diagram shows an example of a network using Network Message Service for Meridian Mail.



How networking services are packaged with Meridian Mail

Introduction

Even though five different types of networking are available, they are not offered as such when the Meridian Mail software is purchased.

Feature structure

The following table identifies the features that are available, and the networking services they provide.

Available networking features	Services provided
Meridian Mail Networking	Meridian Networking and Enterprise Networking The customer has the option of implementing either Meridian Networking, or Enterprise Networking, or both.
AMIS Networking	AMIS Networking
Network Message Service	Network Message Service

If the customer wants to implement Virtual Node AMIS, the customer must purchase the following:

- Meridian Mail Networking
- AMIS Networking

Features available to end users

Introduction

This topic describes the features that are available to users who wish to send messages to and receive messages from users of other Meridian Mail (or voice messaging) systems.

Features available to users

The following table lists the features supported by each networking service. Notes that apply to specific features are shown on page 4-14.

Feature	Enterprise Networking	Meridian Networking	AMIS Networking	Virtual Node AMIS	Network Message Service
Call Sender	yes	yes	no	yes	yes
Automatic addition of Remote Voice Users	yes	no	no	no	yes
Name Addressing	yes	yes*	no	yes*	yes
Name Dialing	yes	yes*	no	yes*	yes
Broadcast Messages	yes†	yes†	no	no	yes
Personal Distribution Lists	yes	yes	yes	yes	yes
System Distribution Lists	yes*~	yes*	no	yes*	yes
Multiple Recipients	yes	yes	no	no	yes
Reply To (compose messages)	yes	yes	yes	yes	yes
Reply All (reply to call answering messages)	yes	yes	no**	no	yes
Users actual Personal Verification	yes	no	no	no	yes
Administrator-recorded Personal Verification	yes	yes	no	yes	yes

Feature	Enterprise Networking	Meridian Networking	AMIS Networking	Virtual Node AMIS	Network Message Service
Remote site spoken names	yes	yes	no	yes	yes
Message privacy	yes	yes	no	no	yes
Acknowledgment tags	yes	yes	yes	yes	yes
Urgent message tags	yes	yes	no	no	yes
Received time announced	yes	yes	yes	yes	yes
Sent time announced	yes	yes	no	no	yes
99-minute messages	yes	yes	no	no	yes
Sender's name	yes	yes	no	no	yes
Recipient's name	yes	yes	no	no	yes
Message subject	yes	yes	no	no	yes
Sender's department	no	yes	no	no	yes

* Requires Remote Voice User (RVU).

** A message sent separately by AMIS to multiple recipients is transparent to users. Therefore, to the user, Multiple Recipients is supported.

~ Cannot enter network address into SDL unless the address has an RVU.

† All sites must be running MM11 or later.

Feature notes

The following table identifies the rules or additional information for features listed in the previous table.

Feature	Note	Applies to
Call Sender	Mailbox numbering must follow the dialing plan or a remote voice user must be added for the mailbox.[1]	Meridian Networking Virtual Node AMIS Enterprise Networking

Feature	Note	Applies to
Name Addressing Name Dialing System Distribution List	These features are available if users at the remote site are remote voice users on the local site.	Meridian Networking Virtual Node AMIS Enterprise Networking
Multiple recipients	The number of recipients for a message depends on the size of the message body. See “Message body length” on pages 4-32 and 4-39.	Meridian Networking Enterprise Networking
Acknowledgment tags	Acknowledgment tags indicate that the message was delivered to the mailbox.	AMIS Networking Virtual Node AMIS
	Acknowledgment tags indicate that the message was actually listened to.	Meridian Networking Enterprise Networking
Urgent message tags	Messages are delivered before standard and economy messages. However, the message received at the receiving site is not tagged as urgent.	AMIS Networking Virtual Node AMIS
99-minute messages	Message body is limited to eight minutes in length. If a longer message is recorded, the message is divided into and delivered in increments of eight minutes. For more information, see “Message delivery” on page 4-34.	AMIS Networking Virtual Node AMIS
Recipient’s name	If the recipients are defined as remote voice users, their names are provided to ACCESS applications, regardless of the message protocol.	Meridian Networking Enterprise Networking

[1] CLID must be available for Call Answering messages.

Section B: Networking and other Meridian Mail features

In this section

Overview of this section

Introduction

This section provides some brief descriptions of how networking interacts with the following features of Meridian Mail:

- Personal Distribution Lists
- System Distribution Lists
  — no RVU setup. Cannot add user to list.
- Remote Voice User (RVU) Propagation
- ACCESS applications
- Message Trigger Mailbox
- Bulk Provisioning
- Call answering

Personal Distribution Lists

Network addresses can be included in a user's Personal Distribution List. Network addresses are subject to the same validation process as other entries in the Personal Distribution List.

Remote Voice User Propagation

Remote Voice User (RVU) Propagation is a mini feature of Enterprise Networking. RVU Propagation permits spoken names of message senders to be sent and reproduced at the recipients' sites.

The administrator defines whether spoken names can be sent or received.

ACCESS applications

Enterprise Networking can transmit the sender's name, all recipients' names, and the message subject to the receiving site for use in ACCESS applications such as Visit Messenger.

Message Trigger Mailbox

Message Trigger Mailbox is a mailbox that is defined by the administrator to receive a message when certain SEERs are generated by Meridian Mail.

The Message Trigger Mailbox may exist on a prime location only in a Network Message Service network.

Bulk Provisioning

Bulk Provisioning is a Meridian Mail enhancement that provides the ability to copy, by tape, information between Meridian Mail systems.

Bulk Provisioning can be used to copy local voice users to another network site as remote voice users. The copied information includes each user's

- spoken name
- textual name
- mailbox address

Remote voice users' personal verifications are played when senders compose messages or use name dialing and name addressing.

Call Answering

Call Answering answers the busy, no-answer calls and takes a message. If the call originated from a remote user across a private ISDN network, the user can reply to the call answering message or invoke call-sender.

Being able to reply or invoke call-sender from a call answering message saves the user the effort of looking up and dialing the number of the caller.

Personal Distribution Lists

Definition

A Personal Distribution List (PDL) is a group of addresses that a mailbox user creates and uses to send one message to a selected group of people.

Usage and benefits

The PDL contains a list of mailbox addresses that are used frequently by the mailbox user. When a PDL is used, the user saves time by not having to enter the same series of addresses for each message to be sent.

Interaction with networking

Network addresses can be included in a user's PDL. They are subject to the same validation process as other PDL entries.

A network address in a PDL can become invalid when

- Class of Service capabilities (such as dialing permissions or the user's ability to use AMIS) are revoked
- the networking feature is removed from the system
- addresses contain references to network sites that no longer exist
- a network prefix is deleted

  Note: Personal Distribution Lists are not automatically updated when a network prefix is deleted.

If a network address is found to be invalid after a message addressed with a PDL is sent, the user receives a non-delivery notification.

Remote Voice User Propagation

Definition

Remote Voice User (RVU) Propagation is a feature of Enterprise Networking. It provides the ability to have the spoken names of senders of Enterprise Networking messages reproduced at recipient sites. If the user does not exist at the recipient site, a temporary RVU is added at that site with the sender's name and spoken name.

Benefit

RVU Propagation eliminates the need for the administrator to manually add a permanent RVU, and to record a spoken name on behalf of the remote user.

What the administrator can do

The administrator can

- define whether to accept and store spoken names received by RVU Propagation
- define whether spoken names will be sent by the system
- define to which sites spoken names are sent.

  This ability is useful if the local site is networking with sites that incur toll charges. The administrator may choose to send spoken names to toll-free sites, but not to sites that incur toll charges.

How it works

For information about how RVU Propagation and Enterprise Networking interact, refer to the "Really understanding how Enterprise Networking works" chapter in the *Enterprise Networking Installation and Administration Guide* (NTP 555-7001-246).

Meridian ACCESS applications

Definition

Meridian ACCESS applications are Nortel products that have been developed by Meridian ACCESS. These products include

- Interactive Voice Response (IVR)
- Customer Controlled Routing (CCR)
- VISIT Messenger

Interaction with networking

Enterprise Networking can transmit certain information in text format for use with ACCESS applications such as VISIT Messenger. The text information sent by Enterprise Networking includes the following:

- sender name
- all recipient names
- message subject

This information may require a large amount of time to deliver. For example, each name can consist of 19 characters requiring two DTMF tones per character. At five DTMF tones per second, each name can take as long as 7.8 seconds to deliver.

For more information about transmission times, see "Transmission times for messages with text information" on page 4-47.

Many sites may not have Meridian ACCESS applications, and therefore will not be able to use the text information. Other sites may not wish to absorb the long-distance charges incurred while delivering this information.

What the administrator can do

The administrator can

- define whether to accept text information for ACCESS applications
- define to which sites text is sent

  This ability is useful if the local site is networking with sites that incur toll charges. The administrator may choose to send text to toll-free sites but not to sites that incur toll charges.

Message Trigger Mailbox

Definition

A Message Trigger Mailbox is a mailbox that is defined by the administrator to receive a message when certain SEERs (also defined by the administrator) are generated by Meridian Mail.

Usage and Benefit

When the Message Trigger Mailbox receives a message about a SEER, the administrator or support person is immediately notified that a problem has occurred on the system.

The Message Trigger Mailbox is also used in conjunction with Meridian Mail Auto Administration to notify the support person that

- an authorized mailbox login attempt has been attempted
- a thru-dial call has been detected during a specified period of time
- a thru-dial call has been detected from a specified phone number

For more information about the Message Trigger Mailbox and Hacker Monitor, refer to the "Identifying security problems" section in your *Meridian Mail System Administration Guide*.

Interaction with networking

When Network Message Service is present and is being used by the system, the Message Trigger Mailbox may exist on the prime location only.

Note: The prime location is the location that has both a Meridian 1 switch and a Meridian Mail system. The prime location is the message center for the other Meridian 1s in the network.

Bulk Provisioning

Definition

Bulk Provisioning is a Meridian Mail enhancement that provides the ability to copy, by tape, data between Meridian Mail systems.

Usage and benefit

Bulk Provisioning can be used to copy

- a voice application (voice services and DNs) to one or more other systems
- local voice users as remote voice users to other systems within a Meridian Mail network

Bulk Provisioning reduces the amount of work an administrator must do to enter the same data on multiple Meridian Mail systems.

Interaction with networking

End user perspective

Copying remote users to a Meridian Mail system with Bulk Provisioning gives end users on one site the ability to address messages to users on another site, as well as name dial and name address those users. Also, the spoken names of the remote users are played in their own voice.

System administrator perspective

The system to which remote users are being copied must be correctly configured with the DNs, networking sites, and switch dialing plan(s) required for the networking service.

Only local users that belong to the networking customer group (on a multi-customer system) may be copied to tape. Network Message Service users are considered to be local users (to the site that is preparing the tape), and may be included.

Interaction with networking (continued)

Users may be copied as either permanent or temporary remote voice users. In the case of temporary remote users, the user's entire name is copied. (When temporary remote users are propagated by RVU Propagation, only the first 18 characters are copied.)

CAUTION

Risk of data loss

Bulk Provisioning of remote voice users could overwrite existing remote voice users if the administrator is not careful.

Section C: Networking limitations

In this section

Overview of this section

Introduction

This section describes the limitations that apply to networking. Some examples are

- number of sites that can be supported
- PTT and conference beep regulations
- VMUIF support
- platforms that are supported
- signaling and dialing plan requirements
- maximum combinations of sites and locations, translation tables, and exchange codes

This section is important

Note: It is important that you become familiar with the limitations of each networking service. If they are overlooked, then the customer may become dissatisfied with the network.

How this section is organized

Limitations that apply to all networking services are identified first followed by the limitations that apply to each specific networking service.

Limitations that apply to all networking services

Introduction

This topic describes the limitations that should be taken into consideration before deciding whether or not any networking service can be supported.

Number of sites

A maximum of 150 remote sites and one local site are supported. The maximum may decrease if dialing translation tables, exchange codes, and NMS locations are also present on the system. For more information, see "Maximum networking combinations" on page 4-40.

Note: The term "location" is used by Network Message Service only. It refers to the place in the network where a Meridian 1 has been installed.

Number of locations

A maximum of 60 remote sites or locations. The maximum may decrease if dialing translation tables, exchange codes, or remote sites are also present on the system.

Ports supported

All networking services (except for Network Message Service) require full-service voice ports. Networking will not work on basic-service voice ports.

Note: If full-service multimedia ports are also available on Meridian Mail, they are used by networking only when Meridian Mail has

- only full-service multimedia ports configured
- both full-service voice and full-service multimedia ports configured, and *all* voice ports are out of service

Delivery sessions

Up to 20 Meridian, 20 Enterprise, or 20 AMIS message delivery sessions may run at the same time.

Report calculations

On the Services Summary operational measurement report, information for Enterprise Networking, Meridian Networking, and Virtual Node AMIS are grouped together.

This means that if Meridian Mail Networking (Meridian/ Enterprise) and AMIS Networking are both present on the same system, the administrator will have to do some manual calculations in order to determine total usage by Enterprise Networking.

Limitations that apply to Meridian Networking

Introduction

This topic describes the limitations that should be taken into consideration before deciding whether or not Meridian Networking (that is, networking with modems) can be supported.

Local PTT regulations and Meridian Networking

Local PTT regulatory requirements may affect Meridian Networking operation. For example, the German PTT requires that the associated telephone be off-hook before a modem command can be accepted.

For networking, an ATD command that is issued without digits when an incoming call is detected by the modem causes an error message to be sent back to the switch. This prevents Meridian Mail from establishing the modem connection.

Conference beep

Some European countries (such as Germany) require a conference beep while the call is conferenced. The conference beep interferes with the operation of networking modems that are conferenced in.

VMUIF support

VMUIF does not support Meridian Networking.

Multi-customer systems

On a multi-customer Meridian Mail system, only one customer group can use Meridian Networking because only one network database can exist on the system. The network database contains the local and remote site definitions.

Message body length

The length of the message body is restricted by the number of recipients allowed in a message. The following table shows the maximum number of recipients in comparison with the message length.

Message body length (continued)

Note: The message body includes the voice recording and all attachments.

Message body length	Maximum number of recipients
1 minute	440
10 minutes	425
60 minutes	350
99 minutes	290

Additional limitations

The limitations discussed in "Limitations that apply to all networking services" also apply to Meridian Networking.

Limitations that apply to AMIS and Virtual Node AMIS Networking

Introduction

This topic describes the limitations that should be taken into consideration before deciding whether or not AMIS Networking or Virtual Node AMIS can be supported.

Mailbox numbers

For AMIS Networking, mailbox numbers cannot exceed 16 digits in length.

VMUIF support

VMUIF supports AMIS Networking.

VMUIF does not support Virtual Node AMIS.

Multi-customer systems

AMIS Networking can be used by all customer groups on a multi-customer system.

Virtual Node AMIS can be used by only one customer group, because only one network database can exist on the system. The network database contains the local and remote site definitions.

Meridian Mail features not supported by AMIS

The following Meridian Mail features are not supported by AMIS Networking:

Private message tags

Meridian Mail cannot prevent “private” tagged messages that are sent to AMIS sites from being forwarded to another person. Messages that are tagged as private are not sent to any AMIS address; instead they are returned to the sender with a non-delivery notification.

Reply All

The Reply All feature does not work since AMIS messages contain information about the originator only. They do not contain information about other recipients of the message.

Broadcast Messages

AMIS does not support broadcast addresses. Consequently, broadcast messages cannot be sent Virtual Node AMIS or open AMIS sites.

Other features

For a list of other features that are not supported by AMIS, see "Features available to end users" on page 4-13.

How these features can be provided to AMIS users

Private message tags, Reply all, and the other features not supported by AMIS (see page 4-13) can be made available to AMIS users by defining the site (where the users are located) in the Meridian Mail network database. This type of site is referred to as a virtual node.

Note: In order to access the network database to define a virtual node, the Meridian Mail Networking feature must be activated.

Message delivery

When an AMIS message is sent to more than one recipient, a separate message is transmitted for each recipient. (Meridian Networking transmits one message to the remote site, which is then deposited into each recipient's mailbox.)

AMIS Networking limits the length of any given message to eight minutes. However, Meridian Mail overcomes this limitation by allowing a user to record a message longer than eight minutes, and then breaking the message body into increments of eight minutes each before sending it.

Example

If a 24-minute message is recorded, Meridian Mail breaks the message into three messages of eight minutes each before delivering it to the recipient. The recipient receives three messages instead of one.

Additional limitations

The limitations discussed in "Limitations that apply to all networking services" also apply to AMIS and Virtual Node AMIS Networking.

Limitations that apply to Network Message Service

Introduction

This topic describes the limitations that should be taken into consideration before deciding whether or not Network Message Service can be supported.

Platforms

Network Message Service is supported on Meridian 1 switches only. Therefore, only the following Meridian Mail platforms are supported:

- Card Option
- EC11
- Modular Option
- Modular Option EC

Network Message Service is not supported on

- Modular Option GP
- Message Services Module (MSM)

Tandem switches

A tandem switch is the switch that sends transaction signaling messages to the next switch in the network.

Non-Nortel switches (such as AT&T, NEC, and ROLM) are not supported as tandem switches because they do not support the transaction signaling protocol used to send message waiting indication (MWI) notification and Call Sender information.

DMS and SL-100 switches are supported as tandem switches only when TCAP/PRA networking for Network Message Service on Meridian Mail is available on the DMS and SL-100.

Signaling

ISDN signaling

Network Message Service (NMS) uses the signaling capabilities of the ISDN primary rate access (ISDN PRA) and ISDN signaling link (ISL) to provide networked customers with messaging services. Therefore, Network Message Service for Meridian Mail is subject to the assumptions and limitations of the ISDN Network Numbering Plan Enhancement feature.

If a non-PRA or -ISL trunk is involved in a Network Message Service for a Meridian Mail call, then NMS is not supported because the original called number and calling party number are not sent.

Virtual signaling

The prime switch and satellite switches communicate through virtual signaling to

- turn message waiting indication on and off at a user's telephone
- transport necessary call information for a networked voice messaging feature such as Call Sender

These capabilities are supported by using ISDN non-call associated transaction signaling messages. The FACILITY message with the TCAP protocol is used to transport the information across the ISDN network.

End-to-end signaling

End-to-end in-band signaling (EES) is required for accessing Meridian Mail features from a switch that is not directly connected to Meridian Mail (satellite switch).

ISDN Network Call Redirection

Network Message Service for Meridian Mail is based on the Network Call Redirection (NCRD) features on the Meridian 1, and is therefore subject to the assumptions and limitations of the NCRD features. For more information, refer to the "Understanding the Network Message Service feature" chapter in the *Network Message Service Installation and Administration Guide* (NTP 555-7001-243).

Dialing plans

A *no dialing plan* configuration on the Meridian 1 switch is not supported by Network Message Service on Meridian Mail. The dialing plans on the Meridian 1 must be either the Coordinated Dialing Plan (CDP), the Electronic Switched Network (ESN) dialing plan, or a combination of CDP and ESN (hybrid).

Only distance steering codes (DSC) are supported for CDP in an ISDN network.

The Network Message Service dialing plan does not support the following:

- Digit Manipulation Index (DMI, overlay 86) to insert the ESN access code for ESN dialing in the sending Meridian 1. Instead, ESN access code insertion is provisioned with the INAC option in overlay 16 in the receiving Meridian 1.

  If DMI exists, then it must be removed in order to support a fully featured Meridian Mail system in a Network Message Service environment.
- mixed numbering plans and tandem tie networks using trunk access codes
- CDP transferable DNs
- trunk steering codes
- international dialing (Release 16)

Message Center DN

Only one message center (Meridian Mail) DN can be defined on each user telephone.

Additional limitations

The limitations discussed in “Limitations that apply to all networking services” also apply to Network Message Service.

Limitations that apply to Enterprise Networking

Introduction

This topic describes the limitations that should be taken into consideration before deciding whether or not Enterprise Networking can be supported.

VMUIF support

VMUIF does not support Enterprise Networking.

Channel usage time

If an Enterprise Networking message contains more than five addresses, Enterprise Networking requires approximately three seconds more channel usage time per recipient than Meridian Networking. If the recipient's text name is also sent, then approximately ten more seconds are required.

DTMF tones

Enterprise Networking relies on DTMF tone transmission to send and receive messages.

Call Progress Tone Detection

Enterprise Networking relies on Call Progress Tone Detection (CPTD) to set up a connection, and therefore will not work with NVP (network voice processor) 16K voice processor cards on Modular Option Meridian Mail systems. They require NVP 32K voice processor cards instead.

Message body length

The length of the message body is restricted by the number of recipients allowed in a message. The following table shows the maximum number of recipients in comparison with the message length.

Note 1: The message body includes the voice recording and all attachments.

Message body length (continued)

Note 2: The restriction of 99 minutes on the message body is an Enterprise Networking restriction.

Message body length	Maximum number of recipients
1 minute	440
10 minutes	425
60 minutes	350
99 minutes	290

Additional limitations

The limitations discussed in “Limitations that apply to all networking services” also apply to Enterprise Networking.

Maximum networking combinations

Introduction

You should be aware of the number of sites and locations that can be defined when dialing translation tables and exchange codes are also present on the system.

Translation tables and exchange codes are present on the system if the local site requires special dialing translations for the AMIS or Fax on Demand features.

The limitation on the number of sites and locations applies to the following networking services:

- Meridian Networking
- Virtual Node AMIS
- Network Message Service
- Enterprise Networking

Guidelines

The maximum combination of sites, locations, dialing translation tables, and exchange codes that can be supported in Meridian Mail are based on the following (approximate) ratio:

1 site = 1 NMS location = 3 translation tables = 10 exchange codes

Example 1
If one site is added, then one location, three translation tables, or ten exchange codes must be removed from the system.

Example 2
If ten exchange codes are added, then one site, one location, or three translation tables must be removed from the system.

Enforcement

The limits are enforced by Meridian Mail when networking sites and NMS locations, translation tables, or exchange codes are added or modified.

Maximum combinations table

The following table shows the maximum combinations of sites, locations, translation tables, and exchange codes.

Notes:

1. Network Message Service is not supported on SMDI platforms.
2. Statistics for more than 66 sites are currently not available.

Sites defined (Local and remote)	NMS satellite locations (Local and remote)	Dialing Translation tables	Exchange codes in Dialing Translation table
Dialing Translations			
0	0	15	1800
Networking and Dialing Translations (No NMS)			
59	0	15	1800
75	0	15	1490
100	0	15	1160
125	0	15	820
150	0	15	480
Network Message Service and Dialing Translations (No Networking)			
1	59	15	1800
Networking, Network Message Service, and Dialing Translations			
10	60	15	1800
10	132	15	900
30	35	15	1800
30	108	15	900
30	196	0	0
50	11	15	1800
50	84	15	900
50	172	0	0

Sites defined (Local and remote)	NMS satellite locations (Local and remote)	Dialing Translation tables	Exchange codes in Dialing Translation table
75	0	15	1490
75	54	15	900
75	142	0	0
100	0	15	1160
100	23	15	900
100	112	0	0
125	0	15	825
125	33	15	460
125	81	0	0
150	0	15	480
150	26	5	240
150	50	0	0

Section D: Transmission times

In this section

Overview of this section

Introduction

This section describes

- message transmission times
- transmission times for messages with text information
- transmission times for messages with RVU Propagation information

This section is important

It is important that you and the customer are aware of how long it takes to transmit certain types of messages. This may be a cost issue if the customer is required to pay toll charges between sites.

Factors that affect transmission times

The time it takes to transmit messages depends on how many people will be receiving the message, and whether those people are at the same site or at different sites.

Transmission times are also affected when messages contain text or RVU Propagation information.

Message transmission times

Introduction

The amount of time that a voice channel is in use for the transmission of a networking message depends on the networking service being used.

General things to know

The average message contains 40 seconds of voice, which requires the same amount of time to transmit for all protocols. The voice is played at the sending site and recorded at the receiving site.

AMIS Networking messages are transmitted separately for each recipient. For example, a message to ten recipients is transmitted ten times.

In the case of Network Message Service, messages are not transmitted between Meridian Mail systems. All users at Meridian 1 locations are added as mailbox users on the Meridian Mail system that functions as the message center in that network. Therefore, when a message is sent to one or more users, it is simply deposited into each user's mailbox.

When all recipients are at the same site

The following table shows the approximate length of transmission time when all recipients of a message are located at the same receiving site.

Number of recipients at the receiving site	Meridian Networking	AMIS Networking	Enterprise Networking
1 recipient	70 seconds	54.4 seconds	76 seconds
10 recipients	75 seconds	544 seconds	111 seconds
50 recipients	95 seconds	2720 seconds	262 seconds

For one recipient at each site

The following table shows the approximate length of transmission time when each recipient of a message is located at a different site.

Note: This is the time required to send the messages to all sites. In most cases, Meridian Mail will send to multiple sites at the same time if channels are available. This effectively reduces the time required to deliver the message.

Number of sites (one recipient at each site)	Meridian Networking	AMIS Networking	Enterprise Networking
1 site	70 seconds	54.4 seconds	76 seconds
10 sites	700 seconds	544 seconds	760 seconds
66 sites	2800 seconds	2176 seconds	3040 seconds

Transmission times for messages with text information

Introduction

This topic identifies how long it takes to transmit an Enterprise Networking message that contains text information for ACCESS applications.

What the text information contains

The text information portion of an Enterprise Networking message contains the following

- sender and recipient names
- subject

Transmission times

Each name can consist of 19 characters that require two DTMF tones per character. Based on five DTMF tones per second, it may take up to 7.8 seconds to transmit each name.

The following table shows the approximate length of transmission time when all recipients of a message are located at the same site.

Number of recipients at the receiving site	Standard message	Message with text information
1 recipient	76 seconds	89.6 seconds
10 recipients	111 seconds	132.8 seconds
50 recipients	262 seconds	324.8 seconds

Note: The administrator can define to which sites the text is sent.

This ability is useful if the local site is networking with sites that incur toll charges. The administrator may choose to send text to toll-free sites, but not to sites that incur toll charges.

Transmission times for messages with RVU Propagation information

Introduction

This topic identifies how long it takes to transmit an Enterprise Networking message that contains RVU Propagation information.

What the information contains

The RVU Propagation information portion of a message contains the sender's spoken name.

If, when the message arrives at the receiving site, the sender does not exist, a temporary remote voice user is added at that site with the sender's name and spoken name.

When spoken names are sent

When an Enterprise Networking message is sent, the sending and receiving sites negotiate whether spoken names are to be sent. If the receiving site does not want to receive the spoken name (defined by the system administrator at that site), then the sending site does not send it, resulting in a reduced transmission time.

Transmission times

It takes about 12.8 seconds to transmit the RVU Propagation information. This is based on a 7-second spoken name and a 12-character name.

If text information is already being sent, then only eight seconds are required because the sender's text name is already included in the message.

The following table shows the approxiamte length of transmission time when all recipients of a message with RVU Propagation and text information are located at the same site.

Number of recipients at the receiving site	Message with RVU Propagation information	Message with RVU Propagation and text information
1 recipient	88.8 seconds	97.6 seconds
10 recipients	123.8 seconds	140.8 seconds
50 recipients	274.8 seconds	332.8 seconds

Transmission times (continued)

Note: The administrator can

- define whether spoken names will be sent by the system
- define to which sites spoken names are sent

This ability is useful if the local site is networking with sites that incur toll charges. The administrator may choose to send spoken names to toll-free sites, but not to sites that incur toll charges.

Section E: Compatibility with other features and platforms

In this section

Overview of this section

Introduction

This section describes

- compatibilities between networking services and Meridian Mail platforms
- compatibilities between networking services and other Meridian Mail features
- how networking services interact with each other

Networking services and Meridian Mail platforms

Most networking services are supported on all platforms of Meridian Mail. The only exception is Network Message Service—Meridian Mail, which is not supported on the following platforms:

- Modular Option GP
- MSM

Networking services and other Meridian Mail features

There are some features of Meridian Mail that cannot be present on the same system that has one or more networking services. The features with which networking are incompatible are

- SMDI
- Multi-customer
- VMUIF
- Hospitality/Guest Messaging
- Meridian Mail Connections

How networking services interact with each other

The networking features of Meridian Mail are very flexible. You can combine one or more networking services to suit the customer's needs.

It is important that you become familiar with the similarities and differences between networking services that are implemented together. Doing so will encourage both you and the customer to take full advantage of the networking services' feature-rich capabilities.

Platform and feature compatibilities

Introduction

This topic identifies the Meridian Mail

- platforms on which networking services are supported
- features with which networking cannot coexist on the same system

Platforms supported

The following table shows the Meridian Mail platforms on which networking can exist. It also identifies the type of communication link used between Meridian Mail and the switch (AML or SMDI).

Networking service	Card Option (AML)	Modular Option (AML)	Modular Option GP (SMDI)	Modular Option EC (AML)	MSM (SMDI)	EC11 (AML)
Meridian Networking	yes	yes	yes	yes	yes	yes
AMIS Networking	yes	yes	yes	yes	yes	yes
Virtual Node AMIS	yes	yes	yes	yes	yes	yes
Network Message Service—Meridian Mail	yes	yes	no	yes	no	yes
Enterprise Networking	yes	yes	yes	yes	yes	yes

Note: The Options platforms (NT/XT and ST/RT) are no longer manufactured.

Feature compatibility (system level)

The following table shows the Meridian Mail features that *cannot* exist on the same system as networking.

This feature	Cannot coexist with	Notes
Multi-Customer	Network Message Service	One customer in a multi-customer system may use Meridian Networking and Enterprise Networking. (There is only one network database, and only one customer can use it.) All customers in a multi-customer system may use AMIS Networking.
SMDI Connections	Network Message Service	Network Message Service is designed to work only with the AML link on the Meridian 1.
Integrated Auto Administration	Network Message Service at satellite locations	These two features may coexist at the primary location only, and apply to primary location users only.
VMUIF	Meridian Networking Virtual Node AMIS Network Message Service Enterprise Networking	These services were designed to use MMUI.

Feature compatibility (customer level)

The following table shows the Meridian Mail features that *cannot* exist for the same customer as networking.

This feature	Cannot co-exist with	Notes
Integrated Auto Administration	Network Message Service at satellite locations	These two features may coexist at the primary location only, and apply to primary location users only.
VMUIF	Meridian Networking Virtual Node AMIS Enterprise Networking	These services were designed to use MMUI.
Hospitality/Guest Messaging	AMIS Networking	Hospitality/Guest Messaging does not support AMIS Networking.

How networking services interact with each other

Introduction

This topic explains how networking services interact with each other. The similarities and differences between any two (or three in some cases) networking services are identified.

Comparison table

The similarities and differences identified in the following table apply when more than one networking service is implemented on the same system.

When these features are present	The similarities are	And the differences are
Meridian Networking Enterprise Networking	• Meridian Networking and Enterprise can share the same network database. • All features are the same. • Menu and screen structure are the same. • Viewing of network status is the same.	• Meridian Networking and Enterprise Networking cannot share the same networking DN. • Enterprise Networking does not require modems and additional switch hardware. • Therefore, messages are transmitted differently. • Enterprise Networking includes an additional feature called RVU Propagation.
Meridian Networking Network Message Service	• The fields on site and location maintenance screens are basically the same. • Dialing plans are similar (that is, they can use ESN or CDP). • Meridian Networking users may receive messages from Network Message Service users associated with the local site. • A Meridian Networking remote site can be defined as a Network Message Service message center (prime location).	• Hierarchy of Meridian Networking sites and Network Message Service locations is different. • Therefore, extra levels of menus and screens are present. • More administration is involved in the configuration and maintenance of Meridian Networking.

When these features are present	The similarities are	And the differences are
Meridian Mail Networking AMIS Networking ***Note 1:*** In this case, Meridian Mail Networking consists of • Meridian Networking or • Enterprise Networking or • both ***Note 2:*** The combination of Meridian Mail Networking and AMIS Networking creates Virtual Node AMIS.	• AMIS sites can be defined in the network database. These sites are referred to as virtual nodes. • Meridian Mail Networking and Virtual Node AMIS can share the same network database. • Virtual Node AMIS site users receive the same features as Meridian Mail Networking site users. • Site maintenance screens are the same regardless of the transmission protocol. • Enterprise Networking and AMIS Networking can share the same DN; Meridian Networking and AMIS Networking cannot.	• Certain features are not supported by AMIS Networking. • AMIS Networking is supported on a Multi-Customer system; Meridian Mail Networking is not. • Virtual Node AMIS is not supported on a Multi-Customer system (only one customer can use the network database). • Messages are addressed differently. • Messages are transmitted differently by Meridian Mail Networking and AMIS Networking. • Messages for multiple recipients are transmitted differently. • There are extra levels of menus when both Meridian Mail Networking and AMIS Networking are present. • Viewing of network status is different (because of different protocol used by sites). • AMIS Networking and Enterprise Networking will compete for voice ports.
AMIS Networking Network Message Service	• There are no similarities.	• When both AMIS Networking and Network Message Service are present, there are extra levels of menus.

When these features are present	The similarities are	And the differences are
Virtual Node AMIS Network Message Service	• The fields on site and location maintenance screens are basically the same. • Dialing plans are similar (that is, they can use ESN or CDP). • Virtual Node AMIS users may receive messages from Network Message Service users associated with the local site.	• Hierarchy of Meridian Mail Networking sites and Network Message Service locations is different. • Therefore, extra levels of menus and screens are present.
AMIS Networking Virtual Node AMIS	• AMIS is used to send messages to — sites that are defined in the network database — sites that are *not* defined in the network database	• Messages are addressed differently.
Enterprise Networking Network Message Service	• The fields on site and location maintenance screens are basically the same. • Dialing plans are similar (that is, they can use ESN or CDP). • Enterprise Networking users may receive messages from Network Message Service users associated with the local site. • An Enterprise Networking remote site can be defined as a Network Message Service message center (prime location).	• Hierarchy of Meridian Mail Networking sites and Network Message Service locations is different. • Therefore, extra levels of menus and screens are present.

Chapter 5

Deciding which networking service to use

In this chapter

Overview of this chapter

Introduction

This chapter explains how to decide which networking service(s) the customer should purchase. The decisions are based on a combination of the following:

- information gathered from the customer in Chapter 2, “Gathering information from the customer”
- the network diagram created in Chapter 3, “Converting the information into a diagram”
- knowledge gained by reading Chapter 4, “What you should know about networking”
- customer preferences and scenarios

Who should read this chapter

This chapter should be read by planning engineers who are

- evaluating the customer’s current inventory of voice messaging systems and switches
- preparing a proposal for the customer

Making the decision based on the customer's inventory

Introduction

This topic provides a tool for deciding which networking services (if more than one is required) would be most suitable for the customer's networking requirements.

Before you begin

Before you begin, you need to

1. Complete the following forms:
   - NWP-001(A), Networking Site Survey Checklist for Voice Messaging Information
   - NWP-001(B), Networking Site Survey Checklist for Switch Information
   - NWP-002, Customer's networking requirements and expectations

   For instructions, see Chapter 2, "Gathering information from the customer.
2. Create a diagram of the network by using the information gathered on the Site Survey Checklist forms.
3. Read Chapter 4, "What you should know about networking."

Decision table

The following table provides the conditions for deciding which networking services to choose.The conditions are based on the information gathered on the Site Survey Checklist forms.

IF the trunk type is	AND the remote site	THEN recommend
Central Office TIE WATS FX DID	has a Meridian Mail system using an AML or SMDI link	Meridian Networking Enterprise Networking AMIS Networking Virtual Node AMIS
	has another vendor's voice messaging system	AMIS Networking Virtual Node AMIS

IF the trunk type is	AND the remote site	THEN recommend
ISDN	has a Meridian Mail system using AML	Network Message Service ***Note:*** Network Message Service is not supported on Meridian Mail platforms using SMDI.
	wants to get rid of a voice messaging system (Meridian Mail or other vendor)	
	does not have a voice messaging system	
	has another vendor's voice messaging system	AMIS Networking Virtual Node AMIS
	has Meridian Mail release 7	Meridian Networking
	has Meridian Mail release 8	AMIS Networking Virtual Node AMIS

Note: Network Message Service can be used in a network that has a combination of

- Meridian 1 switches
- DMS/SL-100 switches which are used as tandem switches

The following conditions apply:

- The Meridian Mail system must be directly connected (by AML) to a Meridian 1.
- The DMS/SL-100 (tandem) switches must support NMS transaction signaling (in the form of TCAP/PRA) in order to transport MWI notification and Call Sender information.

Other factors to consider

Other factors that need to be considered are

- distance between sites
- cost for ISDN transport across time zones
  Note: NMS does not correct for time zone differences
- customer's responses to questions asked regarding long-term expectations and requirements (recorded on form NWP-002)
- customer preferences and scenarios. For more information, see "Making the decision based on other scenarios" on page 5-6.
- international boundaries
- volume of traffic
- trade-offs
- time of day for majority of networking traffic
- time zone differences
- location of auto-attendants

Making the decision based on other scenarios

Introduction

This topic provides another tool for deciding which networking services (if more than one is required) would be most suitable for the customer's networking requirements.

This tool is based on customer preferences and other scenarios, and can be used to validate the decisions you made based on the customer's inventory.

Before you begin

Before you begin, you must

- read "Making the decision based on the customer's inventory" on page 5-3
- make a preliminary decision on which networking services to recommend to the customer

Decision table

The table on page 5-7 helps you to prioritize the decision when more than one networking service would be appropriate (based on the customer's inventory).

The scenarios and choices are basic guidelines only. When reviewing this table, ensure that you consider all the scenarios that might apply to the customer.

Note: Network Message Service is not covered in this decision table. If the customer has Meridian 1 locations without a Meridian Mail system and has ISDN trunks between those Meridian 1 locations, the only networking solution for the customer is Network Message Service.

Decision table (continued)

Scenario	Meridian Networking	AMIS Networking	Virtual Node AMIS	Enterprise Networking
International networking is required	not supported	second choice	second choice	first choice
Ease of setup is desired	last choice	second choice	first choice	first choice
Most features are provided	second choice	last choice	third choice	first choice
Most support tools are provided	last choice	second choice	second choice	first choice
Propagation of remote voice users is provided	not supported	not supported	not supported	only choice
Text support for Meridian ACCESS applications is required	second choice	not supported	not supported	first choice
Networking with other vendor voice messaging systems is required	not supported	first choice	first choice	not supported
Transmission time is important	first choice	last choice	last choice	second choice
Meridian Networking is already installed and running (existing customers only)	first choice	last choice	third choice	second choice

Chapter 6

Identifying the customer's hardware and software requirements

In this chapter

Overview of this chapter

Introduction

This chapter identifies the hardware and software a customer may need to purchase for a particular networking service.

Who should read this chapter

The whole chapter should be read by planning engineers who are preparing a networking solutions proposal for the customer.

Existing customers should read Sections B through F in order to gain a full understanding of the networking requirements.

Section A: Recording what the customer needs

In this section

Overview of this section

Introduction

This section explains how to identify the hardware and software the customer may need to purchase in order to implement one or more networking services.

Who should read this section

Planning engineers should read this section.

Existing customers do not need to read this section since it is assumed that you have already purchased the hardware and software you need.

Summary: what to do

The following is a summary of the process:

1. Read the entire chapter to identify the following:
   - what hardware needs to be purchased (if any)
   - what software needs to be purchased (if any)
   - what documentation needs to be purchased
2. Complete the following forms:
   - NWP-003(A), Customer's Networking Hardware Requirements form
   - NWP-003(B), Customer's Networking Software Requirements form
3. Present your recommendations to the customer.

Identifying what the customer needs to purchase

Introduction

This topic explains how to identify the hardware and software the customer needs to purchase in order to implement one or more networking services.

This information is recorded on the following forms:

- NWP-003(A), Customer's Networking Hardware Requirements form
- NWP-003(B), Customer's Networking Software Requirements form.

Before you begin

Before you can complete the Networking hardware and software requirements form, you need to read the rest of this chapter. It describes what each networking service requires.

Procedure

To identify what the customer needs to purchase, do the following:

Step	Action
1	Obtain a working copy of the following forms: • NWP-003(A), Customer's Networking Hardware Requirements • NWP-003(B), Customer's Networking Software Requirements Copies of the forms can be found in Appendix A. The forms may be photocopied.
2	Complete the "Customer Information" section. Ensure that you include the area codes for the customer's telephone and fax numbers.
3	Read the rest of this chapter to identify • what hardware needs to be purchased (if any) • what software needs to be purchased (if any) • what documentation needs to be purchased (mandatory for Meridian Mail)
4	Complete the "Requirements" section with information gathered in step 3.

Step	Action
5	Complete the *Planning Engineer* and *Date* fields in the "For Nortel/Distributor use only" section.
6	Attach all "information gathering" documents to this form. This includes • Site Survey Checklist forms • Customer's Networking Requirements and Expectations form • network diagram(s) • any notes that were recorded separately
7	Ask a coworker or your manager to review your recommendations.
8	Present your recommendations to the customer.

The Customer's Networking Hardware Requirements form

Description

The Customer's Networking Hardware Requirements form NWP-003(A) is used to identify the hardware the customer needs to purchase (if any) when implementing one or more networking services.

A sample is shown on page 6-8. Fields are also described on page 6-8.

Why this form is important

Certain implementations of networking require specific hardware. If this hardware is not included in the customer's order, then the customer will not be able to implement the networking service.

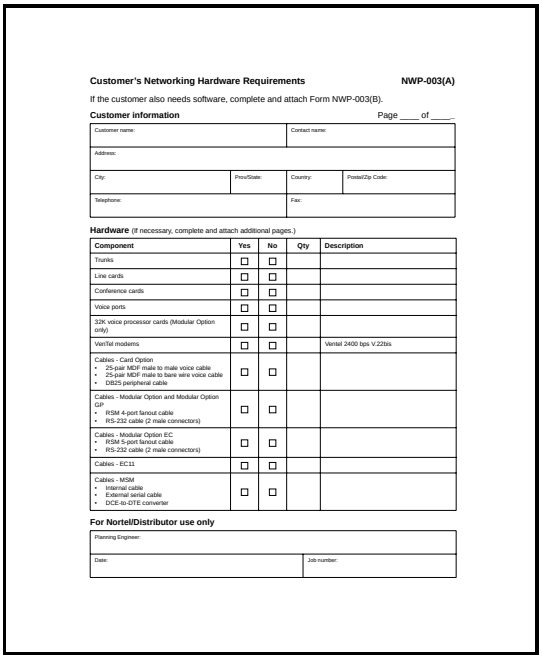
Example

If the customer wants to implement Meridian Networking, then modems must be purchased.

Where to get a working copy

Copies of the forms can be found in Appendix A. The forms may be photocopied.

Form sample



Customer's Networking Hardware Requirements **NWP-003(A)**

If the customer also needs software, complete and attach Form NWP-003(B).

Customer information Page ____ of ____.

Customer name:		Contact name:	
Address:			
City:	Prov/State:	Country:	Postal/Zip Code:
Telephone:		Fax:	

Hardware (If necessary, complete and attach additional pages.)

Component	Yes	No	Qty	Description
Trunks	☐	☐		
Line cards	☐	☐		
Conference cards	☐	☐		
Voice ports	☐	☐		
32K voice processor cards (Modular Option only)	☐	☐		
VenTel modems	☐	☐		Ventel 2400 bps V.22bis
Cables - Card Option • 25-pair MDF male to male voice cable • 25-pair MDF male to bare wire voice cable • DB25 peripheral cable	☐	☐		
Cables - Modular Option and Modular Option GP • RSM 4-port fanout cable • RS-232 cable (2 male connectors)	☐	☐		
Cables - Modular Option EC • RSM 5-port fanout cable • RS-232 cable (2 male connectors)	☐	☐		
Cables - EC11	☐	☐		
Cables - MSM • Internal cable • External serial cable • DCE-to-DTE converter	☐	☐		

For Nortel/Distributor use only

Planning Engineer:	
Date:	Job number:

Customer information Descriptions of customer information fields follow.

Field	Description
Customer name	The name of the company that is making the inquiry
Contact name	The name of the person within the company which is making the inquiry
Address	Company's street address, including suite number
City	The city in which the company is located
Prov/State	The province or state in which the company is located
Postal/Zip Code	The company's postal or zip code
Telephone	The telephone number where the contact person can be contacted
Fax	The contact person's fax number

Hardware

Descriptions of site information fields follow.

Field	Description
Component	This column lists the hardware components required to implement networking.
Yes	If the customer needs to purchase this component, record a check mark here.
No	If the customer does not need to purchase this component, record a check mark here.
Qty	Record the number of pieces the customer will need to purchase; otherwise, leave blank.
Description	Record any of the following as appropriate: • part or model number • platform • any other notes as applicable

For Nortel/Distributor use only

Descriptions of Nortel/Distributor fields follow.

Field	Description
Planning engineer	The name of the planning engineer who is analyzing the customer's requirements
Date	The date on which the inquiry was received
Job number	The job number

The Customer's Networking Software Requirements form

Description

The Customer's Networking Software Requirements form (NWP-003[B]) is used to identify the software the customer needs to purchase (if any) when implementing one or more networking services.

A sample is shown on page 6-11. Fields are also described on page 6-11.

Why this form is important

Certain flavors of networking require specific Meridian Mail features and software packages on the switch. If the software is not included in the customer's order, then the customer will not be able to implement the networking service.

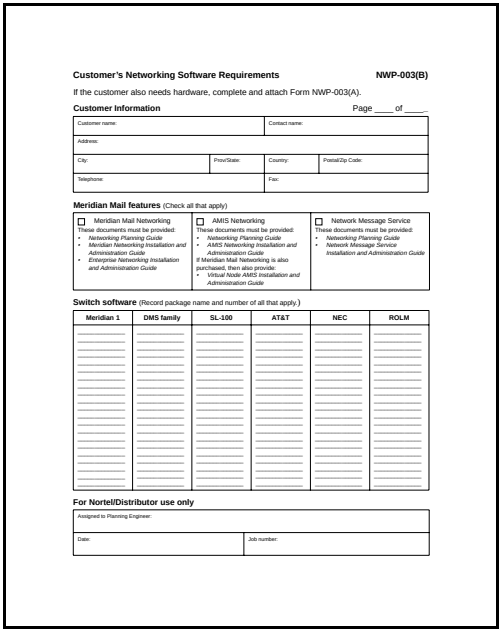
Example

If the customer wants to implement Network Message Service, then package 148 (ISDN network service) must be purchased for all switches in the network.

Where to get a working copy

Copies of the forms can be found in Appendix A. The forms may be photocopied.

Form sample



Customer's Networking Software Requirements **NWP-003(B)**

If the customer also needs hardware, complete and attach Form NWP-003(A).

Customer Information Page ____ of ____.

Customer name:		Contact name:	
Address:			
City:	Prov/State:	Country:	Postal/Zip Code:
Telephone:		Fax:	

Meridian Mail features (Check all that apply)

Meridian Mail Networking	AMIS Networking	Network Message Service
These documents must be provided: • *Networking Planning Guide* • *Meridian Networking Installation and Administration Guide* • *Enterprise Networking Installation and Administration Guide*	These documents must be provided: • *Networking Planning Guide* • *AMIS Networking Installation and Administration Guide* If Meridian Mail Networking is also purchased, then also provide: • *Virtual Node AMIS Installation and Administration Guide*	These documents must be provided: • *Networking Planning Guide* • *Network Message Service Installation and Administration Guide*

Switch software (Record package name and number of all that apply.)

Meridian 1	DMS family	SL-100	AT&T	NEC	ROLM

For Nortel/Distributor use only

Assigned to Planning Engineer:	
Date:	Job number:

Customer information

Descriptions of customer information fields follow.

Field	Description
Customer name	The name of the company that is making the inquiry
Contact name	The name of the person within the company which is making the inquiry
Address	Company's street address, including suite number
City	The city in which the company is located
Prov/State	The province or state in which the company is located
Postal/Zip Code	The company's postal or zip code
Telephone	The telephone number where the contact person can be contacted
Fax	The contact person's fax number

Meridian Mail features

Descriptions of Meridian Mail feature fields follow.

Field	Description
Meridian Mail Networking	Record a check mark if the customer wants to implement one or both of the following: • Meridian Networking • Enterprise Networking
AMIS Networking	Record a check mark if the customer wants to implement one or both of the following: • AMIS Networking • Virtual Node AMIS (must also purchase Meridian Mail Networking)
Network Message Service	Record a check mark if the customer wants to implement Network Message Service.

Switch software

Descriptions of switch software fields follow.

Field	Description
Meridian 1	Record the package name and number for each package the customer needs to purchase.
DMS family	
SL-100	
AT&T	
NEC	
ROLM	

For Nortel/Distributor use only

Descriptions of Nortel/Distributor fields follow.

Field	Description
Planning engineer	The name of the planning engineer who is analyzing the customer's requirements
Date	The date on which the inquiry was received
Job number	The job number

Section B: Hardware required for networking

In this section

Overview of this section

Introduction

This topic identifies the hardware that a customer needs in order to implement networking.

Types of hardware discussed

The following types of hardware are identified in this section:

- for all networking services
  - trunks
  - Meridian Mail voice ports
  - voice processor cards
- for Meridian Networking only
  - line cards
  - conference cards
  - RSM or Utility cards
  - modems

Network Message Service

Network Message Service needs a specific type of hardware on the switch. For more information, see "Section D:: Switch hardware required for NMS," on page 6-37.

Hardware required for all networking services

Introduction

This topic identifies the hardware the customer will need to purchase for a particular networking service. Possible hardware requirements are

- additional trunks
- Meridian Mail voice ports
- voice processor cards

Engineering guidelines documentation

For engineering guidelines based on traffic patterns, see one of the documents listed in the following table.

Meridian Mail platform	NTP
Card Option	*Meridian 1 Option 11 - General Installation and Planning Guide* (NTP 553-3011-200)
Modular Option	*Site and Installation Planning Guide* (NTP 555-7041-200)
Modular Option GP	*Site and Installation Planning Guide* (NTP 555-7051-200)
Modular Option EC	*Site and Installation Planning Guide* (NTP 555-7061-200)
EC 11	*Meridian 1 Option 11 - General Installation and Planning Guide* (NTP 553-3011-200)
MSM	*MSM Planning and Engineering Guide* (NTP 557-7001-100)

Trunks

Trunks must be installed so that the networking services will function. Trunks may be connected to a central office or to a private tie network.

The following table describes the trunks that can be used.

Trunk type	Description
Central Office	Central Office trunks provide public switched telephone service to the customer's switch. ***Note:*** Central Office trunks are also referred to as Public Exchange trunks.
DID	Direct Inward Dial trunks provide a portion of the called party's number signaled from the local public exchange to the customer's switch. This permits the call to be delivered directly to the destination without private network attendant intervention.
FX	Foreign Exchange trunks provide the customer's switch with the equivalent of a local connection to a "foreign" or distant public exchange. This bypasses switching at the local public exchange.
Tie	Tie trunks connect Centrex and Meridian 1 PBXs directly without being switched at the intermediate public exchange(s).
WATS	Wide Area Telecommunications Services trunks permit the customer's switch to • receive in-WATS (or "800" service) or • originate out-WATS long-distance calls at a lower rate than regular long-distance calls. The rate is based on a bulk pricing arrangement with the long-distance service provider.
ISDN	Integrated Services Digital Network trunks are digital trunks that can be used to carry either voice or data information. Network Message Service uses the ISDN Primary Rate Interface (PRI) and ISDN signaling link (ISL) to provide customers with messaging services on a network rather than on a strictly local basis.

Trunks (continued)

Requirements

The trunks between sites that use Enterprise Networking must support DTMF tones including the C and D tones. Enterprise Networking will also work on trunks which incorporate bandwidth compression schemes.

Additional trunks will be required if networking traffic will increase call blocking to an unacceptable level. The number of outgoing trunks required is based on the anticipated outgoing message traffic. If outgoing trunks will also be used for incoming calls, then the incoming call traffic must also be considered.

The type of trunk chosen can depend on the following:

- cost effectiveness between sites
- distance between sites
- the networking service chosen

Voice ports

Number of ports required

If ports are to be dedicated to networking, then the number of ports required for networking needs to be identified. In fact, the number of ports required may also depend on the traffic requirements of other Meridian Mail features.

The table on page 6-18 shows how many networking calls are processed per hour for a specific number of ports. The following assumptions apply:

- Five percent of the recipients of composed messages are located at remote sites.
- The network consists of three sites.

Voice ports (continued)

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Number of voice ports	Networking calls per hour (40-second messages)
72	102
96	153
144	204
168	255
192	606

Note 1: Meridian Networking uses 2400-bps modems that are connected to RS-232 ports to send message data information. A minimum of two modems is required for a 72-port system. To maintain the number of networking calls per hour identified in the previous table, add one modem for each 24 ports.

Note 2: Network Message Service does not require voice ports to transmit messages. Instead, calls between locations are routed to Meridian Mail over the ISDN PRI links. However, calculation of the system size must take into account all users, even if they are connected to other Meridian 1 switches.

Calculating traffic

Traffic calculations are based on

- usage (including how much time is spent at busy hour)
- traffic patterns
- grade of service desired

See "Engineering guidelines documentation" on page 6-15 for a list of documents that may help you with traffic calculations.

Voice ports (continued)

Types of ports required

Networking requires full-service voice ports. Networking will not work on basic service voice ports.

Note: If full-service multimedia ports are also available on Meridian Mail, they are used by networking only when Meridian Mail has

- only full-service multimedia ports configured
- both full-service voice and full-service multimedia ports configured, and *all* voice ports are out of service

Voice processor cards

The voice processing cards on the following platforms support all networking services:

- Card Option
- Modular Option EC
- MSM

Dedication of ports to networking is not required.

Modular Option

At least one NVP 32K voice processor card is required on the Meridian Mail Modular Options platform to support outgoing calls for the following networking services:

- Meridian Networking
- AMIS Networking
- Enterprise Networking

Voice processor cards (continued)

The following table describes the requirements for each networking service on a Modular Option system with both 16K and 32K NVP cards.

The requirements for	are
Meridian Networking	Meridian Networking does not need to be dedicated to a 32K voice processor card because outgoing calls are automatically routed to the 32K voice processor card. Incoming calls can terminate on either the 16K or 32K voice processor cards.
AMIS Networking Virtual Node AMIS	AMIS Networking and Virtual Node AMIS must be dedicated to a 32K voice processor card because • incoming calls must terminate on a 32K voice processor card • outgoing calls are not automatically routed to the 32K voice processor card unless AMIS Networking is dedicated to a port on that card.
Enterprise Networking	Enterprise Networking requires call progress tone detection (CPTD). CPTD is available only on 32K voice processor cards. Enterprise Networking will not work on most Options systems that contain 16K NVP cards.

Modular Option GP

The Modular Option GP platform uses both 16K and 32K voice processor cards. However, 16K voice processor cards are not recommended for networking.

Hardware required specifically for Meridian Networking

Introduction

This topic identifies the following types of hardware the customer will need to purchase specifically for Meridian Networking:

- line cards
- conference cards
- RSM or Utility cards
- modems

Line cards

A data pathway is required to support each active incoming or outgoing Meridian Networking connection. Control data used in the Meridian Mail message transfer protocol is transmitted over this pathway.

Each pathway consists of a port on the line card on the switch (or for the Card Option, a connection to the BIX pack), an RS-232 port, and a modem.The following table identifies the line card required for each Meridian Mail platform.

Platform	Line card required
Card Option	Not required. The modem is connected to the BIX pack.
Modular Option	500/2500
Modular Option EC	
EC 11	
Modular Option GP	6X17
Message Services Module (MSM)	6X17

Conference cards

A three-party conference card is required for conferencing the control data and voice components from Meridian Mail onto an outgoing trunk to the remote site. The card is usually installed as part of the switch base feature set.

The following table identifies the conference card required for each Meridian Mail platform.

Platform	Conference card required
Card Option	
Modular Option	
Modular Option EC	
EC 11	
Modular Option GP	3X67
Message Services Module (MSM)	***Note:*** This card can be configured as either a two- to three- party or one- to six-party conference.

RS-232 ports on RSM or Utility card

The following table shows the RS-232 port and cabling requirements for Meridian Networking. The RS-232 ports are used to connect the modems.

Note: RS-232 ports on the ESBC cards cannot be used for networking.

Platform	Card type	Cabling required
Card Option	RSM card (with breakout assembly)	• 25-pair MDF voice cable, 3.1 m (10 feet), male to male (NEA25D-DE) • 25-pair MDF voice cable, 3.1 m (10 ft), male to bare wire (NEA25D-SE) • DB25 peripheral cable, 3.1 m (10 ft), male to bare wire (NTAK37AA) ***Note:*** Refer to the *Card Option Installation and Maintenance Guide* (NTP 555-7071-210).

Platform	Card type	Cabling required
Modular Option Modular Option GP	RSM card	• RSM 4-port fanout cable • RS-232 cable (NTND91AA/ A0399143) with two male connectors, which interconnects the modem with an RSM port
Modular Option EC	Utility card (with or without an onboard modem)	• RSM 5-port fanout cable • RS-232 straight 10-ft cable with two male connectors which interconnects the modem with a utility card port
EC 11	Utility card	• RSM 4-port fanout cable • RS-232 straight 10-ft cable with two male connectors which interconnects the modem with an RSM port
Message Services Module (MSM)	RS-232 Transition Module (NTGX06AB)	• Internal cable from the RS-232 transition module to the input/output panel • External serial cable (NT0X96JD) from the input/output panel to the modem. This cable has four DB25 male connectors to connect to the modems. • DCE to DTE converter (A0376505). This must be used if a DTE device is being connected to the external serial cable (NT0X96JD).

MSM configuration requirements

The RS-232 networking enhancement is available only with signal processing nodes (SPN) that are configured as RS-232-D ports. The multiserver processor (MSP) nodes remain as current loop interfaces.

In a fully configured system, three new RS-232-C input/output panels and one existing current loop input/output panel are used. Mixed combinations of SPNs with RS-232 serial ports or current loop interfaces are neither configured nor available for order.

RS-232 port configuration guidelines

RS-232 ports that are dedicated to networking are configured at 2400 bps on any of the ports identified in the following table.

Platform	Position in system	Port name
Card Option	RSM assembly	DP1 DP2 DP3 DP4
Modular Option Modular Option GP	Node 1, RSM card	DP3 DP4 DP5 DP6
	Node 2, RSM card	DP9 DP10 DP11 DP12
	Node 3, RSM card	DP15 DP16 DP17 DP18
	Node 4, RSM card	DP21 DP22 DP23 DP24
	Node 5, RSM card	DP27 DP28 DP29 DP30

Platform	Position in system	Port name
Modular Option EC	Module 0, Node 1, Utility card, with or without modem	1 2 3 4
	Last module, Utility card 2 ***Note:*** The position of the card in the node depends on whether the system is shadowed or unshadowed.	1 2 3 4
EC 11	Node 1, Utility card	3
	Node 2, Utility card	3
MSM	Nodes 3 through10 (SPNs 1 through 8)	RS-232-C ports 1 through 4 ***Note:*** A maximum of 20 ports can be used.

Supported modems

Supported modems

Modems are required by Meridian Networking only. The following models of modems are supported:

- US Robotics Sportster 33.6 (A0674453)
- US Robotics Sportster 28.8
- US Robotics Sportster 14.4 model 268
- model number EC2400-33, rev 5.2 or 6.0
- model number EC2400 Plus II, rev 4.53

Number of modems required

The following table identifies the minimum number of modems required for each Meridian Mail platform. The maximum number of modems is equal to the maximum number of RS-232 ports that are dedicated to networking.

Number of modems required (continued)

Platform	Minimum number of modems required	Maximum number of modems allowed
Card Option	2 ***Note:*** Two modems are required in order to perform the loop-back test to verify that the network is working correctly.	4
Modular Option		20 (4 per node)
Modular Option GP		
Modular Option EC		8
EC 11		2
Message Services Module		20

Hardware spares planning

Introduction This topic identifies the spare parts and the quantities that should be kept on hand in case anything breaks down.

Spare parts table The following table identifies what the customer should have as spare parts.

Part type	Description	Product code	Spares quantity
Line cards	500/2500		
	6X17		
	1X89		
Conference cards	3X67		
Networking kit		NT9D67AA	
Modems	• US Robotics 33.6 (A0674453) • US Robotics 14.4 model 268 • US Robotics 28.8 • VenTel 2400 bps V.22bis modem.	NT3M50AF	
Cables	*Card Option* • 25-pair MDF voice cable, 3.1 m (10 ft), male to male • 25-pair MDF voice cable, 3.1 m (10 ft) male to bare wire • DB25 peripheral cable, 3.1 m (10 ft), male to bare wire	 • NEA25D-DE • NEA25D-SE • NTAK37AA	 • • •

Part type	Description	Product code	Spares quantity
Cables (continued)	*Modular Option* • RSM 4-port fanout cable • RS-232 modem cable 3.1 m (10 ft) • RS-232 modem cable 7.62 m (25 ft) • RS-232 modem cable 3.1 m (10 ft, null-modem) • RS-232 modem cable 7.62 m (25 ft, null-modem) • RSM cable assembly	 • NT4R20AA • NTND91AA • NTND91AB • NTND82AA • NTND82AB • NT4R85AA	 • • • • • •
	Modular Option GP • RSM 4-port fanout cable (25 ft)	 • NT4R20AA	 •
	Modular Option EC • RS-232 4-port fanout • RS-232 5-port fanout • RS-232 modem cable • RS-232 modem cable 7.62 m (25 ft, null-modem)	 • NT6P0110 • NT6P0109 • NTND91AA or NTND91AB • NTND82AB	 • • • •
	EC 11 • RS-232 4-port fanout • RS-232 modem cable	 •	 • •
	MSM • RS-232 transition module - internal • RS-232 transition module - external • DCE to DTE converter	 • • NT0X96JD • 	 • • •
RSM cards	Modular Option Modular Option GP	NT4R03AA	
Utility cards (Modular Option EC)	without onboard modem	NT6P42AA	

Part type	Description	Product code	Spares quantity
Voice processor cards	Modular Option EC: • VP4 • VP8	 • NT6P04AA • NT6P08AA	 • •
	MSM: • VP12 • VP12A	 • NTGX12AA • NTGX12AB	 • •
	Modular Option (32K)	NT4R01AC	
RS-232 transition module	68K	NTGX06AB	

Section C: Switch software required for networking

In this section

Overview of this section

Introduction

This section identifies the switch software release and packages that are required by networking for Meridian Mail.

Categorized by switch type

The software release and packages are identified for the following types of switches:

- Meridian 1
- DMS family
- SL-100
- non-Nortel switches (AT&T, NEC, ROLM)

Meridian 1 software

Introduction

This topic identifies the packages that must be present on the Meridian 1 in order for networking to work. This topic applies to the following networking services:

- Meridian Networking
- AMIS Networking
- Virtual Node AMIS
- Enterprise Networking

For packages required for Network Message Service, see "Section E:: Switch software required for NMS," on page 6-41.

Meridian 1 software release

Networking requires

- Release 14 or later on the SL-1
- Release 14 or later on the EC 11
- Release 15 or later on the Meridian 1 for Options 21 through 81
- Release 16.87 for on the Meridian 1 Option 11 (Card Option)

Meridian 1 packages required

The following packages are needed in order to properly implement networking. For descriptions of these packages, see Chapter 4 of the *Meridian 1 Feature Document.*

Meridian 1 package number	Package name	Required by
1 (OPTF)	Extended PBX features	• AMIS Networking
10 (EES)	End-to-end signaling	• Meridian Networking • Virtual Node AMIS • Enterprise Networking
14 (BRTE)	Basic Routing	
28 (BQUE)	Basic Queuing	
32 (NCOS)	Network Class of Service	

Meridian 1 package number	Package name	Required by
35 (IMS)	Integrated Messaging System	• AMIS Networking • Meridian Networking • Virtual Node AMIS • Enterprise Networking
40 (BACD)	Basic Automatic Call Distribution	
45 (ACDA)	ACD Package A	
46 (MWC)	Message Waiting Center	
• 57 (BARS) or • 58 (NARS) or • 59 (CDP)	• Basic Alternate Route Selection or • Network Alternate Route Selection or • Coordinated Dialing Plan	• Meridian Networking • Virtual Node AMIS • Enterprise Networking
61 (FCBQ)	Flexible Call Back Queuing	
77 (CSL)	Command Status Link	• AMIS Networking • Meridian Networking • Virtual Node AMIS • Enterprise Networking
ESN group of features	See the *Meridian 1 Feature Document* for a list of the features included in this package.	• Meridian Networking • Virtual Node AMIS • Enterprise Networking

DMS family and SL-100 software

Introduction

This topic identifies the packages that must be present on the DMS family or SL-100 switch in order for networking to work. This topic applies to the following networking services:

- Meridian Networking
- AMIS Networking
- Virtual Node AMIS
- Enterprise Networking

Note: Network Message Service is not supported on DMS family or SL-100 switches.

However, a network using Network Message Service may contain a DMS family or SL-100 switch operating as a tandem switch. For software requirements on these switches, see "Packages required on tandem switches" on page 6-45.

Software release

The following table identifies the software releases that are required for networking.

Switch platform	Release required
DMS 10	Not applicable. Networking is not supported for the Modular Option GP platform.
DMS-100	BCS28
SL-100	BCS28

Non-Nortel switch software

Introduction

This topic identifies the packages that must be present on the AT&T or ROLM switch in order for networking to work. This topic applies to the following networking services:

- Meridian Networking
- AMIS Networking
- Virtual Node AMIS
- Enterprise Networking

Note: Network Message Service is not supported on non-Nortel switches (not even as tandem switches).

Non-Nortel switch software release

The following table identifies the switch software release required by Meridian Mail.

Model	Software Release
AT&T • 5ESS • 1AESS • System 75 series • System 85 series • Definity series	 • R1V1 or later • R2V1 or later • G1V1 or later
ROLM • 8000 CBX • 9000 CBX series • 9751 BCS, models 10, 40, 50, and 70	 • 8003 or later

Section D: Switch hardware required for NMS

In this section

Overview of this section

Introduction

This section provides a high-level overview of the hardware required to implement Network Message Service (NMS).

What is supported

Network Message Service is supported in networks which contain a combination of

- Meridian 1s
- one or more DMS family or SL-100 switches (with BCS 36 configured with the NMS option) which act as tandem switches

What is not supported

Network Message Service—Meridian Mail is not supported on Meridian Mail platforms that use SMDI.

ISDN access, signaling, and hardware

Introduction

Meridian Mail NMS is an application which requires Meridian ISDN and NMS. ISDN PRI requires specific hardware with its own guidelines and considerations.

It is outside the scope of the Meridian Mail networking suite of documentation to explain those guidelines and considerations. This information is provided in other Nortel Publications (NTPs).

Where to get more information

For descriptions of the hardware required for ISDN PRI, see the following documents:

- *Meridian Networking Feature Document* for Generic X11 Release 20 (P0803833)
- *ISDN Primary Rate Interface description and administration* (NTP 553-2901-100)
- *ISDN PRI installation* (NTP 553-2901-200)

ISDN access method interface

Four types of access method interfaces are supported in Meridian 1 networks. They are

- nB+D Primary Rate Interface (PRI)
- NB+D ISDN Signaling Link (ISL)

Network Message Service uses the Primary Rate Interface (PRI) method to access ISDN. ISDN PRI provides connectivity between the Meridian 1 and the following:

- other Meridian 1s
- SL-100
- DMS-100 and DMS-250

Signaling

The prime switch and satellite switches communicate through virtual signaling

- to turn message waiting indication on and off at a user set
- to transport call information for features such as Call Sender

These capabilities are supported by using ISDN non-call associated transaction signaling messages. The FACILITY message with the TCAP protocol is used to transport this information across the ISDN network.

Section E: Switch software required for NMS

In this section

Overview of this section

Introduction

This section identifies the switch software release and packages that are required on the switch in order to implement Network Message Service.

Categorized by switch type

The software release and packages are identified for the following types of switches

- role in network:
  - — originating switch
  - — tandem switch
  - — prime switch
- platform
  - — Meridian 1
  - — DMS family and SL-100 (supported as tandem switches only in a network using Network Message Service)

Packages required on originating switches

Introduction

This topic identifies the software packages that are required on an originating switch of a Network Message Service network.

Definition: originating switch

The definition of an originating switch depends on whether a caller accessed Meridian Mail directly or indirectly.

Direct access

Direct access means the caller

- dialed the Meridian Mail DN

or

- pressed the message waiting key to access the Meridian Mail system

In these cases, the originating switch is the switch in the network where the calling party resides.

Indirect access

Indirect access means the caller dialed another party and was forwarded to Meridian Mail.

In this case, the originating switch is the switch in the network where the original called party resides.

Software release requirement

The following software releases are required on an originating switch:

- Meridian 1, Option 11
  - EC 11: Release 16.55 or higher
  - Card Option: Release 16.87 or higher
- Meridian 1, Options 21 through 81: Release 16 or higher

Packages required

The following table identifies the packages that must be installed on originating Meridian 1s in order to get Network Message Service to work. For descriptions of these packages, see the *Meridian 1 Feature Document.*

Package number	Package name
10 (EES)	End-to-end signalling
14 (BRTE)	Basic Routing
19 (DDSP)	Digit Display (if Calling Line ID is desired)
28 (BQUE)	Basic Queuing
32 (NCOS)	Network Class of Service
40 (BACD)	Basic Automatic Call Distribution
45 (ACDA)	ACD Package A
46 (MWC)	Message Center
57 (BARS) or 58 (NARS) or 59 (CDP)	Basic Alternate Route Selection or Network Alternate Route Selection or Coordinated Dialing Plan
61 (FCBQ)	Flexible Call Back Queuing
75 (PBXI)	PBX Interface for DTI
77 (CSL)	Command Status Link
145 (ISDN)	ISDN Signaling
146 (PRA) or 147 (ISL)	ISDN Primary Rate Access or ISDN Signaling Link
148 (NTWK)	Advanced Network Services ***Note:*** Package 148 has its own prerequisite package requirements that need to be fulfilled. For more information, see "ISDN package 148 requirements" on page 6-48.
175 (NMS)	Network Message Service

Packages required on tandem switches

Introduction

This topic identifies the software packages that are required on a tandem switch in a Network Message Service network.

Definition: tandem switch

A tandem switch is the switch in the network that sends transaction signaling messages to the next switch in the network.

A tandem switch can be either

- another Meridian 1
  or
- a DMS or SL-100 switch

Non-Nortel switches (such as AT&T, NEC, and ROLM) are not supported as tandem switches because they do not support the transaction signalling protocol used to send message waiting indication (MWI) notification and Call Sender information.

Software release requirement

The following table identifies the software release required on tandem switches.

Switch	Release required
Meridian 1 (Options 21 through 81)	Release 16 or higher
EC 11 (Option 11/Meridian Mail)	Release 16.55 or higher
Meridian 1 (Option 11) (Card Option)	Release 16.87 or higher
SL-100	BCS36

Packages required

The following table identifies the packages that must be installed on the tandem switchso that Network Message Service will7 work.

Package number	Package name
Meridian 1	
14 (BRTE)	Basic Routing
19 (DDSP)	Digit Display (if Calling Line ID is desired)
28 (BQUE)	Basic Queuing
32 (NCOS)	Network Class of Service
37 (NSIG)	Network Signaling
57 (BARS) or 58 (NARS) or 59 (CDP)	Basic Alternate Route Selection or Network Alternate Route Selection or Coordinated Dialing Plan
61 (FCBQ)	Flexible Call Back Queuing
75 (PBXI)	PBX Interface for DTI
145 (ISDN)	ISDN Signaling
146 (PRA) or 147 (ISL)	ISDN Primary Rate Access or ISDN Signaling Link
148 (NTWK)	Advanced Network Services ***Note:*** Package 148 has its own prerequisite package requirements that need to be fulfilled. For more information, see "ISDN package 148 requirements" on page 6-48.
DMS-100	
	TCAP/PRA networking
SL-100	
	TCAP/PRA networking

Packages required on the prime switch

Introduction

This topic identifies the software packages that are required on the prime switch of a Network Message Service network.

Definition: prime switch

A prime switch is the switch in the network to which the Meridian Mail system is connected. It is the network's message center.

Software release requirement

The following software releases are required on the prime switch:

- Meridian 1, Option 11
  - — EC 11: Release 16.55 or higher
  - — Card Option: Release 16.87 or higher
- Meridian 1, Options 21 through 81: Release 16 or higher

Packages required

The following table identifies the packages that must be installed on the prime Meridian 1 in order to get Network Message Service to work. For descriptions of these packages, see the *Meridian 1 Feature Document.*

Package number	Package name
10 (EES)	End-to-end signalling
14 (BRTE)	Basic Routing
32 (NCOS)	Network Class of Service
35 (IMS)	Integrated Message System
40 (BACD)	Basic Automatic Call Distribution
45 (ACDA)	ACD Package A
46 (MWC)	Message Center
57 (BARS) or 58 (NARS) or 59 (CDP)	Basic Alternate Route Selection or Network Alternate Route Selection or Coordinated Dialing Plan
75 (PBXI)	PBX Interface for DTI

Package number	Package name
77 (CSL)	Command Status Link
145 (ISDN)	ISDN Signaling
146 (PRA) or 147 (ISL)	ISDN Primary Rate Access or ISDN Signaling Link
148 (NTWK)	Advanced Network Services ***Note:*** Package 148 has its own prerequisite package requirements that need to be fulfilled. For more information, see "ISDN package 148 requirements" on page 6-48.
175 (NMS)	Network Message Service - Message Center

ISDN package 148 requirements

Requirements

ISDN Network package 148 has its own prerequisite package requirements that need to be fulfilled.

It is outside the scope of this manual to include those requirements. This information is provided in other Nortel Publications (NTPs).

Where to get more information

For information about ISDN software requirements, see the following documents:

- *Meridian Networking Feature Document* for Generic X11 Release 20 (P0803833)
- *ISDN Primary Rate Interface description and administration* (NTP 553-2901-100)

  Note: This NTP also includes information about connectivity to the following switches:

  - SL-100
  - DMS-100
  - DMS-250
  - AT&T IAESS and 5ESS
- *ISDN PRI installation* (NTP 553-2901-200)
- *ISDN PRI maintenance* (NTP 553-2901-500)

Section F: Documentation required for networking

In this section

Overview of this section

Introduction

This section identifies the Nortel documentation the customer will need in order to properly implement networking for Meridian Mail.

Meridian Mail documentation

There is a separate installation and administration NTP for each networking service that is available for Meridian Mail. Each installation and administration NTP is a stand-alone document that explains how to

- gather information for the network
- configure the switch

  Note: Detailed instructions are provided for only the Meridian 1. Only the guidelines and requirements information for the following types of switches are provided:

  — DMS family

  — SL-100

  — non-Nortel switches (AT&T, NEC, ROLM)
- configure Meridian Mail
- test the network (throughout and after the implementation)
- perform daily maintenance of the network
- troubleshoot network errors

Switch documentation

Switch documentation is required in order to obtain detailed instructions and information about the following:

- Coordinated Dialing Plan
- Electronic Switched Network
- ISDN PRI

Meridian Mail documentation

Introduction

This topic identifies the Meridian Mail documentation the customer must have when one or more networking services are purchased.

Legend

Each alphabetic code in the following table corresponds to a particular Meridian Mail document as listed below:

A *Networking Planning Guide* (NTP 555-7001-241)

B *AMIS Networking Installation and Administration Guide* (NTP 555-7001-242)

C *Network Message Service Installation and Administration Guide* (NTP 555-7001-243)

D *Meridian Networking Installation and Administration Guide* (NTP 555-7001-244)

E *Virtual Node AMIS Networking Installation and Administration Guide* (NTP 555-7001-245)

F *Enterprise Networking Installation and Administration Guide* (NTP 555-7001-246)

Meridian Mail documentation required

The x's in the following table identify the documents a customer must have when one or more networking services are wanted or being used.

If the customer has or wants	Then these documents must be provided to the customer					
	A	**B**	**C**	**D**	**E**	**F**
Meridian Mail Networking ***Note:*** Meridian Mail Networking includes both Meridian Networking (with modems) and Enterprise Networking (without modems).	x			x		x
AMIS Networking	x	x				
Meridian Mail Networking and AMIS Networking ***Note:*** When these two features are present, the customer may set up AMIS sites as virtual nodes in the Meridian or Enterprise Network.	x	x		x	x	x
Network Message Service ***Note:*** Network Message Service can be used with either or both Meridian Mail Networking and AMIS Networking. Documentation should be provided accordingly.	x		x			

Switch documentation

Introduction

This topic identifies the switch documents the customer may need to use when implementing networking for Meridian Mail.

Switch documents required

The following table lists documents that explain how to configure the switch.

NTP name	NTP number
Meridian 1	
X11 input/output guide	553-3001-400
Basic and Network Alternate Route Selection description	553-2751-100
Coordinated Dialing Plan description	553-2751-102
Base and Network Authorization Code description	553-2751-103
Flexible Numbering Plan	553-2751-105
ESN engineering (signaling guidelines)	309-3001-180
ESN transmission guidelines	309-3001-181
Meridian 1 (for Network Message Service only)	
ISDN PRI description and administration	553-2901-100
ISDN PRI installation	553-2901-200
ISDN PRI maintenance	553-2901-500
DMS family	
SL-100	

Appendix A

Forms

In this appendix

NWP-001(A)

Networking Site Survey Checklist **NWP-001(A)**
Voice Messaging systems information

If the customer has a switch network, complete and attach Form NWP-001(B).

Customer information Page ____ of ____

Customer name:		Contact name:	
Address:			
City:	Prov/State:	Country:	Postal/Zip Code:
Telephone:		Fax:	

Site information (If necessary, complete and attach additional pages.)

Site #	Site name (geographical location) ***Note:*** Record sites in the same sequence shown on Form NWP-001(B).	Voice Messaging type (check one per site only)					
		MMail	Platform	RIs	Other	Vendor	None
1		☐			☐		☐
2		☐			☐		☐
3		☐			☐		☐
4		☐			☐		☐
5		☐			☐		☐
6		☐			☐		☐
7		☐			☐		☐
8		☐			☐		☐
9		☐			☐		☐
10		☐			☐		☐

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Sales Representative:	Date:
Assigned to Planning Engineer:	Job number:

Networking Site Survey Checklist **NWP-001(B)**
Switch information

If the customer has one or more voice messaging systems, complete and attach Form NWP-001(A).

Customer information Page ____ of ____

Customer name:	Address:				Telephone:
Contact name:	City:	Prov/State	Country:	Postal/Zip Code	Fax:

Site information (If necessary, complete and attach additional pages.)

Site #	Site name (geographical location) ***Note:*** Record sites in the same sequence shown on Form NWP-001(A).	Switch type (complete all that apply)							Trunk type	This site is directly connected to: (record all that apply)
		M1	Rls	DMS/ SL-100	Model	Rls	Other	Vendor		
1		☐		☐			☐			
2		☐		☐			☐			
3		☐		☐			☐			
4		☐		☐			☐			
5		☐		☐			☐			
6		☐		☐			☐			
7		☐		☐			☐			
8		☐		☐			☐			
9		☐		☐			☐			
10		☐		☐			☐			

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Sales Representative:	Date:	Assigned to Planning Engineer:	Job number:

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NWP-002

Customer's Networking Requirements and Expectations **NWP-002**

Complete and attach to forms NWP-001(A) and NWP-001(B).

Customer Information Page ____ of ____

Customer name:		Contact name:	
Address:			
City:	Prov/State:	Country:	Postal/Zip Code:
Telephone:		Fax:	

Notes (If necessary, complete and attach additional pages.)

For a list of questions to ask the customer, see "Identifying the customer's networking requirements and expectations" in the *Networking Planning Guide*. Record the customer's responses below.

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Sales Representative:	Date:
Assigned to Planning Engineer:	Job number:

NWP-003(A)

Customer's Networking Hardware Requirements **NWP-003(A)**

If the customer also needs software, complete and attach Form NWP-003(B).

Customer information Page ____ of ____

Customer name:		Contact name:	
Address:			
City:	Prov/State:	Country:	Postal/Zip Code:
Telephone:		Fax:	

Hardware (If necessary, complete and attach additional pages.)

Component	Yes	No	Qty	Description
Trunks	☐	☐		
Line cards	☐	☐		
Conference cards	☐	☐		
Voice ports	☐	☐		
32K voice processor cards (Modular Option only)	☐	☐		
VenTel modems	☐	☐		Ventel 2400 bps V.22bis
Cables - Card Option • 25-pair MDF male to male voice cable • 25-pair MDF male to bare wire voice cable • DB25 peripheral cable	☐	☐		
Cables - Modular Option and Modular Option GP • RSM 4-port fanout cable • RS-232 cable (2 male connectors)	☐	☐		
Cables - Modular Option EC • RSM 5-port fanout cable • RS-232 cable (2 male connectors)	☐	☐		
Cables - EC11	☐	☐		
Cables - MSM • Internal cable • External serial cable • DCE-to-DTE converter	☐	☐		

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Planning Engineer:	
Date:	Job number:

NWP-003(B)

Customer's Networking Software Requirements **NWP-003(B)**

If the customer also needs hardware, complete and attach Form NWP-003(A).

Customer Information Page ____ of ____

Customer name:		Contact name:	
Address:			
City:	Prov/State:	Country:	Postal/Zip Code:
Telephone:		Fax:	

Meridian Mail features (Check all that apply)

☐ Meridian Mail Networking These documents must be provided: • *Networking Planning Guide* • *Meridian Networking Installation and Administration Guide* • *Enterprise Networking Installation and Administration Guide*	☐ AMIS Networking These documents must be provided: • *Networking Planning Guide* • *AMIS Networking Installation and Administration Guide* If Meridian Mail Networking is also purchased, then also provide: • *Virtual Node AMIS Installation and Administration Guide*	☐ Network Message Service These documents must be provided: • *Networking Planning Guide* • *Network Message Service Installation and Administration Guide*

Switch software (Record package name and number of all that apply.)

Meridian 1	DMS family	SL-100	AT&T	NEC	ROLM

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Assigned to Planning Engineer:	
Date:	Job number:

Index

Numerics

A

B

C

D

E

F

G

H

I

L

M

N

O

P

Q

R

S

T

U

V

W

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Reader Response Form

Meridian Mail 12
Networking Planning Guide
NTP 555-7001-241

Tell us about yourself:

Name: _____

Company: _____

Address: _____

_____

Occupation: _____ **Phone:** _____

1. What is your level of experience with this product?

   ❑ New User ❑ Intermediate ❑ Experienced ❑ Programmer

2. How do you use this book?

   ❑ Learning ❑ Procedural ❑ Reference ❑ Problem solving

3. Did this book meet your needs?

   ❑ Yes ❑ No

   If you answered No to this question, please answer the following questions.

4. What chapters, sections, or procedures did you find hard to understand?

   _____

   _____

   _____

5. What information (if any) was missing from this book?

   _____

   _____

   _____

6. How could we improve this book?

   _____

   _____

   _____

Please return your comments by fax to (416) 597-7104, or mail your comments to:
Toronto Information Products, Nortel, 522 University Avenue, 14th Floor, Toronto, ON, M5G 1W7, Canada.

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Reader Response Form

Meridian Mail
Networking Planning Guide

Toronto Information Products
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522 University Avenue, 14th Floor
Toronto, Ontario, Canada
M5G 1W7

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