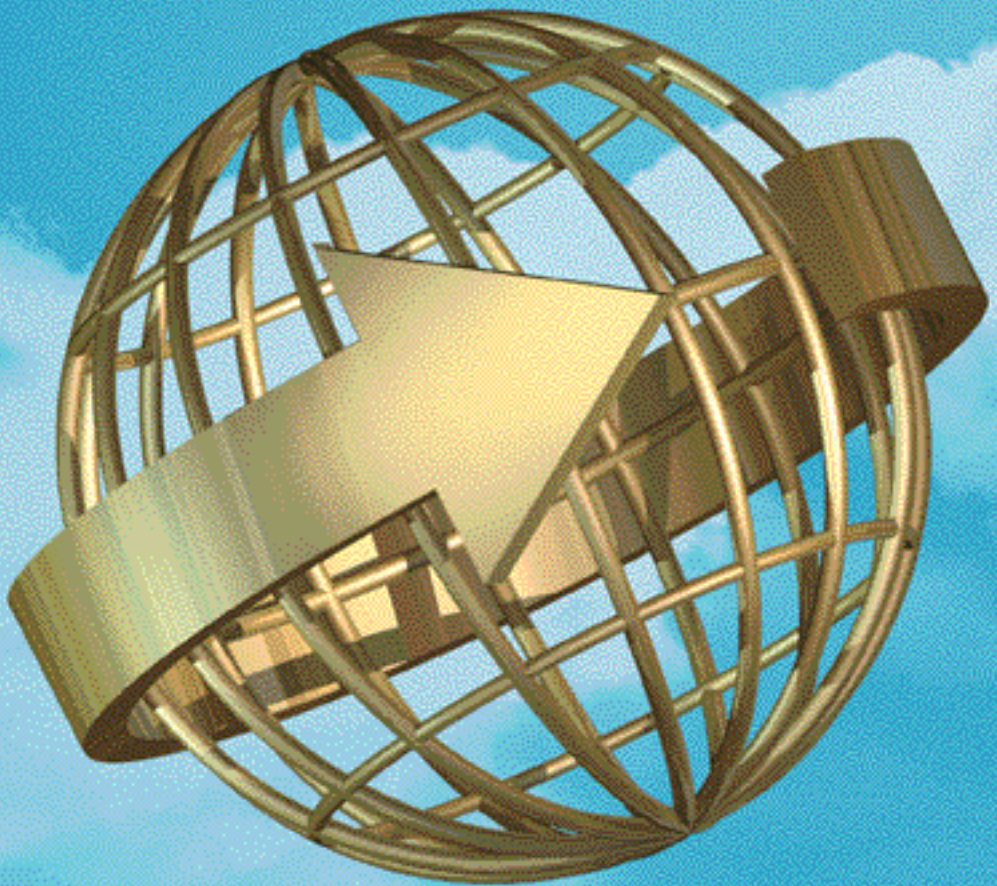
NORTEL MERIDIAN
NORTHERN TELECOM

Meridian Mail Net Gateway
System Installation & Administration Guide



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Meridian Mail Net Gateway

System Installation and Administration Guide

Product release 1.0 Standard 1.0 August 1997

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This is the Standard 1.0 release of the *Meridian Mail Net Gateway Installation and Administration Guide*. It explains how to set up and use the Meridian Mail Net Gateway system together with Meridian Mail to exchange voice messages with other Meridian Mail, Norstar Voice Mail, or VPIM-compatible voice mail systems over TCP/IP networks.

Contents

Chapter 1

About this manual

In this chapter

What this manual is about

Introduction

The *Meridian Mail Net Gateway System Installation and Administration Guide* provides information and instructions for setting up, administering, and maintaining the Meridian Mail Net Gateway 1.0 system.

What this manual includes

This manual explains how to set up and use Meridian Mail Net Gateway with your existing TCP/IP network and Meridian Mail in order to exchange voice messages with other Meridian Mail, Norstar Voice Mail, or VPIM-compatible voice mail systems. It includes guidelines *only* for

- configuring your network and Windows NT
- configuring your PBX
- setting up Meridian Mail, Norstar Voice Mail, or VPIM-compatible voice mail systems

It includes detailed instructions for

- installing Meridian Mail Net Gateway hardware and software
- verifying the installation
- configuring Meridian Mail Net Gateway using the administration interface
- interpreting Meridian Mail Net Gateway Operational Measurements
- maintaining and troubleshooting the system

Assumptions

This manual assumes that you have a properly configured TCP/IP network (Internet or intranet), and a Windows NT 4.0 server. It also assumes that you have the Meridian Mail Enterprise Networking feature installed and properly configured in Meridian Mail.

Who should read this manual

There are two distinct audiences who will use this manual:

- installation technicians responsible for maintaining Meridian Mail, implementing Enterprise Networking, and configuring the PBX
- data network administrators responsible for implementing and maintaining a customer's Local Area Network (LAN), Wide Area Network (WAN), or both

Skills you need to have

Introduction

There are two distinct sets of skills required to successfully implement Meridian Mail Net Gateway:

- data network administration
- telephony network administration

It is assumed that, in most cases, the data network and telephony network tasks are performed by different individuals who must be in close contact with one another.

Telephony network administration

If you are responsible for configuring the telephony components of Meridian Mail Net Gateway, you should know how to do the following:

- Work with Nortel (Northern Telecom) Publications (NTPs).
- Work with the networking feature of Meridian Mail.
- Configure hunt groups on your PBX.
- Set up analog lines from the PBX to connect Meridian Mail Net Gateway to the switch.

Data network administration

If you are responsible for a customer's data networks and must install a Meridian Mail Net Gateway system, you should know how to do the following:

- Set up TCP/IP networking on a Windows NT 4.0 server.
- Install a circuit card in a PC.
- Install software on a Windows NT 4.0 system.
- Stop and start Windows NT services.

You should have a basic understanding of

- Internet domain naming conventions
- Internet E-mail standards and protocols (such as SMTP, MIME, and VPIM)
- mail relays and firewalls
- domain name servers

Data network administration (continued)

If you have purchased the Entrust security encryption product for use with Meridian Mail networks, you should also understand how to work with Entrust/Lite Manager or Entrust/Lite Client, or both.

Systems supported by this guide

Introduction

This manual supports Meridian Mail Net Gateway Release 1.0.

Voice mail systems

The Meridian Mail Net Gateway system can exchange messages with

- Meridian Mail Release 11
- Norstar Voice Mail Release 3.0
- any voice mail system compatible with the Voice Profile for Internet Mail (VPIM) standard Version 2

Platforms supported

There are several types of systems involved in the Meridian Mail Net Gateway system. The following summarizes the platform requirements.

PC Server

Meridian Mail Net Gateway works on a Windows NT 4.0 server as described in “Recommended hardware configuration” on page 3-25.

Meridian Mail

Meridian Mail Net Gateway works with all Meridian Mail platforms capable of using the Enterprise Networking feature. Valid platforms are

- Card Option
- Modular Options
- Modular Option EC
- EC11
- Modular Option GP
- MSM

Norstar Voice Mail

Any Norstar platform that is capable of running Norstar Voice Mail Release 3.0 can exchange messages with Meridian Mail Net Gateway.

Platforms supported (continued)

VPIM compatible voice mail systems

Refer to your voice mail system's documentation to determine if your system is VPIM-compliant. If it is, then your VPIM-compliant system can exchange messages with Meridian Mail Net Gateway.

PBXs supported

Meridian Mail Net Gateway works with any PBX that can be connected to the Meridian Mail systems described on page 1-6.

Structure of this guide

Introduction

This manual provides all the information normally required to set up, configure, and maintain the Meridian Mail Net Gateway system.

Contents of this manual

This manual contains the following chapters.

Chapter number and title	Description
Chapter 1, About this manual	This chapter explains the structure and content of this manual.
Chapter 2, Understanding Net Gateway	This chapter provides an overview of how Net Gateway works. It describes what it is and how it interacts with Meridian Mail networking. It also explains the related technologies of Internet/ intranet, compliance with the VPIM standard, and the Entrust security option.
Chapter 3, Installing Net Gateway hardware and software	This chapter explains • what you need to do before you can install Net Gateway • how to install the Dialogic voice processor board and the copy protection device • how to install the Net Gateway software
Chapter 4, Configuring Net Gateway	This chapter explains • the Net Gateway administration interface • how a primary network administrator can configure information for the entire voice mail network • how local administrators can configure their systems
Chapter 5, Net Gateway operational measurements	This chapter explains the statistics that Net Gateway collects and how to interpret them.
Chapter 6, Maintenance and troubleshooting	This chapter contains a number of procedures that are useful if you encounter problems with your Net Gateway system.
Chapter 7, Voice Profile for Internet Mail (VPIM) description	This chapter provides information about which features of the Voice Profile for Internet Mail standard are supported by Net Gateway.
Index	The index is an alternate way of locating information in this manual.

Typographic conventions

Introduction

This topic explains the typographic conventions used in this manual.

"System-related" text

The following table describes how keyboard keys, system text, and responses you enter into the system are presented.

Convention for	Description	Example
keyboard keys	A keyboard key is referred to by its label enclosed in angle brackets. When two key names appear together, you press them both at the same time. A keyboard key appears in the same typeface as the accompanying text.	Press <Return>. Press <Ctrl> <R>.
text you are required to enter	Text that you type appears in bold print.	Type **PRT** and press <Return>.
names of menu options, screens, or fields	The first letter of a field name is capitalized. The field name appears in the same typeface as the accompanying text. ***Note:*** For clarity, some field names may be enclosed in quotation marks.	*Procedure text:* Move your cursor to the Mailbox number equals local extension? field. *Other text:* The Remote Site Maintenance—Add screen is used to define sites in your network.
values in a field	The first letter of a value in a field is capitalized. The field value appears in the same typeface as the accompanying text.	The default is No.
system responses	System responses appear in the same typeface as the accompanying text. They are often introduced with ***Result:***.	***Result:*** The Remote Site Maintenance—Add screen is displayed.

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 manual	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 "Skills you need to have" on page 1-4.
in another chapter of this manual	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 instructions on adding sites, see "Adding, changing, and deleting sites" in Chapter 4, "Configuring Net Gateway."
in another manual	in italics (for the NTP title) and parentheses (for the NTP number).	For instructions on how to ensure that the Meridian Mail Enterprise Networking feature is correctly configured, refer to the *Meridian Mail Enterprise Networking Installation and Administration Guide* (NTP 555-7001-246).

Chapter 2

Understanding Net Gateway

In this chapter

Overview of this chapter

Introduction

This chapter describes

- how the Meridian Mail Net Gateway operates
- Net Gateway's major features
- the related technologies and products used with Net Gateway

It is intended to give you an overview of the system to aid in implementation and troubleshooting.

Meridian Mail Net Gateway

Introduction

This section describes the Meridian Mail Net Gateway, its major features, and how it works.

What Net Gateway does

Meridian Mail Net Gateway provides Meridian Mail with the capability of exchanging messages between other Meridian Mail, Norstar Voice Mail, and other vendors' voice mail systems using a standard data communications network as the transport backbone.

Net Gateway takes Meridian Mail messages sent through Enterprise Networking, formats them using industry-standard electronic mail protocols (ESMTP/MIME), and sends them across either a private enterprise wide-area network (WAN) or the Internet for delivery to a remote site. This site could either be a Norstar Voice Mail 3.0 system, another Net Gateway system attached to Meridian Mail, or a voice mail system conforming to the Voice Profile for Internet Mail (VPIM) standard.

It runs on any standard Pentium-class PC under Windows NT 4.0 that meets the minimum software and hardware configuration requirements described in Chapter 3, "Understanding Net Gateway."

Major features

Net Gateway introduces several new features to Meridian Mail networking. It has the ability to do the following:

- Network together up to 500 sites.
- Exchange voice messages between Meridian Mail and Norstar Voice Mail or VPIM-compatible voice mail systems.
- Operate over standard TCP/IP networks (Internet/intranet).
- Run on standard PC hardware and software.
- Perform network administration in a Windows Graphical User Interface (GUI) environment.

Major features (continued)

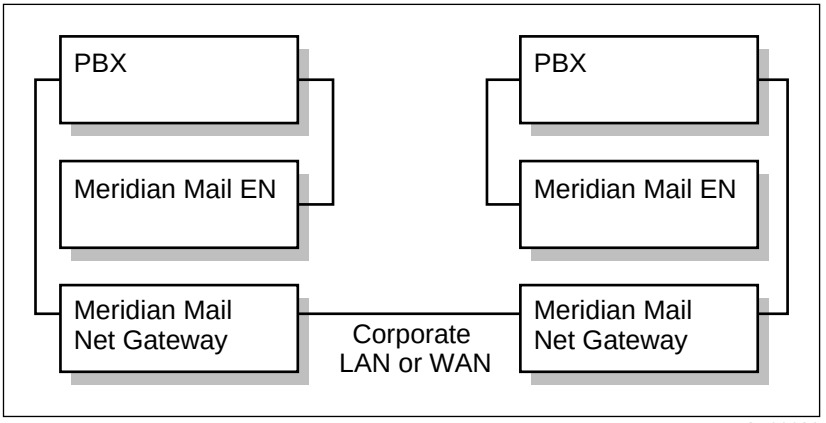
- Save toll charges for network messages by sending them over the Internet.
- Simplify network administration by centrally administering network sites.
- Optionally secure voice mail traffic using the industry-leading Entrust encryption technology (only between Net Gateway sites).

Typical setups

This section discusses the typical setups for the Net Gateway.

Simple implementation

This diagram shows the Net Gateway used in a corporate LAN or intranet.



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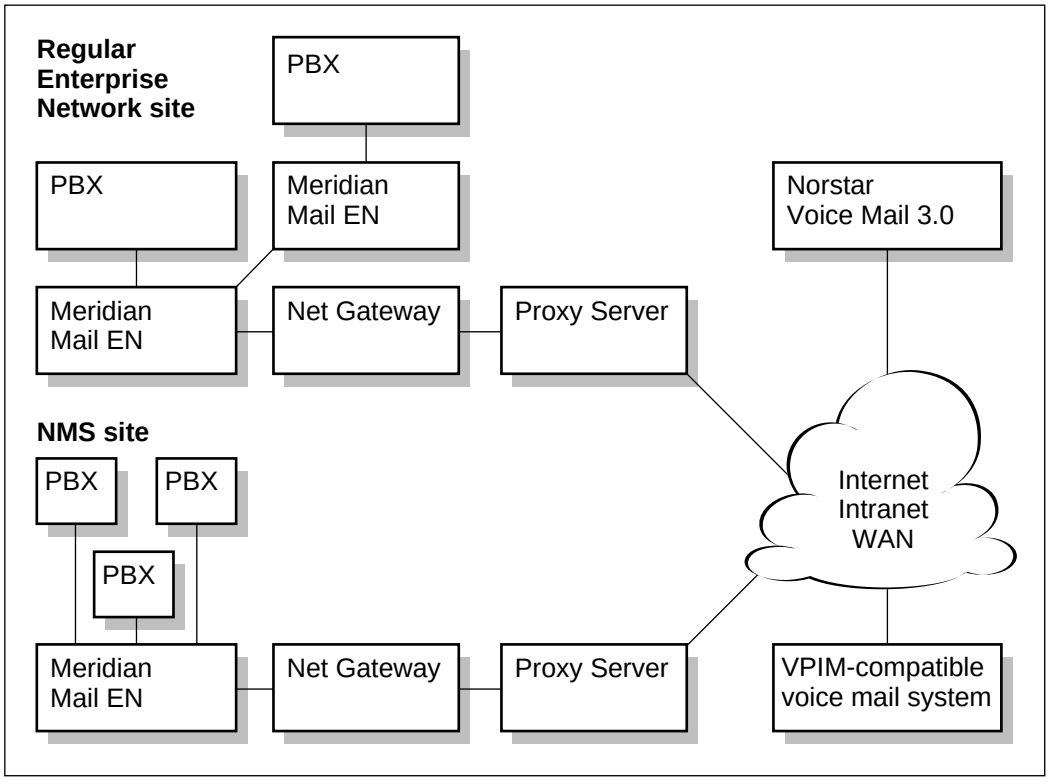
Typical setups (continued)

Complex network

This diagram shows the Net Gateway used over an Internet connection with NMS, Norstar Voice Mail, and VPIM-compatible systems.



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Meridian Mail Enterprise Networking

Introduction

This section describes the Meridian Mail 11.0 feature, Enterprise Networking, and how it is used in the Net Gateway system.

Enterprise Networking

Enterprise Networking is a Meridian Mail networking protocol that is used to transmit messages between users on different Meridian Mail systems. It uses

- a network database to define local and remote sites
- DTMF signaling instead of modems to transmit message header information between sites

When used by itself, Enterprise Networking only allows networking with other Meridian Mail sites and a maximum of 151 sites (one local site and 150 remote sites).

How Net Gateway uses Enterprise networking

The Net Gateway system receives the DTMF signaling and voice data from Meridian Mail Enterprise Networking through any one of four analog voice ports from the PBX which are connected to a Dialogic voice processor card installed in the Net Gateway PC.

Meridian Mail Net Gateway translates the Enterprise Networking DTMF information to standard Internet E-mail information. It then sends it over the Internet/intranet (through a standard network interface card) as a MIME message. The voice message is included in a format appropriate for the destination system.

When receiving a MIME message, the Net Gateway system translates the information in the MIME header into Meridian Mail format. Meridian Mail Net Gateway then sends this information, with the voice message content, back to Meridian Mail Enterprise Networking on any one of four analog voice ports connected to the voice processor card.

The Internet and intranets

Introduction

This topic defines the terms “Internet” and “intranet.”

Definition: Internet

The Internet is a large “network of networks.” There is no one network known as “The Internet.” Instead, networks from all over the world are “inter-networked” together to form one huge network communicating at amazing speeds with the TCP/IP protocol. The Internet offers mail, file transfer, and remote login, as well as a variety of other services.

Definition: Intranet

An intranet is similar to the Internet except that it is a collection of networks that are networked together within an organization.

Finding someone on the Internet/intranet

Finding someone on the Internet (or the intranet) can be accomplished by the use of domain names and addresses.

Domain names

A domain name identifies the name of a system or location, and the kind of organization it is. The format of the domain name is “*somewhere.domain*.” The following table identifies some domain types.

Domain extension	Domain type
com	This usually identifies a company or other commercial institution or organization. **Example:** nortel.com
edu	This identifies an educational institution. **Example:** nyu.edu represents New York University.
net	This usually identifies gateways and other administrative hosts for a network. **Example:** nic.eu.net is an example of a gateway.

Domain names (continued)

The proper terminology for a site's domain name is its Fully Qualified Domain Name (FQDN). It is usually selected to give a clear indication of the site's organization or sponsoring agent.

Example: mmng.tor.nortel.com

IP addresses

Every single computer on the Internet (or intranet) has a unique address. This address is commonly referred to as an *IP address*.

The IP address is a 32-bit number that is represented in dot decimal format.

Example: 147.31.254.130

There are three classes of IP addresses: Class A, Class B, and Class C. The network class determines the number of bits assigned to both the network and host portions of the IP address. (A host is a particular computer in the network.)

- In a Class A address, the first byte is in the range of 1 through 127, and the network address is 1 byte in length. The last three bytes comprise the host address.
- In a Class B address, the first byte is in the range of 128 through 191, and the network address is 2 bytes in length. The last two bytes comprise the host address.
- In a Class C address, the first byte is in the range of 192 through 254, and the network address is 3 bytes in length. The last byte is the host address.

Relationship of domain names to IP addresses

Any computer on the network can be located by using either the domain name or its IP address. However, it is very difficult to remember IP addresses and much easier to remember domain names.

To make the job of locating someone easier, a computer within a domain is dedicated to mapping domain names to IP addresses. This type of computer is called a domain name server (or DNS server).

For examples of how the DNS server works, see "Data network requirements" in Chapter 3, "Installing Net Gateway hardware and software."

VPIM

Introduction

This section defines what is meant by the term VPIM.

Definition

The Voice Profile for Internet Mail (VPIM) is a new standard that profiles Internet mail for voice messaging.

With the development of voice messaging, a class of special-purpose computers has evolved to provide voice messaging services. These machines generally interface to a telephone switch, and provide call answering and voice messaging services.

Traditionally, messages sent to a non-local computer are transported using analog networking protocols based on DTMF signaling and analog voice playback. As the demand for networking increases, there is a need for a standard high-quality digital protocol to connect them. To address this need, the VPIM Work Group of the Electronic Messaging Association (EMA) has developed the VPIM profile of the Internet standard MIME and ESMTP protocols for use as a digital voice messaging networking protocol.

How Net Gateway uses VPIM

Net Gateway can exchange messages with any other vendor's product that supports the VPIM standard.

For more information, see the following topics in Chapter 7, "Voice Profile for Internet Mail (VPIM) description."

- "VPIM-compatible voice messaging systems requirements"
- "VPIM Version 2 conformance"

For more information

If you want more information and have access to the World Wide Web, you can access the official VPIM web site at

http://www.ema.org/vpimdir/index.htm

Entrust security option

Introduction

This section describes the optional Entrust security package for Meridian Mail Net Gateway.

Reasons for using the Entrust option

The Entrust option allows you to protect the security of your voice mail messages. Without the Entrust option, messages in transit to or from the Net Gateway system could be intercepted and decoded by hackers.

If these messages contain information important to your business, you should consider the Entrust option. Information that may need to be secure includes

- financial data
- product development information
- confidential personnel information

How it works

With the Entrust option installed, the Net Gateway system encrypts each voice message and attaches a special digital key to the file. Only another Net Gateway with the correct key can decrypt the message.

The Net Gateway interface automates the distribution of digital keys which simplifies administering security for the networked voice mail system.

How to obtain the Entrust security option

Your organization must purchase the Entrust security package separately; it is not available from Nortel.

After you purchase it, you must do the following:

- Install Entrust/Lite Manager on all network administration sites.
- Install Entrust/Lite Client on all sites (including network administration sites).
- Enable encryption at each site when installing the Meridian Mail Net Gateway software.

Limitations

The Entrust option can only be used to secure messages sent between Net Gateway systems. The Entrust option cannot secure messages sent between Net Gateway and Norstar Voice Mail or VPIM-compatible systems.

Even though Meridian Mail Net Gateway can support up to 500 sites in the network, the Entrust option cannot secure messages between Net Gateway systems when there are more than 200 of them. (This implies that to use encryption, your network may have up to 200 Net Gateway systems and up to 300 Norstar Voice Mail or VPIM-compatible systems.)

You cannot have a mixture of encryption and non-encryption Net Gateway systems in your network. If you want to use encryption, all Net Gateway systems must have encryption enabled.

Chapter 3

Installing Net Gateway hardware and software

In this chapter

Overview of this chapter

Introduction

This chapter describes how to install a typical Meridian Mail Net Gateway system.

It includes information on

- what to do before you start
- how to install the Net Gateway hardware
  - — Dialogic voice processor board
  - — copy protection device (dongle)
- how to install the Net Gateway software (and optional Entrust software)

Working through this chapter from beginning to end should get you to the point where your system is up and running, and ready for you to enter your network information.

Limitations

This chapter does not describe in detail any setup which is beyond the scope of this document, such as

- setting up Enterprise Networking on Meridian Mail systems
- configuring the PBX
- installing Windows NT 4.0

For details on these topics, you should refer to the documents listed in “Referenced documents” on page 3-11. Guidelines are presented for items particular to Net Gateway.

As well, because there can be an almost infinite variety of Internet/intranet setups, this manual presents only typical configurations.

The installation process

Introduction

This section provides an overview of the installation process.

Installation process

To access instructions for a particular task, refer to the following table.

Stage	Procedure	Page
1	Assemble the materials you will need.	3-9
2	Ensure that your voice mail system and PBX are configured correctly.	3-14
3	Ensure that your data network is set up properly.	3-20
4	Set up an appropriate PC.	3-25
5	Set up the Windows NT 4.0 Server software on the PC that you will use as the Net Gateway system. Refer to Windows NT documentation.	not provided in this manual
6	Configure the settings within Windows NT that are specific to Net Gateway.	3-36
7	Install the Dialogic voice processor board.	3-59
8	Connect the Net Gateway to the PBX.	3-61
9	Install the copy protection device.	3-62
10	Install the Entrust security software (optional).	3-68
11	Install the Meridian Mail Net Gateway software.	3-72
12	Verify the installation.	3-87

Section A: Before you begin

In this section

Overview of this section

Introduction

This section discusses things that you need to consider before installing your Net Gateway system. The following topics are discussed:

- the items you need for installation
- switch requirements
- voice mail system requirements
- VPIM requirements
- data network requirements
- hardware and software configuration
- Windows NT setup specifically for Net Gateway
- planning and engineering considerations

Checklist of required items

A checklist is provided listing the items you need to complete the installation. Some items you may need to have arranged with your data network administrator (such as LAN access for the Net Gateway). Other items you may need to have set up by your telephony support person (such as the analog voice lines and Meridian Mail configuration).

This section also lists the documents you may need to have on hand for reference.

Switch requirements

Basically, any switch that is supported by your Meridian Mail system is also supported by your Net Gateway system.

Switch configuration consists of four analog lines that are

- configured to one hunt group directory number
- connected to the voice processor board inside Net Gateway

Voice mail system requirements

In order to get your Net Gateway system to successfully communicate with your voice mail system, you must consider the following:

- how sites are defined
- how your dialing plan is configured
- the directory number used to establish communication with Net Gateway

VPIM requirements

The VPIM standard describes, in detail, how messages are formatted for distribution over the Internet.

In order to claim conformance and be called VPIM compliant, a voice mail system must implement all mandatory features of VPIM in each of two areas: Content and Transport. In addition, systems which conform to this profile must not send messages with features beyond this profile unless explicit per-destination configuration of these enhanced features is provided.

Data network requirements

Net Gateway uses the Transmission Control Protocol/Internet Protocol (TCP/IP) to communicate with other sites in the network. Net Gateway may have to interact with one or more of the following systems in an IP network:

- Domain Name Service (DNS)
- SMTP E-mail proxy server (or gateway or relay)

Configuration and management of these systems is at your discretion and is not covered in this manual.

Hardware and software configuration

In order to maintain a dependable and reliable Net Gateway system, certain requirements must be met in both the hardware and software configuration of the platform used to run Net Gateway.

Windows NT setup

For Net Gateway to operate properly, you must have TCP/IP networking installed and functioning as described in “Data network requirements” on page 3-20.

In addition to this, you must do the following:

- Set up a user group called NortelMMNGAdmin.
- Install the Streams Environment network protocol to support the Dialogic voice processor board.
- Set the time zone environment variable correctly to properly set up the time zone variable in the date field of VPIM messages.

Planning and engineering considerations

Things to consider when engineering the Net Gateway network include the following:

- impact of Net Gateway on your local area network (LAN) or wide area network (WAN)
- message handling abilities (throughput)
- message queuing capacities
- message delivery times
- Net Gateway limitations

What you need

Introduction

This section describes the items you need to have available to install the Meridian Mail Net Gateway system

Checklist

The following table lists the items you need to complete the installation. Some items you may need to have arranged with your data network administrator (such as LAN access for the Net Gateway), and other items you may need to have set up by your telephony support person (such as the analog voice lines and Meridian Mail configuration).

Make sure you have all these items checked off before starting to install the system.

Check	Item
	This manual
	Documents listed in “Referenced documents” on page 3-11
	PC configured as described in “Recommended hardware configuration” on page 3-25
	Up to four analog voice ports available from your PBX, configured as described in “Switch requirements” on page 3-14
	Meridian Mail 11 with Enterprise Networking installed as described in “Meridian Mail requirements” on page 3-15
	Network connection available for the Net Gateway system
	Dialogic voice processor board
	Copy protection device
	Meridian Mail Net Gateway installation CD-ROM
	At a network administration site: Entrust/Lite Manager and Entrust/Lite Client software (optional for the network)

Check	Item
	At a network node: Entrust/Lite Client software (optional for the network)
	Standard PC tools
	Antistatic wrist strap and working surface

Referenced documents

Introduction

This topic provides a list of Nortel Publications (NTPs) and other vendor documents that you may need to refer to when installing and configuring the Net Gateway system and the voice mail network.

Nortel documents

The following table shows the Nortel documentation you may need to install the Net Gateway system.

Title	Document Number
Meridian Mail configuration	
Meridian Mail Networking Planning Guide	555-7001-241
Meridian Mail Enterprise Networking Installation and Administration Guide	555-7001-246
Maintenance Messages (SEERs)	555-7001-510
System Administration - The Basics (Card Option)	555-7071-300
System Administration Guide (M1)	555-7001-301
System Administration Guide for Multi-Customer Systems (M1)	555-7001-302
System Administration Guide (MSM and Modular Option GP)	557-7001-301
Norstar Voice Mail configuration	
Norstar Voice Mail 3.0 Digital Networking Installation Guide	P0869226
Norstar Voice Mail 3.0 Digital Networking Set Up and Operation Guide	P0869228
Norstar Voice Mail 3.0 Set Up and Operation Guide	P0869212
Norstar Voice Mail 3.0 Reference Guide	P0869196
—continued—	

Title	Document Number
Norstar Voice Mail 3.0 Software Maintenance Guide	P0869542
Meridian 1 network dialing plan configuration	
X11 input/output guide	553-3001-400
Basic and Network Alternate Route Selection description	553-2751-100
Coordinated Dialing Plan description	553-2751-102
Basic 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
Entrust/Lite Manager and Entrust/Lite Client configuration	
Entrust/Lite Manager User Guide for Microsoft Windows	
Entrust/Lite Client User Guide for Microsoft Windows	
—end—	

Other vendors' documents

In addition to these Nortel documents, you may also need to refer to the following:

- documentation for your VPIM compatible voice mail system
- Windows NT 4.0 documentation from Microsoft
- general reference books on TCP/IP networking and the Internet

How to order Nortel documentation

In North America

If you require additional copies of any of the Nortel manuals listed in the previous section, in North America you may contact the following:

Northern Telecom Inc.
Nortel Product Training and Documentation
1057 South Sherman Street
Richardson, TX USA
75081-4848

Telephone: (800)-775-6835

Outside North America

To obtain any Nortel documentation outside of North America, please contact your local distributor or Nortel reseller.

Switch requirements

Introduction

This topic briefly describes Net Gateway's switch requirements.

Supported switches

Any switch that is supported by your Meridian Mail Release 11 system can be used with Net Gateway. Net Gateway is not switch dependent.

Telephone lines

Up to four analog lines are required to connect your switch to Net Gateway. The lines are connected directly to two RJ-14 telephone jacks on the voice processor board inside Net Gateway.

Directory number configuration

One hunt group must be defined for all four lines. The directory number assigned to the hunt group is the number that your voice mail system uses to establish communication with Net Gateway.

Meridian Mail requirements

Introduction

This topic explains what Meridian Mail needs in order to successfully send and receive messages through Net Gateway.

Enterprise Networking feature

The Enterprise Networking feature must be installed and enabled on Meridian Mail. Enterprise Networking must also be configured to operate on one or more voice ports.

Directory Number

The Directory Number (DN) that Net Gateway will use to establish an Enterprise Networking session with Meridian Mail must be defined in the Voice Services Directory Number (VSDN) table in Meridian Mail.

Dialing plan

The dialing plan(s) must be defined (ESN, CDP, hybrid, or none).

Site prefixes used in mailbox addresses must be consistent and unique across the network. There cannot be any conflicts between the site prefixes or duplication of digits. For example, 33 and 334 cannot be used as site prefixes because the digits 33 are duplicated. However, 334 and 335 can be used.

Unique network addresses consist of the mailbox number (including the site prefix) and the site's domain name.

Example: 63387460 (mailbox) and mmng.tor.widget.com (domain name) form the network address: 63387460@mmng.tor.widget.com.

Network database and overflow site

The network database (site maintenance table) must be defined. The hunt group DN used to call Net Gateway must be defined as the connection DN for each site.

Up to 150 remote sites can be defined in the Meridian Mail network database. If more than 150 sites are required, you must create one site that will act as an overflow site.

Network database and overflow site (continued)

The overflow site

- must contain a prefix which is unique from any other site prefix in the network
- be defined the same way at all sites in the network (site ID must be the same at all sites)
- the dialing plan must be set to “none”

The overflow site can be used at any time to facilitate centralized network administration from the Net Gateway network administration site.

Example: message addressing

The following table shows how users would address messages to users in Calgary by using normal addressing versus addressing through the overflow site.

Note: In Meridian Mail, the overflow site dialing plan is set to “none.” The ESN and CDP dialing plan information shown is required to dial out through the switch.

Addressing by normal means (Site 1)	Addressing by using the overflow site (Site 500)
Dialing plan is ESN ESN access code - 6 Site - 1 location code - 775 mailbox number - 7460 The user enters 67757460. Meridian Mail sends the following to Net Gateway: • Site 1 • Location 0 • Mailbox 7460 The ESN prefix for the site is defined as 6775, which is entered into the Net Gateway routing table for the Calgary site. Net Gateway sends 67757460@mmng.calgary.widget.com over the network.	Dialing plan is “none” ESN access code - 6 Overflow site prefix - 8 Overflow site - 500 location code - 775 mailbox number - 7460 The user enters 867757460. Meridian Mail sends the following to Net Gateway: • Site 500 • Location 0 • Mailbox 67757460 The mailbox prefix for the site is 8. 6775 is entered as the prefix in the Net Gateway routing table for the Calgary site. Net Gateway sends 67757460@mmng.calgary.widget.com over the network.

—continued—

Addressing by normal means (Site 1)	Addressing by using the overflow site (Site 500)
Dialing plan is CDP CDP steering code - 33 Site -1 mailbox number - 6740 The user enters 336740. Meridian Mail sends the following to Net Gateway: • Site 1 • Location 0 • Mailbox 6740 The CDP steering code for the site is defined as 33, which is entered into the Net Gateway routing table for the Calgary site. Net Gateway sends 336740@mmng.calgary.widget.com over the network.	Dialing plan is “none” CDP steering code - 33 Overflow site prefix - 8 Overflow site - 500 mailbox number - 6740 The user enters 8336740. Meridian Mail sends the following to Net Gateway: • Site 500 • Location 0 • Mailbox 336740 The mailbox prefix for the site is 8. 33 is entered as the prefix in the Net Gateway routing table for the Calgary site. Net Gateway sends 336740@mmng.calgary.widget.com over the network.
—end—	

Overflow site limitations

The following Meridian Mail features are affected when addressing messages through the overflow site:

- Call sender may not be available to message recipients.
- Site spoken names are not available to message senders.

Norstar and non-Nortel system sites

If you want to define Norstar and other non-Nortel voice mail systems in the network database, you must carefully consider how the dialing plans used by those systems will be implemented into your network addressing plan.

More information

For more information about how Meridian Mail is configured for networking, refer to the *Enterprise Networking Installation and Administration Guide* (NTP 555-7001-246).

Norstar Voice Mail requirements

Introduction

This topic identifies what needs to be done on Norstar Voice Mail 3.0 systems in order to participate in the Net Gateway network.

Networking feature must be enabled

Each Norstar Voice Mail system in the network must have Digital Networking installed and enabled before messages can be sent or received. In addition, General Networking features must also be enabled.

Network addressing

The following must also be done:

- A local Internet Protocol (IP) address must be assigned to the Norstar Voice Mail system.
- TCP/IP parameters must be configured.
- The network site table must be set up (required for site-based addressing).
- Network delivery mailboxes must be set up (required for network mailbox addressing). A maximum of 1000 mailboxes may be set up.

Local site network parameters

Before your site can participate in the network, you must set up the following digital networking parameters in Norstar Voice Mail:

- proxy name
  The proxy name is the Internet domain name address of the networking server that accepts message delivery for this site. The proxy name is entered only when the domain name of the networking server is different from the domain name of the local TCP/IP connection.
- mailbox prefix
  The prefix, when added before the local mailbox number, forms the unique network address for the mailbox. The mailbox prefix must not conflict with, or overlap, the mailbox prefix for any other site.

Local site network parameters (continued)

In addition

- Network messaging features (including Network Receive, Network Delivery) must be enabled.
- The networking class of service must be enabled for each network mailbox.

Site table setup

Each site in the network must use the same network addressing plan, and each mailbox must have an address that is unique across the entire network. This is produced by taking the local mailbox number and prefixing it with the site prefix (known as the mailbox prefix).

When choosing your network address format, you need to keep in mind that the mailbox prefix is limited to a maximum of nine digits in length.

In addition, the following needs to be identified for each site:

- voice encoding used by each destination site
  Meridian Mail systems use Adaptive Differential Pulse Code Modulation (ADPCM) voice encoding.
- message protocol
  SMTP is the message protocol used in the Net Gateway network.

Network delivery mailbox setup

Before network delivery mailboxes can be set up, the site to which they belong must be defined in the network site table.

Data network requirements

Introduction

Net Gateway uses the Internet Protocol (IP) to communicate with other sites in the network. This topic briefly describes how addresses can be resolved in a Net Gateway network.

IP network

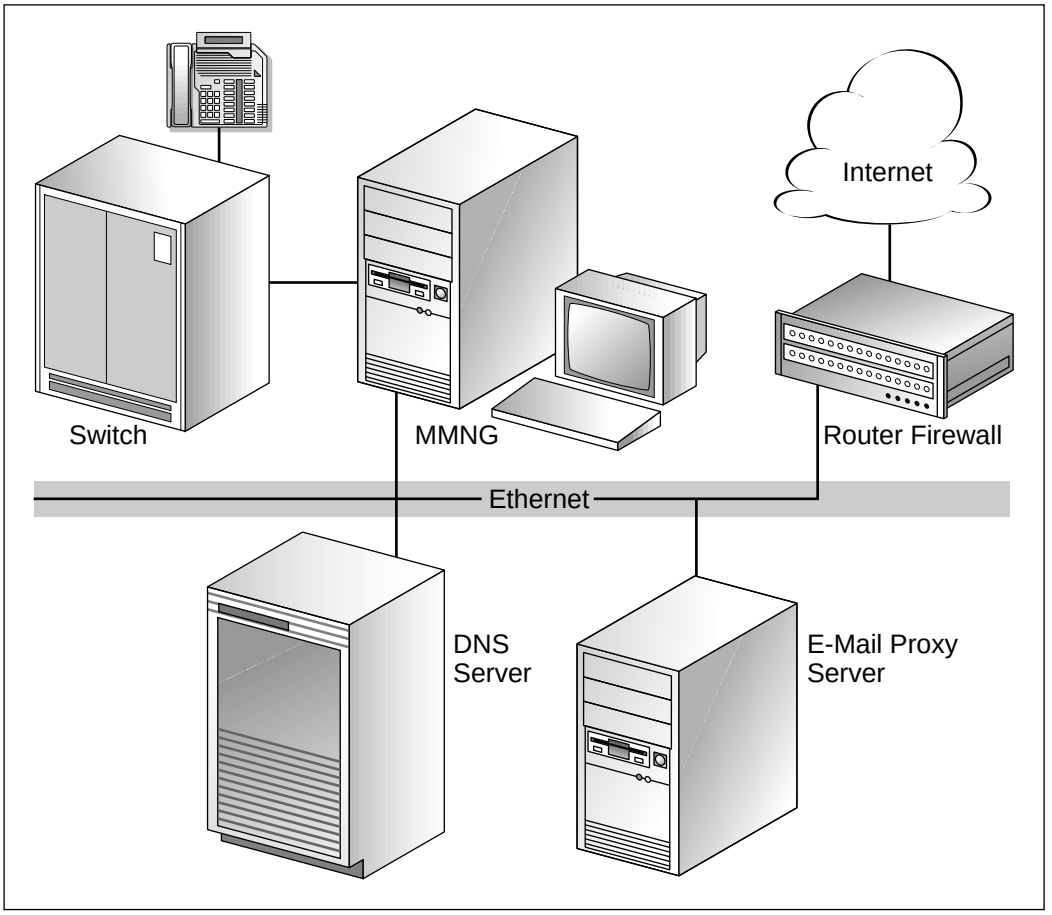
The Simple Mail Transport Protocol (SMTP) message network is configured by the customer for use with Net Gateway, and may be expected to vary in complexity.

In the simplest case, Net Gateway resides on a single logical network, independent of firewalls or gateways. More likely, Net Gateway may interact with one or more of the following systems in an IP network:

- Domain Name Service (DNS)
- SMTP E-mail proxy server (or gateway or relay)

Any or all of these systems may be present in the network environment in which you install Net Gateway. Configuration and management of these systems is at your discretion. The following sections serve as guidelines to their usage with Net Gateway.

See the following illustration.



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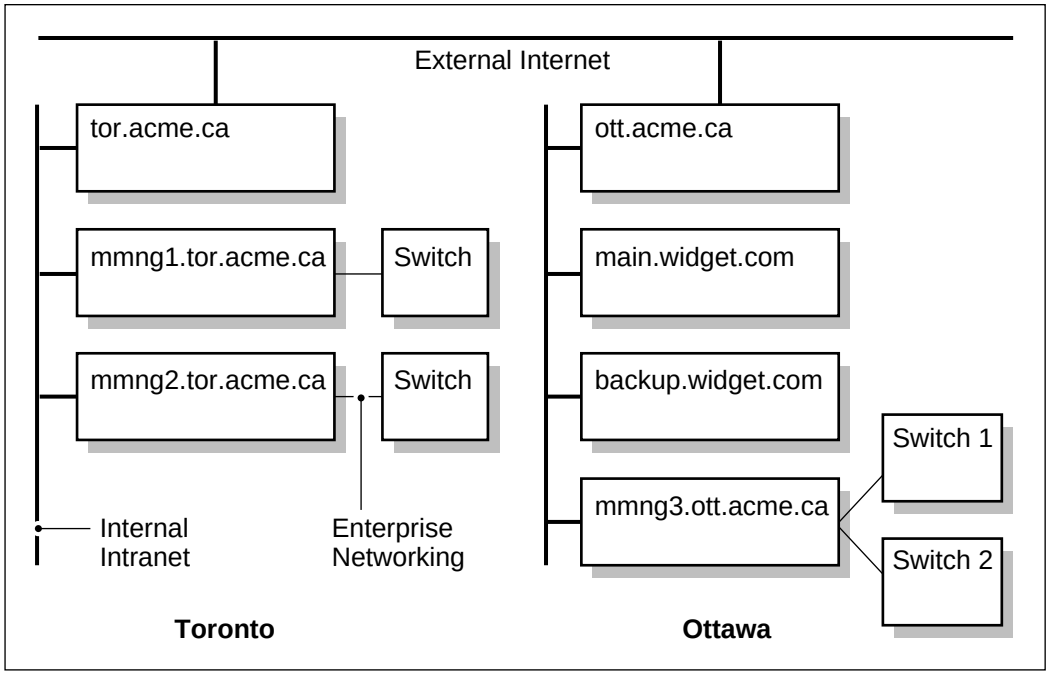
DNS server

The names of Net Gateway remote sites (which are entered as IP network addresses or aliases in the Net Gateway routing table during Net Gateway administration), must be resolvable to IP addresses by Net Gateway's SMTP delivery agent, using the host Windows NT system network sockets facilities.

The host may be configured to use a local host table or, more likely, to use an external Domain Name Server. This server must be able to resolve, in cooperation with other DNS servers, all of the network site names entered into the Net Gateway routing table.

DNS server (continued)



G100635

In the event that an intervening firewall or E-mail gateway separates Net Gateway from the Internet/intranet, then Net Gateway need only resolve the IP address of the relay server (which is also entered during administration). However, a domain name service must, in turn, be available to the relay server in order to resolve the final destination address of the site's name in outbound Net Gateway messages.

Where a gateway, proxy, or relay server, or firewall intervenes between the Net Gateway's subnet and the Internet/intranet, the DNS server must be configured with Mail Exchanger MX records. This allows SMTP traffic from remote Net Gateway sites to be redirected through the gateway and then delivered to the local Net Gateway system.

DNS example 1: Internet/intranet

The following is an example of DNS database records on a Nortel DNS server (perhaps in Ottawa) which is exposed to the external Internet, as well as the internal intranet.

tor.acme.ca	IN A 195.100.50.10
	IN MX 0 tor.acme.ca
	IN MX 10 ott.acme.ca
*.tor.acme.ca	IN MX 0 tor.acme.ca
*.acme.ca	IN MX 0 ott.acme.ca
ott.acme.ca	IN A 195.200.45.10
widget.com	IN MX 0 main.widget.com
	IN MX 10 backup.widget.com
main.widget.com	IN A 195.100.60.15
backup.widget.com	IN A 195.100.88.45

- "A" records indicate canonical IP addresses of
  - — tor.acme.ca
    This is the Toronto mail relay server connected to both internal and external (Internet) networks. The relay server is able to forward mail addressed to any (internal) mail server in the tor.acme.ca IP domain.
  - — main.widget.com, backup.widget.com
    These are the primary and secondary mail gateways connected to both internal and external (Internet) networks. These servers are able to forward mail addressed to any mail server in Nortel's widget.com domain.
- "MX" records indicate the mail server for the domain indicated at the left.
  For example, either main.widget.com or backup.widget.com can handle mail destined for the widget.com domain.

DNS example 2: intranet only

The following is an example of DNS database records on a Nortel DNS server in Toronto. It appears only on the internal intranet, and shows

- address records of three Net Gateway systems in Toronto
- Mail Exchangers records for two Net Gateways in Ottawa

Net Gateway1.tor.acme.ca	IN A 49.105.04.25
Net Gateway2.tor.acme.ca	IN A 49.105.42.33
Net Gateway3.ott.acme.ca	IN A 49.107.31.23

E-Mail gateway server

Net Gateway may be configured to forward all outbound SMTP message traffic to a (local) machine which serves as an SMTP relay. Note the example in the preceding section.

If a proxy is to be used for this site, the proxy software must be configured to recognize and handle messages for any other site. For example, the proxy with a domain name of widget.com must have an entry that will map 4165551234 at widget.com to 4165551234 at toronto.widget.com.

Note: Details for proxy software configuration vary by vendor.

Recommended hardware configuration

Introduction

The following table lists the hardware requirements for the Meridian Mail Net Gateway PC server.

Item	Recommendation
CPU	Net Gateway runs on an Intel Pentium 100 MHz or faster CPU, or another vendor's equivalent.
System Memory	Minimum installed random access memory (RAM) on the Net Gateway platform is 32 Mbytes. Speed and type of RAM memory should be consistent with the CPU requirement above.
CD-ROM Drive	A CD-ROM drive is required to allow software installation. The drive should support disk formats CD-ROM modes 1 and 2.
Hard Disk	The minimum-size hard disk recommended for a Net Gateway platform is 500 Mbytes, of which 300 Mbytes is expected to be available for Net Gateway working storage. 14 kbytes are required in order to run the install/upgrade procedures.
Floppy drive	A floppy disk drive is required for copying Entrust/ Lite Manager files, performing backups, and doing system repairs (if required).
Monitor	A VGA video monitor is the minimum requirement with the Net Gateway platform for software installation and system administration.
LAN Interface	The Net Gateway requires a LAN adapter for connection to the customer's network facilities. Operation and performance are specified for IEEE 802.3, Ethernet, 10BaseT LANs. While Net Gateway may be installed with other LAN facilities supported by the Windows/NT operating system, and which support TCP/IP protocols, operation and performance of Net Gateway on these facilities are not specified.
—continued—	

Item	Recommendation
Voice Interface	Net Gateway is supplied with a Dialogic voice processing interface board. The interface provides four line connections with USOC RJ-14 jacks for connection to the switch. It requires one 16-bit half-depth ISA-bus slot in the host PC.
Parallel Printer Port	In order to use the software protection device used by Net Gateway, the host platform must be equipped with a functioning parallel printer port.
Serial port	A serial port is required in order to connect a modem for accessing the Net Gateway system for remote maintenance.
—end—	

Software configuration

Introduction

This topic identifies the following requirements for software configuration:

- disk storage requirements
- third-party software requirements
- security requirements

Operating system requirement

Net Gateway is installed on a platform environment of Microsoft Windows NT version 4.0 (server edition).

Disk usage requirement

The computer used to run Net Gateway may be partitioned as a Windows NT File System (NTFS) volume for privacy and security. If the computer has only one disk installed, the recommended minimum size is 512 Mbytes. Following the installation of all Net Gateway software on this or on another volume, it is recommended that at least 300 Mbytes be free and available to Net Gateway as working storage.

Third-party software requirement

A feature of Net Gateway is the encryption of voice message content sent on the Internet/intranet. In this case, *Entrust* security software is installed as part of the Net Gateway installation process.

For one Net Gateway site designated as the MMNG network administration site (and a second, as a recommended backup), you pre-install Nortel Entrust/Lite Manager (packaged separately). Entrust/Lite Manager is used to create the user certificates, on which the encryption process is based, for all network sites.

On both network administration sites and network nodes, you also install Entrust/Lite Client.

Software security requirement

In order to prevent unauthorized use of copied Net Gateway software or its components, a hardware protection key is provided. The key must be installed on the printer port of the host PC prior to the use of Net Gateway.

The key is a pass-through device which allows you to connect a printer, if desired.

Planning and engineering considerations

Introduction

Things to consider when engineering the Net Gateway network include

- impact of Net Gateway on your local area network (LAN)
- message handling abilities (throughput)
- message queuing capacities
- message delivery times
- Net Gateway limitations

Dedicated server

Net Gateway must be installed as the sole application running on its own Windows NT system, with exclusive access to its resources. Performance measures outlined in this manual assume that there are no conflicting or competing demands on the resources mentioned in this topic.

LAN load

It is predicted that the sustained *maximum* load imposed by Net Gateway on its connected LAN is 180 kbytes per second (less than 1 percent of 10BaseT bandwidth), and is equal to the estimated pump rate for the SMTP delivery process.

This is independent of the aggregate number of SMTP connections on allocated IP ports (specified as five inbound and five outbound).

The *average* data rate imposed on the LAN by Net Gateway, in order to keep four Enterprise Networking channels active, is 21 kbytes per second (less than 1 percent of 10BaseT bandwidth).

For example, a 94-minute message would create a 33 Mbyte file which would take three minutes to go from one Net Gateway system to another.

Sustained message throughput

Net Gateway maintains a message flow at a sustained rate as follows.

Net Gateway *continuously* transfers messages

- received from Meridian Mail by way of an Enterprise Networking port to an SMTP connection on an allocated IP port
  or
- received by SMTP, on an IP port, to a Meridian Mail Enterprise Networking port with the following limits and conditions:
  - four active Enterprise Networking voice ports
  - five inbound SMTP connections on allocated IP ports
  - five outbound SMTP connections on allocated IP ports
  - all recipients of each outbound message are at the same destination site
  - no competing LAN traffic

Net Gateway continuously feeds messages to and from a Meridian Mail system, as in real-time, with all four Enterprise Networking ports active to and from an SMTP connection.

If competing traffic on the LAN connection constrains Net Gateway outbound throughput, then Net Gateway internal queuing capacity restrictions govern. In a case such as this, sustained throughput on the Enterprise Networking ports is decreased in order to work off the accumulated queue.

If incoming SMTP messages from the digital network exceed the capacity of the installed voice channels to Meridian Mail, then Net Gateway internal queuing capacity restrictions govern.

Message queuing capacity

In its role as a gateway device, Net Gateway must queue messages received by each of the delivery agents (SMTP and Enterprise Networking), while these await the attention of the companion delivery agent. Due to differing capacities of the Internet/intranet reached by the LAN connection, and Meridian Mail reached by Enterprise Networking, a relatively large number of messages may require queueing.

The number of messages which may be queued is dependent on the disk capacity and system memory available to Net Gateway, and on the size of the messages.

For outbound messages, there is, in fact, a queue entry for each message-destination, but one instance of the actual MIME message data is shared (up to three, if the message is addressed to Net Gateway, Norstar, and VPIM-compatible sites). Each message exists in the Net Gateway queue in both MIME-format file and in Enterprise Networking agent's VOX and ASCII descriptor file formats.

- Digitized voice in the VOX-format (Dialogic/OKI 32Kbps ADPCM voice encoding) requires four kbytes per second of recorded voice.
- Digitized voice within the MIME-format file requires 5.33 kbytes per second of recorded voice, due to Base64 encoding of the 32Kbps ADPCM data which adds one third to its size.

  Note: G.726 is the same size as OKI 32 Kbps ADPCM.

- Enterprise Networking descriptor text file is 500 bytes per message.
- The average recorded voice message duration is 40 seconds.

Message queuing capacity (continued)

- The minimum-size hard disk recommended for a Net Gateway platform is 500 Mbytes, of which 300 Mbytes is expected to be available for Net Gateway working storage. However, Net Gateway will actually stop accepting messages at 100 Mbytes to ensure sufficient storage space for long messages.

  This is exclusive of the Windows NT operating system and the installed Net Gateway software executables, and working data files and structures.

Based on these statistics, message queue capacity at minimum disk size is

Available disk capacity / (VOX + MIME storage density, assuming one MIME file per message)
= 200 X 10^6 / (4 X 1024 + 5.33 X 1024)
= 21K seconds or 349 minutes of recorded voice

or

21K / 40 seconds per average message
= 525 average-duration voice messages

In the event that disk space is exhausted (that is, less than 100 Mbytes), the Net Gateway Message Transfer Agent prevents the SMTP, the Enterprise Networking delivery agents, or both, from accepting inbound calls or connections on their respective network or lines.

Note: These numbers and calculations are approximate, and omit assorted disk usage which is incidental to the major consumers of disk space (excludes time for spoken name). Queue capacity is reduced by messages addressed to mailboxes on Net Gateway, Norstar Voice Mail, and VPIM-compatible sites, which may require duplicate encrypted and plain text MIME files in the queue.

Message delivery times

The time for delivery of a message through Net Gateway from one Meridian Mail system to another consists of the following:

- Enterprise Networking transfer time
  - — This is composed of the actual real-time of the voice message, plus the signaling overhead of Enterprise Networking, which includes DTMF frames and accompanying information, such as a spoken name.
  - — Two such Enterprise transfers occur, one at the originating site, and one at the destination site.
- message handling time of Net Gateway, in preparing a message received from Enterprise Networking for MIME and SMTP transmission
- transfer time on digital network by Net Gateway to a receiving or intervening mail relay server
- store and forward relay time for each mail server or proxy which handles the message between Net Gateway sites; typically, two such relays may be involved

From this, it may be seen that the *minimum* time for message delivery will be twice that of an end-to-end transfer using Enterprise Networking, irrespective of the digital network time.

Effect of digital network facilities on throughput

Message throughput by Net Gateway to and from the SMTP network accessed by a LAN is dependent on the traffic conditions present on that LAN.

The time required to deliver a message also varies with the wide-area network facilities used to reach, and within, the Internet or an intranet. As an example, the following table compares the delivery time for a message, relative to end-to-end Enterprise Networking, for various intranet capacities.

Effect of digital network facilities on throughput (continued)

Network facility	Bandwidth Kbps	Message delivery time (relative to Enterprise Networking)
Maximum Net Gateway data rate	180	2.28
Rate to match Enterprise Networking connection	21	3
ISDN	15.6	3.3
Switched 56	6.8	5
V.34 asynchronous modem	2.8	9.5

Net Gateway limitations

The following limitations apply.

Enterprise Networking

Net Gateway is limited in its capacity of forwarding incoming Internet voice messages to Enterprise Networking by any condition in the switch or Meridian Mail system which prevented or delayed full and continuous operation on each of the configured Enterprise Networking voice channels.

IP network

Operational performance is dependent on the characteristics of the Internet/intranet IP network accessed by the LAN. Factors which influence the reliability and throughput of messages transferred to the Internet/intranet may include, but are not limited to the following:

- LAN traffic from other sources
- wide area network characteristics and traffic
- router capabilities
- electronic mail gateways, proxies, relays, and routers

Net Gateway limitations (continued)

For full and continuous throughput to and from Enterprise Networking channels, each of which has an effective data transfer rate of 32 Kbps or 4 kbytes per second, Net Gateway offers and accepts Base64-encoded MIME data to and from the LAN at the average rates shown in the following table.

Active Enterprise Networking channels	Kilobytes per second	% LAN bandwidth
1	5.33	< 1%
2	10.66	< 1%
3	16	< 1%
4	21.33	< 1%

Windows NT setup

Introduction

The Meridian Mail Net Gateway requires Windows NT version 4.0 (server edition). This section describes specific items that must be set up for the Net Gateway system.

For detailed instructions on installing and configuring Windows NT, refer to your Microsoft documentation.

Requirements

For the Net Gateway to operate properly, you must have TCP/IP networking installed and functioning as described in "Data network requirements" on page 3-20.

In addition to this, you must do the following:

- Set up a user group called NortelMMNGAdmin. Your system administrator must create this group and assign to it any users who will be administering the Net Gateway system locally. The NortelMMNGAdmin group needs to have full administration privileges.
- Install the Streams Environment network protocol to support the Dialogic voice processor board.
- Ensure the timezone is set correctly at the Date/Time control panel.
- Set the time zone environment variable correctly to properly set up the time zone variable in the date field of VPIM messages.

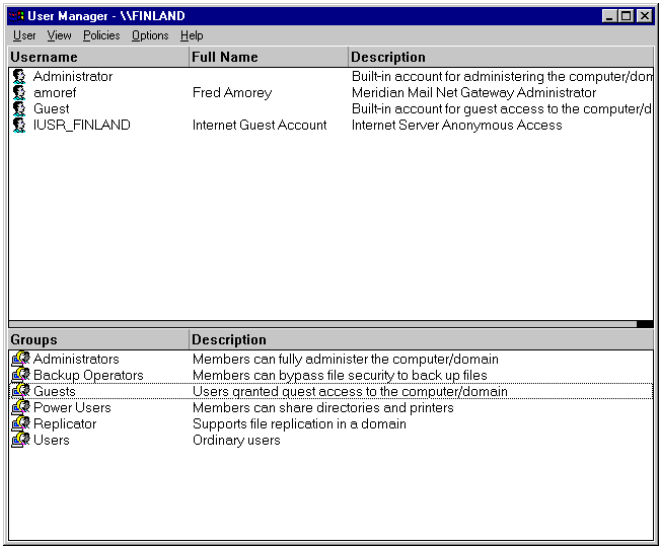
ATTENTION

If the users were logged in to Windows NT at the time they were added to the group, they must log off, then log back in to activate their rights in the **NortelMMNGAdmin** group.

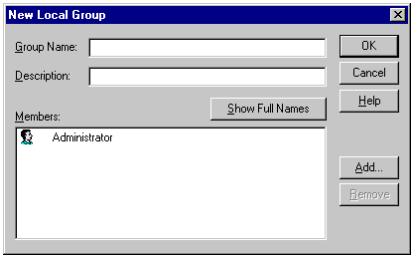
Setting up the user group

To create the NortelMMNGAdmin user group, do the following.

Step	Action
1	Log in to Windows NT as the administrator.
2	Click Start.
3	Click Programs.
4	Click Administrator Tools (Common).
5	Click User Manager for Domains. ***Result:*** A screen similar to the following appears.

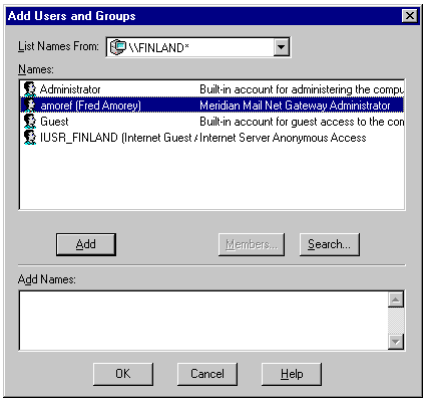


6	Click User, then New Local Group. ***Result:*** The New Local Group dialog box appears.



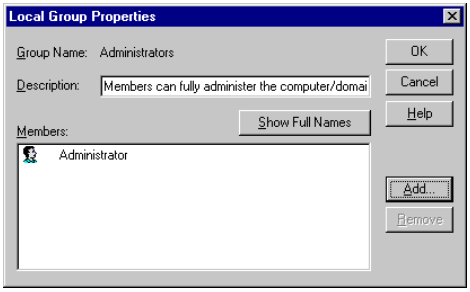
7	In the Group Name box, type **NortelMMNGAdmin**.

Step	Action
8	In the Description box, type a meaningful description.
9	Click Add to add users to the group. ***Result:*** The Add Users and Groups dialog box appears.



Note: By default, the current logged-in persons are displayed.

10	Select the user representing yourself.
11	Click Add.
12	Click OK.
13	Click on the Administrators group in the group list and press <Enter>. ***Result:*** The Local Group properties dialog box appears.



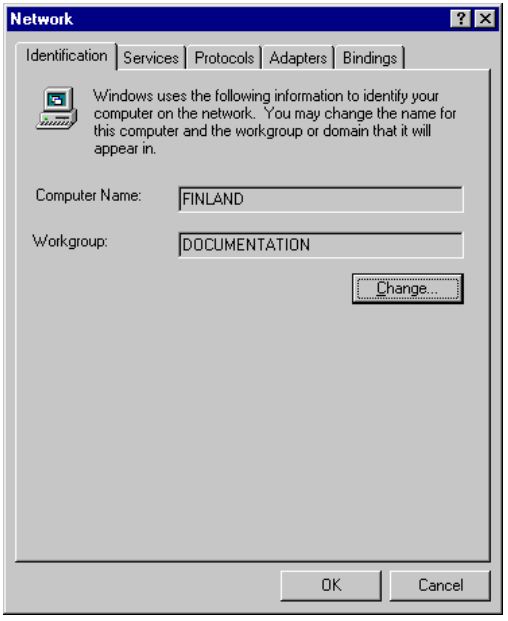
14	Click Add.
15	Click the user representing yourself.
16	Click Add.
17	Click OK.

Step	Action
18	Click OK again. ***Result:*** This gives you full administration privileges.
19	Close, then restart User Manager for Domains.
20	Click on the NortelMMNGAdmin user group and verify that the members you added are present in the Local Group Properties dialog.
21	Log out of Windows NT and log back in. ***Result:*** Your privileges within the NortelMMNGAdmin group are activated.

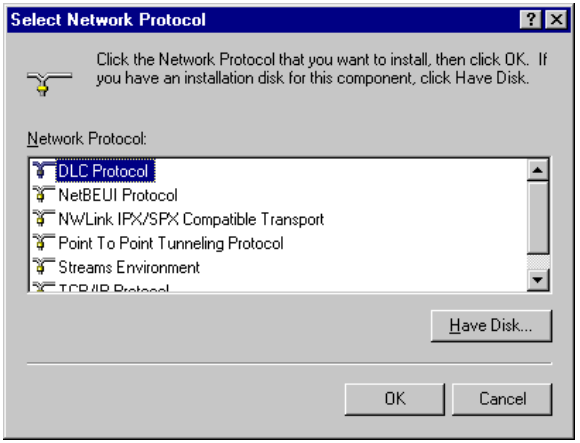
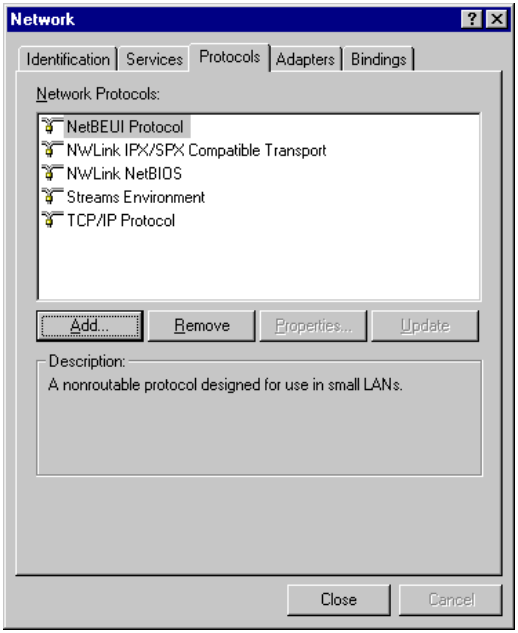
Installing the Streams Environment

To install the Windows NT Streams Environment, do the following.

Step	Action
1	Display the Control Panel.
2	Double-click the Network icon. ***Result:*** The Network page opens.



3	Click the Protocols tab.

Step	Action
4	Click Add. ***Result:*** The Select Network Protocol dialog box appears. 
5	Select Streams Environment from the list. ***Result:*** You are returned to the Network page. 
6	Click Close.
7	When prompted, click Yes to restart your system.

Determining your time zone variable value

The format for the time zone variable string for your area can be determined according to the American National Standards Institute standard ANSI X3.51-1975, “Representation of Universal Time, Local Time Differentials, and United States Time Zone Reference for Information Exchange.”

In general, this is a three-letter time zone name combined with a number showing the difference from Universal Time (UT) or Greenwich Mean Time (GMT) and another three-letter abbreviation for the daylight savings time calculation in use in the time zone.

The following table lists some common examples.

Time zone variable	Description
GMT0BST	Greenwich Mean Time / British Standard Time
WAT1	West Africa Time
AT2	Azores Time
XST3XDT	Includes cities such as Brasilia, Buenos Aires, and Georgetown
AST4ADT	Atlantic Standard Time
EST5EDT	Eastern Standard Time
CST6CDT	Central Standard Time
MST7MDT	Mountain Standard Time
PST8PDT	Pacific Standard Time
YST9YDT	Yukon Standard Time
HST10HDT	Hawaii Standard Time
IDLW12	International Date Line West
CES-1CEST	Central Europe Standard Time
EET-2EETT	Eastern Europe Standard Time
BT-3	Baghdad Time and USSR Zone 2
ZP4-4	USSR Zone 3
ZP5-5	USSR Zone 4

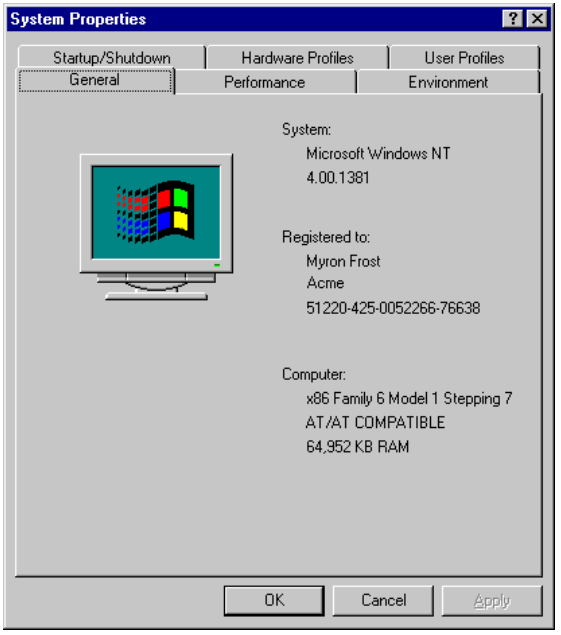
—continued—

Time zone variable	Description
GMT0BST	Greenwich Mean Time / British Standard Time
ZP6-6	USSR Zone 5
WAST-7WADT	Western Australia Standard Time and USSR Zone 6
CCT-8	China Coast Time and USSR Zone 8
JST-9	Japan Standard Time and USSR Zone 8
CAST-9:30CADT	Central Australia Standard Time
EAST-10EADT	Eastern Australia Standard Time and USSR Zone 9
NZST-12NZDT	New Zealand Standard Time
—end—	

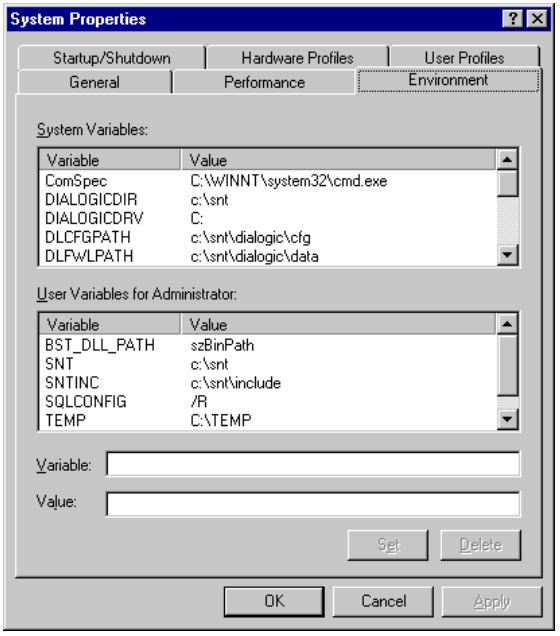
Setting the time zone environment variable

To set the time zone environment variable, do the following.

Step	Action
1	Display the Control Panel.
2	Double-click the System icon. ***Result:*** The System Properties dialog box appears.



Step	Action
3	Click the Environment tab. ***Result:*** The Environment Variables page appears.



4	In the variable box (near the bottom of the page), type **TZ**.
5	In the Value box, type a value that represents your time zone as described in “Determining your time zone variable value” on page 3-42.
6	Click Set.
7	Click OK to save your changes and close the System Properties page. ***Result:*** Your changes are applied immediately.

Section B: Installing Net Gateway hardware

In this section

Overview of this section

Introduction

This section explains how to

- ensure that all work takes place in a static-safe environment
- locate and set jumpers and switches on the voice processor board
- physically install the voice processor board into the computer
- connect the voice processor board to telephone lines
- install the copy protection device to the back of the computer

Essential electrostatic precautions

All computer boards are electrostatic sensitive. Handle all static-sensitive component boards and systems at a static-safeguarded work area.

Jumper and switch settings on the voice processor board

The following table identifies the jumpers and switches that must be set. The IRQ and memory address settings should be recorded and retained for future reference.

For information on the	See page
multiple voice processor jumper (identifies how many voice processor boards are used inside the computer)	3-55
default hook switch state jumper	3-55
base memory address segment jumpers	3-56
hardware level interrupt jumper	3-57
offset address jumpers	3-57
ring detection threshold jumpers	3-58

Note: If you own software that can determine what IRQs and memory addresses are in use, it may be useful to run it to help determine potential conflicts before installing the voice processor board.

Where the voice processor board is inserted

The voice processor board is inserted into an empty ISA expansion bus slot.

Telephone line connection

The voice processor board supports up to four telephone lines, and is connected with RJ-14 connectors and cables to standard wall jacks.

Copy protection device

The copy protection device (also referred to as a *dongle*) is used to prevent the unauthorized copying of the Net Gateway software. It is connected to the parallel port on the back of the computer.

Ensuring the workstation is static-safe

Introduction

This topic describes what a static-safe environment is, and how to maintain during hardware installation.

CAUTION

Risk of equipment damage

All computer boards are electrostatic sensitive. Handle all static-sensitive component boards and systems at a static-safeguarded work area.

Definition: Static-safe workstation

A static-safe workstation consists of a grounded static-dissipative wrist strap and a work surface covered with, or composed of, a grounded static-dissipative material. The work surface drains electrical charges from conductive materials when the materials are placed on the surface. The grounded static-dissipative wrist strap drains static charge from the person wearing the strap.

Both components

- ensure that static charges are drained at a rate and current level that are safe
- must be used any time a person is handling any component

See “Static-safe work environment” on page 3-51 for a diagram of a static-safe workstation.

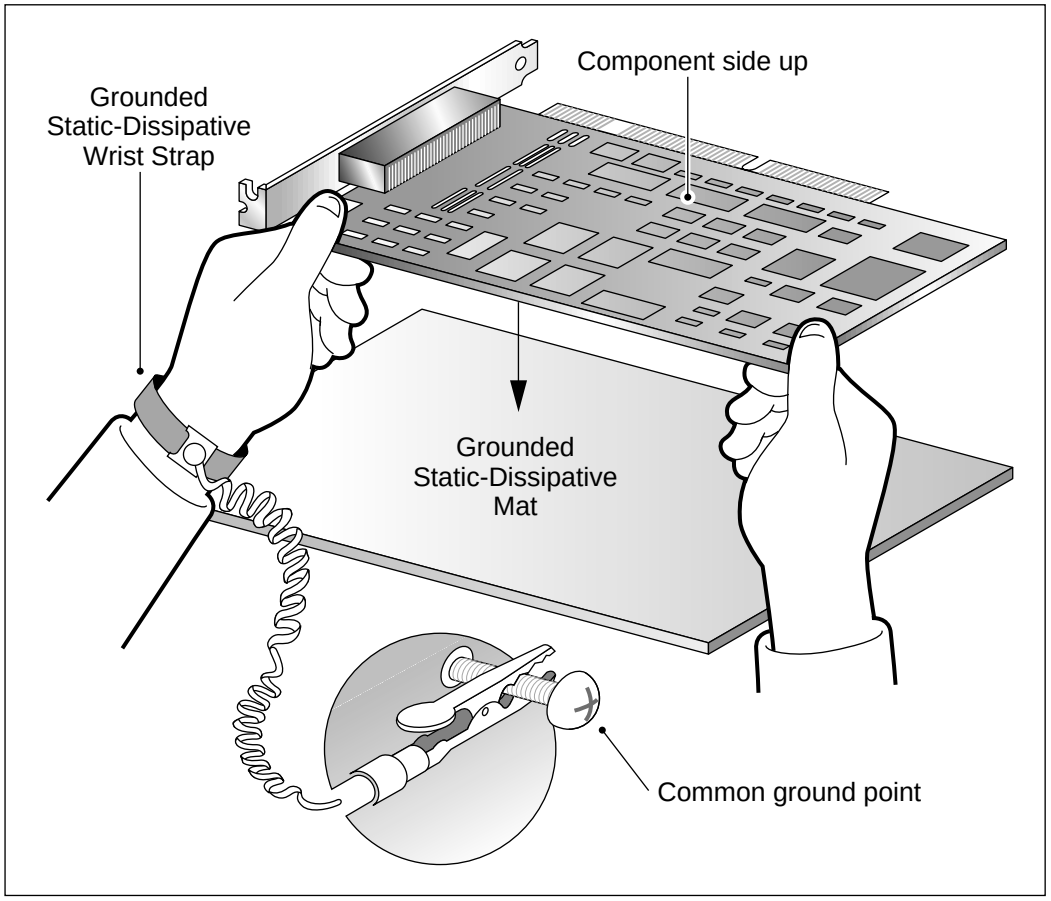
Maintaining a static-safe environment

To maintain a static-safe environment during installation, you must do the following:

- Ground yourself to the static-safe workstation using a static-dissipative wrist strap for the entire installation.
- Remove the board from the shipping carton and static shielding at the static-safe workstation.
- Lay the board on the static-dissipative work surface.

Static-safe work environment

The following illustration shows a static-safe work environment suitable for installing the voice processor board.

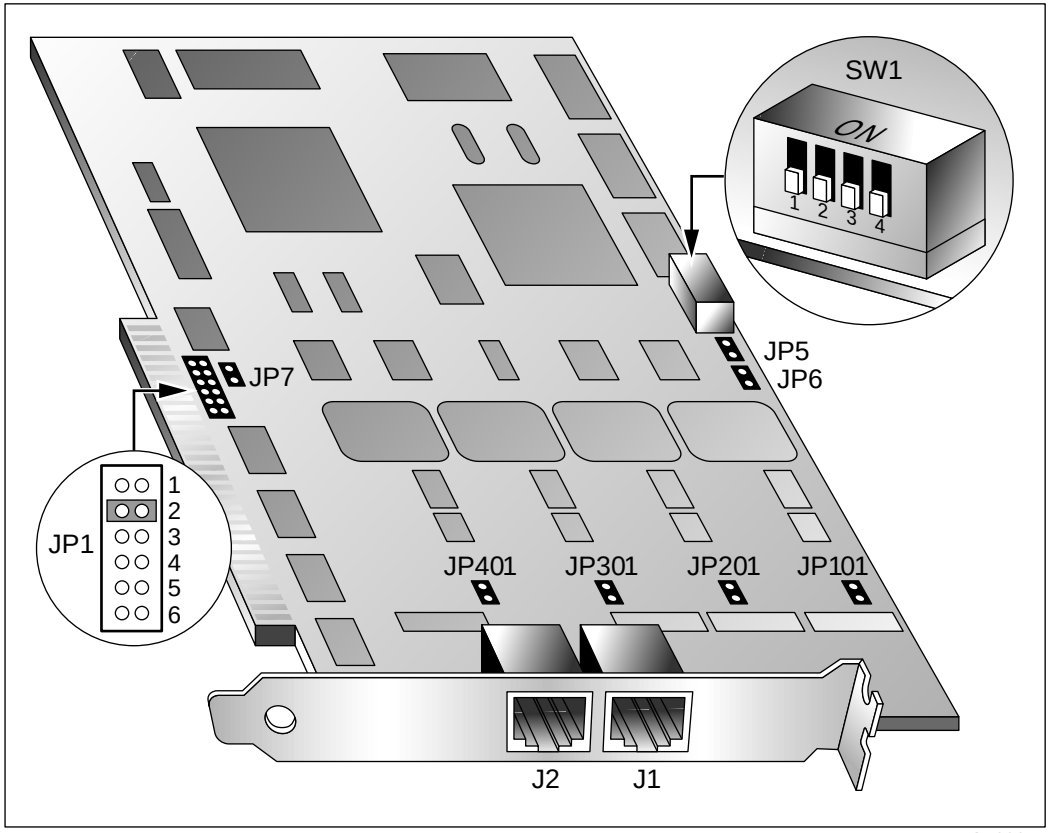


G100653

DIALOG/4 voice processor board layout

Board layout

The following illustration shows the layout of the Dialogic DIALOG/4 voice processor board.

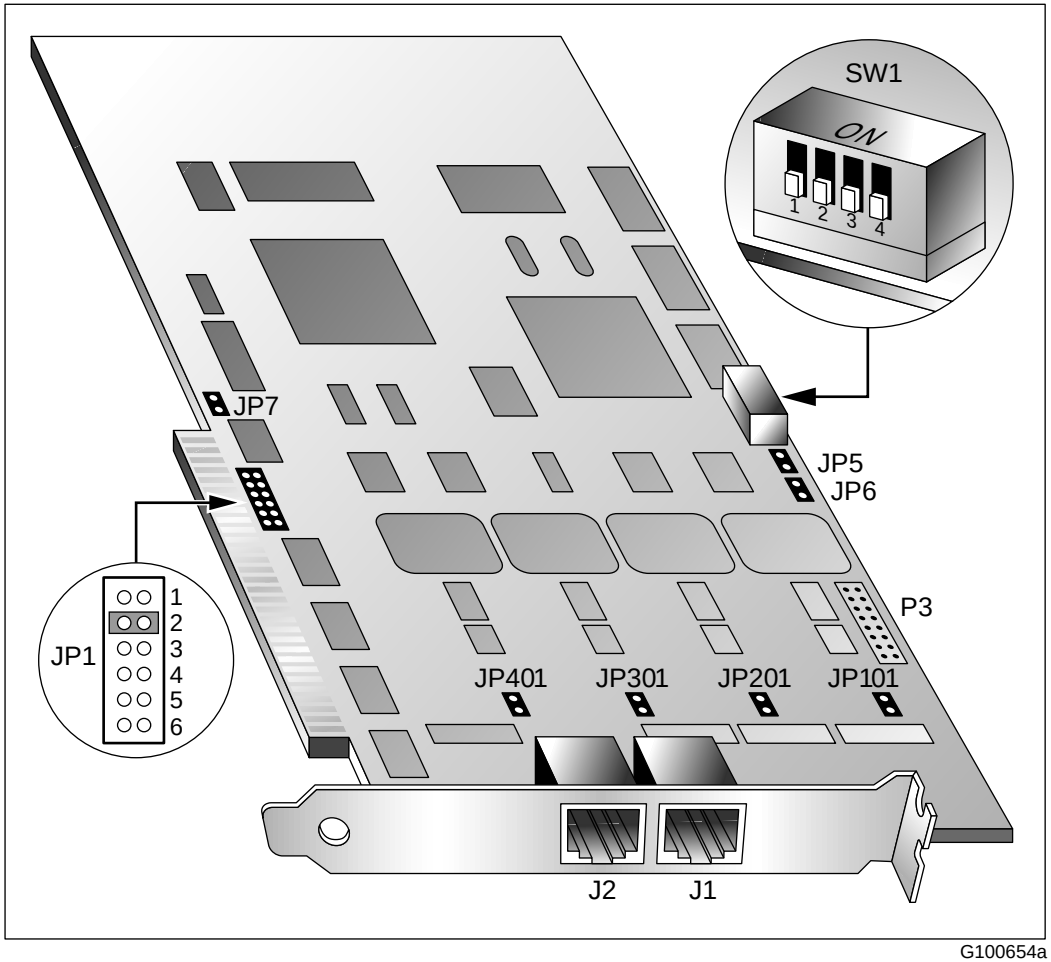


G100654

D/41D voice processor board layout

Board layout

The following illustration shows the layout of the Dialogic D/41D voice processor board.



G100654a

Setting jumpers and switches on the voice processor board

Introduction

This topic explains how to configure the Dialogic voice processor board before physically installing it inside the computer. With the exception of the P3 connector, this topic applies to

- the DIALOG/4 voice processor board (used in North America)
- the D/41D voice processor board (used outside of North America)

The P3 connector is available on the D/41D voice processor board only.

Factory defaults

You may be able to use the factory defaults. Read through these instructions and check for possible interrupt level (IRQ) and memory address conflicts between the voice processor board and other software or hardware devices (for example, video card, modem cards, CD-ROM controller card, or COM ports) in use before installing the board.

ATTENTION

Verify all jumper settings to confirm that they are set at factory default. If the jumpers are not set at factory default, they will not match the software driver settings, which may result in blue-screen crashes of your Meridian Mail Net Gateway system.

Jumper and switch functions

The following table identifies the function of each set of jumpers or switches.

Part	Function
J1-J2	RJ-14 connectors to interface with PBX or CO lines
JP1	Jumper block to set interrupt level
JP5-JP6	Jumper pins to set base memory segment
JP7	Jumper pins to enable hardware interrupt circuitry
JP101-JP401	Jumper pins to set ring detection threshold
P3	Connector to the Analog Expansion Bus (AEB) **Note:** This switch is available only on the D/41D voice processor board.
SW1:1, 2, and 3	Switches to set the offset address
SW1:4	Switch to set the default hook switch state

Configuring multiple voice board (JP7)

In general, you can install up to 16 voice processor boards in a PC. However, you must dedicate your PC as the Net Gateway server, and since Net Gateway only supports one voice processor board, you can only install one voice processor board per Net Gateway system.

Ensure the JP7 jumper is installed (default) so the system is configured for only one voice processor board.

Setting the default hook switch state (SW1:4)

SW1 switch 4 sets the default hook switch state for the voice processor board when the PC is powered on but the firmware has not yet been downloaded. The default, on-hook, presents a ring with no answer state to inbound calls if the board receives a call before the firmware has been downloaded. You can change the default hook switch state to off-hook to present a busy signal instead of a ring no answer signal.

Setting the default hook switch state (SW1:4) (continued)

The following table shows the settings for SW1:4.

Hook switch state	Set SW1:4	Inbound call response when firmware not downloaded
on-hook	off	Ring no answer (default)
off hook	on	Busy

Note: If the PC is not powered on, the inbound call response is ring no answer when a board receives a call.

Setting the base memory address segment (JP5 and JP6)

The default base memory address segment for the voice processor board is D000H (hexadecimal). You can change the address segment to A000H, B000H, or C000H. Generally, you should use the default unless there are other non-Dialogic devices in your system that must use the D000H segment.

Select the base address memory segment with jumpers JP5 and JP6 as follows.

Base address (Hex)	JP5	JP6
D000 (default)	removed	removed
A000	installed	removed
B000	installed	installed
C000	removed	installed

Note: Be aware of possible conflicts with video adapters that often use the A and B segments.

Setting the hardware interrupt level (JP1)

The default hardware interrupt Level (IRQ) is 3. Change the IRQ by moving the jumper on jumper block JP 1 as follows if IRQ 3 is in use by another device.

Note: If IRQ settings are in use by other devices, and you do not change the jumper, you may need to disable those devices, either from the BIOS or system setup, or by making a hardware change. Refer to the documentation for your PC for on using the BIOS setup.

IRQ Level	Pin position
2 and 9	1
3 (default)	2
4	3
5	4
6	5
7	6

Configuring the offset address (SW1: 1, 2, 3)

The default offset address for the voice processor board is 0000H. If you need to change the offset address, set the switches 1, 2, and 3 on SW1 as shown in the following table.

	SW1: Switches		
Offset Address (Hex)	**1**	**2**	**3**
0000 (default)	off	off	off
2000	off	off	on
4000	off	on	off
6000	off	on	on
8000	on	off	off
A000	on	off	on
C000	on	on	off
E000	on	on	on

Configuring the offset address (SW1: 1, 2, 3) (continued)

Note: Base memory address segment B000H does not support offset addresses 0000H-6000H.

Setting the ring detection threshold (JP101-JP401)

If a board has problems detecting rings, you can lower the ring detection threshold. To lower the threshold on a channel-by-channel basis, install the jumpers as follows.

Channel	Jumper
1	JP101
2	JP201
3	JP301
4	JP401

Note: A lower threshold may be too sensitive for network lines and cause false detection of rings.

Recording the IRQ level and memory address settings

Write the IRQ level and memory address settings below for use later when installing system software:

IRQ	Base	Offset	Lines/Board

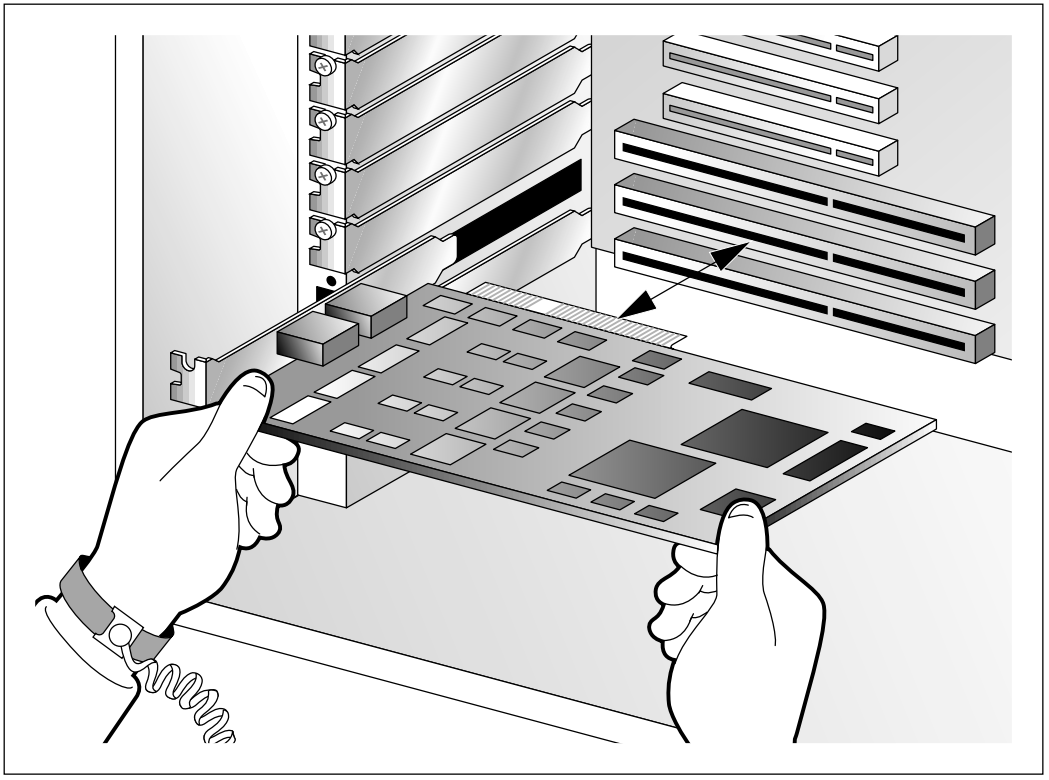
Installing the voice processor board

Introduction

This topic explains how to insert either the DIALOG/4 or the D/41D board into the computer. Before you begin, ensure that your work area is free from static electricity.

Diagram

The following illustration shows how to insert the voice processor board into an ISA expansion bus slot.



G100632

Procedure

To physically install the voice processor board in the computer, do the following.

Step	Action
1	Prepare a static-safe workstation, turn off all power to the system, and disconnect the system's power cords from electrical outlets.
2	Remove the PC cover.
3	Select an empty ISA expansion bus slot, and remove the slot's retaining screw and access coverplate.
4	Insert the board's edge connector into the bus slot.
5	Replace and tighten the retaining screw.
6	Replace the PC cover when finished.

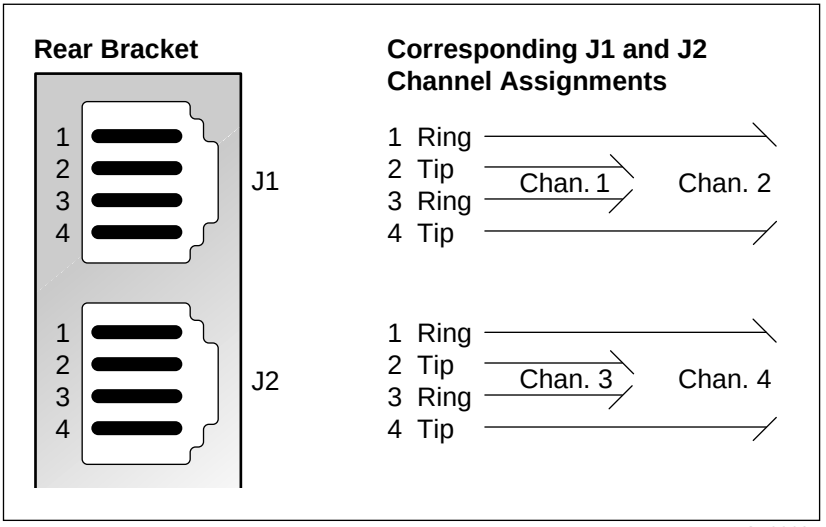
Connecting the voice processor board to the switch

Introduction

This topic describes how to connect either the DIALOG/4 or D/41D voice processor board to a telephone line. Up to four telephone lines are supported by the board.

Pin assignments

The following diagram shows channel pin assignments for telephone line connections.



Guidelines

The board supports two channels per board jack. Use RJ-14 connectors and cables to access both channels. If you use RJ-11 instead of RJ-14 connectors and cables, only the jack's inner channel can be accessed.

Connect one end of a phone cable into the board jack and the other end into a wall jack. One phone cable is required for each jack.

Note: A standard telephone will not function when directly attached to the board jack.

Installing the copy protection device

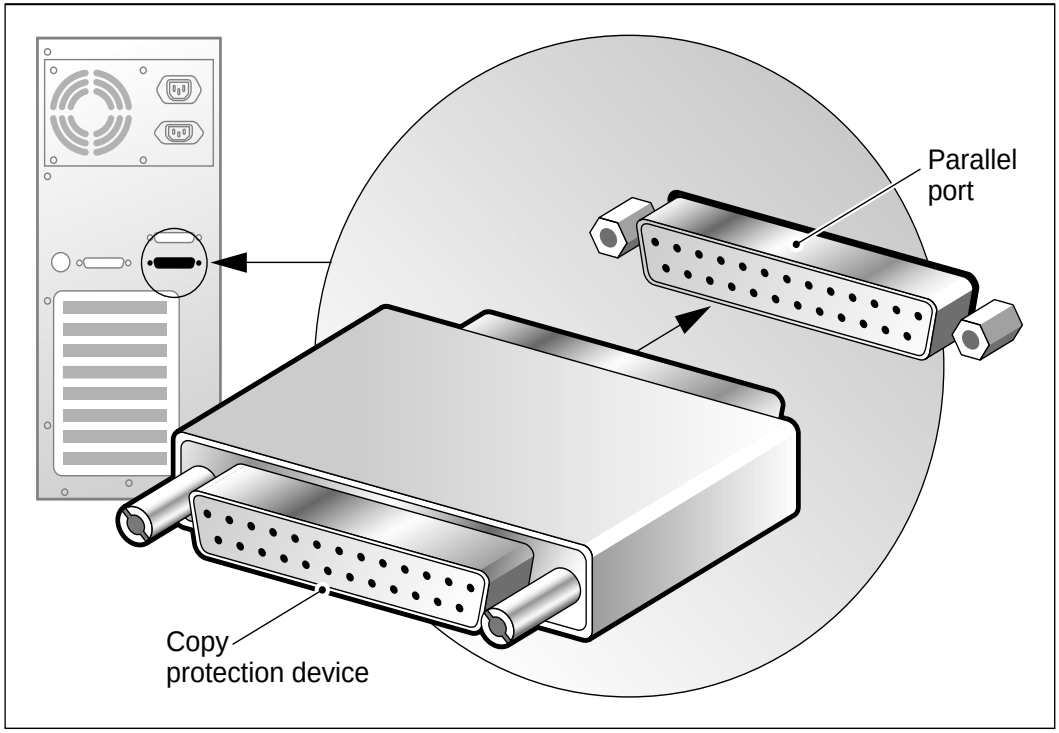
Introduction

The copy protection device prevents others from copying the Net Gateway software through the parallel port.

Diagram

The following illustration shows how to connect the copy protection device to the parallel port on the computer. The parallel port may be labeled on the back of your computer as LPT1 or printer port.

Once connected, you may connect a printer to the copy protection device.



G100633

Procedure

To install the copy protection device, do the following.

Step	Action
1	With the system turned off, connect the copy protection device to the parallel port on the back of the computer.
2	Connect a printer cable to the copy protection device. ***Note:*** This step is optional.
3	Power up the Net Gateway PC. ***Note:*** Windows NT detects the copy protection device during initial power on self test. If you install the copy protection device while the system is running, Windows NT will not recognize it.

Section C: Installing Net Gateway software

In this section

Overview of this section

Introduction

This section explains how to install the Net Gateway software on your system. It also provides some minimal information about installing Entrust/Lite Manager and Entrust/Lite Client software if encryption will be used in your Net Gateway network.

After the Net Gateway software is installed, you must perform a verification test to ensure that Net Gateway is operational.

Entrust software

The Entrust software can only be used to secure messages sent between Net Gateway systems. Entrust cannot secure messages sent between Net Gateway and Norstar Voice Mail or VPIM-compatible systems.

The Entrust software consists of two packages: Entrust/Lite Manager and Entrust/Lite Client.

Entrust Lite/Manager is installed at network administration sites only. To install Entrust/Lite Manager, consider the following:

- You should be the network system administrator.
- The Entrust/Lite Manager may be installed in a Windows NT File System (NTFS) partition for maximum security, but can be installed in a File Allocation Table (FAT) partition if required.

Entrust/Lite Client is installed at all network nodes of an encrypted network (including network administration sites).

Net Gateway

Net Gateway software installation includes the following tasks:

- installing the base software (provided on CD-ROM)
- installing and configuring the voice processor board drivers
- configuring country-specific settings for the voice processor card

Verification test

The verification test is done by running the Universal Dialogic Diagnostic utility which tests the voice processor board.

After testing the voice processor board, you need to set the Dialogic services so that they will start automatically on restarting the system.

Installing the optional Entrust software

Introduction

This section provides information about installing the optional Entrust/Lite Manager and Entrust/Lite Client software. If your network will not be using encryption, you may skip this section and proceed to installing the Net Gateway software.

Why this software is used

When voice mail messages are sent from one Net Gateway system to another, they are encrypted as a security precaution. When the messages reach the destination system, they are decrypted by the receiving system so that voice mail recipients can listen to them.

Encryption and decryption are done by using two types of keys: private keys and public keys. Entrust/Lite Manager is used to administer these keys (which are also known as *certificates*).

Private keys

A private key is a certificate that is created for a specific site. Each site uses its own private key to decrypt Net Gateway messages.

Public keys

A public key file contains a list of sites that are authorized to receive and decrypt voice messages from other sites in the network. This file contains the public key for these sites and may be referred to as a public address book.

Limitations

The Entrust software can only be used to secure messages sent between Net Gateway systems.

Even though Meridian Mail Net Gateway can support up to 500 sites in the network, Entrust cannot secure messages between Meridian Mail Net Gateway systems when there are more than 200 of them. (This implies that to use encryption, your network may have up to 200 Meridian Mail Net Gateway systems and up to 300 Norstar Voice Mail or VPIM systems.)

Limitations (continued)

The Entrust software cannot secure messages sent between Net Gateway and Norstar Voice Mail or VPIM-compatible systems.

You must purchase the Entrust software separately from the Meridian Mail Net Gateway system.

Installing the Entrust software

If you have encryption enabled, you must install the Entrust software on the Net Gateway system.

Administration sites

Install the Entrust/Lite Manager software on the Net Gateway system according to the instructions in the *Entrust/Lite Manager User Guide*.

Install the Entrust/Lite Client software on the Net Gateway system according to the instructions in the *Entrust/Lite Client User Guide*.

Network node sites

Install the Entrust/Lite Client software on the Net Gateway system according to the instructions in the *Entrust/Lite Client User Guide*.

Note: The Entrust software may be installed in an NTFS partition for maximum security, but can be installed in a FAT partition as well.

Making Entrust files available to Net Gateway

During installation, for network administration sites, two files are created which must be made available. They are

- ENTUSERS.PUB
- ENTUSERS.PRI

If these files cannot be accessed by the Net Gateway software, then you will not be able to install Net Gateway and enable encryption at the network administration site

Making Entrust files available to Net Gateway (continued)

.

ATTENTION

Create a backup copy of the ENTUSERS.PRI file. If the original file becomes damaged or corrupt, you can restore it with the backup copy.

About the MGRLITE.INI file

When Entrust/Lite Manager is installed at a primary or secondary network administration site, an MGRLITE.INI file is created in the default Windows directory. This file must be identical at each network administration site in the network. Therefore, once it has been installed at the first site, it should be copied to all other network administration sites.

ATTENTION

Create a backup copy of the MGRLITE.INI file. If the original file becomes damaged or corrupt, or if you must install Entrust/Lite Manager again, you can restore it with the backup copy.

Creating Entrust users

For detailed instructions on creating Entrust users, see “Setting up Entrust/Lite users” on page 4-49.

Entrust error messages

There are two error messages which Entrust may produce in the Windows NT error log. The following paragraphs describe them.

Certificate is not valid yet

Certificates cannot be used before their creation time. In other words, if the PC that is creating the certificate is not set to the same time as the PC using the profile, you will get this error message. You must wait until the certificate is valid.

Could not connect to public directory...

You may ignore this error message.

Installing the Net Gateway software

Introduction

This topic explains how to install the Net Gateway software on your system. Software installation includes the following tasks:

- installing the base software (provided on CD-ROM)
- installing and configuring the voice processor board drivers
- configuring country-specific settings for the voice processor card

Site types

Within the Net Gateway network, there are two types of sites: network administration sites, and network sites (or nodes). When installing the Net Gateway software, you are prompted for your site type.

Network administration sites

The system administrator located at a network administration site performs administration for the whole network.

Network administration sites are given the capability to configure, maintain, and download both the site information (routing table) and Entrust Public Address Book (also referred to as a *PUB file*) to other sites in the network.

If you choose to use encryption, the Entrust/Lite Manager software must be installed at these sites in order to administer users. The Entrust/Lite Client software must also be installed.

Network sites (or nodes)

The Entrust/Lite Client software is required at these sites if you enable encryption during installation.

The Entrust/Lite Manager software is not required at these sites. The network routing table will always be downloaded to the site from the network administration site, and the Entrust PUB files are downloaded to this type of site only if encryption has been enabled during installation.

System administrators at these sites perform administration for their site only.

Prerequisites

Before you install the Net Gateway software, see "Before you begin" on page 3-5, and ensure that all requirements outlined there have been fulfilled.

If your site is a network administration site and encryption is enabled, you must do the following:

- Install the Entrust/Lite Manager software before you install the Net Gateway software. This installation procedure asks you for the directory in which Entrust files are located.
- Install the Entrust/Lite Client software before you install the Net Gateway software.

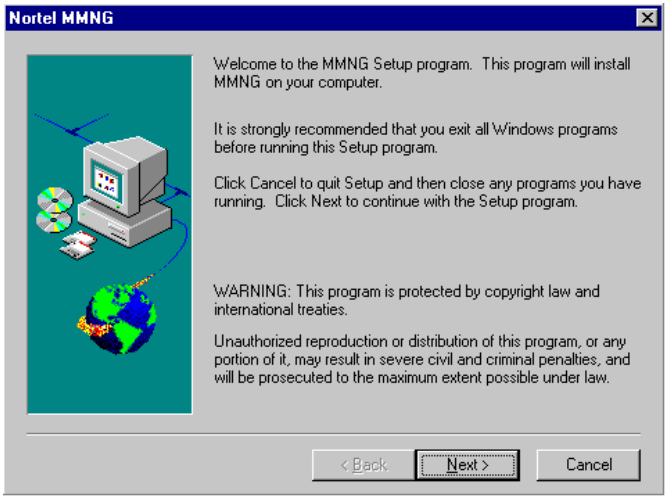
If your site is a network node with encryption enabled you must install the Entrust/Lite Client software.

Procedure

To install the Meridian Mail Net Gateway software, do the following.

Step	Action
1	Insert the Meridian Mail Net Gateway CD-ROM into the CD-ROM drive.

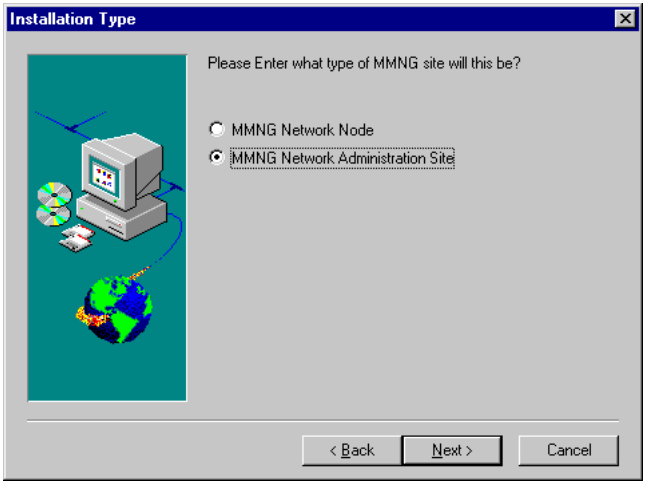
Step	Action
2	From either the command tool or the Windows NT File Explorer, start the Net Gateway Setup program SETUP.EXE. ***Result:*** The Net Gateway installation routine starts up and displays the setup opening screen.



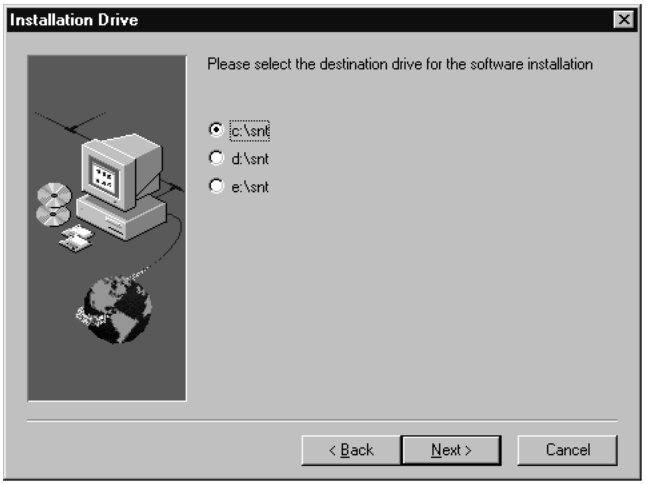
Note: If you have not installed the Streams protocol, you will see an error dialog box. You must go back and install Streams. See “Installing the Streams Environment” on page 3-40.

3 Click Next>.

Result: The Installation Type dialog box appears.

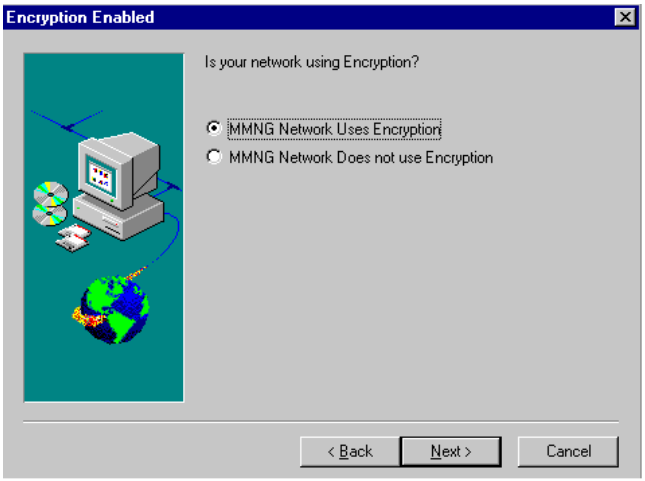


Step	Action
4	Depending upon which type of site you are installing, click either the Network Node or Network Administration Site radio button.
5	Click Next>. The Installation Drive dialog box appears.

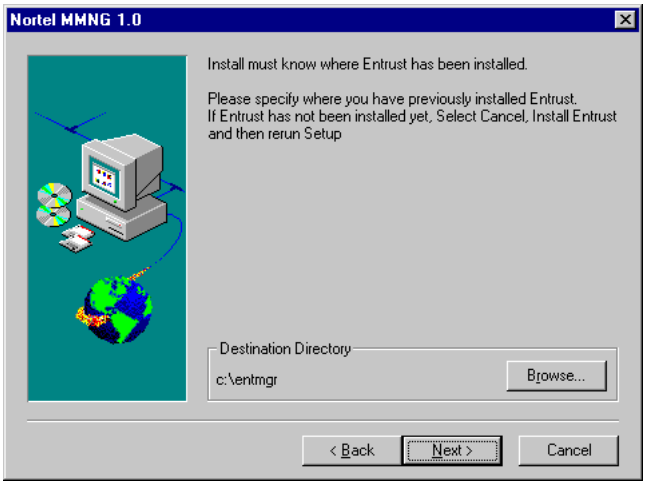


6	Click the button for the drive. ***Notes:*** a. You cannot change the directory name. b. If you do not have at least 300 Mbytes of hard drive space available on the target drive, an error dialog box appears. Click Yes to continue. (The installation will continue even if you decide not to select another drive.)

Step	Action
7	Click Next>. ***Result:*** The Encryption Enabled dialog box appears.

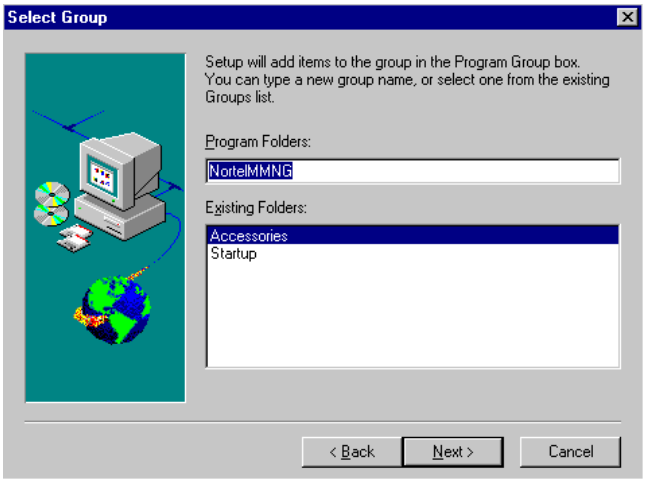


Step	Action
8	If your network will be using the Entrust security feature, click the “MMNG Network Uses Encryption” button; otherwise, click the “MMNG Network does not use Encryption” button. • If you selected “MMNG Network Uses Encryption” and you are setting up a Network Administration site, you will see the directory select dialog box as shown below. Go to step 9.

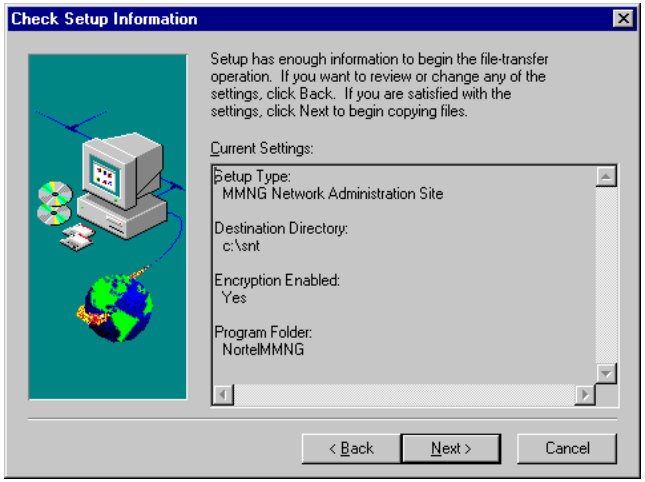


	• If you selected “MMNG Network does not use Encryption” or you are installing a network node site, go to step 10.
9	Verify that the directory shown for the Entrust/Lite Manager is correct. If it is not, click Browse to find the correct directory.

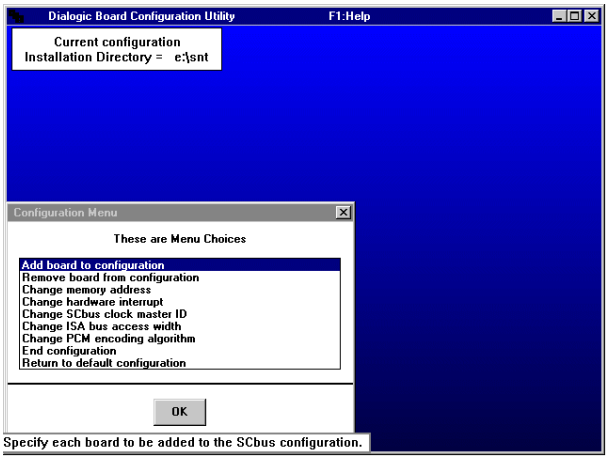
Step	Action
10	Click Next>. ***Result:*** The Select Group dialog box appears.



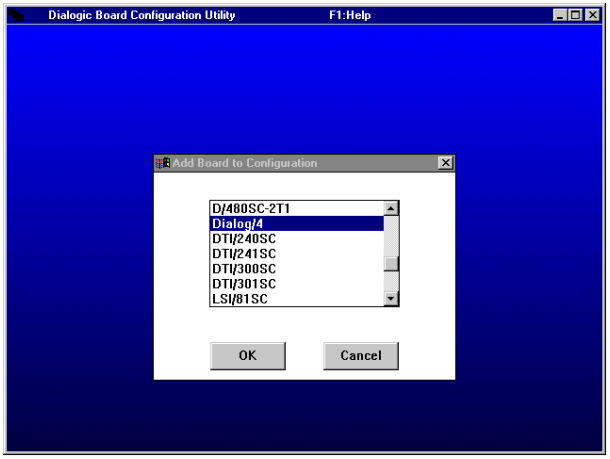
11	If you wish to assign the Net Gateway shortcuts to another folder, either select an existing folder or type a name for a new one. Otherwise, click Next> to continue. ***Result:*** The Check Setup Information dialog box appears. This displays a summary of all the options selected so far. If you need to change any of them, use the <Back button to navigate backwards through the installation.



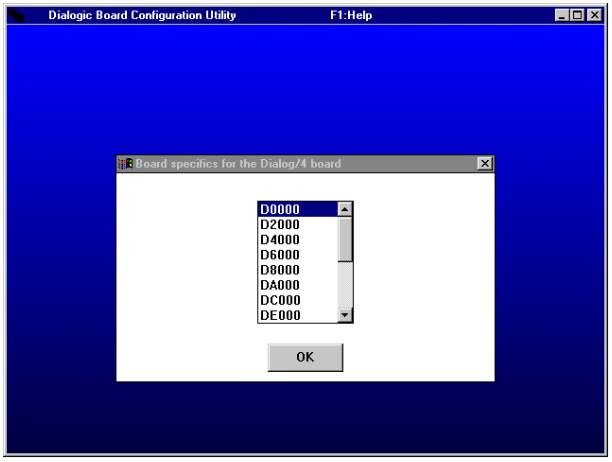
Step	Action
12	Click Next> to continue. ***Result:*** This installs the Net Gateway base software and starts the process of installing the drivers for the voice processor card. The Dialogic Board Configuration Utility starts.



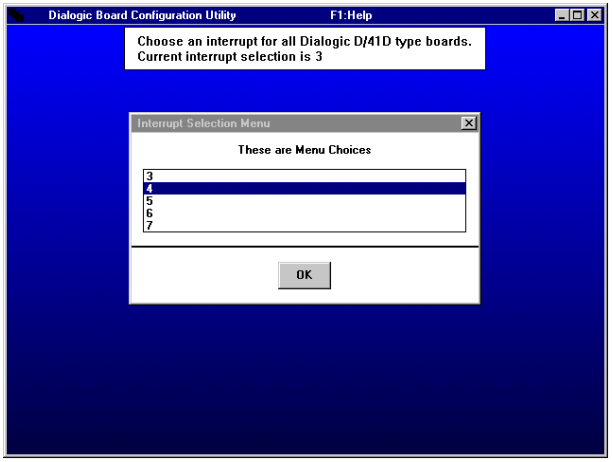
13	From the Configuration Menu of the utility, select the “Add board to configuration” option to set up your voice processor board. Click OK to continue. ***Result:*** The Add Board to Configuration list box comes up.

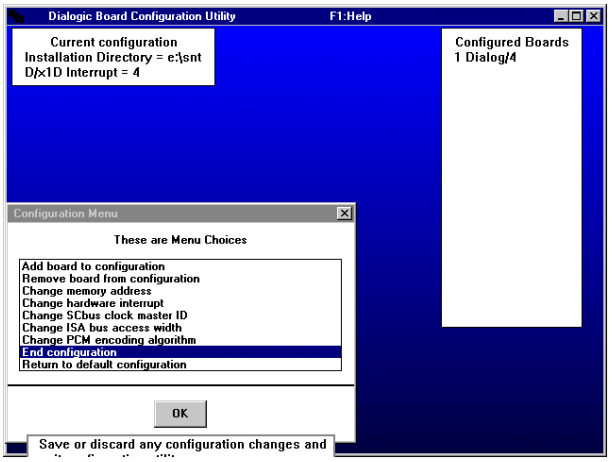
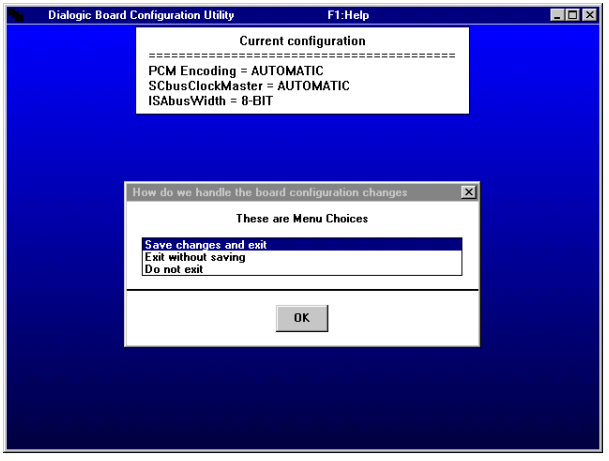


Step	Action
14	Select your voice processor card from the list. • If you are in North America, select the Dialog/4. • If you are outside North America, select the D/41D. Click OK to continue. ***Result:*** The "Board specifics" list box comes up.

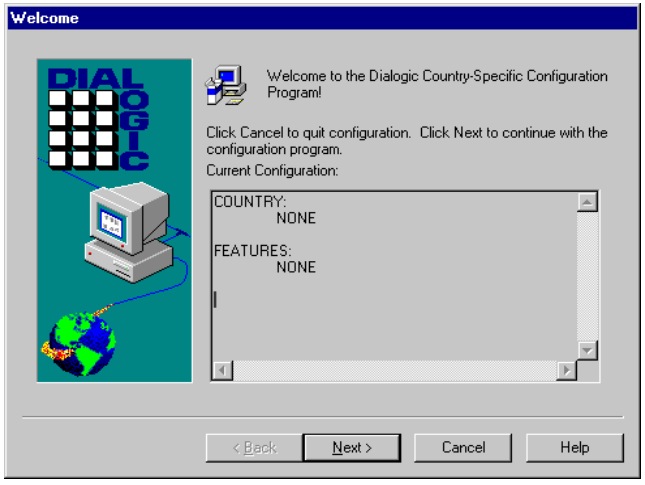


15	Select the base memory address segment for the voice processor card that you set on JP5 and JP6 when you installed the card. See "Setting the base memory address segment (JP5 and JP6)" on page 3-56 for more information on this setting. Click OK to continue. ***Result:*** The Interrupt Selection menu comes up.

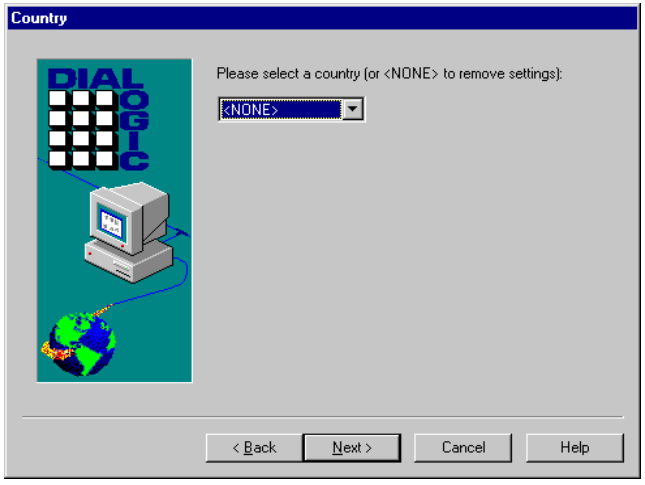


Step	Action
16	Select the interrupt value for your voice processor card that you set on JP1 when you installed the card. See “Setting the hardware interrupt level (JP1)” on page 3-57. Click OK to continue. ***Result:*** You are returned to the Dialogic Configuration Utility main window. You can see on the right-hand side that your voice processor card has been added to the configuration. 
17	Select End configuration from the Configuration menu and click OK. ***Result:*** The How do we handle the board configuration changes menu appears. 

Step	Action
18	Choose Save changes and exit from the menu. Click OK. ***Result:*** This starts the portion of the installation process where you choose settings specific to the country in which you will be using the Net Gateway system.



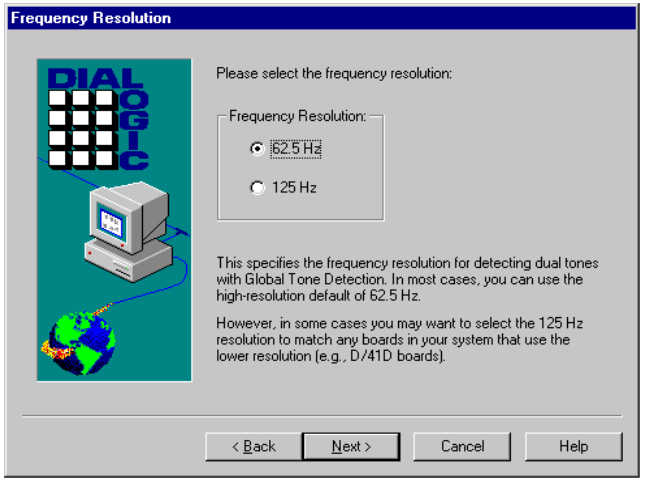
19	Click Next> to continue. ***Result:*** The Country selection dialog box appears.



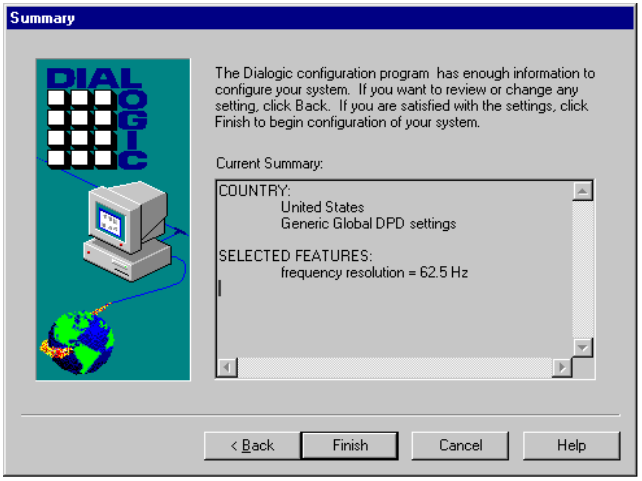
If you are

- in North America, proceed to step 20
- outside North America, go to step 23.

Step	Action
20	Select the United States from the drop-down list and click Next>. ***Result:*** The Frequency Resolution dialog box comes up.



21	You should leave the Frequency Resolution setting at 62.5 Hz, so click Next> to continue. ***Result:*** The Dialogic Summary dialog shows up that allows you to review your country-specific selections.

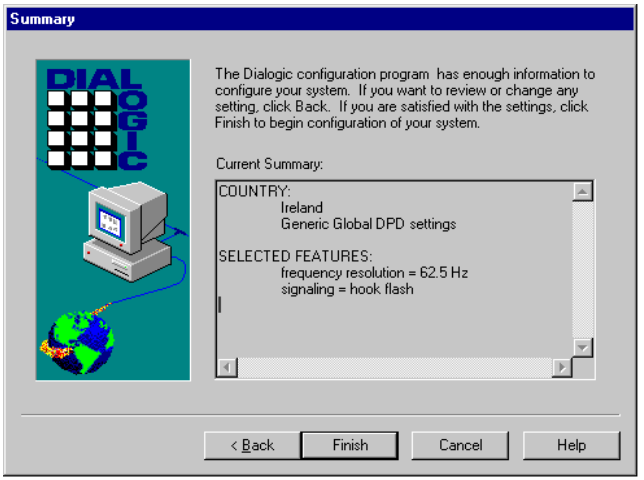


22	Go to step 24 to complete the Net Gateway installation.

Step	Action
23	From the drop-down list, choose the country where you will be operating the Net Gateway system. If your country does not appear in the list, select either NONE or an equivalent country. When you choose a country outside of North America, the setup program prompts you to select any special features available for the country. Click Next> to move through the options. The list of countries and features may change with each release, and the available features depend on the country selected and the voice processor board being used. The following are some typical examples of country-specific features: • **Signaling**: You can select the type of signaling used in the country: either Hook Flash (default) or Earth Recall signaling. Several countries (mostly European countries) employ earth-recall instead of hook-flash signaling. • **Outbound Pulse Dialing**: You can select the number of pulses per second (PPS) that will be used for pulse dialing: either 10 (default) or 20 PPS. This feature is used in some Asian countries (such as Japan and Korea), where rotary telephones use dial pulse instead of loop pulse dialing. • **GTD Dual-Tone Frequency Resolution**: You can select the frequency resolution for detecting dual tones with Global Tone Detection (GTD). In most cases, you can use the high-resolution default of 62.5 Hz. However, in some cases, you may want to select the 125 Hz resolution to match any boards in your system that use the lower. • **Receive Gain**: You can select a positive, a negative, or zero receive gain in dB. The default is 0 dB. If you are not sure about which option to choose as you go through the setup program, use the default.

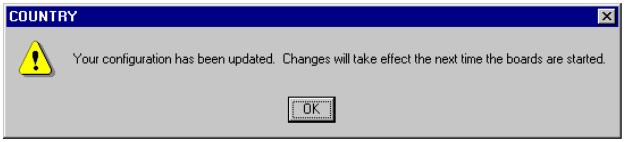
Step Action

Result: When you have completed all country-specific options, the Summary dialog box appears. This displays a summary of the country-specific options selected. If you need to change any of them, use the <Back button to navigate backwards through the installation.



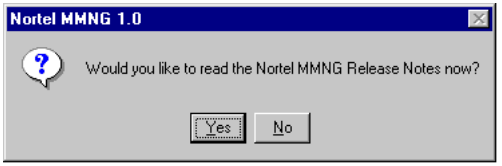
24 Click Finish to complete the country-specific setup.

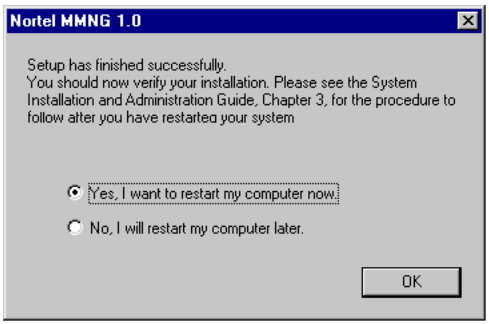
Result: The country-specific setup program warns you that your changes will only take effect when the voice processor board is restarted (in other words, when the system is restarted).



25 Click OK.

Result: The Release Notes dialog box appears.



Step	Action
26	Click Yes to review the Release Notes or No to proceed with the installation. ***Result:*** The final setup dialog appears which gives you the choice of when to restart your system.  ***Note:*** You must restart your system before the Net Gateway system will operate properly.
27	Click OK to restart your system. Proceed to “Verifying the installation” on page 3-87 to check that the installation was successful.

Verifying the installation

Introduction

This topic explains how to verify that the installation was successful. This is done by starting the Universal Dialogic Diagnostic utility, which verifies that the voice processor board has been correctly installed and configured. The utility may take up to 30 minutes to run.

Once you have completed this procedure, you will need to set the start-up mode for the Net Gateway system to automatic. See "Setting service start-up mode" on page 3-90.

When to verify installation

Both procedures in this topic are performed only when doing a brand new installation. You do not need to perform them for a software reinstallation.

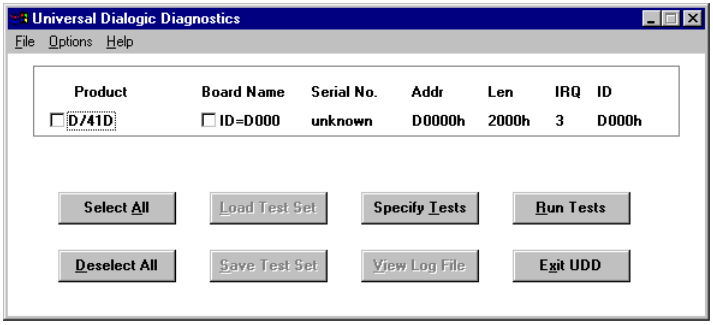
Note: Restart your system before you begin.

Running the Universal Dialogic Diagnostic utility

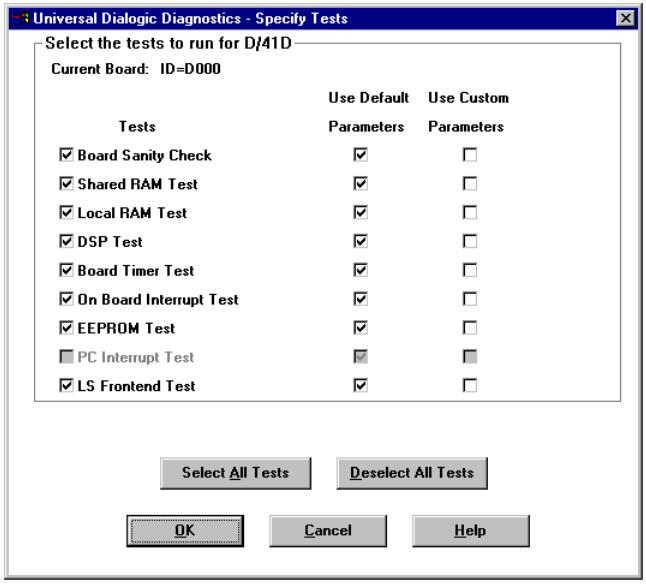
To verify the installation, do the following.

Step	Action
1	On the Windows NT task bar, click Start.
2	Click Programs.
3	Click Nortel MMNG.
4	Click Universal Dialogic Diagnostic utility.

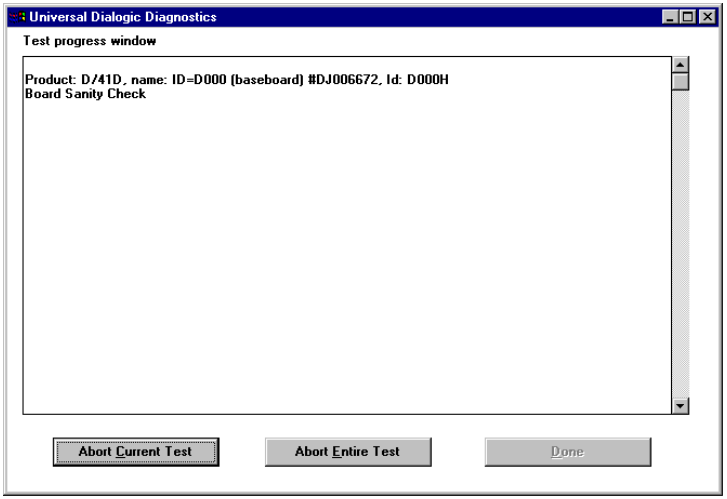
Step	Action
5	Click Continue ***Result:*** After the utility initializes, the Universal Dialogic Diagnostics utility main window appears.



Step	Action
6	Click in the Product checkbox. ***Result:*** The utility immediately brings up the Specify test dialog box which allows you to choose the test you are going to run on the voice processor board. You should select all tests.



Step	Action
7	Click OK ***Result:*** The utility performs the test on the voice processor card. This can take up to 30 minutes. While the tests are running, the utility displays the Test progress window.

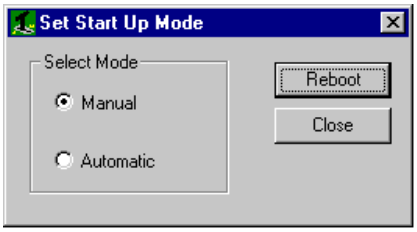


8	Once the tests have concluded, click Done to close the Test progress window. If any test failed, you should review your voice processor card installation and see “Possible causes for failure” on page 3-91.
9	Click Exit UUD to quit the utility. ***Result:*** The utility warns you that the voice processor card services have been stopped to perform the tests.

10	Click OK. After running the diagnostic, you must set the startup mode for the services. See “Setting service start-up mode” on page 3-90.

Setting service start-up mode

Follow these steps to set the start up mode for the voice processor related services.

Step	Action
1	On the Windows NT task bar, click Start.
2	Click Programs.
3	Click Nortel MMNG.
4	Click Set Start Up Mode ***Result:*** The Set Start Up Mode dialog box appears in “Manual” mode. 
5	Click Automatic.
6	Click Reboot. ***Result:*** The system reboots and starts the following Net Gateway Windows NT services: • Dialogic • Nortel MMNG Transfer Agent (MTA) • Nortel MMNG SMTP • Nortel MMNG Enterprise Networking Agent (ENA)

Step	Action

7	Do the following.
	a. Check the Windows NT Event Viewer System Log to verify that the Dialogic service started successfully.
	The following message should be present:
	`c:\snt\dialogic\bin\voxctl: started board: dxxxB1`
	b. Check the Application Log to verify that the other services started successfully.
	The following messages should be present:
	`The Nortel MMNG MTA has started successfully`
	`MAIN: SMTP service ready`
	`SLEE Process Started`
	If any messages are not present, see Chapter 6, "Maintenance and troubleshooting" for possible causes. For more information on the Windows NT Event Viewer, see "Using the Windows NT Event Viewer" on page 6-5.

Possible causes for failure

If the Dialogic Service did not start successfully, possible causes are

- bad interrupt setting (incorrect jumper setting)
- incorrect memory address (incorrect jumper setting)
- conflicting IRQ number
- devices not disabled where there are one or more conflicting IRQ numbers (for example, if you have not disabled COM2, which is usually assigned to IRQ 3, and this conflicts with the default IRQ setting on the voice processor board)

Verify all settings, then repeat the procedures described above.

Uninstalling Meridian Mail Net Gateway

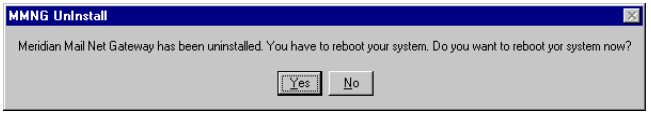
Introduction

If you need to remove the Meridian Mail Net Gateway software from your system, you must follow the procedure described in this section.

Procedure

To remove the Net Gateway software from your system, follow these steps.

Step	Action
1	On the Windows NT task bar, click Start.
2	Click Programs.
3	Click Nortel MMNG.
4	Click Uninstall MMNG. ***Result:*** The uninstallation program starts and displays the Uninstall MMNG dialog box.

Step	Action
5	Click Proceed with Uninstall. ***Result:*** Uninstall MMNG warns you to close all other running applications before continuing. 
6	Click OK. ***Result:*** The Uninstall MMNG program proceeds to • delete all Net Gateway software • delete registry entries containing Routing Table information When it is finished, you are prompted to reboot your system. 
7	Click Yes to restart your system.

Upgrading Meridian Mail Net Gateway software

Introduction

This section describes the process for upgrading your Net Gateway software.

This process is very similar to the installation process described in “Installing the Net Gateway software” on page 3-72.

The upgrade process will recognize your existing setting for the voice processor card and country-specific parameters. You only need to change these settings if you are using a new voice processor or have changed the country the Net Gateway system is operating in.

Your existing Routing Table is also left intact.

When to perform this procedure

You should perform this procedure when

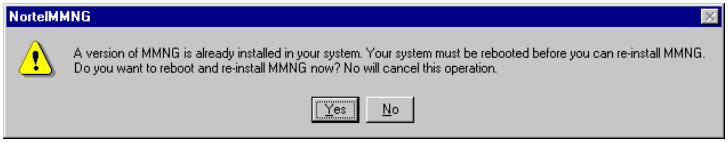
- you receive an upgrade package from Nortel
- you wish to reinstall your Net Gateway software without performing a full uninstall (for example, if you suspect your software has become corrupted)
- you are changing a site from a network node to a network administration site
- adding encryption to your network

  In this case, all Net Gateway systems in the network must have encryption enabled.
- you suspect there is a problem with the Net Gateway software

Procedure

To upgrade your software, follow these steps.

Step	Action
1	Insert the Meridian Mail Net Gateway CD-ROM into the CD-ROM drive.

Step	Action
2	From either the command tool or the Windows NT File Explorer, start the Net Gateway Setup program SETUP.EXE. ***Result:*** The setup program shows you a dialog box. 
3	Perform steps 3 to 11 from “Installing the Net Gateway software” on page 3-72. ***Note:*** When rebooting your system, the Setup program starts automatically.
4	When the installation routine comes to the section for installing the voice processor card software, you may select End Configuration and click OK to skip configuring your card if the information shown is correct. If you wish to revise your voice processor card setting, follow steps 12 to 17 from “Installing the Net Gateway software” on page 3-72.
5	When the installation routine comes to the section for setting country-specific parameters, you may select Cancel to skip country configuration. If you wish to change the country settings, follow steps 18 to 24 from “Installing the Net Gateway software” on page 3-72.
6	Complete steps 25 to 27 from “Installing the Net Gateway software” on page 3-72.
7	Run the procedure to set the Startup Mode. For instructions, see “Setting service start-up mode” on page 3-90.

Chapter 4

Configuring Net Gateway

In this chapter

Overview of this chapter

Introduction

This chapter explains how to configure Net Gateway for operation in your network.

Section A: Getting started

This section provides some introductory information about the Net Gateway:

- administration interface
- online help

It also describes how the Net Gateway system can be used to administer the network.

Section B: Configuring the routing table

This section provides instructions for defining sites, locations, and dialing plan information in the Net Gateway routing table.

It also provides instructions for creating site user profiles (certificates) in the Entrust/Lite Manager security administration software.

Section C: Local administration

This section explains how to do the following:

- Define the addresses of two network administration sites.
- Define the SMTP proxy server address.
- Request a download of your site's Entrust user certificate from a network administration site.
- Request a download of the routing table and Entrust public address book from a network administration site.
- Define the Meridian Mail Enterprise Networking DN.
- Enable or disable Net Gateway voice ports.
- Maintain a list of site IDs that have been defined in the local Meridian Mail system.

Section A: Getting started

In this section

Overview of this section

Introduction

This section provides some introductory information about working with Net Gateway.

Administering the network

The Net Gateway network can be set up and administered in one of three ways:

- If a Meridian Mail network already exists, and there are fewer than 150 sites, the existing network database configuration can be used. The DN used to call the Net Gateway system is entered as the connection DN for each site.
- If a Meridian Mail network already exists, and there are more than 150 sites, the existing network database configuration can be used, with the addition of one site that is configured as the overflow site.
- If a new Net Gateway network is being created, the entire network can be administered centrally at one site (known as the primary network administration site). One site is defined in each Meridian Mail system as the overflow site.

In the first two options, the Net Gateway system can be configured so that its presence is not noticed. This requires that the central Net Gateway network administrator faithfully reproduces the configuration of each Meridian Mail system in the global Net Gateway database.

Administrative interface

Administration tasks are all performed from a graphical user interface (GUI) application that is installed with the Meridian Mail Net Gateway software.

Setting up your Meridian Mail Net Gateway network

When getting your Net Gateway network up and running, it is important to perform the procedures in this chapter in the order described in this section.

Online help

The Meridian Mail Net Gateway uses the standard Windows NT 4.0 Help system.

This features context-sensitive “What’s This?” help, overview topics for each property sheet and dialog box, and general help topics.

Introduction to network administration

Introduction

This section provides a general introduction to site administration. It also briefly describes the administration interface for Meridian Mail Net Gateway.

Types of sites

The Net Gateway can be installed as one of two types of sites: network administration sites and network sites.

Network administration sites

In a Net Gateway network, there is a primary network administration site and an optional backup site, which is referred to as a secondary network administration site. At these sites, the administrator can set up global network data through the Routing Table (see “Configuring the routing table” on page 4-19).

The primary and secondary network administration sites have the same privileges, but a remote site queries the primary site for routing table data before it queries the secondary site. In this way, the network administration capabilities are always available, even if one of the network administration sites is down.

Administration sites can send routing table data to Net Gateway network sites only.You can also perform local administration tasks from an administration site (see “Local administration” on page 4-53).

Network sites (nodes)

Network sites are the regular Meridian Mail sites in the network. You cannot alter data related to the configuration of the rest of the network (routing table data) from a network site. Most of the sites in a Net Gateway network are of this type.

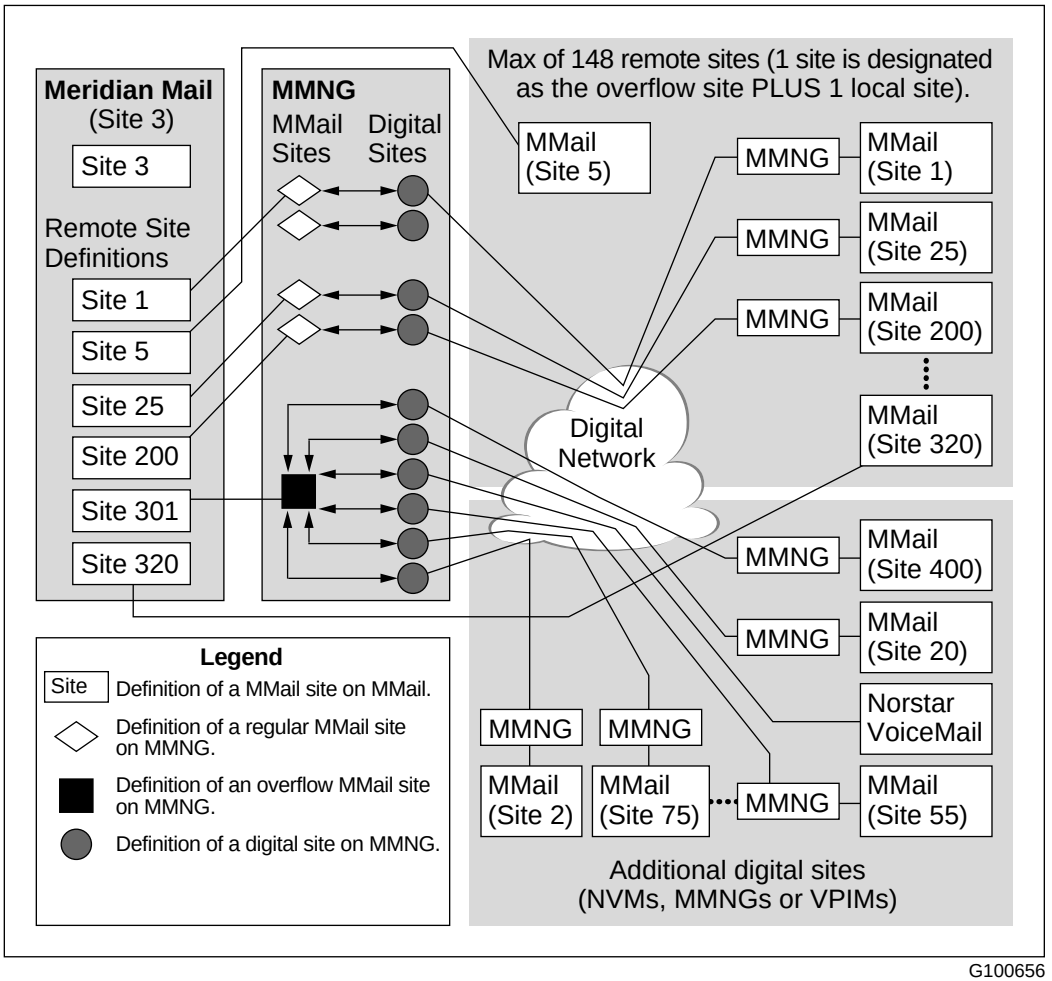
Types of sites (continued)

Network sites can request that routing table data be downloaded from an administration site. You can also perform local administration tasks from a network site (see “Local administration” on page 4-53).

Networking up to 500 sites

Up to 500 networking sites can be defined in the Net Gateway network by defining an overflow site in each Meridian Mail system. The overflow site contains a unique prefix and uses the “none” dialing plan.

When messages addressed with the overflow site prefix are received by Net Gateway, Net Gateway applies the translation required for mapping the sender and recipients in the original message to Internet addresses. As shown in the following figure, the overflow site (Site 301) can map to many remote digital sites (the circles). Consequently, a recipient addressed at the overflow site may actually exist on any one of many different digital sites.


Meridian Mail
(Site 3)
Site 3
Remote Site Definitions
Site 1
Site 5
Site 25
Site 200
Site 301
Site 320
MMNG
MMail Sites
Digital Sites
Max of 148 remote sites (1 site is designated as the overflow site PLUS 1 local site).
MMail (Site 5)
Digital Network
MMNG
MMail (Site 1)
MMail (Site 25)
MMail (Site 200)
MMail (Site 320)
MMail (Site 400)
MMail (Site 20)
Norstar VoiceMail
MMail (Site 55)
MMail (Site 2)
MMail (Site 75)
Additional digital sites
(NVMs, MMNGs or VPIMs)
Legend
Site
Definition of a MMail site on MMail.
Definition of a regular MMail site on MMNG.
Definition of an overflow MMail site on MMNG.
Definition of a digital site on MMNG.

G100656

Administration methods

The Net Gateway network can be set up and administered in one of three ways:

- ***Method 1*** If a Meridian Mail network already exists, and there are fewer than 150 sites, the existing network database configuration can be used. The DN used to call the Net Gateway system is entered as the connection DN for each site.
- ***Method 2*** If a Meridian Mail network already exists, and there are more than 150 sites, the existing network database configuration can be used (as described in Method 1), with the addition of one site that is configured as the overflow site.
- ***Method 3*** If a new Net Gateway network is being created, the entire network can be administered centrally at one site (known as the primary network administration site). One site is defined in each Meridian Mail system as the overflow site.

In Methods 1 and 2, the Net Gateway system can be configured so that its presence is not noticed. This requires that the central Net Gateway administrator faithfully reproduces the configuration of each Meridian Mail system in the global Net Gateway database.

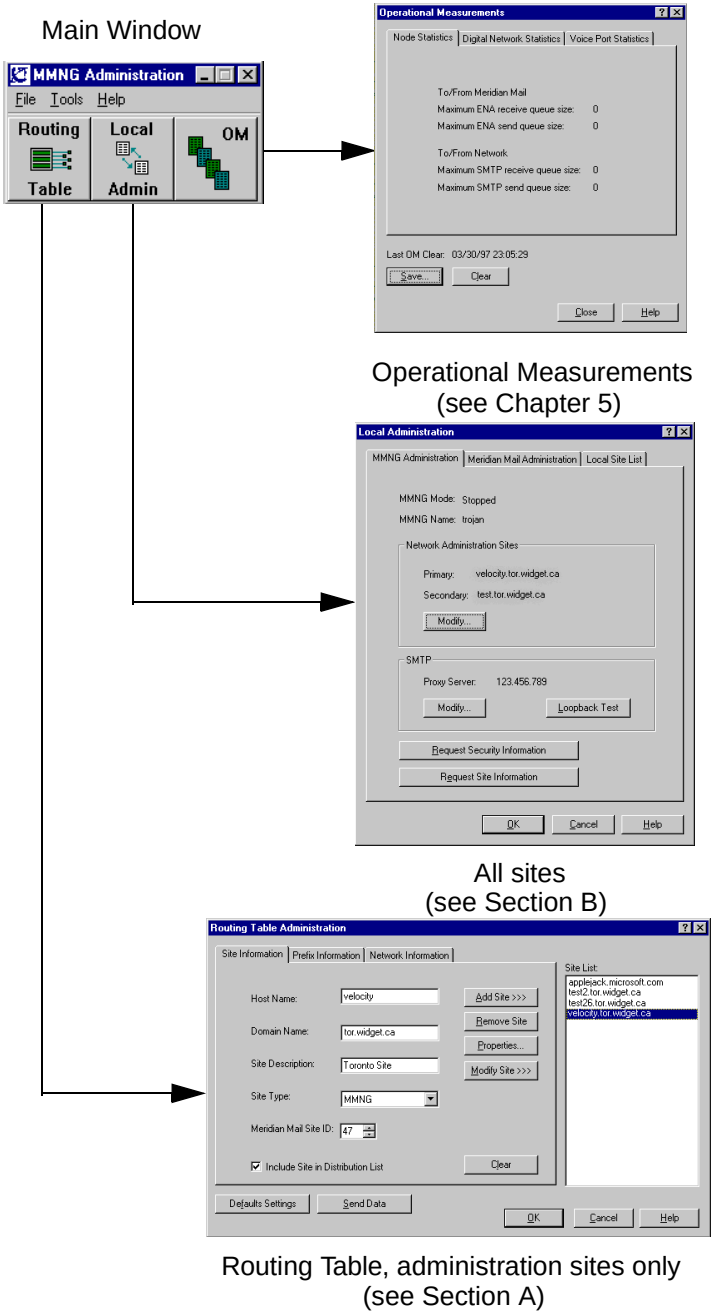
These methods mean that end users are not impacted and continue to address users in the same fashion as before Net Gateway was introduced.

By using Method 2, you can control how you want your Net Gateway network to operate. The downside is that if a problem results due to improper configuration, tracking the cause may be difficult to find.

In Method 3, all network messages are addressed with the overflow site prefix and the recipient's address. Meridian Mail networking passes each message to the Net Gateway system. Net Gateway then resolves the address and sends the message to the proper destination.

Administration interface

Administration tasks are all performed from a graphical user interface (GUI) application that is installed with the Meridian Mail Net Gateway software. The following diagram shows how the major parts of the interface are accessed from the main window.


Main Window
MMNG Administration
File Tools Help
Routing Table
Local Admin
OM
Operational Measurements
Node Statistics
Digital Network Statistics
Voice Port Statistics
To/From Meridian Mail
Maximum ENA receive queue size: 0
Maximum ENA send queue size: 0
To/From Network
Maximum SMTP receive queue size: 0
Maximum SMTP send queue size: 0
Last OM Clear: 03/30/97 23:05:29
Save...
Clear
Close
Help
Operational Measurements
(see Chapter 5)
Local Administration
MMNG Administration
Meridian Mail Administration
Local Site List
MMNG Mode: Stopped
MMNG Name: trojan
Network Administration Sites
Primary: velocity.tor.widget.ca
Secondary: test.tor.widget.ca
Modify...
SMTP
Proxy Server: 123.456.789
Modify...
Loopback Test
Request Security Information
Request Site Information
OK
Cancel
Help
All sites
(see Section B)
Routing Table Administration
Site Information
Prefix Information
Network Information
Host Name: velocity
Domain Name: tor.widget.ca
Site Description: Toronto Site
Site Type: MMNG
Meridian Mail Site ID: 47
Include Site in Distribution List
Add Site >>>
Remove Site
Properties...
Modify Site >>>
Clear
Site List:
applejack.microsoft.com
test2.tor.widget.ca
test26.tor.widget.ca
velocity.tor.widget.ca
Defaults Settings
Send Data
OK
Cancel
Help
Routing Table, administration sites only
(see Section A)

Setting up your Meridian Mail Net Gateway network

Introduction

This section provides important information on getting your Net Gateway network up and running. It describes the sequence in which the procedures in the following sections should be performed when you are first setting up a network of Net Gateway systems.

Example with Entrust option disabled

This section describes the process of setting up a simple Net Gateway network without Entrust security.

Setting up a three-node network

The following table describes the stage of setting up a three-node Net Gateway network without the Entrust security option.

Stage	Action	Procedure
1	Install primary node as the Administration site.	Chapter 3, “Installing Net Gateway hardware and software”
2	Add information for the administration site and Nodes 1 and 2 to Routing Table.	“Adding, changing, and deleting sites” on page 4-28, “Adding, changing, and deleting locations at sites” on page 4-34, “Adding, changing, and deleting network prefix information for locations” on page 4-39
3	Install Nodes 1 and 2.	Chapter 3, “Installing Net Gateway hardware and software”
4	At Node 1, enter the name for the administration site.	“Defining the administration sites” on page 4-62
5	At Node 1, request site information from the administration site.	“Requesting site administration data” on page 4-69
6	At Node 2, repeat steps 4 and 5.	

Example with Entrust option disabled (continued)

Adding another node

This table shows the steps to be followed if you were to add another node (Node 3) to the network described in the example above.

Stage	Action	Procedure
1	Add information for Node 3 to Routing Table at the primary administration site.	"Adding, changing, and deleting sites" on page 4-28, "Adding, changing, and deleting locations at sites" on page 4-34, "Adding, changing, and deleting network prefix information for locations" on page 4-39
2	Install Node 3.	Chapter 3, "Installing Net Gateway hardware and software"
3	At Node 3, enter the name of the primary administration site.	"Defining the administration sites" on page 4-62
4	At Node 3, request site information from the primary administration site.	"Requesting site administration data" on page 4-69
5	At the primary administration site, send out Routing Table Data to all sites so that Nodes 1 and 2 can recognize Node 3. Node 3 receives the Routing Table.	"Sending Routing Table data to other Net Gateway sites" on page 4-42

Example with Entrust option enabled

This section describes the process of setting up a simple Net Gateway network with Entrust security.

Setting up a three-node network

The following table describes the steps for setting up a three-node Net Gateway network with the Entrust security option.

Stage	Action	Procedure
1	Install primary node as the administration site, and install Entrust/ Lite Manager and Client software.	Chapter 3, “Installing Net Gateway hardware and software”
2	At the primary administration site, create an Entrust user for the primary administration site.	“Setting up Entrust/Lite users” on page 4-49
3	At the administration site (primary node), request security data.	“Requesting security information” on page 4-65
4	Add information for the administration site and Nodes 1 and 2 to Routing Table.	“Adding, changing, and deleting sites” on page 4-28, “Adding, changing, and deleting locations at sites” on page 4-34, “Adding, changing, and deleting network prefix information for locations” on page 4-39
5	At the primary administration site, create Entrust users for Nodes 1 and 2.	“Setting up Entrust/Lite users” on page 4-49
6	Install Nodes 1 and 2 (including Entrust Client software).	Chapter 3, “Installing Net Gateway hardware and software”
7	Primary Administration site administrator: Provide Entrust password to the administrator at Node 1.	
8	At Node 1, enter the name for the administration site.	“Defining the administration sites” on page 4-62
9	At Node 1, request security information from the administration site.	“Requesting security information” on page 4-65 **Note:** The site information is automatically downloaded after the security information is received.
10	At Node 2, repeat steps 7 to 9.	

Example with Entrust option enabled (continued)

Adding another node with Entrust

This table shows the steps to be followed if you were to add another node (Node 3) to the network described in the example above.

Stage	Action	Procedure
1	Add information for Node 3 to the Routing Table at the primary administration site.	"Adding, changing, and deleting sites" on page 4-28, "Adding, changing, and deleting locations at sites" on page 4-34, "Adding, changing, and deleting network prefix information for locations" on page 4-39
2	Primary administration site administrator: Create an Entrust user for Node 3.	"Setting up Entrust/Lite users" on page 4-49
3	At the primary administration site, request site information.	"Requesting site administration data" on page 4-69
4	Install Node 3 (including Entrust Client software).	Chapter 3, "Installing Net Gateway hardware and software"
5	At Node 3, enter the name of the primary administration site.	"Defining the administration sites" on page 4-62
6	Primary administration site administrator: Provide Entrust password to administrator at Node 3.	
7	At Node 3, request security data.	"Requesting security information" on page 4-65 **Note:** The site information is automatically downloaded after the security information is received.
8	Primary administration site administrator: send out Routing Table Data to all sites so that Nodes 1 and 2 can recognize Node 3.	"Sending Routing Table data to other Net Gateway sites" on page 4-42

Getting help

Introduction

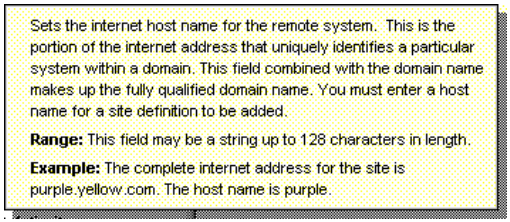
The Meridian Mail Net Gateway uses the standard Windows NT 4.0 Help system.

This features context-sensitive “What’s This?” help, overview topics for each property sheet and dialog box, and General help topics. Each of these is explained in the next sections.

Using “What’s This?” help

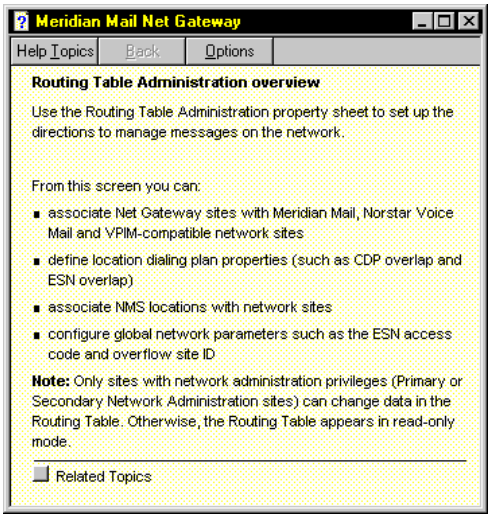
From any property page or dialog box in Net Gateway, you can get context-sensitive help (called “What’s This?” help in Windows NT 4.0). This can provide important information to you in brief popups while you are performing administration tasks.

Follow these steps.

Step	Action
1	Click the question mark button in the upper right-hand corner of a dialog box or property page. ***Result:*** The cursor changes to show a question mark like this: 
2	Click on a box or button in the Net Gateway interface. ***Result:*** A pop-up topic is displayed providing help for the box or button. This is an example. 
3	Click anywhere to close the pop-up window.

Viewing overview topics

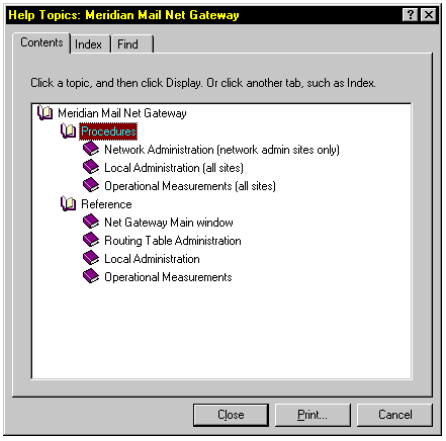
To get to overview help for property sheets and dialog boxes, follow these steps.

Step	Action
1	Click the help button found in the lower right-hand corner of property sheets and dialog boxes. ***Result:*** The system displays a window showing an overview topic describing the property sheet or dialog box.  Use the Related Topics button to get more descriptions and procedures.
2	Click the  button in the upper right-hand corner of the property page to close the help topic.

Accessing a list of help topics

To access a list of all help topics and to search the help file, follow these steps.

Step	Action
1	From the Main Window, select Help, then Help Topics. or Click the Help Topics button in any overview topic. ***Result:*** The Help Topics property sheet appears.



From this property sheet, you can do the following:

- View help topics in a table of content view.
- Search the help index.
- Search for keywords in the help file.

2	Click Close to close the Help Topic window.

Section B: Configuring the routing table

In this section

Overview of this section

Introduction

This section provides instructions for defining sites, locations, and dialing plan information in the Net Gateway routing table.

It also provides instructions for creating site user profiles in the Entrust/Lite Manager security administration software.

Gathering information

The local administrator at each site in the network is required to answer certain questions in order to provide information for the network administrator to enter into the Net Gateway routing table. Information is required for the following:

- host name, and domain name of the Net Gateway server
- type of voice mail system being used
- dialing plan used on the switch
- site number

Default values

Net Gateway provides a dialog box for defining default values for sites and locations. When adding a large number of sites with similar information (such as the same Domain Name or Site Type), the default values save time when entering site information.

Site maintenance

The Site Information property page of the Routing Table Administration property sheet is where you add sites to, change, and delete sites from the network.

Location and CDP/ ESN overlap maintenance

The Site Properties dialog box (accessed from the Site Information property page of the Routing Table Administration property sheet) is where you add, change, and delete locations from network sites.

You also use this dialog box to define CDP Overlap and ESN Overlap for a location.

Network prefix information

Network prefixes are added and removed from a site location by using the Prefix Information property page of the Routing Table Administration property sheet.

Updating sites with new information

Once you, as network administrator, have completed entering all the data in the Routing Table, you can distribute this information to all other Net Gateway systems in the network.

Entrust users

Each Net Gateway site in the network is considered to be one user in the Entrust/Lite Manager software. The site's host name is used to identify each user within the Entrust private and public key files.

The password assigned by Entrust to the user is used by the site when requesting security information from Net Gateway.

Gathering information

Introduction

This section explains what information needs to be gathered to perform the network administration tasks, and presents a form for local sites to complete to provide the data.

Network, voice mail, and switch data

The local administrator at each site in the network is required to answer certain questions in order to provide information for the network administrator to enter into the Net Gateway routing table. The following information is required:

- host name and domain name of the Net Gateway server
- type of voice mail system being used
  Is the remote system another Net Gateway system, a Meridian Mail system using other networking techniques, a Norstar Voice Mail system, or a VPIM-compatible system?
- dialing plan used on the switch
  If the system is another Net Gateway system, does the switch use CDP, ESN, both, or no dialing plan? If using CDP, ESN or both, what are the values for the overlap with local extensions? If using no dialing plan, how is the site uniquely addressed?

Net Gateway Site worksheet

If you are performing central administration on a Net Gateway network, copy the form on the next page and distribute it to all the sites in your network, along with the explanations of what information to fill in. When the form has been completed and returned, you will have the information that must be entered into the Routing Table as described in the rest of this section.

Meridian Mail Net Gateway Site Worksheet	
Host Name _____ Domain Name _____ Site Description _____	To be completed by central administrator Site ID # _____
Include site in distribution list? ❑ Yes ❑ No	
Site Type ❑ MMNG ❑ Meridian Mail ❑ NVM ❑ Other	
Location # 0 Network dialing prefixes _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ If site type is MMNG, complete the following: CDP Overlap_____ ESN Overlap____	
Does site have NMS? ❑ Yes ❑ No If yes, add additional switch locations below.	
Location #____ Network dialing prefixes _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ CDP Overlap_____ ESN Overlap____	
Location #____ Network dialing prefixes _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ CDP Overlap_____ ESN Overlap____	
Location #____ Network dialing prefixes _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ CDP Overlap_____ ESN Overlap____	
Add additional locations as required.	

Worksheet box descriptions

This table explains the fields on the worksheet.

Host Name	
Description	The host name of the Net Gateway system. This is the portion of the Internet address that uniquely identifies a particular system within a domain. This field, combined with the domain name, makes up the fully qualified domain name. The host name should be the same as the Windows NT computer name. To determine this, see "Identifying your system's host and domain names" on page 4-27.
Example	The complete Internet address for the site is *purple.yellow.com*. The host name is *purple*.
Domain Name	
Description	The Internet domain name for the system. For the Primary or Secondary Administration sites, this is the local machine; otherwise, it is the remote machine being administered. To determine the domain name, see "Identifying your system's host and domain names" on page 4-27.
Example	The complete Internet address for the site is *purple.yellow.com*. The domain name is *yellow.com*.
Site Description	
Description	A description for the site. For added security, this name can be made different from the Host Name.

Site ID #	
Description	This is the Enterprise Networking Site ID of the Meridian Mail system to be networked using Net Gateway. To avoid confusion (and possible conflicts), the central administrator must assign the same Meridian Mail site ID for the site. For new Meridian Mail, Norstar Voice Mail, and VPIM-compatible sites, site IDs can be assigned centrally.

Include site in distribution list?	
Description	Indicates whether the site is to be included in the distribution of the routing table data and public address book (if Entrust is to be used). Usually, only Net Gateway sites are included. Only Net Gateway sites will be sent the routing table data and the public address book. Norstar Voice Mail and VPIM-compatible sites are ignored even if defined as included in the distribution list.

Site Type	
Description	Record the type of site.
Available choices	**MMNG** refers to a Net Gateway system connected to Meridian Mail through Enterprise Networking. **NVM** refers to a site running Norstar Voice Mail. **Meridian Mail** refers to a Meridian Mail system that is not accessible over a digital network (in other words, it is networked using the regular Meridian Mail networking techniques). **Other** refers to a VPIM-compatible voice mail system.

Location #	
Description	The ID number of a switch that does not have its own Meridian Mail system and is connected to another switch location that does have a Meridian Mail system. In other words, enter the ID numbers of switch locations that use the Network Message Service (NMS) feature of Meridian Mail.

CDP Overlap	
Description	The number of digits in the Coordinated Dialing Plan (CDP) steering code that overlap with the local user's extensions. Check the value entered in the "Number of overlapping digits between CDP steering code and local ext" field from the Local Site Maintenance - Add Site screen in Meridian Mail.

ESN Overlap	
Description	The number of digits in the Electronic Switched Network (ESN) prefix that overlap with the local user's extensions. Check the value entered in the "Number of overlapping digits between ESN prefix and local ext" field from the Local Site Maintenance - Add Site screen in Meridian Mail.

Network dialing prefixes	
Description	The network dialing prefixes used to address a network recipient. Do not include mailbox numbers in the prefix. You must enter the network dialing prefixes associated with a site so that Net Gateway can properly direct messages.

Does site have NMS?	
Description	Check off whether the site uses the Network Message Service feature of Meridian Mail. This feature allows multiple PBXs to share the same Meridian Mail system. If you check Yes, you must complete the data for each of the switch locations.

Identifying your system's host and domain names

To determine the host and domain names for your Net Gateway system, do the following.

Step	Action
1	Click Start.
1	Click Settings, then Control Panel. ***Result:*** The Control Panel appears.
1	Click the Network icon. ***Result:*** The Network Property page appears.
2	Click on TCP/IP in the box that identifies which network components have been installed. ***Result:*** Your selection is highlighted.
3	Click Properties. ***Result:*** The TCP/IP Properties page appears.
4	Click the DNS Configuration tab. ***Result:*** The DNS Configuration page appears.
5	Obtain the following values in the Enable DNS section and record them on the Meridian Mail Net Gateway Site Worksheet: • host • domain
6	Click Cancel to close the TCP/IP Properties page.
7	Click Cancel to close the Network page.

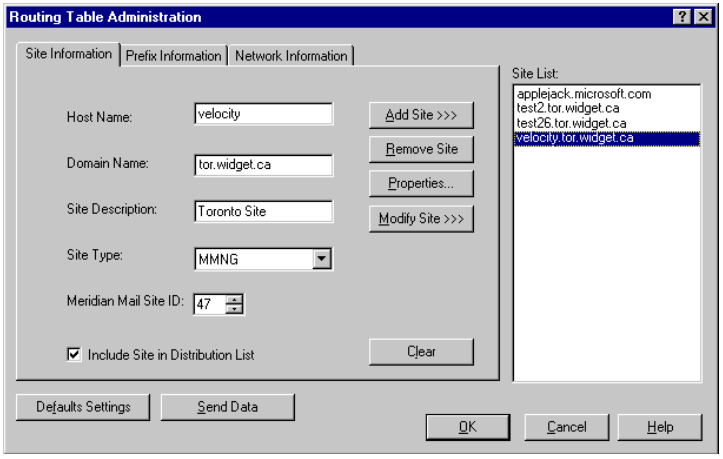
Adding, changing, and deleting sites

Introduction

The Site Information property page of the Routing Table Administration property sheet is where you add sites to the network, and change and delete sites from the network.

Site Information property page

The following illustration shows the Site Information property page of the Routing Table Administration property sheet.



Box and button descriptions

The following boxes and buttons appear on the property page.

Host Name	
Description	Sets the Internet host name for the remote system. This is the portion of the Internet address that uniquely identifies a particular system within a domain. This field, combined with the domain name, makes up the fully qualified domain name. You must enter a host name for a site definition to be added.
Range	This field may be a string of up to 128 characters in length.
Example	The complete Internet address for the site is *purple.yellow.com*. The host name is *purple*.

Domain Name	
Description	Sets the Internet domain name for the remote system. This field may be left blank. For the Primary or Secondary Administration sites, this is the local machine; otherwise, it is the remote machine being administered.
Range	The name may be up to 126 characters in length.
Example	The complete Internet address for the site is *purple.yellow.com*. The domain name is *yellow.com.*

Site Description	
Description	Sets a name for the site. This can be up to 128 characters in length. A site name is mandatory and must be present for a site definition to be added. Use easy-to-remember names for your sites. For added security, this name can be made different from the Host Name.

Site Type	
Description	Sets the type of site. Click on the arrow to see a drop-down list of choices.
Available choices	**MMNG** refers to a Net Gateway system connected to Meridian Mail through Enterprise Networking. **NVM** refers to a site running Norstar Voice Mail. **Meridian Mail** refers to a Meridian Mail system that is not accessible over a digital network (in other words, it is networked using the regular Meridian Mail networking techniques). **Other** refers to sites running voice mail systems that are VPIM compatible.

Meridian Mail Site ID	
Description	Sets the Meridian Mail site ID. This is the Enterprise Networking Site ID of the Meridian Mail system to be networked using Net Gateway. For all systems, a unique site ID in the range of 1 through 500 must be assigned.

Include Site in Distribution List	
Description	If checked, the site is included in the distribution list for receiving the routing table and public address book. When the network administrator distributes the routing table and public address book by the send data button, only sites with this option turned on receive the list.
Default	Checked. It should be on for all sites that will receive the routing table remotely.
Note	Norstar, Meridian Mail, and other VPIM-compatible sites are not sent this data, regardless of the setting of this option.

Add Site>>>	
Description	Enters a site definition into the routing table.

Remove Site	
Description	Removes the selected site from the Routing Table.

Properties...	
Description	Brings up the Site Properties dialog box. Use this dialog to define new Network Message Service (NMS) locations for a site, and to change the ESN or CDP overlaps.

Modify Site>>>	
Description	Changes the definition of an existing networking site based on the values you have entered in the fields on the Site Information property page.

Clear	
Description	Clears all site edit fields and restores any default values for the fields. ***Note:*** Default values can be changed by clicking the Default Settings button on the Routing Table Administration dialog box.
Default Settings	
Description	Brings up the Default Settings dialog box which allows you to change the values that appear in the Routing Table's boxes. Use this to speed up the task of entering a large number of similar sites.
Send Data	
Description	Sends out the routing table and Entrust public keys file to all Net Gateway sites in the distribution list. Prior to submitting the request to the MTA, a dialog is presented asking the administrator to confirm the request.
OK	
Description	Closes the dialog box and saves any changes you have made.
Cancel	
Description	Closes the dialog box without saving any changes you have made.
Help	
Description	Provides overview help.

Adding a new site

To add a new network site to the routing table, follow these steps.

Step	Action
1	From the Routing Table Administration property sheet, click the Site Information tab.
2	In the Host Name box, type the host name for the site you are adding.
3	In the Domain Name box, type the domain name for the site. This box can be left blank.
4	From the Site Type drop-down box, select MMNG, Meridian Mail, NVM, or Other.
5	In the Meridian Mail Site ID box, enter the Meridian Mail Networking site number that identifies the site being added.
6	Check the Include Site in Distribution List check box to include the site in the distribution of the Routing Table and Security file to remote locations.
7	Click Add>>> to add the site to the Site List.

Changing a site

To modify the information for a site, follow these steps.

Step	Action
1	From the Routing Table Administration property sheet, click on a site from the Site List.
2	Click the Site Information tab.
3	Modify the values for the Host Name, Domain Name, Site Description, Site Type Meridian Mail ID, or the Include Site in Distribution List check box.
4	Click Modify Site>>>.

Removing a site

To remove a site, follow these steps.

Step	Action
1	From the Routing Table Administration property sheet, click the Site Information tab.
2	Click a site from the Site List.

Step	Action
3	Click the Remove Site button.
4	Click Yes to confirm the deletion.

Adding, changing, and deleting locations at sites

Introduction

This section describes how to add, change, and delete locations from network sites. This is done using the Site Properties dialog box which is accessed from the Site Information property page of the Routing Table Administration property sheet.

You also use this dialog box to define CDP Overlap and ESN Overlap for a site.

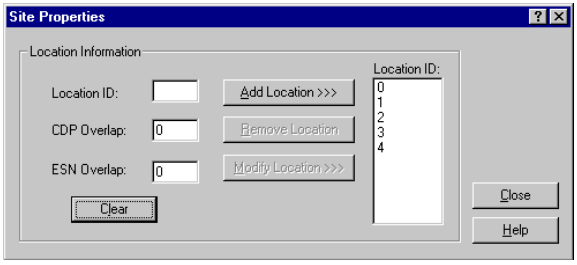
Definition: locations

All network sites have a default location called Location 0. Sites that have the Meridian Mail Network Message Service (NMS) feature (which allows multiple PBXs to use a single Meridian Mail system) can have several locations that designate different PBXs connected to the voice mail system.

Each location is designated by a number, and each can have different values for CDP Overlap and ESN Overlap, which are described below.

Site Properties dialog box

The following illustration shows the Site Properties dialog box.



Box and button descriptions

The following boxes and buttons appear on the dialog box.

Location ID	
Description	Use to enter the ID number of a switch that does not have its own Meridian Mail system and is connected to another switch location that does have a Meridian Mail system. In other words, this sets the ID numbers of switch locations that use the Network Message Service (NMS) feature of Meridian Mail.
CDP Overlap	
Description	Sets the number of digits in the Coordinated Dialing Plan (CDP) steering code that overlap with the local user's extensions. This is the same as the value entered in the "Number of overlapping digits between CDP steering code and local ext" field from the Local Site Maintenance - Add Site screen in Meridian Mail.
Default	0
Range	0 to 10
ESN Overlap	
Description	Sets the number of digits in the Electronic Switched Network (ESN) prefix that overlap with local user's extensions. This is the same as the value entered in the "Number of overlapping digits between ESN prefix and local ext" field from the Local Site Maintenance - Add Site screen in Meridian Mail.
Default	0
Range	0 to 10

Location ID list	
Description	Lists the switch location IDs associated with a particular site. All sites must have a location 0. If a site has the Network Message Service (NMS) feature of Meridian Mail installed, this will list all the switch IDs associated with a particular site.

Add Location>>>	
Description	Adds a new Network Message Service (NMS) location ID number to the Location ID list.

Remove Location	
Description	Deletes the NMS location ID of a switch from the Location ID list.
Note	Location 0 cannot be deleted.

Modify Location>>>	
Description	Changes the values associated with a switch location.

Clear	
Description	Clears all site edit fields and restores any default values for the fields. ***Note:*** Default values can be changed by clicking the Default Settings button on the Routing Table Administration dialog box.

Close	
Description	Closes the dialog box without saving any changes you have made.

OK	
Description	Closes the dialog box and saves any changes you have made.

Help	
Description	Provides overview help.

Adding locations to a site

To add locations to a site, follow these steps.

Step	Action
1	From the Routing Table Administration property sheet, click on a site from the Site list.
2	Click the Site Information tab.
3	Click the Properties button on the Site Information property page. ***Result:*** The Site Properties dialog box appears. ***Note:*** Location 0 is added automatically.
4	In the Location ID box, type the number of the switch that is connected to the NMS message center or prime location.
5	In the CDP Overlap box, type the number of digits in the Coordinated Dial Plan steering code that overlap the digits in the local extensions.
6	In the ESN Overlap box, type the number of digits in the Electronic Switched Network prefix that overlap the digits in the local extensions.
7	Click Add Location>>> to add the location to the list.
8	Click OK to save your changes and close the Site Properties dialog box.

Changing location information

To change information for a location, follow these steps.

Step	Action
1	From the Routing Table Administration property sheet, click on a site in the Site List.
2	Click the Site Information tab.

Step	Action
3	Click the Properties button. ***Result:*** The Site Properties dialog box appears.
4	Modify the values in the Location ID, CDP Overlap, or ESN Overlap boxes.
5	Click Modify Location>>>.
6	Click OK to save your changes and close the Site Properties Dialog box.

Removing locations from a site

To delete a location, follow these steps.

Step	Action
1	From the Routing Table Administration property sheet, select a site from the Site List.
2	Click the Site Information tab.
3	Click Properties. ***Result:*** The Site Properties dialog box appears.
4	Select a location from the Location ID list.
5	Click Remove Location.
6	Click Yes to confirm the deletion.
7	Click OK to save your work and close the Site Properties dialog box. ***Note:*** You cannot delete location 0.

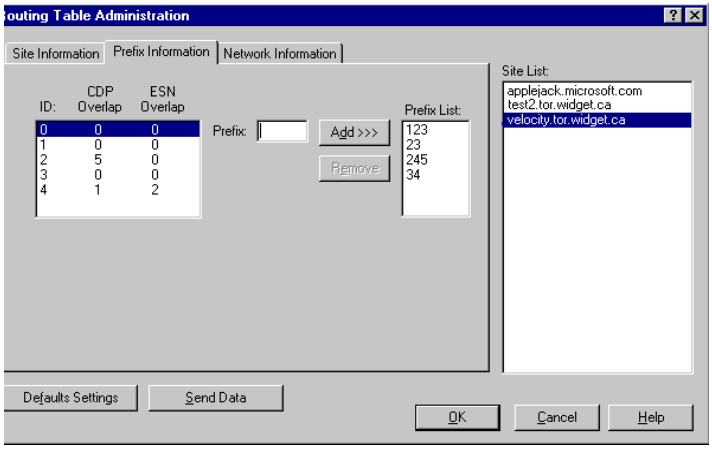
Adding, changing, and deleting network prefix information for locations

Introduction

This section describes how to add and remove network dialing prefixes from a location at a site using the Prefix Information property page of the Routing Table Administration property sheet.

Prefix Information property page

The following illustration shows the Prefix Information property page of the Routing Table Administration property sheet.



Box and button descriptions

The following boxes and buttons appear on the Prefix Information property page.

ID list	
Description	Lists the switch locations associated with a particular Meridian Mail Enterprise Networking site. If the site has the Network Message Service (NMS) installed, use the Site Properties dialog box to associate new switch locations with the networking site.

Prefix	
Description	Use to enter dialing prefixes used to address a network recipient. You must enter the network prefixes associated with a site so that Net Gateway can properly direct messages.
Example	You address a network message to a remote mailbox by entering 6-442-3372 (switch uses ESN). In this case, 6 is the ESN access code and 3372 is the remote mailbox number, so 6442 is the prefix for the site.
Prefix List	
Description	Lists all of the dialing prefixes associated with a particular site's locations. You must enter the dialing prefixes associated with a site so that Net Gateway can properly direct messages.
Add>>>	
Description	Adds a new network dialing prefix to the Prefix List.
Remove	
Description	Deletes a network dialing prefix from the Prefix List.
OK	
Description	Closes the dialog box and saves any changes you have made.
Cancel	
Description	Closes the dialog box without saving any of the changes you have made.
Help	
Description	Provides overview help.

Adding prefix information to a location

To add a prefix to a location, follow these steps.

Step	Action
1	From the Routing Table Administration property sheet, select a site from the site list.
2	Click the Prefix Information tab.
3	Select a location ID from the list on the left side of the Prefix Information property page.
4	In the Prefix box, type a network addressing prefix (in other words, the number the telset users must use to address a remote network site including the ESN access code).
5	Click Add>>>.

Removing prefix information from a location

To remove a prefix from a location, follow these steps.

Step	Action
1	From the Routing Table Administration property sheet, select a site from the Site List.
2	Click the Prefix Information tab.
3	Click on a location ID from the ID list on the left side of the Site Information property page.
4	Select a prefix from the Prefix List on the right side of the Site Information property page.
5	Click Remove.

Sending Routing Table data to other Net Gateway sites

Introduction

Once you, as administrator, have completed entering all the data in the Routing Table using the procedures in the previous sections, you can distribute this information to all other Net Gateway systems in the network.

Sending Routing Table information to remote sites

To send the Routing Table data to all other Net Gateway systems in the network, follow these steps.

Step	Action
1	From the Routing Table Administration property sheet, click Send Data.
2	Click Yes to confirm sending Routing Table data to remote sites.

Changing Net Gateway defaults

Introduction

This section explains how to set up the default values that come up on the Routing Table Administration property sheet using the Default Settings dialog box.

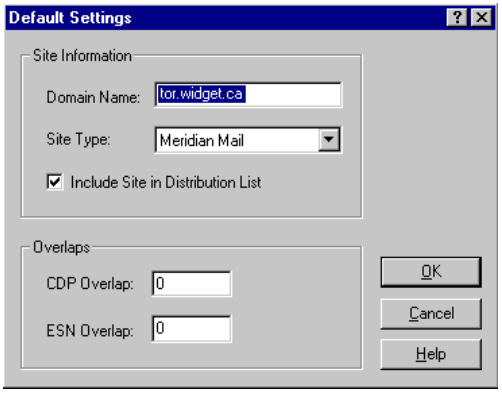
Tip

When adding a large number of sites with similar information (such as the same Domain Name or Site Type), you can set up the values here and save time entering site information.

Note: Changing the values on this dialog box does not have any effect on the sites you have already entered.

Default Settings dialog box

The following illustration shows the Default Settings dialog box.



Box and button descriptions

The following table lists the buttons and boxes of the Default Settings dialog box.

Domain Name	
Description	Sets the value that appears as a default for the Domain Name when adding new sites. Changing this does not have any effect on site definitions you have already entered.

Site Type	
Description	Selects the value that appears as the default for the Site Type drop-down list on the Site Information property page. Changing this does not have any effect on site definitions you have already entered.
Include Site in Distribution List	
Description	Selects whether the Include site in distribution list is always checked or cleared. Changing this does not have any effect on site definitions you have already entered.
CDP Overlap	
Description	Sets the value that always appears in the CDP Overlap box on the Site Properties dialog box. Changing this does not have any effect on site definitions you have already entered.
ESN Overlap	
Description	Sets the value that always appears in the ESN Overlap box on the Site Properties dialog box. Changing this does not have any effect on site definitions you have already entered.
OK	
Description	Closes the dialog box and saves any changes you have made.
Cancel	
Description	Closes the dialog box without saving any changes you have made.
Help	
Description	Provides overview help.

Changing default information

To change the default settings, follow these steps.

Step	Action
1	From the Routing Table Administration property sheet, click Default Settings. ***Result:*** The Default Settings dialog box appears.
2	In the Domain Name box, type a new default domain name.
3	From the Site Type drop-down list, select a default value for the type of site.
4	If you do not want sites to be included in the Site Distribution list by default, clear the Include Site in Distribution List check box.
5	In the CDP Overlap box, type a default value for the number of digits in the CDP steering code that overlap the digits in the local extensions.
6	In the ESN Overlap box, type a default value for the number of digits in the ESN prefix that overlap the digits in the local extensions.
7	Click OK to save your changes and close the Default Settings dialog box. ***Note:*** Changing values in this dialog has no effect on sites you have already defined.

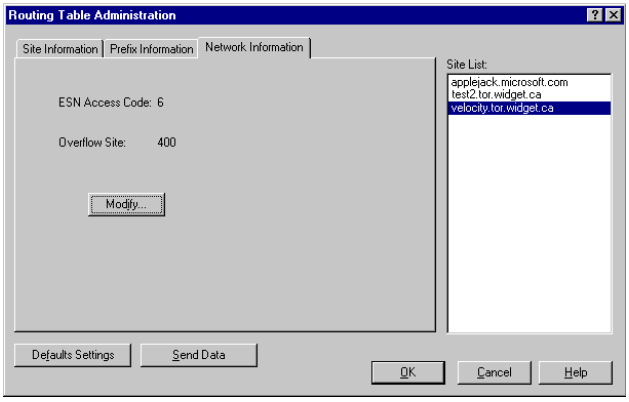
Changing network information

Introduction

This section explains how to change items that describe your telephone network. This is done from the Network Information property page of the Routing Table Administration property sheet.

Network Information property page

The following illustration shows the Network Information property page.



Box and button descriptions

The following buttons and boxes appear on the Network Information property page.

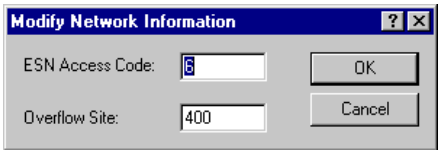
ESN Access Code	
Description	The number that users must dial to connect to a telephone network that uses ESN. Net Gateway uses this value to direct messages. Click Modify… to change the value for the access code.
Note	For a Net Gateway network, the ESN access code must be the same throughout the entire network.

Overflow Site	
Description	The site ID allocated for the Meridian Mail Enterprise Networking "overflow site." An overflow site allows you to address networking sites beyond the Meridian Mail limit of 150 sites. Net Gateway uses the overflow site to map to up to a limit of 500 remote sites. ***Note:*** All Meridian Mail systems must use the same overflow site ID. ***Note:*** If an overflow site is in use, you should set this value or you will get Non-Delivery Notification (NDN) messages.
Modify…	
Description	Brings up the Change Network Info dialog box so that you can edit the values for ESN Access Code and Overflow Site.
OK	
Description	Closes the dialog box and saves any changes you have made.
Cancel	
Description	Closes the dialog box without saving any changes you have made.
Help	
Description	Provides overview help.

Changing network information

To change the network information, follow these steps.

Step	Action
1	From the Routing Table Administration property sheet, click the Network Information tab.
2	Click Modify. ***Result:*** The Modify Network Information dialog box appears.



3	In the ESN Access Code box, type the number used throughout the phone network to get to ESN locals.
4	In the Overflow Site box, enter the site number designated in Meridian Mail Enterprise Networking to be the “overflow site.”
5	Click OK to save your changes and close the Network Information dialog box.

Setting up Entrust/Lite users

Introduction

Each Net Gateway site in the network is considered to be one user in the Entrust/Lite Manager software. The site's fully qualified domain name (FDQN) is used to identify the user within the Entrust private and public key files.

The password assigned by Entrust to the user is used by the site when requesting security information from Net Gateway.

Note: The entrust user name for a site must be the FDQN for the site. The user name must be entered in all lower case.

Example: If a site is called *purple.yellow.com*, the user name entered in Entrust would be "purple.yellow.com."

When to perform this procedure

Perform this procedure only if you have chosen to use encryption in your Net Gateway network.

How user names are assigned by Entrust

User profile names must contain only eight characters plus .EPF as the extension. Periods (".") are not valid in the first eight characters.

Since a site's host name may contain more than eight characters, and may contain periods or other special characters (such as "_") throughout, Entrust does the following when suggesting a user profile name:

- ignores periods and other special characters
- selects the first eight characters (not counting ".")
- appends the user profile name with ".EPF"

Example 1: *mmng3.tor.nt.com* has been entered into Net Gateway as the site name.You would enter "mmng3.tor.nt.com" as the Entrust user name.

Entrust suggests that *mmng3tor.EPF* be used for the user profile name. You must accept this suggestion, since Net Gateway does expect to see this name.

How user names are assigned by Entrust (continued)

Example 2: *mmng_3.tor.nt.com* has been entered into Net Gateway as the site name.

Entrust suggests that *mmng3tor.epf* be used for the user profile name. However, since Net Gateway expects to see *mmng_3to*, you should change the name to *mmng_3to.epf*.

> **ATTENTION**
>
> The resulting user name must be unique and must be entered in lower case. The file name must follow the above-mentioned rules an be unique.

Procedure

To create users in Entrust, do the following.

Step	Action
1	Click Start.
2	Click Programs.
3	Click Entrust Manager.
4	Click User.
5	Click Create User.
6	Type the site's fully qualified domain name (FQDN) in lower case.
7	Click Locate. ***Result:*** The Open dialog box appears, suggesting a file name based on the first eight characters of the site's FQDN.
8	Click Create User to accept the suggested file name or change it if necessary. ***Result:*** The User password window appears with the password that has been created for the site.
9	Write down the password.
10	Verify that you wrote down the password correctly. ***Note:*** You have only once chance to get it right. If you make a mistake, you must recreate the user with a new password.
11	Click OK.

Step	Action
12	To create another user, repeat steps 4 through 11. To exit, click Exit.
13	Communicate the password to the site administrator by secure means.

What to do next

The updated user certificates (.PRI) and public address book (.PUB) files must be made available to the Net Gateway system by either copying them to the Net Gateway system directory, or by setting up appropriate file-sharing privileges on your network. They should also be provided to the secondary network administration site (if there is one).

You should create a copy of the user certificates file so that you can restore it if the original file becomes damaged or corrupt.

ATTENTION

After Net Gateway downloads the certificate, the certificate on the primary or secondary administration site is deleted so the next request from the same user will fail. If it is required, the primary site should recover the user following the procedures in *Entrust/ Lite Manager User Guide for Microsoft Windows.*

Section C: Local administration

In this section

Overview of this section

Introduction

This section explains how to do the following:

- Define the addresses of two network administration sites.
- Define the SMTP proxy server address.
- Request security information from a network administration site.
- Request information about sites from a network administration site.
- Define the Meridian Mail Enterprise Networking DN.
- Enable or disable Net Gateway voice ports.
- Maintain a list of site IDs that have been defined in the local Meridian Mail system.

All these functions can be accessed from the Local Administration property page.

Primary and secondary network administration site addresses

When you need to download security and site information to your site, Net Gateway needs to know from which site the information should be downloaded. You can define the addresses of two sites as first and second choices.

For security reasons, Entrust data will only be accepted from the Primary and Secondary Network Administration sites.

SMTP proxy server address

If you are connecting to the Internet (or a corporate intranet) through a proxy server, you need to tell Meridian Mail Net Gateway the address of the proxy server.

Requesting security information

When you request security information, you are actually downloading your site's Entrust user profile information (and private key) from a network administration site.

This task is performed only once after your site has been set up in the network. If you determine that you need to download the information again, you must contact the network administrator.

Note: Requesting security information also downloads the routing table and public address book.

Requesting site information

When you request site information, you are actually downloading the routing table and Entrust public address book file from a network administration site.

Normally, this information is downloaded to your site from the network administration site. You should request the information yourself if

- you have just installed the system
- the original download failed
- your system was down at the time of the download
- you suspect that your routing table has become corrupt

Entering the Meridian Mail DN

Net Gateway needs to know the directory number used by Meridian Mail to receive Enterprise Networking calls.

The directory number is entered only once immediately after the Net Gateway system has been set up. It should be changed only if the Enterprise Networking DN has been changed in Meridian Mail.

Enable or disable voice ports

Disabling voice ports prevents the Net Gateway software from answering calls from Meridian Mail. This prevents Meridian Mail from using the ports. Conversely, enabling voice ports allows the Net Gateway software to answer calls from Meridian Mail.

You would use this function very rarely.

Maintaining the site ID list

The Net Gateway system provides a function for maintaining a list of sites that have been defined on the local Meridian Mail system. The Net Gateway site list must

- match the local Meridian Mail system site list found on the Remote Site Maintenance - List Sites screen
- include the local site ID as defined in the Meridian Mail Local Site Maintenance screen

Note: The only exception is the Overflow Site ID. The Overflow Site ID must never be added to the local site list.

Maintaining the site ID list (continued)

Messages that are sent to a site that has been defined in the Net Gateway Routing Table, but has not been defined in the Meridian Mail network database, are routed through the site that has been defined as the overflow site in Meridian Mail.

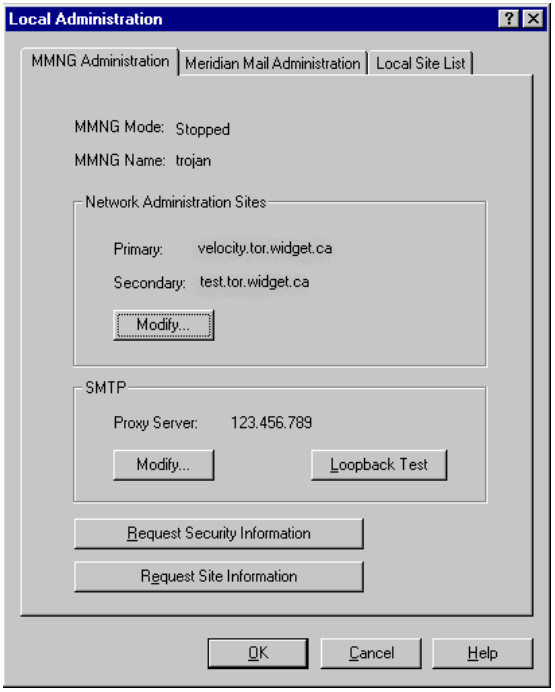
MMNG Administration property page

Introduction

This topic describes the MMNG Administration property page of the Local Administration property sheet. A number of procedures can be performed from this property page that are described later in this chapter.

MMNG Administration property page

The following illustration shows the MMNG Administration property page.



Box and button descriptions

The following buttons and boxes appear on the MMNG Administration property page.

MMNG Mode	
Description	Identifies what the site is capable of in terms of site administration and security as follows: • **Lite**: Entrust has been installed but has not been set up. • **Open**: Entrust has not been installed. • **Secure**: Entrust has been installed, and encryption has been enabled. • **Normal**: The site is not an administration site. • **Primary**: The site is a primary network administration site. • **Secondary**: The site is a secondary network administration site. • **Stopped:** The Message Transfer Agent (MTA) component of the Net Gateway software is not running. The mode description is usually a combination of one Lite, Open, or Secure, plus Normal, Primary, or Secondary.

MMNG Name	
Description	Displays the name assigned to the local Net Gateway system. This is the system's fully qualified domain name (FQDN) followed by the site ID.
Example	purple.tor.widget.com: 47

Primary Network Administration Site	
Description	Sets the fully qualified domain name (FQDN) of the primary network administration site. This must be set so that your system can receive Routing Table data from a valid administration site. The local Net Gateway system first sends a request for Routing Table data to the primary administration site. If this fails, it sends the request to the secondary administration site.
Limit	128 characters

Secondary Network Administration Site	
Description	Sets the fully qualified domain name (FQDN) of the secondary network administration site. This may be set so that your system can receive Routing Table data from a valid backup administration site. The local Net Gateway system first sends a request for Routing Table data to the primary administration site. If this fails, it sends the request to the Secondary administration site.
Limit	128 characters

Modify...	
Description	Displays the Change Primary/Secondary Sites dialog box. This allows you to change the values for the Primary and Secondary Administration site.

SMTP Proxy Server	
Description	Indicates the simple mail transfer protocol (SMTP) Proxy Server's fully qualified domain name (FQDN). Use the Modify... button to change.
Limit	128 characters

Modify...	
Description	Modifies the proxy server address. It brings up the Change Proxy Server dialog box.

Loopback Test	
Description	Starts a diagnostic test that sends a message to the loopback mailbox of one or more destinations. The loopback mailbox at the remote site routes the message back to the local system to check that the systems are communicating correctly. If an SMTP proxy server is specified, the loopback test may occur between Net Gateway and the proxy server only. To view the results, use the Windows NT Event Viewer.

Request Security Information	
Description	Requests a download of the Entrust user profile file from the primary network administration site (Net Gateway tries the secondary network administration site if the primary network administration site does not respond). You are required to enter a password before you can receive the information.

Request Site Information	
Description	Sends a request to the primary administration site to download the information stored in the Routing Table and the Entrust public address book file. If the primary administration site does not respond, Net Gateway tries the secondary administration site.

OK	
Description	Closes the dialog box and saves any changes you have made.

Cancel	
Description	Closes the dialog box without saving any changes you have made.
Help	
Description	Provides overview help.

Defining the administration sites

Introduction

This topic explains how to identify the primary and secondary network administration sites in your network.

Why this function is required

When you need to download security and site information to your site, Net Gateway needs to know from which site the information should be downloaded, and from where to accept data.

The system first sends a request for the information to the site defined as the primary administration site. If the request fails, the system sends the request to the secondary administration site.

Procedure

To change network administration site addresses, follow these steps.

Step	Action
1	From the MMNG Administration property page of the Local Administration property sheet, click Modify under Network Administration Sites. ***Result:*** The Modify Primary/Secondary Sites dialog box appears.

2	In the Primary Site box, type the fully qualified domain name (FQDN) of the first-choice network administration site. ***Note:*** If your site is the primary network administration site, enter your site's FQDN.

Step	Action
3	In the Secondary Site box, type the fully qualified domain name (FQDN) of the second-choice network administration site. ***Note:*** If your site is the secondary network administration site, enter your site's FQDN.
4	Click OK to save your work and close the Change Primary/ Secondary Sites dialog box.

Setting the SMTP proxy server address

Introduction

If you are connecting to the Internet (or a corporate intranet) through a proxy server, you will need to tell Meridian Mail Net Gateway the address of the proxy server.

Procedure

To change the SMTP proxy server address, follow these steps.

Step	Action
1	From the MMNG Administration property page of the Local Administration property sheet, click Modify under SMTP. ***Result:*** The Modify Proxy Server dialog box appears.
2	In the Proxy Server box, type the fully qualified domain name (FQDN) of the proxy server.
3	Click OK to save your work and close the Modify Proxy Server dialog box.

Requesting security information

Introduction

This topic explains how to download your site's Entrust user profile information (containing the private key) from a network administration site.

Prerequisites

Before requesting security information, you must ensure the following:

- Your site is defined in the routing table at the network administration site.
- The network administration sites are defined on your system.
- The local site ID in Meridian Mail has been added to the site list on Net Gateway.
- The certificate has been created at the administration site.
- You have been given your password.

When security information should be requested

For network sites, this task should be performed only if your Net Gateway network is using encryption, and only once after your site has been set up in the network. Once you download the information, it is deleted from the network administration site. Therefore, if you try to perform this task again at another time, it will fail.

If you determine that you need to download the information again, you must contact the network administrator. The network administrator recreates your Entrust user profile and assigns you a new password.

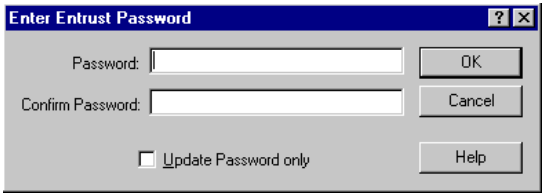
For the primary network administration site, after initial setup, you must request the security information before you can

- download information to other sites
- accept download requests from remote sites

Enter Entrust Password dialog box

The following is an example of the Enter Entrust Password dialog box. This is where you enter the password that has been assigned to your site.

Note: This is available only if you are using the optional Entrust security package.



Box and button descriptions

The following buttons and boxes appear on the Enter Entrust Password dialog box.

Password	
Description	Enters your Entrust password when requesting an updated Entrust User Profile for your site.

Confirm Password	
Description	Reenters your Entrust password for confirmation when requesting an updated Entrust User Profile for your site.

Update Password only	
Description	This check box should be checked if you want to correct a password that was previously entered incorrectly, or if you have recovered your certificate from a backup. ***Note:*** You do not need to enter a password in the password box if you are recovering your certificate from a backup. Primary network administration sites must check this check box in order to copy the Entrust user profile for the network administration site from the Entrust directory to the Net Gateway system directory. If this check box is checked, the password is updated on the local machine only. No request is made over the network.
Default	Cleared
OK	
Description	Sends the request to the network administration site and closes the dialog box.
Cancel	
Description	Cancels the request and closes the dialog box.
Help	
Description	Provides overview help.

Requesting security information

To request security information (only if your network is using the Entrust security option), follow these steps.

Step	Action
1	From the Local Administration property sheet, click on the MMNG Administration tab.
2	Click Request Security Information. ***Result:*** The Enter Entrust Password dialog box appears.
3	In the Password dialog box, type the password given to you by the network administrator.
4	In the Confirm Password box, retype the security password.
5	Click OK. ***Result:*** The security information is updated automatically. ***Note:*** The Routing Table and public address book are downloaded automatically after the certificate is received.

Requesting site administration data

Introduction

This topic explains how to download the routing table and Entrust public address book from the network administration site.

The Entrust public address book identifies the sites that have been authorized to receive messages from other sites.

Prerequisites

Before requesting site information you must ensure the following:

- Your site is defined in the routing table at the network administration site.
- The network administration sites are defined on your system.
- The local site ID in Meridian Mail has been added to the site list on Net Gateway.

When site administration data should be requested

Normally, the routing table and public address book are downloaded to your site from the network administration site. You should request the information yourself if

- you have just installed the system
- the original download failed
- your system was down at the time of the download
- you suspect your routing table has become corrupt

Procedure

To download site information from the network administration site, do the following.

Step	Action
1	From the Local Administration property sheet, click the MMNG Administration tab.
2	Click the Request Site Information button.
3	Click Yes to confirm. ***Result:*** The Administration site automatically sends out the routing table and public address book.

Entering the Meridian Mail DN

Introduction

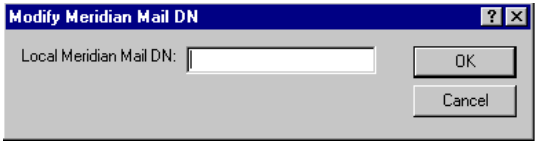
This topic explains how to enter the directory number used by Meridian Mail to receive Enterprise Networking calls.

When you should change the DN

The directory number is entered only once immediately after the Net Gateway system has been set up. It should be changed only if the Enterprise Networking DN has been changed in Meridian Mail.

Procedure

To enter or change the Meridian Mail Enterprise Networking DN, do the following.

Step	Action
1	From the Local Administration property sheet, click the Meridian Mail Administration tab.
2	Click Modify. ***Result:*** The Modify Meridian Mail DN dialog box appears. 
3	In the Local Meridian Mail DN box, type the DN of the local Meridian Mail system. ***Note:*** This number can be determined from the Meridian Mail VSDN table.
4	Click OK to save your changes and close the Modify Meridian Mail DN dialog box.

Enabling and disabling voice ports

Introduction

This topic explains how to prevent Meridian Mail from using a port that you suspect is faulty by enabling and disabling voice ports on the Net Gateway's voice processor card.

Why you should disable/enable ports

If you determine that one or more voice ports on the Net Gateway system are malfunctioning, those voice ports should be disabled.

Once the fault has been fixed, do not forget to enable the ports.

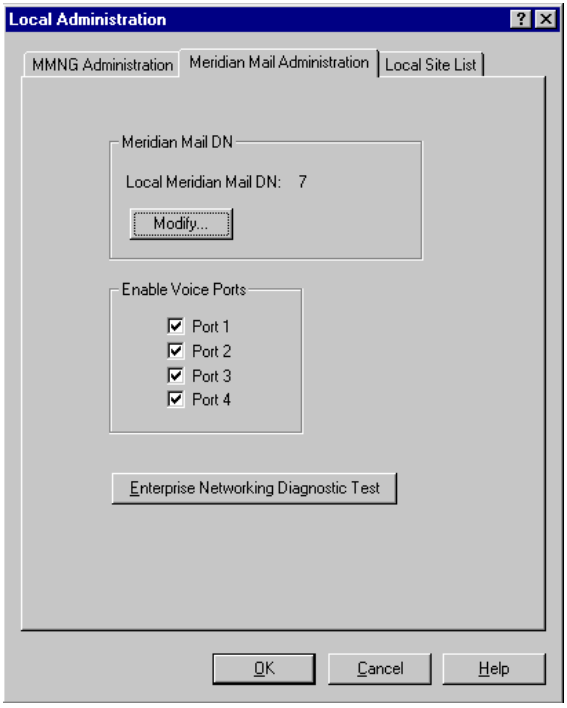
Enabling/disabling Net Gateway voice ports

To enable or disable voice ports, do the following.

Note: These steps only enable and disable voice ports on Net Gateway within the system's software. They have no effect on the voice ports of the local Meridian Mail system.

Step	Action
1	From the Local Administration property sheet, click the Meridian Mail Administration tab. ***Result:*** The Meridian Mail Administration page appears.

Step Action



2 Do the following.

IF you want to	THEN
disable a voice port	clear the check box for the voice port.
enable a voice port	check the check box for a voice port.

3 Click OK to confirm.

Adding and deleting local sites

Introduction

This topic explains how to identify to the Net Gateway system which sites have been defined in the local Meridian Mail system.

The sites listed here must

- match the site list found on the Remote Site Maintenance - List Sites screen of the local Meridian Mail system
- include the local site ID defined on the Meridian Mail Local Site Maintenance screen

For instructions on verifying sites that have been defined in Meridian Mail, refer to the *Meridian Mail Enterprise Networking Installation and Administration Guide* (NTP 555-7001-246).

Note: The only exception is the Overflow Site ID. The Overflow Site ID must never be added to the local site list.

Why this function is required

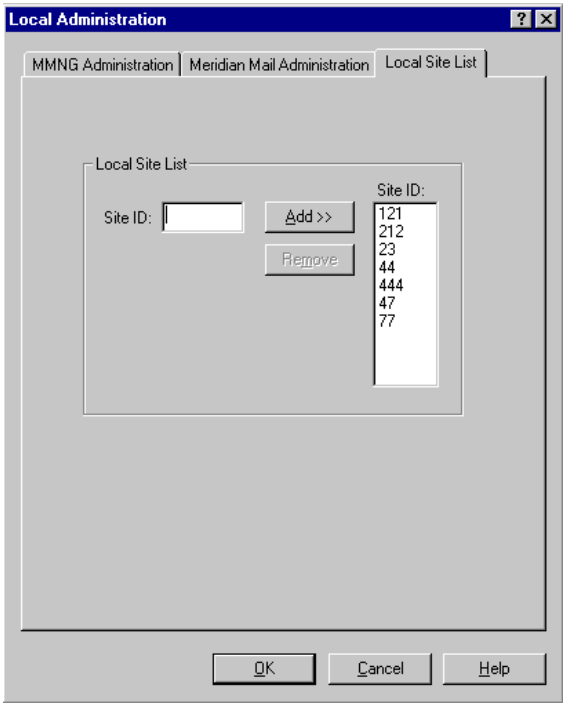
The Meridian Mail system can have up to 150 sites defined in its network database. However, the Net Gateway system can have up to 500 sites defined in the Routing Table.

If a message is being received from a site that has been defined in the Net Gateway local site list, but has not been defined in the Meridian Mail network database, the site defined as the overflow site in Meridian Mail is used to route the message.

This is accomplished by an internal mapping mechanism within the Net Gateway system.

Local Site List property page

The following is an example of the Local Site List property page where Meridian Mail site IDs are entered.



Box and button descriptions

The following buttons and boxes appear on the Local Site List property page.

Site ID	
Description	Adds the ID numbers of Enterprise Networking sites defined in the local Meridian Mail network database.

Site ID list	
Description	Lists each networking site defined in the local Meridian Mail database. The Net Gateway list must include the sites listed on the Meridian Mail Remote Site Maintenance - List Sites screen, as well as the local site ID defined on the Meridian Mail Local Site Maintenance screen.

Add>>>	
Description	Adds a new Meridian Mail Site ID to the Site ID List.
Remove	
Description	Deletes a Meridian Mail Site ID from the Site ID List.
OK	
Description	Closes the dialog box and saves any changes you have made.
Cancel	
Description	Closes the dialog box without saving any changes you have made.
Help	
Description	Provides overview help.

Adding local site IDs

To add a new site, do the following.

Step	Action
1	From the Local Administration property sheet, click the Local Site List tab.
2	Print out a list of the networking site IDs from the local Meridian Mail system by doing the following. a. Go to the Remote Site Maintenance - List Sites screen on the local Meridian Mail system for a list of site IDs. b. Print a copy of the Local Site Maintenance screen.
3	In the Site ID box, type the Meridian Mail Enterprise Networking Site ID you wish to add to the local Net Gateway database.
4	Click Add>>.

Removing local site IDs

To remove a site from the routing table, do the following.

Step	Action
1	From the Local Administration property sheet, click on the Local Site List tab.
2	Select a site ID from the Site ID list box.
3	Click Remove.
4	Click Yes to confirm.

Chapter 5

Net Gateway operational measurements

In this chapter

Overview of this chapter

Introduction

The Net Gateway system provides two methods of reviewing operational measurement statistics:

- Operational Measurements pages within Net Gateway itself
- Performance Monitor within Windows NT

Both the Operational Measurement pages and the Performance Monitor provide the administrator with data on how the Net Gateway system is performing. This data can assist in troubleshooting problems with the Net Gateway system or allow an administrator to monitor traffic volume being handled by the system. They provide statistics on the particular node, the digital network, and the voice ports.

Three types of operational measurement statistics are available:

- Node Statistics
- Digital Network Statistics
- Voice Port Statistics

Node Statistics description

Node statistics record the number of pending messages that were waiting to be processed by Net Gateway components at any given time since the last time the statistics were reset to zero. Internal queue sizes are reported

- as a maximum for the sampling interval to the Windows NT Performance Monitor
- as the maximum since last reset

Digital Network Statistics description

Digital network statistics reflect traffic sent to and received from your network.

Voice Port Statistics description

Voice port statistics reflect traffic sent between the Net Gateway and the Meridian Mail system at this site. Statistics can be shown for each individual port, or they can be shown as totals for all ports.

Where the statistics come from

The statistics are maintained by the Message Transfer Agent (MTA). They are obtained dynamically from the MTA when you display the operational measurement pages, or when you start the Windows NT Performance Monitor.

Types of counters

Several kinds of counters are kept. In Net Gateway, they are known as *simple counters*, *accumulation counters*, and *high water marks*.

Simple counter

An example of a simple counter might be “received messages.” The MTA continues to count received messages and only resets when you click the Clear button on the Operational Measurement pages.The Performance Monitor displays the number of received messages in the sample interval.

Accumulation counters

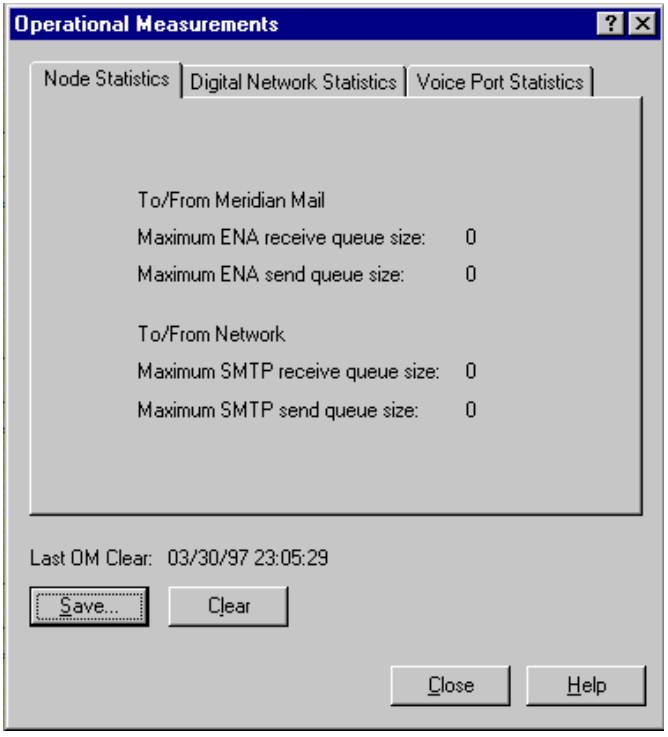
An example of an accumulation counter might be “send failures.” The MTA continues to count send failures and only resets when you click the Clear button on the Operational Measurement pages. The Performance Monitor displays this total value, rather than the number received in the interval.

High water marks

These counters record the maximum value in an interval. An example of this type of OM is “ports in use.” Two sets of counters are maintained. One records the maximum in each Performance Monitor interval. The other records the maximum since you last clicked the Clear button on the Operational Measurement pages.

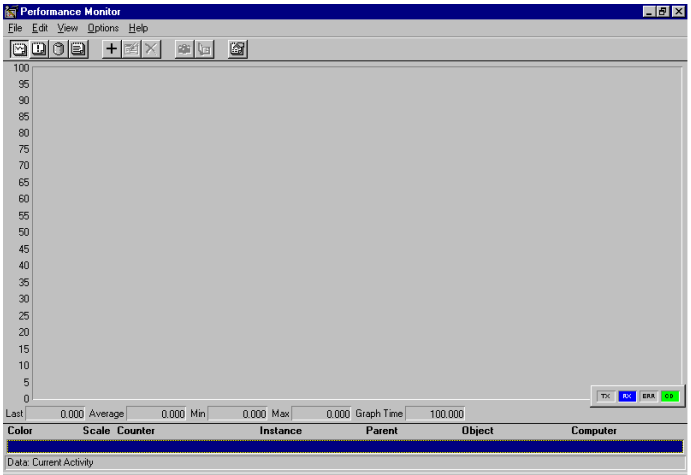
Net Gateway OM pages

When you click the OM button on the Main Control, a tab control dialog box with three pages appears. The following example shows the Operational Measurements dialog box (with the Node Statistics page selected).



Performance Monitor

When you start the Windows NT Performance Monitor from the Administrative Tools (Common) menu, the following screen is initially displayed.



By selecting Add to Chart from the Edit menu, then selecting specific objects, counters, and instances in the dialog box, you can gather statistics that are as detailed as you want them to be.

Node statistics

Introduction

Node statistics record the number of pending messages that were waiting to be processed by Net Gateway components at any given time since the last time the statistics were reset to zero.

Queue sizes are reported

- as a maximum for the sampling interval to the Windows NT Performance Monitor
- as the maximum since last reset

Why you should view these statistics

You should view these statistics periodically. If the queues (especially the send queues) start increasing in size, this may indicate a problem with the Net Gateway system. Things which may cause an increase in queue sizes are

- very slow processing speed of the Net Gateway system
- slow LAN
- Meridian Mail is very busy
- increased traffic in multiple-recipient messages
- communication problems

Ideal statistics range

The ideal range of statistics which indicate that the system is running well depends largely on the type of traffic and types of messages that are being sent. Currently, information about what the ideal ranges are is not available.

Relationship to the Windows NT Performance Monitor

The Node Statistics page corresponds to the MMNG Performance object in the Windows NT Performance Monitor. While the Node Statistics page shows historical information, the Windows NT Performance Monitor shows actual real-time activity in graph form.

Relationship to the Windows NT Performance Monitor (continued)

Windows NT Performance Monitor counters correspond with fields on the Node Statistics page as described in the following table.

Node Statistics fields	Windows NT Performance Monitor counters
Maximum ENA receive queue size	ENA receive queue
Maximum ENA send queue size	ENA send queue
Maximum SMTP receive queue size	SMTP receive queue
Maximum SMTP send queue size	SMTP send queue
not applicable	Maximum ports

Viewing the statistics

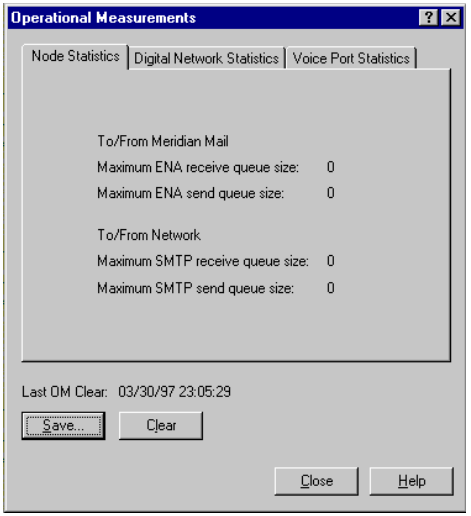
To view the statistics, do the following.

Starting Point: MMNG Administration window

Step	Action
1	Click on OM. ***Result:*** The Operational Measurements page appears.
2	If the Node Statistics page is not already displayed, click on the Node Statistics file tab. ***Result:*** The Node Statistics page appears with the statistics that are available. ***Note:*** The page does not refresh with new data automatically. To see the most recent up-to-date information, you must exit and then redisplay this page.

Node Statistics page

The following is an example of the Node Statistics page.



Field descriptions

Fields on this page are described in the following tables.

Maximum ENA receive queue size	
Description	This is the number of messages waiting to be processed by the MTA and then handed to SMTP.

Maximum ENA send queue size	
Description	This is the number of messages waiting to be sent by the Enterprise Networking agent to Meridian Mail.

Maximum SMTP receive queue size	
Description	This is the number of messages waiting to be processed by the MTA and then handed to Enterprise Networking.

Maximum SMTP send queue size	
Description	This is the number of messages waiting to be sent by the SMTP over the Network.

Last OM Clear	
Description	This indicates the last date and time when the Operational Measurement statistics were reset to zero.

Digital network statistics

Introduction

Digital network statistics reflect traffic sent to and received from your network. There is only one instance of each counter since only one network connection is supported.

Why you should view these statistics

You should view the Digital Network Statistics periodically for the purpose of monitoring traffic volume. This page identifies if there were send or receive failures, or both.

Reasons for send failures

Send failures indicate a network failure. The following are some examples of network failures:

- The Net Gateway system at the far end is down or is too busy to accept messages.
- The Net Gateway system at the far end is not configured correctly.
- There are problems with the LAN.
- The routing table is incorrect.

We recommend that you run the loopback test for all sites. The event log indicates which sites are in error.

Reasons for receive failures

Receive failures may occur if

- Net Gateway is running with Entrust enabled but not configured and it receives messages from sites which are not administration sites.
- There are errors in the Message Transfer Agent (MTA), such as not enough memory or the disk drive is corrupt.

Relationship to the Windows NT Performance Monitor

The Digital Network Statistics page corresponds to the Nortel MMNG Network object in the Windows NT Performance Monitor. While the Digital Network Statistics page shows historical information, the Windows NT Performance Monitor shows actual real-time activity in graph form.

Windows NT Performance Monitor counters correspond with fields on the Digital Network Statistics page as described in the following table.

Digital Network Statistics fields	Windows NT Performance Monitor counters
Messages Sent	Network Messages Sent
KBytes Sent	Network Kbytes Sent
Send Failures	Network Send Failures
Messages Received	Network Messages Received
KBytes Received	Network Kbytes Received
Messages Rejected	Network Messages Rejected

Viewing the statistics

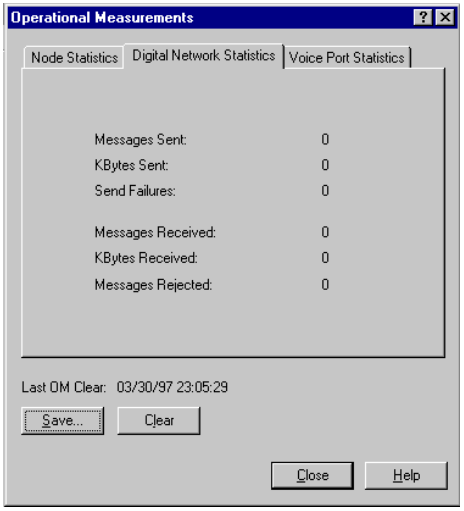
To view the statistics, do the following.

Starting Point: MMNG Administration window

Step	Action
1	Click on OM. ***Result:*** The Operational Measurements page appears (with Node Statistics selected).
2	Click on the Digital Network Statistics file tab. ***Result:*** The Digital Network Statistics page appears with the statistics that are available. ***Note:*** The page does not refresh with new data automatically. To see the most recent up-to-date information, you must exit and then redisplay this page.

Digital Network Statistics page

The following is an example of the Digital Network Statistics page.



Field descriptions

Fields on this page are described in the following table.

Messages Sent	
Description	This is the number of messages sent from this Net Gateway system out to the digital network.
KBytes Sent	
Description	This is the total size (in kbytes) of all messages sent to the local Meridian Mail system.
Send Failures	
Description	This is the number of messages that could not be sent by the Net Gateway system. This statistic is accumulated since the last reset to zero.
Messages Received	
Description	This is the number of messages received from other network systems from the digital network.

KBytes Received	
Description	This is the total size (in kbytes) of all messages received from the digital network.

Messages Rejected	
Description	This is the number of messages rejected by the Meridian Mail system at this site. This statistic is accumulated since the last reset to zero.

Last OM Clear	
Description	This indicates the last date and time when the Operational Measurement statistics were reset to zero.

Voice port statistics

Introduction

Voice port statistics reflect traffic sent between the Net Gateway and Meridian Mail systems at this site.

Statistics can be shown for each individual port, or they can be shown as totals for all ports.

Why you should view these statistics

You should view the Voice Port Statistics periodically for the purpose of monitoring traffic volume. This page identifies if there were send or receive failures, or both.

Reasons for send failures

Send failures typically indicate a hardware failure. The following are some examples of hardware failures:

- Meridian Mail could not receive the message. The system might have been down, or was too busy.
- The voice port was down.
- The voice port lines are not connected.
- There were too many retries due to noisy connections.
- There is a dialing conflict between Net Gateway and Meridian Mail (in other words, Net Gateway and Meridian Mail are trying to use the same line).

Once the system is running properly, these types of errors should occur very rarely.

Reasons for receive failures

Receive failures usually indicate configuration problems. The following are some examples of configuration problems:

- The routing table is incorrect.
- The receiving site is not known by Meridian Mail. The local site ID of the Net Gateway system did not match the globally defined site ID in the Net Gateway system routing table.

Reasons for receive failures (continued)

It is recommended that you do the following:

- Compare the information on the Local Site Maintenance screen in Meridian Mail with the Routing Table Administration and the MMNG Administration pages in the Net Gateway system.
- Request site information (from the MMNG Administration page).
- Run the Enterprise Networking Diagnostic test.

Relationship to the Windows NT Performance Monitor

The Voice Port Statistics page corresponds to the Nortel MMNG Ports object in the Windows NT Performance Monitor. While the Voice Ports Statistics page shows historical information, the Windows NT Performance Monitor shows actual real-time activity in graph form.

Windows NT Performance Monitor counters correspond with fields on the Voice Ports Statistics page as described in the following table.

Counters that correspond with fields on the Voice Port Statistics page are listed in the following table.

Voice Port Statistics fields	Nortel MMNG Ports counters
Messages Sent	Voice Messages Sent
KBytes Sent	Kbytes Sent
Send Failures	Send Failures
Messages Received	Voice Messages Received
KBytes Received	Kbytes Received
Messages Rejected	Rejected
CCS	Voice CCS (The number of 100-second intervals of voice traffic.)
not applicable	Maximum ports (The number of ports in use in this interval.)

In addition to the counters, instances correspond to the voice ports on the Net Gateway system. Available instances are 1, 2, 3, 4, and T (total for all voice ports).

Viewing the statistics

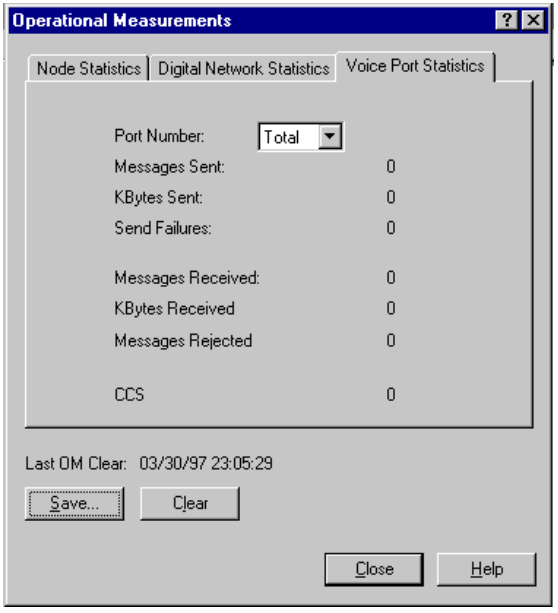
To view the statistics, do the following.

Starting Point: MMNG Administration window

Step	Action
1	Click on OM. ***Result:*** The Operational Measurements page appears (with Node Statistics selected).
2	Click on the Voice Port Statistics file tab. ***Result:*** The Voice Port Statistics page appears.
3	Select the port you want to view from the Port Number drop-down list. or Select Total if you want to view totals for all four ports. ***Result:*** The available statistics are displayed. ***Note:*** The page does not refresh with new data automatically. To see the most recent up-to-date information, you must exit and then redisplay this page.

Voice Port Statistics page

The following is an example of the Voice Port Statistics page.



Field descriptions Fields on this page are described in the following table.

Port Number	
Description	The “Port Number” drop-down box is used to select the voice port to be monitored.
Values available	1, 2, 3, and 4: Enables you to view statistics on a particular port. Total: Enables you to view statistics for all ports.
Messages Sent	
Description	This is the number of messages sent from this Net Gateway system to the Meridian Mail system.
KBytes Sent	
Description	This is the total size (in kbytes) of all messages sent.
Send Failures	
Description	This is the number of messages that could not be sent from this Net Gateway system to Meridian Mail. This statistic is accumulated since the last reset to zero.
Messages Received	
Description	This is the number of messages received by this Net Gateway system from Meridian Mail.
KBytes Received	
Description	This is the total size (in kbytes) of all messages received.
Messages Rejected	
Description	This is the number of messages attempted to be sent to Net Gateway by Meridian Mail but rejected by this Net Gateway system. This statistic is accumulated since the last reset to zero.

CCS	
Description	Centi-call seconds. This is the number of 100-second intervals of port traffic. ***Example:*** Five minutes of traffic equals 300 seconds or 3 centi-call seconds. This statistic is accumulated since the last reset to zero.
Last OM Clear	
Description	This indicates the last date and time when the Operational Measurement statistics were reset to zero.

Saving and clearing statistics

Introduction

Each Operational Measurements page provides two controls: Save and Clear.

Save button

The Save button (on any Operational Measurements page) allows you to save node, digital network, and voice port statistics information to a comma-delimited ASCII file for use in any standard database or spreadsheet. The file can be saved in any accessible directory on the Net Gateway system.

By default, the generated file has the ".csv" file extension.

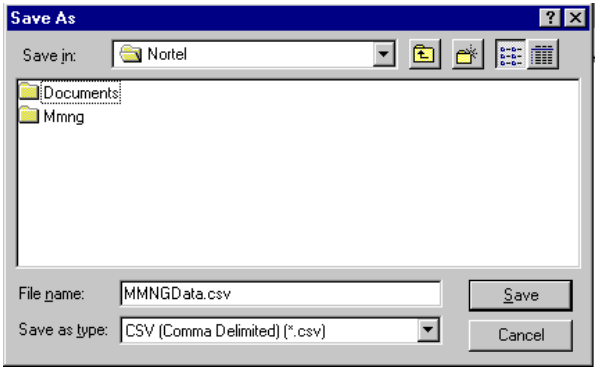
Clear button

The clear button (on any Operational Measurements page) resets all node, digital network, and voice port statistic values to zero.

Saving statistics to a file

To save statistics to a comma-delimited ASCII file, do the following on any Operational Measurements page.

Step	Action
1	Click on Save... ***Result:*** The Save As dialog box appears.



2	Navigate to the directory (folder) where you want to save the file.

Step	Action
3	Type the name of the file you want to save in the File name box. Alternatively, use the default name “MMNGData.csv” as the file name.
4	Ensure that the “Save as type” box shows CSV (Comma Delimited (*.csv). If it does not, select CSV (Comma Delimited (*csv) from the drop-down list.
5	Click Save. ***Result:*** The file is saved and the dialog box is closed.

Clearing statistics

To clear statistical information from the system, do the following on any Operational Measurements page.

Step	Action
1	Click on Clear. ***Result:*** You are prompted to confirm the clear request.
2	Click on Yes. ***Result:*** All Operational Measurement statistics are reset to zero.

Viewing statistics in a database or spreadsheet application

Introduction

Operational Measurement statistics information can be saved to a file for viewing at a later time in a database or spreadsheet application. Data is saved in comma-delimited format.

This topic explains how to open a statistic file in Microsoft Excel. For instructions on opening the file in any other application, refer to the appropriate documentation.

Viewing the statistics in Microsoft Excel

The simplest method of viewing the statistics information is to open the comma-delimited file in Microsoft Excel.

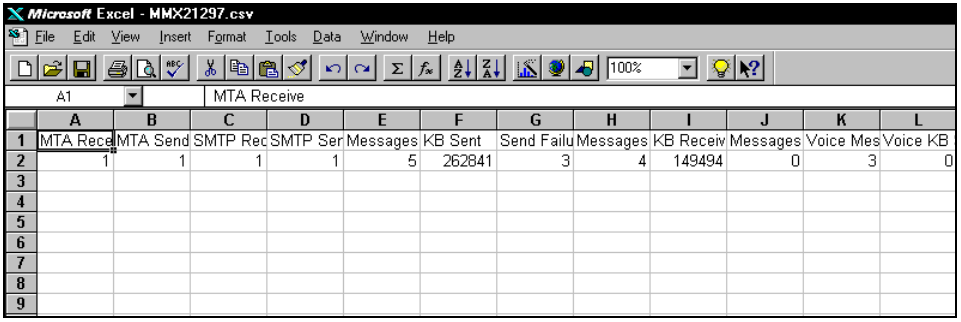
Do the following.

Step	Action
1	Start Microsoft Excel.
2	On the menu bar, click File, then click Open. ***Result:*** The Open dialog box appears.
3	Navigate to the directory that contains the file you wish to open.
4	In the “Files of type” drop-down list, select “Text Files (*.prn, *.txt, *.csv)”. ***Result:*** The file you want to open is displayed in the list of files.
5	Select the file and click Open. ***Result:*** The statistics information is displayed.

Example of a statistic file in Microsoft Excel

The following is an example of what the statistic file looks like when opened in Microsoft Excel. The file contains two rows of information:

- The first row of information contains the statistics headings. There are approximately 52 columns.
- The second row of information contains the statistics data.



	A	B	C	D	E	F	G	H	I	J	K	L
1	MTA Rece	MTA Send	SMTP Rec	SMTP Ser	Messages	KB Sent	Send Failu	Messages	KB Receiv	Messages	Voice Mes	Voice KB
2	1	1	1	1	5	262841	3	4	149494	0	3	0
3												
4												
5												
6												
7												
8												
9												

Suggestion: To create a view of statistical information over an extended period of time, you can copy and paste information from several statistic files into one Excel file.

Using the Win NT Performance Monitor

Introduction

The Performance Monitor is a Windows NT graphical tool for measuring the performance of both the Net Gateway system and the computer on which the Net Gateway system is running.

The Performance Monitor provides charting, alerting, and reporting capabilities that reflect both current activity and ongoing logging. You can open, browse, and chart log files later as if they reflected current activity.

This topic discusses the use of the Windows NT Performance Monitor for measuring the performance of the Net Gateway system. It does not discuss using it for measuring the performance of the PC.

Performance Monitor objects

The types of information that you can view with the Performance Monitor are called objects. For Net Gateway, you can view the behavior of the following objects:

- MMNG Performance
  This object corresponds to the Node Statistics page in Net Gateway Operational Measurements.
- Nortel MMNG Network
  This object corresponds to the Digital Network page in Net Gateway Operational Measurements.
- MMNG Ports
  This object corresponds to the Voice Port Statistics page in Net Gateway Operational Measurements.

Performance Monitor counters

Each object has a set of counters that provide more detailed information about the object. For Net Gateway, the counters provide information about message traffic to and from the Net Gateway system. The counters correspond to the fields that are shown on the Net Gateway Operational Measurement pages.

Performance Monitor counters (continued)

MMNG Performance counters

Counters that correspond with fields on the Node Statistics page are listed in the following table.

Node Statistics fields	MMNG Performance counters
Maximum ENA receive queue size	ENA receive queue
Maximum ENA send queue size	ENA send queue
Maximum SMTP receive queue size	SMTP receive queue
Maximum SMTP send queue size	SMTP send queue
not applicable	Maximum ports

Nortel MMNG Network counters

Counters that correspond with fields on the Digital Network Statistics page are listed in the following table.

Digital Network Statistics fields	Nortel MMNG Network counters
Messages Sent	Network Messages Sent
KBytes Sent	Network Kbytes Sent
Send Failures	Network Send Failures
Messages Received	Network Messages Received
KBytes Received	Network Kbytes Received
Messages Rejected	Network Messages Rejected

Performance Monitor counters (continued)

Nortel MMNG Voice Port Statistics counters

Counters that correspond with fields on the Voice Port Statistics page are listed in the following table.

Voice Port Statistics fields	Nortel MMNG Ports counters
Messages Sent	Voice Messages Sent
KBytes Sent	Kbytes Sent
Send Failures	Send Failures
Messages Received	Voice Messages Received
KBytes Received	Kbytes Received
Messages Rejected	Rejected
CCS	Voice CCS (The number of 100-second intervals of voice traffic.)
not applicable	Maximum ports (The number of ports in use in this interval.)

In addition to the counters, instances correspond to the voice ports on the Net Gateway system. Available instances are 1, 2, 3, 4, and T (total for all voice ports).

Performance Monitor time intervals

Time intervals are periods of time between the reporting of events. By default, the intervals are set at one second.

Intervals can be changed according to your needs and should be meaningful to your organization. For example, you may want to change the interval to ten minutes to view daily load statistics; or, you may want to change the interval to one hour to view weekly load statistics.

What you can do with the Performance Monitor

The following overview lists how you use Performance Monitor to view the performance of objects:

- View and dynamically change charts reflecting current activity and showing counter values that are updated at a user-defined frequency.
- Export data from charts, logs, alert logs, and reports to spreadsheet or database programs for further manipulation and printing.

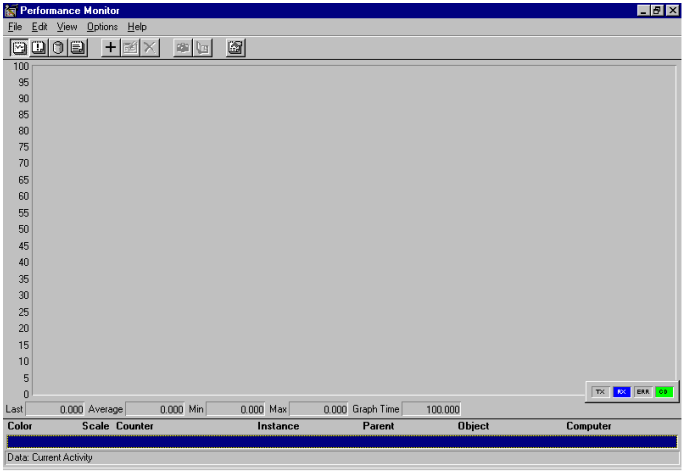
What you can do with the Performance Monitor (continued)

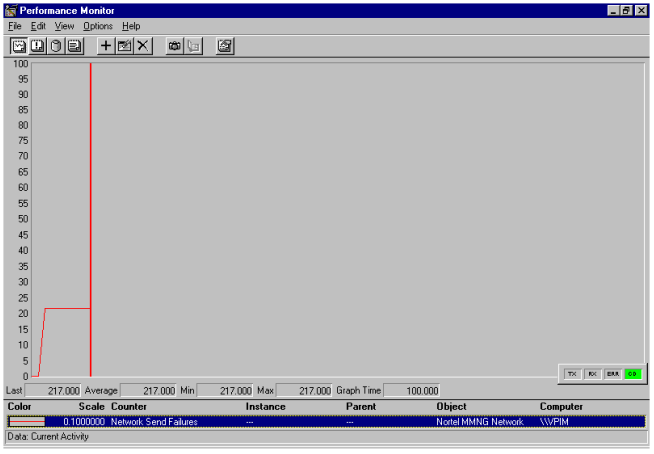
- Add system alerts that list events in the Alert Log and notify you either by reverting to Alert view, logging the event in Event Viewer's Application log, or issuing a network alert.
- Run a predefined program either every time or only the first time a counter value goes over or under a user-defined value.
- Append selected sections of existing log files to a single file, forming a long-term archive.
- View current activity reports, or create reports from existing log files.
- Save individual chart, alert, log, and report settings, or save the entire workspace setup to reuse when needed.

How to use the Performance Monitor

To gather statistical information by using the Windows NT Performance Monitor, do the following.

Step	Action
1	Click Start.
2	Click Programs.
3	Click Administrative Tools (Common).
4	Click Performance Monitor. ***Result:*** The following screen appears.



Step	Action
5	Click Edit, then Add to Chart. ***Result:*** A dialog box appears.
6	Select one of the following objects from the Object drop-down list: • Nortel MMNG Network • Nortel MMNG Performance • Nortel MMNG Ports
7	Select one or more counters.
8	If you want to view voice port statistics, select an instance.
9	Repeat steps 7 and 8 for each value you want to chart.
10	Click OK. ***Result:*** The chart starts reporting statistics. The following is an example of what the chart may look like. 

Clearing the chart

To clear the chart, click File, then New Chart.

Chapter 6

Maintenance and troubleshooting

In this chapter

Overview of this chapter

Introduction

This chapter explains how to perform the following tasks:

- View messages associated with Net Gateway by using the Windows NT Event Viewer.
- Stop the following Net Gateway services:
  - — Dialogic
  - — Nortel MMNG Enterprise Networking Agent
  - — Nortel MMNG SMTP
  - — Nortel MMNG Transfer Agent
- Start Net Gateway services that have been stopped.
- Run the Enterprise Networking Diagnostic Test
  - — on Meridian Mail
  - — on Net Gateway
- Solve Entrust problems.
- Run the SMTP loopback test.
- Create a Windows NT repair disk.

Event Viewer

The Event Viewer is a Windows NT tool that you can use to monitor events in your system. You can use Event Viewer to view and manage the following:

- system event logs (including logs for the Dialogic card)
- security event logs
- application event logs, including events for the following Net Gateway components:
  - — Message Transfer Agent
  - — Enterprise Networking Agent
  - — SMTP Agent

Stopping Net Gateway services

You should stop Net Gateway services when a service-threatening problem occurs within the system. The following are examples of service-threatening problems:

- The system is not working properly.
- There is a high failure rate in the sending of messages (resulting in nondelivery notifications and many messages in event logs).

Starting Net Gateway services

You should use this procedure if you have stopped Net Gateway services for any reason.

Meridian Mail Enterprise Networking test

The Enterprise Networking Diagnostic Test on Meridian Mail is performed

- each time a new remote site is added to the Net Gateway network database
- each time a remote site is modified

If the test fails, the site is placed into error status.

The test can also be used to clear a site that is in error. If the test is successful, the error status is cleared (changed to idle or ready).

Net Gateway Enterprise Networking test

The Net Gateway Enterprise Diagnostic Test should be run immediately after the Net Gateway system has been installed and configured. If you make any changes to either system (such as voice port configuration on Meridian Mail, or site configuration on either system), it is recommended that you run this test again to ensure that the system is still working.

Solve Entrust problems

Problems can occur with Entrust on your system when the following happen:

- Net Gateway site administrators forget their site passwords.
- Net Gateway site administrators lose or damage their Entrust profiles.
- Net Gateway site administrators are not able to log on for the first time.

Solve Entrust problems (continued)

- You and the user may lose an automatically generated password.
- The file containing the list of users is lost or damaged.
- Users are not able to select recipients for encrypted files.

SMTP loopback test

The SMTP loopback test is used to verify that messages can be sent to, and received from, other sites in the Net Gateway network. The SMTP loopback test sends a message to the loopback mailbox of one or more destinations. The loopback mailbox at the remote site routes the message back to the local system to check that the systems are communicating correctly.

This test can be performed on just one site, or on all sites.

Create Windows NT repair disk

The Repair Disk utility is used to update the repair information for Windows NT on your hard disk, or to create a new Emergency Repair Disk using the repair information currently saved on your hard disk.

The repair information on your hard disk or your Emergency Repair Disk can be used to reconstruct the following if they become damaged:

- Windows NT system files
- system configuration
- start-up environment variables
- Net Gateway registry (which contains the routing table and passwords)

Using the Windows NT Event Viewer

Introduction

The Event Viewer is a Windows NT tool that you can use to monitor events in your system. You can use Event Viewer to view and manage the following:

- system event logs (including logs for the Dialogic card)
- security event logs
- application event logs, including events for the following Net Gateway components:
  - — Message Transfer Agent
  - — Enterprise Networking Agent
  - — SMTP Agent

You can also archive event logs.

The event-logging service starts automatically when you run Windows NT. You can stop event logging with the Services tool in Control Panel.

What this topic contains

This topic explains how to view and work with logs associated with the Net Gateway system.

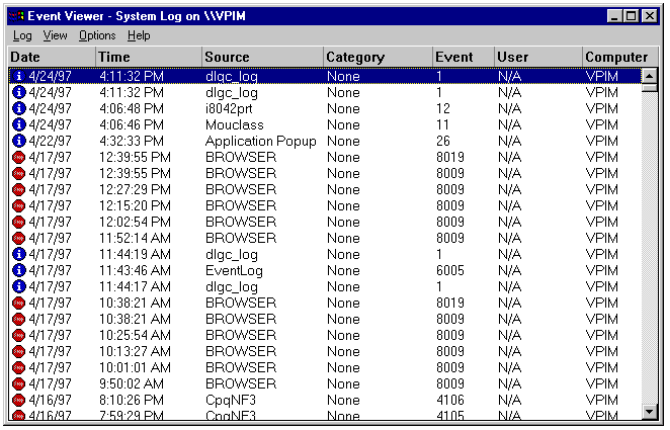
When you first open a log, Event Viewer displays the current information for that log. That information is not updated while you view the list unless you refresh it. The log is automatically updated only when it is no longer the current log displayed in Event Viewer.

Starting the Event Viewer

To start the Event Viewer, do the following.

Step	Action
1	On the Windows NT task bar, click Start. ***Result:*** The Start menu appears.
2	Click Programs. ***Result:*** The Programs menu appears.

Step	Action
3	Click Administration Tools (Common). ***Result:*** The Administration Tools menu appears.
4	Click Event Viewer. ***Result:*** The Event Viewer dialog appears.



Step	Action
5	To view messages in the system or application logs, do the following.

To view	See
the system log	“Viewing Dialogic card messages” on page 6-6
the application log	“Viewing Net Gateway system messages” on page 6-7

Viewing Dialogic card messages

To view messages associated with the Dialogic card, do the following.

Step	Action
1	On the Log menu, select System.
2	Look for current system log messages that contain “dlgc_log” in them.
3	Click View, then Detail, to display detailed information.

Viewing Net Gateway system messages

To view messages associated with the Net Gateway system, do the following.

Step	Action
1	On the Log menu, select Application.
2	Look for current messages that contain NortelMMNG in them.
3	Click View, then Detail, to display detailed information.

Working with the event log

Once you have displayed the appropriate Event Viewer log, you can view specific event records in that log. To do so, do one of the following on the View menu.

To	Click
sort events chronologically	Oldest First or Newest First
view only events with specific characteristics	Filter Events
search for events based on specific characteristics or event descriptions	Find
display descriptions and additional details that the event source might contain	Detail

More information

For more information, refer to the Event Viewer online help.

Stopping all Net Gateway services

Introduction

This topic explains how to stop the following Net Gateway services by using the Windows NT Services Control Manager:

- Dialogic
- Nortel MMNG Enterprise Networking Agent
- Nortel MMNG SMTP
- Nortel MMNG Transfer Agent

When you should use this procedure

You should stop Net Gateway services when a service-threatening problem occurs within the system. The following are examples of service-threatening problems:

- The system is not working properly.
- There is a high failure rate in the sending of messages (resulting in nondelivery notifications and many messages in event logs).

Relationship of services

Each service is dependent on the service that precedes it in the above list. What this means is that a particular service cannot be started successfully until the preceding service has also started successfully. Therefore, if the Dialogic service does not start, then neither will the remaining services.

The same rule applies when stopping services. If you stop a service, then subsequent services are also automatically stopped.

Note: When the Transfer Agent is stopped and restarted, some users might receive multiple copies of the same message. There is no danger, however, that they will lose messages.

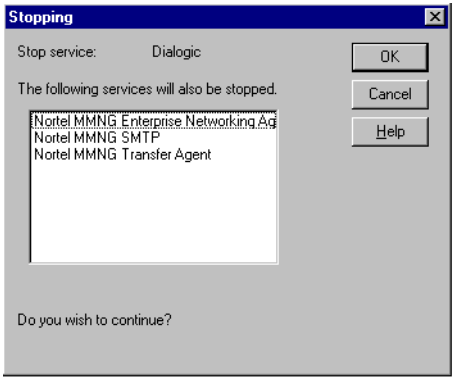
This topic explains how to stop all services at once by stopping the Dialogic service.

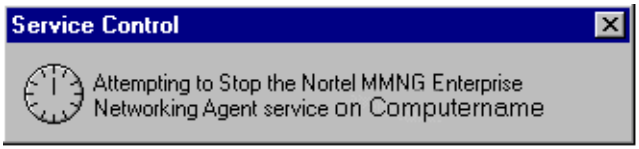
Procedure

To stop all Net Gateway services at once, do the following.

> **ATTENTION**
>
> Stopping Net Gateway services causes any message delivery or receipt sessions currently in progress to be dropped.
>
> However, after all services are successfully restarted, messages waiting to be sent to or by Meridian Mail are redelivered.

Step	Action
1	Display the Control Panel. You can do this through the My Computer icon, or by selecting Settings from the Start menu.
2	Click Control Panel Services. ***Result:*** A list of Control Panel Services appears.
3	Select Dialogic.
4	Click Stop. ***Result:*** The Stopping window appears.



Step	Action
5	Click OK. ***Result:*** The following warning appears.  A warning similar to this appears for each of the following services which are also stopped: • Nortel MMNG SMTP • Nortel MMNG Transfer Agent

Starting Net Gateway services

Introduction

This topic explains how to restart the following Net Gateway services by using the Windows NT Services Control Manager:

- Dialogic
- Nortel MMNG Enterprise Networking Agent
- Nortel MMNG SMTP
- Nortel MMNG Transfer Agent

When you should use this procedure

You should use this procedure if you have stopped Net Gateway services for any reason.

Relationship of services

Each service is dependent on the service that precedes it in the above list. What this means is that a particular service cannot be started successfully until the preceding service has also started successfully. Therefore, if the Dialogic service does not start, then neither will the remaining services.

This topic explains how to start services individually. The services must be started in the following order:

- *First:* Dialogic (see page 6-13)
- *Second:* Nortel MMNG Transfer Agent (see page 6-14)
- *Third:* Nortel MMNG SMTP (see page 6-15)
- *Fourth:* Nortel MMNG Enterprise Networking Agent (see page 6-16)

Note: If you attempt to start the SMTP or Enterprise Networking Agent services before starting the MMNG Transfer Agent service, the MMNG Transfer Agent service will be started automatically.

Start or failure messages

Messages which indicate whether specific services started successfully or not are reported in the Windows NT Event Viewer logs. You should confirm the status of the service by reviewing the logs in the Event Viewer. For instructions on how to use the Event Viewer, see “Using the Windows NT Event Viewer” on page 6-5.

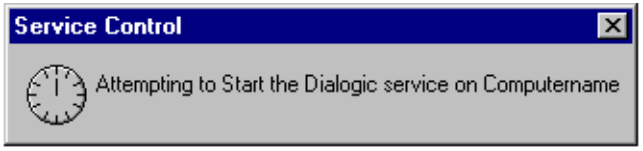
Possible causes for start failure

The following table summarizes the possible causes for failure for each Net Gateway service. You may want to review this table and ensure that possible causes are removed before you start the service.

Service	Possible cause of failure	Fix
Dialogic	• bad interrupt setting (incorrect jumper setting) • incorrect memory address (incorrect jumper setting) • conflicting IRQ number	Verify all settings. See Chapter 3, “Installing Net Gateway hardware and software.”
Nortel MMNG Transfer Agent Nortel MMNG SMTP	• Dialogic service has not been started • registry database is corrupted	Do the following as applicable: • Start the Dialogic service. • Request the routing table from the MMNG Administration page in Local Administration. • Reinstall the Net Gateway software.
Nortel MMNG Enterprise Networking Agent	The copy protection device is not installed on the back of the computer.	Install the device. See Chapter 3, “Installing Net Gateway hardware and software.” Restart this service.

Starting the Dialogic service

To start the Dialogic service, do the following.

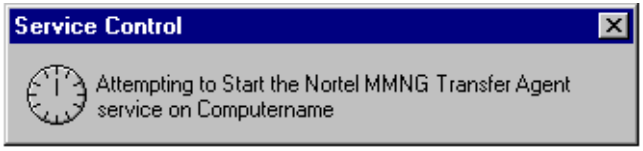
Step	Action
1	Display the Windows NT Control Panel. You can do this through the My Computer icon, or by selecting Settings and then Control Panel from the Start menu.
2	Click Services. ***Result:*** The Services dialog appears.
3	Click Dialogic.
4	Click Start. ***Result:*** The following message appears.  When done, the Status shows Started.
5	Look for the following message in the Event Viewer System Log: `c:\snt\dialogic\bin\voxctl - started board dxxxB1`

IF this message is	THEN
present	the Dialogic service was successfully started. Go to the next procedure.
not present	the Dialogic service did not start successfully. There are one or more error messages. Do the following: • Review the messages. • See Chapter 3, “Installing Net Gateway hardware and software.” • Verify dialogic card settings.

Starting the Nortel MMNG Transfer Agent service

To start the Nortel MMNG Transfer Agent service, do the following.

Starting Point: Services dialog box

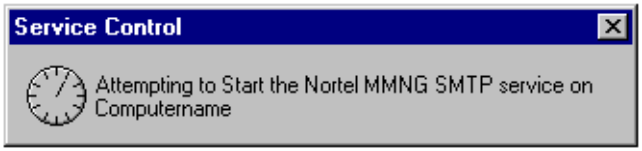
Step	Action
1	Click Nortel MMNG Transfer Agent.
2	Click Start. ***Result:*** The following message appears.  When done, the status shows Started.
3	Look for the following message in the Event Viewer Application Log: `The Nortel MMNG MTA service has started successfully`

IF this message is	THEN
present	the Nortel MMNG Transfer Agent service was successfully started. Go to the next procedure.
not present	the Nortel MMNG Transfer Agent service did not start successfully. Try reinstalling the Net Gateway software.

Starting the Nortel MMNG SMTP service

To start the Nortel MMNG SMTP service, do the following.

Starting Point: Services dialog box

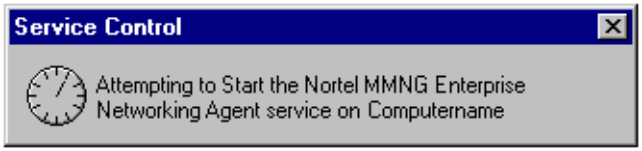
Step	Action
1	From the Control Panel Services list, click Nortel MMNG SMTP.
2	Click Start. ***Result:*** The following message appears.  When done, the Status shows Started.
3	Look for the following message in the Event Viewer Application Log: `MAIN: SMTP service ready`

IF this message is	THEN
present	the Nortel MMNG SMTP service was successfully started. Go to step 1.
not present	the Nortel MMNG SMTP service did not start successfully. Try reinstalling the Net Gateway software.

Starting the Nortel MMNG Enterprise Networking Agent service

To start the Nortel MMNG Enterprise Networking Agent service, do the following.

Starting Point: Services dialog box

Step	Action
1	From the Control Panel Services list, select Nortel MMNG Enterprise Networking Agent.
2	Click Start. ***Result:*** The following message appears.  When done, the Status shows Started. ***Note:*** There is a slight delay between the "Started" display in the services list and the actual message appearing in the Event Viewer Application Log.
3	Look for the following message in the Event Viewer Application Log: `SLEE Process Started`

IF this message is	THEN
present	you have successfully started all Net Gateway services.
not present	the Nortel MMNG Enterprise Networking Agent did not start successfully. Do the following: • Ensure that the copy protection device is installed on the back of the computer. • Restart this service.

Running the Enterprise Networking Test - Meridian Mail

Introduction

The Meridian Mail Enterprise Networking Diagnostic Test is used to verify that sites are correctly configured in Meridian Mail. When sites are correctly configured, Meridian Mail users can begin to compose and send messages to those sites.

When you should run this test

This test is performed

- each time a new remote site is added to the network
- each time a remote site is modified

If the test fails, the site is placed into error status.

The test can also be used to clear a site that is in error. If the test is successful, the error status is cleared (changed to idle or ready).

Procedure

For instructions on how to run the Enterprise Networking Diagnostic Test on Meridian Mail, refer to the *Enterprise Networking Installation and Administration Guide* (NTP 555-7001-246).

Running the Enterprise Networking Diagnostic Test - Net Gateway

Introduction

The Net Gateway Enterprise Networking Diagnostic Test is used to verify that the links between the Net Gateway and Meridian Mail systems are configured and working correctly. It confirms the following:

- Telephone lines have been configured correctly in the PBX.
- The voice ports are working on both the Meridian Mail and Net Gateway systems.
- Meridian Mail and Net Gateway can recognize each other, based on their site information.

When you should run this test

Ideally, this test is run immediately after the Net Gateway system has been installed and configured. If you make any changes to either system (such as voice port configuration on Meridian Mail, or site configuration on either system), it is recommended that you run this test again to ensure that the system is still working.

Requirements

In order to successfully run this test, the local site must be configured on both the Meridian Mail and Net Gateway systems. Site configuration must match on both systems.

At least one other site must be defined on both systems. This site could be the overflow site.

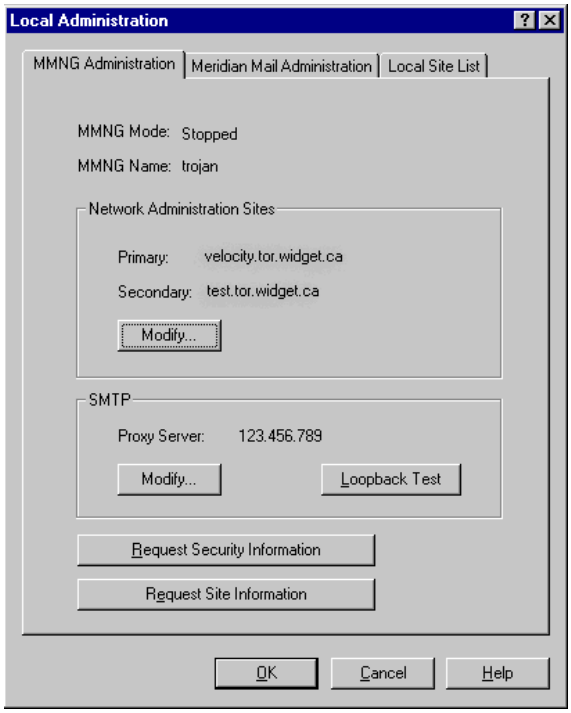
Procedure

To run the Enterprise Networking Diagnostic test, do the following.

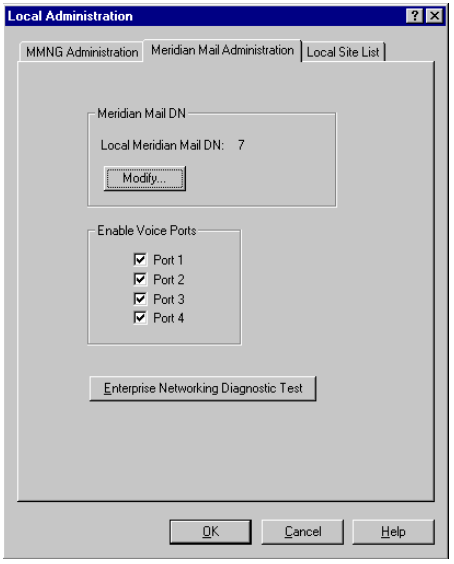
Note: The test takes approximately two minutes or less to run.

Starting Point: Main window

Step	Action
1	Click Local Administration. ***Result:*** The MMNG Administration property page appears.



Step	Action
2	Click the Meridian Mail Administration tab. ***Result:*** The Meridian Mail Administration page appears.



3	Click Enterprise Networking Diagnostic Test. ***Result:*** You are asked by the system if you really want to run this test.

4	Click Yes. ***Result:*** You receive the following message: `Test Started: Examine Event Log for Results` For a list of messages received, see “Event Log messages” following this procedure.

Event Log messages

The following table identifies the messages that appear in the Event Log when the Enterprise Diagnostic Test has been successfully completed.

Note: Failures can happen at any stage.

Message	What this means
Outgoing test to Meridian Mail is starting	Net Gateway initiated contact with Meridian Mail.
Placing the call to Meridian Mail	Net Gateway dialed the Enterprise Networking DN for Meridian Mail.
The call has been answered	Meridian Mail received and answered the call.
Initiating the connection	Net Gateway sent a C-tone to Meridian Mail.
The connection has been established	Meridian Mail received the C-tone and sent a D-tone back to Net Gateway.
Setting up the session	Net Gateway set up the session with Meridian Mail.
The session has been set up	Meridian Mail confirmed the session setup information.
Sending the originating site ID	Net Gateway sent the site ID of an automatically selected remote system from its routing table.
The originating site ID has been confirmed	Meridian Mail confirmed the site ID sent to it by Net Gateway.
Sending the session information	Net Gateway sends the local Meridian Mail site ID and the initiating password to Meridian Mail.
Session information has been confirmed	Once the session information is checked, Meridian Mail informs Net Gateway that the session information is correct and sends the responding password to Net Gateway.
Ending the session	Net Gateway terminates the session and ends the test.
Outgoing test to Meridian Mail completed successfully	Everything between Meridian Mail and Net Gateway is working correctly.

Possible causes for failure

If the Enterprise Diagnostic Test failed, the following may be possible causes:

- Telephone lines have not been configured correctly in the PBX.
- One or more voice ports are not working.
- Voice ports may be disabled on either system.
- The Enterprise Networking DN in Meridian Mail does not match the DN defined in the Net Gateway system.
- Meridian Mail and Net Gateway cannot recognize each other based on their site information.
- There may have been noise on the line.

What to do if the test fails

If the test fails, identify the stage where the test failed. Then verify that the associated system configuration is correct (for example, DNs and site information on either Meridian Mail or Net Gateway).

Troubleshooting Entrust

Introduction

With the Entrust option installed, the Net Gateway system encrypts each voice message. Only another Net Gateway system with the correct key can decrypt the message.

The Net Gateway administration interface automates the distribution of digital keys which simplifies administering security for the networked voice mail system.

Limitations

The Entrust option only provides security between Net Gateway systems only. If your network includes sites using Norstar Voice Mail or VPIM-compatible voice mail system, you cannot use Entrust to secure messages between Net Gateway and those sites.

Types of problems that can occur

The following are some problems that can occur with Entrust on your system when Net Gateway site administrators

- forget their site passwords
- lose or damage their Entrust profiles
- are not able to log on for the first time
- may lose an automatically generated password

Other problems can occur because

- the file containing the list of users becomes lost or damaged
- the file containing the list of users cannot be accessed when sending or requesting security information
- encryption fails

For information on how to recover from these types of problems, refer to the *Entrust/Lite Manager User Guide*.

Running the SMTP loopback test

Introduction

The SMTP loopback test is used to verify that messages can be sent to and received from other sites in the Net Gateway network.

This test is not supported on non-Net Gateway systems.

What it does

The SMTP loopback test sends a message to the loopback mailbox of one or more destinations. The loopback mailbox at the remote site returns the message to the local system to check that the systems are communicating correctly.

This test can be performed on just one site, or on all sites in the Routing Table.

If a proxy server or mail relay is used in the network, the proxy server or mail relay may not be able to route the message. This test is not guaranteed to work where proxy servers are involved.

Why you should run this test

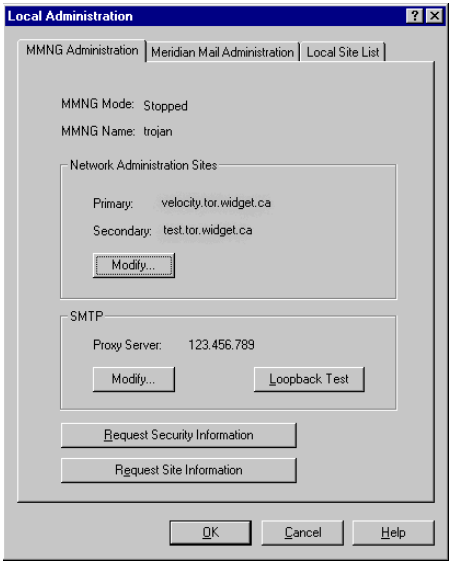
Running this test confirms that all sites within the Net Gateway network are accessible and that your network is running properly.

Procedure

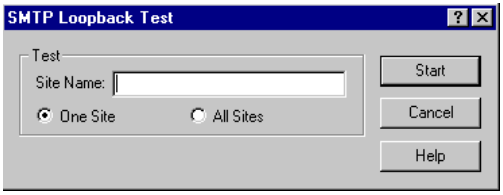
To run the SMTP loopback test, do the following.

Starting Point: Main window

Step	Action
1	Click Local Administration. ***Result:*** The MMNG Administration page appears.



2	Click Loopback Test. ***Result:*** The SMTP Loopback Test dialog box appears.



Step Action

3 How do you want to perform the test?

IF you want to run the test	THEN
on one site only	• enter the fully qualified domain name (FQDN) of the site. • click the One Site radio button.
on all sites	click the All Sites radio button.

4 Click Start.

Result: The test is run.

5 Open the Windows NT Event Viewer and watch for Error/Event notifications related to the test.

How quickly you receive the results depends entirely on the type of network in which the Net Gateway has been installed.

IF the network is	THEN
simple with no proxy servers or firewalls	the results are received almost instantly.
is complex with one or more Internet and proxy servers and firewalls	it may be several hours before you start receiving results. Generally, all results should be received within 24 hours.

If the test was successful, you receive the following message:

```
Loopback test site “domain name” was
successful
```

Possible causes for failure

If the SMTP loopback test did not work between one or more sites, the following may be possible causes:

- The Net Gateway system at the far end is down.
- Parts of the network are down.
- Routing information is not correctly defined.
- Domain names cannot be resolved.

What to do if the test fails

If the test fails for any reason, contact your corporate data network administrator.

Creating a Windows NT repair disk for Net Gateway

Introduction

The Repair Disk utility is used to return a Windows NT-based computer back to the state of the last Emergency Repair update. The disk can be used to reconstruct the following if they become damaged:

- Windows NT system files
- system configuration
- start-up environment variables
- Net Gateway registry (which contains the routing table and passwords)

Note: The Repair Disk utility should not be used as a backup tool.

What this topic contains

This topic provides a very brief explanation of how to create the repair disk and how to use it to repair your system. Refer to the Windows NT documentation for more detailed information.

How it works

The Repair Disk utility replaces some of the files saved in the Repair directory with new files that contain updated information about the system configuration.

Creating the repair disk

To create a new Emergency Repair disk that contains the current configuration information for your computer, do the following.

CAUTION
Risk of data loss
The Repair Disk utility formats the diskette before saving the configuration files; all data currently on the disk will be lost.

Creating the repair disk (continued)

Step	Action
1	On the Windows NT task bar, click Start. ***Result:*** The Start menu appears.
2	Click Run. ***Result:*** The Run dialog box appears.
3	Type **C:\WINNT\SYSTEM32\rdisk.exe** and click OK. ***Result:*** The repair disk utility is started.
4	Click Create Repair Disk. ***Result:*** You are prompted to insert a diskette in drive A:\.
5	Insert a diskette into drive A:\ and click OK. ***Result:*** Windows NT creates the repair disk. When it is finished, you receive a message confirming completion.
6	When the process is finished, do the following: a. Remove the diskette from drive A:\. b. Label the diskette. c. Store the diskette in a secure location.

Restoring your system from the repair disk

To restore your system configuration from the repair disk, you need the Windows NT installation disks or CD-ROM. Do the following.

Step	Action
1	Insert the first boot disk into the computer's floppy drive.
2	Reboot the computer.
3	When the menu appears asking if you want to install Windows NT or if you want to repair, select the option to repair.
4	Follow the instructions on the screen.

Limitations on reinstalling Net Gateway software

Introduction

If you encounter a serious problem with your Net Gateway system and decide to reinstall your software, this topic describes limitations on reinstallation.

Limitations

If you try to reinstall Net Gateway software on a system with less than 14 kbytes of disk space free, you will receive an error dialog box that says “integer divide by zero”.

Solution

If you receive the “integer divide by zero” error message, you must delete files on the system’s hard drive to free enough disk space.

Chapter 7

Voice Profile for Internet Mail (VPIM) description

In this chapter

VPIM-compatible voice messaging systems requirements

Introduction

This topic discusses aspects of the Voice Profile for Internet Mail (VPIM) standard that need to be considered when setting up your Net Gateway system.

Definition: VPIM

The Voice Profile for Internet Mail (VPIM) is an emerging standard that profiles Internet mail for voice messaging. VPIM (version 2) enables Net Gateway to exchange voice mail with non-Nortel equipment.

Definition: VPIM vCards

vCard is an “electronic business card” within a VPIM message. The vCard provides a mechanism for transporting information about the originator that can be used by the receiving VPIM system.

Spoken and text names

Meridian Mail should be configured to ensure that the spoken name and text name are passed to Net Gateway.

Norstar Voice Mail does not support the RVU feature and, at this time, does not support VPIM vCards. Consequently, vCards will not be sent to Norstar Voice Mail recipients. vCards are sent between Net Gateway systems and Net Gateway and VPIM-compatible systems.

Message destination type

Net Gateway must know whether the destination of a message is another Net Gateway system, a Norstar Voice Mail system, or a non-Nortel product, and whether the protocol used to send the message is Enterprise or AMIS.

This type of system is obtained from the Net Gateway routing table. Each site is defined as one of the following:

- MMNG
- NVM (Norstar)
- Meridian Mail (Enterprise or AMIS-A)
- Other

Number of recipients and message length

Net Gateway does not restrict the number of recipients in a single message nor is it limited to a maximum message length (except for the obvious disk storage limitation).

However, your users must be aware of the limitations of your voice mail system. Meridian Mail will not accept, and cannot deliver, a message body that is longer than 99 minutes. Also, mail relays may impose limitations on message length.

Date and time stamps

The originating Net Gateway system uses the date and time passed from Meridian Mail. If the time zone environment variable (TZ) is configured in Windows NT, Net Gateway includes the time zone offset and time zone name when constructing the string.

The receiving system accepts time stamps and discards any time zone offset or time zone name fields. They are discarded because Meridian Mail treats time stamps as the originator's local time, so conversion to the recipient's local time is not required.

Voice encoding

G.726 voice encoding is used when exchanging voice messages between Net Gateway and VPIM-compatible systems.

VPIM Version 2 conformance

In order to claim conformance and be called VPIM compliant, a voice mail system must implement all mandatory features of VPIM in each of two areas: Content and Transport. In addition, systems which conform to this profile must not send messages with features beyond this profile unless explicit per-destination configuration of these enhanced features is provided.

For a listing of VPIM features with which Net Gateway complies, see "VPIM Version 2 conformance" on page 7-4.

VPIM Version 2 conformance

Introduction

This topic identifies the items within the VPIM Version 2 specification with which Meridian Mail Net Gateway complies. Use this topic as reference to determine if your non-Nortel voice mail system can interoperate with Meridian Mail Net Gateway.

For complete explanations of each feature, it is recommended to read Greg Vaudreuil and Glenn Parsons, "Voice Profile for Internet Mail version 2," Internet Draft, March 26, 1997 (draft-ema-vpim-05.txt).

Conformance table description

The conformance table is separated into the following columns:

- *Feature:* name of protocol feature
- *Area:* conformance area to which each feature applies
  - C - content
  - T - transport
  - N - notifications
- *Status:* whether the feature is mandatory, optional, or prohibited. There are five different degrees of status used in this table:
  - *Must:* mandatory
  - *Should:* encouraged optional
  - *May:* optional
  - *Should not:* discouraged optional
  - *Must not:* prohibited
- *Nortel:* Meridian Mail Net Gateway compliance with the feature is marked with an X. Features ignored when messages are received are marked with an I.
- *Note:* This column contains comment about conformance for a particular feature.

Conformance table notes

Notes: The following notes apply to the items which are marked with a note number in the Note column of the conformance table:

1. *Must not* include if all recipients are not known or resolvable.
2. If a sensitive message is received by a system that does not support sensitivity, then it *must* be returned to the originator with an appropriate error notification. Also, a received sensitive message *must not* be forwarded to anyone.
3. If the additional headers are not understood, they *may* be ignored.
4. When binary transport is not available.
5. When binary transport is available.
6. If multiple contents are present in a message, this header *must* be present.
7. Other contents must only be sent by bilateral agreement.
8. If the content cannot be presented in some form, the entire message *must* be nondelivered.
9. When the vCard is present in a message.
10. N and Sound only.
11. Text/plain used in delivery status notifications (DSNs) only.
12. Ignored if within a DSN; otherwise, issue NDN.
13. Uses internal database for address resolution.
14. Passed by Meridian Mail Net Gateway to Meridian Mail which adds entry to its internal directory.

Conformance table

Feature	Area	Must	Should	May	Should not	Must not	Nortel	Note
Message addressing formats								
Use DNS host names	C	X					X	
Use only numbers in mailbox IDs	C		X				X	
Use alphanumeric mailbox IDs	C			X				
Support of postmaster@domain	C	X					X	
Support of non-mail-user@domain	C		X				X	
Support of distribution lists	C		X					
Message header fields: Encoding outbound messages								
From	C	X					X	
From: Addition of text name	C		X				X	
To	C	X					X	1
CC	C		X					1
Date	C	X					X	
Sender	C			X				
Return-Path	C			X				
Message ID	C	X					X	
Reply To	C			X				
Received	C	X					X	
MIME Version 1.0 (Voice 2.0)	C		X				X	
Content-Type	C	X					X	
Content-Transfer-Encoding	C	X					X	

—continued—

Feature	Area	Must	Should	May	Should not	Must not	Nortel	Note
Sensitivity	C			X			X	
Importance	C			X			X	
Subject	C		X				X	
Disposition-notification-to	N			X				
Other headers	C			X			X	
Message header fields: Detection and decoding inbound messages								
From	C	X					X	
From: utilize text personal name	C			X			X	
To	C	X					X	
CC	C			X			I	
Date	C	X					X	
Date: conversion of date to local time	C		X					
Sender	C			X			I	
Return-Path	C			X			I	
Message ID	C	X					X	
Reply To	C	X					X	
Received	C			X			I	
MIME Version 1.0 (Voice 2.0)	C		X				X	
Content type	C	X					X	
Content-Transfer Encoding	C	X					X	
Sensitivity	C	X					X	2
Importance	C			X			X	
Subject	C			X			X	

—continued—

Feature	Area	Must	Should	May	Should not	Must not	Nortel	Note
Disposition-notification-to	N			X				
Other headers	C	X					I	3
Message content encoding: Encoding outbound audio/fax contents								
7BITMIME	C					X		
8BITMIME	C					X		
Quoted printable	C					X		
Base64	C	X					X	4
Binary	C		X					5
Message content encoding: Detection and decoding inbound messages								
7BITMIME	C	X					X	
8BITMIME	C	X					X	
Quoted printable	C	X					X	
Base64	C	X					X	
Binary	C	X					X	5
Message content types: Inclusion in outbound messages								
Multipart/Voice message	C	X					X	
Message/RFC822	C			X			X	
Application/Directory	C		X				X	
Application/Directory: include TEL, EMAIL	C	X					X	
Application/Directory: include N, ROLE, SOUND, REV	C		X				X	10
Application/Directory: only one per level	C	X					X	
Audio/32KADPCM	C	X					X	
Audio/32KADPCM: content-description	C			X				

—continued—

Feature	Area	Must	Should	May	Should not	Must not	Nortel	Note
Audio/32KADPCM: content-disposition	C	X					X	6
Audio/32KADPCM: content-duration	C			X			X	
Audio/32KADPCM: content-language	C			X				
Audio/* (other encodings)	C			X			X	
Image/TIFF	C			X				
Multipart/Mixed	C			X				
Text/plain	C				X		X	11
Multipart/Report	N	X					X	
Multipart/Report: human-readable part is voice	N	X						
Message/delivery status	N	X					X	
Message/disposition-notification	N		X					
Other contents	C				X		X	7
Message content types: Detection and decoding in inbound messages								
Multipart/Voice message	C	X					X	
Message/RFC822	C	X					X	
Application/Directory	C		X				X	
Application/Directory: recognize TEL, EMAIL	C	X					X	
Application/Directory: recognize N, ROLE, SOUND, REV	C		X				X	
Audio/32KADPCM	C	X					X	

—continued—

Feature	Area	Must	Should	May	Should not	Must not	Nortel	Note
Audio/32KADPCM: content description	C			X			I	
Audio/32KADPCM: content disposition	C		X				X	6
Audio/32KADPCM: content duration	C			X			X	
Audio/32KADPCM: content language	C			X			I	
Image/TIFF	C		X				X	
Image/TIFF: send NDN if unable to render	C	X					X	8
Audio/* (other encodings)	C			X			X	
Multipart/Mixed	C	X					X	
Text/plain	C	X					X	12
Text/plain: send NDN if unable to render	C	X					X	8
Multipart/Report	N	X					X	
Multipart/Report: human-readable part is voice	N	X					X	
Message/delivery status	N	X					X	
Message/disposition-notification	N		X					
Other contents	C				X		X	7
Other contents: send NDN if unable to render	N		X				X	
Forwarded messages: use message/RFC822 construct	C		X				X	

—continued—

Feature	Area	Must	Should	May	Should not	Must not	Nortel	Note
Forwarded messages: simulate headers if none available	C		X				X	
Reply messages: send to reply-to, else From address	C	X					X	
Reply messages: always send error on non-delivery	C	X					X	
Notifications: use multi-part/report format	N	X						
Notifications: always send error on non-delivery	C		X					
Message transport protocol: ESMTP commands								
HELO	T	X					X	
MAIL FROM	T	X					X	
MAIL FROM: support null address	T	X					X	
RCP To	T	X					X	
DATA	T	X					X	
TURN	T					X	X	
QUIT	T	X					X	
RSET	T	X					X	
VRFY	T			X			X	
EHLO	T	X					X	
BDAT	T		X					5
Message transport protocol: ESMTP keywords and parameters								
PIPELINING	T		X					
SIZE	T	X					X	

—continued—

Feature	Area	Must	Should	May	Should not	Must not	Nortel	Note
CHUNKING	T		X					
BINARYMIME	T		X					
NOTIFY	N	X					X	
ENHANCED STATUSCODES	N		X					
RET	N		X				X	
ENVID	N			X			X	
ORCPT	N			X			X	
Message transport protocol: ESMTP-SMTP downgrading								
send delivery report upon downgrade								
Directory address resolution								
provide facility to resolve addresses	C		X				X	13
use Vcards to populate local directory	C	X					X	9
use headers to populate local directory	C				X		X	14
Management protocols								
Network management	T		X					
—end—								

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NORTEL
NORTHERN TELECOM

Reader Response Form

Meridian Mail Net Gateway
System Installation and Administration Guide
Product release 1.0

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?

   _____

   _____

   _____

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Reader Response Form

Reader Response Form

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