Meridian Mail Modular Option EC
Site and Installation Planning Guide

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Site and Installation Planning Guide

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About this document

In this chapter

Introduction

This document helps you prepare for Meridian Mail installation. Follow the guidelines described here, to determine the best size and location for your system. Use the worksheets and checklists provided to help you in planning your Meridian Mail installation.

Information about and specifications for the installation of a Meridian 1 switch are included in this document where they pertain to Meridian Mail installation.

Who should use this document

If you are involved in planning for the installation of Meridian Mail at your site, you should read this document.

How this document is organized

This document is organized into five chapters and five appendexes:

- Chapter 1, "Determining system size," shows you how to determine the number of ports and size of the disk (storage hours) required for your site.

- Chapter 2, "Selecting a site," examines the factors involved in selecting a site.

- Chapter 3, "Preparing for installation," identifies the items required before you can install Meridian Mail.

- Chapter 4, "Web server setup," provides information on the system, software, and PC requirements to set up a web server for web-based PC applications.

- Chapter 5, "Planning spares requirements," lists the number and type of Meridian Mail component spares needed for your installation.

- Appendix A "Reference documents," lists documents that may be of value during the site planning and preparation process.

- Appendix B, "Component list," identifies all the components that can be ordered individually.

- Appendix C, "Cable and wiring plan," provides a worksheet to list cables and wiring.

- Appendix D, "Site survey checklist," provides a worksheet to list the features of your site.

- Appendix E, "Data forms and site log form," provides data entry forms that help you to plan and configure Meridian Mail.

NTP references

References to the *System Administration Guide,* the *Installation and Maintenance Guide*, the *System Installation and Modification Guide*, and the *Network Planning Guide* that appear in this guide may be found in the following books:

- *System Administration Guide* (NTP 555-7001-301) for a single-customer system
- *System Administration Guide for Multi-Customer System*s
- (NTP 555-7001-302)
- *Meridian Mail Modular Option EC Installation and Maintenance Guide* (NTP 555-7061-250)
- *System Installation and Modification Guide* (NTP 555-7001-215)
- *Networking Planning Guide* (NTP 555-7001-241)

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NTP references

Chapter 1

Determining system size

In this chapter

Overview

Introduction

This chapter outlines how to estimate the number of ports, nodes, and hours of storage your system will require, based on the estimated system usage. The methods for determining port and storage hours requirements are broken down by feature. You can ignore the procedures for those features that you do not plan to have on your system.

A term used in this chapter that you need to know is *multimedia applications*. This term refers to Meridian Mail services or features that include fax capability. For example, a voice menu that allows a caller to select a fax to receive is a multimedia application.

For hospitality systems, the estimates for system size requirements are different than for other Meridian Mail systems. Therefore, the method for determining the system size for hospitality systems is discussed separately. If you are purchasing a hospitality system, go to "Determining system size for hospitality systems" on page 1-50.

Basic-service, full-service, and multimedia ports

The following port types and capabilities are available:

- basic-service (voice)
- full-service (voice and multimedia)

Note 1: Basic-service multimedia ports are not available.

Note 2: In some regions, Nortel Networks no longer sells full-service multimedia ports. Instead, two full-service ports are used to configure one multimedia port.

To determine how many ports are required for both multimedia and voice services, you need to do the following (detailed instructions are provided later in this chapter):

- Determine how many ports are required for multimedia services.
- Determine how many full- and basic-service ports are required for voice services.
- Calculate the total number of ports as follows:

  (Multimedia x 2) + full- and basic-service = total ports

  Example

  If five multimedia ports and six full-service voice ports are required, purchase
  (5 x 2) + 6 = 16 full-service ports

  Note: The total should be evenly divided by four, since ports are provided on voice processor cards in multiples of four. Add more basic-service ports until the total can be divided evenly by four.

- Reconfigure ten full-service ports as five multimedia ports.

The port type (voice versus multimedia) and capability (basic versus full) determine the features that can be processed by that port. You can have a mixture of port types and capabilities on your system based on the requirements of your site. This

flexibility allows your organization to purchase a lower-cost system (basic ports are less expensive than full-service ports).

The Meridian Mail features that are supported by basic-service and full-service ports are listed below. Note the following:

- Features that require a multimedia port are listed in the Full-service column with an asterisk beside them.
- Features supported by basic-service ports are also supported by full-service ports.

Basic-service	Full-service
ACC ACCESS Enable Option	VM Voice Messaging
AS Announcement Service	EM Express Messaging
MS Voice Menu Service	AN AMIS Networking Agent
PM Prompt Maintenance	DNU Delivery to Non-User
RA Remote Activation	RN Remote Notification
TD Time-of-Day Service	HM Hospitality Messaging
TS Thru-Dial Service	CO Post Checkout Mailbox
VS Voice Softkey	VF Voice Forms Service
	TR Transcription Service
	NW Meridian Networking
	*FOC Fax Outcalling
	Plus all basic services

Note 1: Fax Outcalling (FOC) or Fax on Demand includes

- same call fax delivery (the caller receives faxes during the same call)
- fax callback (the caller specifies a fax number for the fax delivery)
- fax information service (similar to voice announcements, except that a fax is delivered instead of a voice message)

- fax item maintenance (allows the storage and updating of fax items used in Fax on Demand applications)

Note 2: Voice menus or announcements with fax items can run on full-service voice ports as long as the caller is required to enter a fax callback number. With this type of setup, only the fax delivery (fax callback) requires a multimedia port. This option reduces the number of multimedia ports required. Refer to "Number of multimedia ports required" on page 1-19 for more details.

If you are going to have a mixture of port types, capabilities or both, you must determine how many of each port type and capability your system will require (that is, how many basic-service voice, full-service voice, and multimedia ports are required).

Calculating the number of ports required—overview

To determine the number of basic-service ports, first consider which required services need basic-service ports (for example, ICL or IVR). Then refer to "Determining the number of voice ports required" on page 1-7 for instruction on how to estimate traffic requirements for those applications (features). Follow only those procedures that refer to applications or features that you plan to process through basic-service ports. Use those estimates to determine the number of basic-service voice ports required.

To determine the number of full-service voice ports, first consider which required services need full-service voice ports. Then refer to "Determining the number of voice ports required" on page 1-7 for instruction on how to estimate traffic requirements for those applications (features). Use those estimates to determine the number of full-service voice ports required.

When you determine the number of basic-service voice and full-service voice ports required, add the totals to determine the total number of voice ports required.

To determine the number of multimedia ports required, refer to "Number of multimedia ports required" on page 1-19 for instruction on how to estimate traffic requirements for

fax-related features. Follow only those procedures that refer to applications or features that you plan to process through multimedia ports (such as voice menus that have fax items for same call delivery). Use those estimates to determine the number of multimedia ports required.

Then refer to "Total number of voice and multimedia ports required" on page 1-29 to determine the system size required.

ACD queue requirements

If you are going to have a mixture of port types, capabilities, or both, you must set up a separate ACD queue for each group of ports. After you determine the number of ports required of each type and capability, you must plan which ports to linked to which queue.

Determining the number of voice ports required

The number of ports on a system determines the maximum number of users who can use the system and its features at the same time. For example, an eight-port system allows up to eight users to use Meridian Mail at the same time. However, since it is unlikely that all users will try to access their mailboxes simultaneously, each port normally supports a large number of users.

You use standard traffic engineering principles to determine port requirements. These consider busy hour (BH) traffic and desired grade of service. The busy hour is the highest traffic hour for the system.

State traffic capacity in BH CCS (busy hour centi [hundred] call seconds). To calculate traffic capacity add up the total call seconds (connect time) during the busy hour and divide by 100.

$$CCS = \frac{\text{Total call seconds}}{100 \text{ seconds}}$$

When you calculate busy hour traffic, keep in mind that, for a typical business, the busy hour usually occurs between 10:00 a.m. and 11:00 a.m. or between 2:00 p.m. and 3:00 p.m. on weekdays. For individual businesses, the busy hour period may vary.

Furthermore, your busiest hour or peak period may not occur each day. Your peak period may occur only on certain days of the week or month, or only during certain months of the year (especially if your business is seasonal in nature). Consider these ideas when you judge what hour in the week, month, or year is your busy hour. You must be aware of these factors to engineer a system that can truly handle your peak traffic requirements.

Steps for determining the number of voice ports

The steps for determining the number of voice ports required for your organization are listed briefly and then explained in more detail in the procedures that follow. A worksheet on page 1-9 "Worksheet for calculating busy hour activity and the number of voice ports required" helps you perform the required

calculations. To determine the number of voice ports you need, follow these steps.

Step	Action
1	Determine the busy hour voice messaging activity (connect time).
	For instructions, see "Calculating the busy hour messaging activity" on page 1-11.
2	Determine the busy hour activity of all Meridian Mail applications used by your organization.
	For instructions, see "Calculating the total busy hour activity" on page 1-12.
3	Determine the increase in activity that Networking will cause if that feature has been purchased.
	For instructions, see "Calculating the networking activity" on page 1-14. For more information on how to plan for networking, see the *Networking Planning Guide* (NTP 555-7001-241).
	If Networking has not been purchased, then skip this step.
4	Estimate the increase in activity that Outcalling will cause if that feature has been purchased.
	For more information, see "Determining how your organization will use Outcalling" on page 1-15.
	If Outcalling has not been purchased, then skip this step.
5	Calculate the number of ports required.
	For instructions, see "Calculating the number of voice ports required" on page 1-16.

Worksheet for calculating busy hour activity and the number of voice ports required

Note: If you plan to use dedicated ports for particular applications, calculate these port requirements separately, and then insert this value in box 14 on the next page.

Busy hour system activity and ports required		Basic-service voice activity (Call-seconds)	Full-service voice activity (Call-seconds)
1	Voice Messaging activity (see "Calculating the busy hour messaging activity" on page 1-11)		1
2	Activity of all applications (see "Calculating the total busy hour activity" on page 1-12)		
	Voice Menu activity	2a	2b
	Note: Voice menus with fax items for callback delivery must be on full-service voice ports. Refer to "Fax callback activity" on page 1-23. Other voice menus require only basic-service ports.		
	Announcements activity	2c	
	Voice Forms activity		2d
	ACCESS applications activity	2e	2f
	Auto Attendant activity (if used during the busy hour)	2g	
3	Networking activity (if installed and not dedicated) (see "Calculating the networking activity" on page 1-14)		3
4	Outcalling activity (if installed and not dedicated) (see "Outcalling activity" on page 1-14)		4
5	Add each column	5a	5b

— continued —

Busy hour system activity and ports required

6 Number of voice ports required (see "Calculating the number of voice ports required" on page 1-16)

a. Copy the basic-service total from box 5a above. **6** ⬜

b. Divide the figure in box 6 by 100 to determine the total basic-service busy hour activity in CCS. **7** ⬜

c. Look up the CCS (box 7) in "Port capacity" on page 1-17 to determine the number of non-dedicated basic-service voice ports required. **8** ⬜

d. Copy the full-service total from box 5b on the previous page. **9** ⬜

e. Divide the figure in box 9 by 100 to determine the total full-service busy hour activity in CCS. **10** ⬜

f. Look up the CCS (box 10) in "Port capacity" on page 1-17 to determine the number of non-dedicated full-service voice ports required. **11** ⬜

g. Number of ports dedicated to Meridian Networking (obtain assistance from a traffic engineer). **12** ⬜

h. Number of ports dedicated to Outcalling (obtain assistance from a traffic engineer). **13** ⬜

i. Number of voice ports dedicated to or required for other specialized services (see step 7 in "Calculating the number of voice ports required" on page 1-16). **14** ⬜

j. Total number of voice ports required (add lines 8 and 11 through 14). **15** ⬜

7 To determine the minimum number of nodes required, look up the value from box 15 in "Node configurations" on page 1-42. If you plan to have multimedia ports, wait until the multimedia port requirements are calculated before you determine the number of nodes required.

— end —

**Voice messaging
activity**

The busy hour voice messaging activity (connect time) is the
anticipated activity of Meridian Mail during the busy hour.

To determine the busy hour voice messaging activity, use
"Calculating the busy hour messaging activity" below, then
record the result in box 1 of "Worksheet for calculating busy
hour activity and the number of voice ports required" on
page 1-9. For a sample calculation see "Busy hour messaging
activity calculation example" below.

**Calculating the busy
hour messaging
activity**

To calculate the busy hour messaging activity, follow these
steps.

Step	Action
1	Estimate the average connection time per registered user during the busy hour.
	This includes both the time the user is logged on to Meridian Mail and the time callers use to leave messages for that user.
	The normal range is 30 to 60 seconds per user. A reasonable assumption is 40 seconds per user.
2	Determine the number of Meridian Mail users.
3	Multiply the result of step 1 by the result of step 2.
4	Record the result in box 1 of "Worksheet for calculating busy hour activity and the number of voice ports required" on page 1-9.

Busy hour messaging activity calculation example

Average connection time (seconds)	x	Number of Meridian Mail users	=	Total seconds of voice messaging activity
40		1000		40 000
CCS = Total call seconds/100 = 400				

Activity of all applications

Applications that use voice ports include Voice Menus, Auto Attendants, Voice Forms, and Meridian ACCESS applications. It is important to analyze your specific applications, since many applications vary widely in the number of calls that require processing and in the holding times of those calls.

Also, an application can use a shared port or a dedicated port. If you plan to use shared ports for applications, add the applications' estimated activity to the requirements for Voice Messaging (see "Calculating the number of voice ports required" on page 1-16).

The section "Configuring ACD queues on the Meridian 1" in the "Voice administration" chapter of the *System Administration Guide* discusses reasons for and against dedicating ports and how to configure dedicated ports.

To determine the total busy hour activity generated by Meridian Mail applications on shared ports, use "Calculating the total busy hour activity" on page 1-12. See "Busy hour applications activity calculation example" on page 1-13 for an example.

Calculating the total busy hour activity

To calculate the total busy hour activity, follow these steps.

Note: Include the Auto Attendant application only if you plan to use it during peak hours.

Step	Action
1	Estimate the average length of a call during the busy hour.
	The average length is determined by the type of application. For an information-type menu, a reasonable assumption is 60 seconds per call. An automated attendant will have a much smaller average call length.
2	Estimate the number of calls during the busy hour.
3	Multiply the result of step 1 by the result of step 2.
	The result is the estimated busy hour activity for that particular application.
4	Record the total.

Step	Action
5	Repeat steps 1 through 4 for each application item (that is, voice menu, announcement, or voice form).
6	Record the result in the appropriate step 2 box of "Worksheet for calculating busy hour activity and the number of voice ports required" on page 1-9.
7	Repeat steps 1 through 6 for each application.

Busy hour applications activity calculation example

Voice application	Average length of call (seconds) x	Number of calls per hour =	Total call seconds for applications
Voice Menu 1	60	40	2400
Voice Menu 2	90	10	900
Voice Menu 3	30	10	300
Subtotal (recorded in box 2a or 2b on page 1-9)			**3600**
Announcement 1	40	5	200
Announcement 2	30	10	300
Subtotal (recorded in box 2c on page 1-9)			**500**
Voice Form 1	200	10	2000
Voice Form 2	220	10	2200
Subtotal (recorded in box 2d on page 1-9)			**4200**
Auto Attendant (if used during busy hour) (recorded in box 2g of Figure 2-1)	20	60	1200
Total			**9500**
CCS = Total call seconds/100 = 95			

Networking activity   Networking ports can be shared with other applications or dedicated. If the ports are shared, add this networking traffic estimate to the traffic estimates for other applications.

To determine the networking activity for shared ports, use "Calculating the networking activity" described on this and the next page. A typical assumption is that networking traffic increases overall voice messaging traffic by five percent. For more information on how to plan for networking, see the *Networking Planning Guide* (NTP 555-7001-241).

Calculating the networking activity   To calculate the networking activity, follow these steps.

Note: If you plan to dedicate ports to Networking (so that you can control the grade of service and caller access, although port usage will be less efficient), you must obtain assistance from a traffic engineer. The result is recorded in box 12 of "Worksheet for calculating busy hour activity and the number of voice ports required" on page 1-9.

Step	Action
1	Multiply the result in box 1 of "Worksheet for calculating busy hour activity and the number of voice ports required" on page 1-9 by .05.
2	Record the result in box 3 of "Worksheet for calculating busy hour activity and the number of voice ports required" on page 1-9.

Outcalling activity   Outcalling (which collectively refers to the Remote Notification and Delivery to Non-Users features) can be used in different ways by different organizations, so port requirements vary from one organization to the next. You must consider how your organization will use Outcalling, especially during the busy hour. See the following table.

Determining how your organization will use Outcalling

IF	THEN
only a small number of users will be using Delivery to Non-Users and Remote Notification	the effect of these features on your overall system requirements will be small and can be ignored at this point.
the Delivery to Non-Users feature will to be restricted to low-traffic periods (for example, after-hours)	the feature should have no impact on your system requirements.
a large number of users will be accessing Delivery to Non-Users or Remote Notification or both	estimate what the usage will be in CCS and record it in box 4 on page 1-9.
ports are going to be dedicated to the Outcalling feature	you must obtain assistance from a traffic engineer to calculate the port requirements for outcalling.The result is recorded in box 13 on page 1-10.

Calculating the number of voice ports required

To calculate the number of voice ports required, follow these steps.

Step	Action
1	Copy the figure from box 5a on the first page of "Worksheet for calculating busy hour activity and the number of voice ports required" on page 1-9 into box 6 on the second page.
2	Divide box 6 by 100 to get the total busy hour system activity in CCS. Record the result in box 7.
3	Copy the figure from box 5b on the first page of "Worksheet for calculating busy hour activity and the number of voice ports required" on page 1-9 into box 9 on the second page.
4	Divide box 9 by 100 to get the total busy hour system activity in CCS. Record the result in box 10.
5	For each of boxes 7 and 10, determine the number of ports required. See "Port capacity" on page 1-17. In the column labeled "Capacity of system," find the range within which the calculated total busy hour CCS falls. The corresponding value in the column labeled "Number of ports" is the number of ports required to accommodate the estimated total system activity.
6	Record the values from "Port capacity" on page 1-17 in boxes 8 and 11 respectively.
7	If you plan to have dedicated ports for specific services, calculate the port requirements for those specific services, and record it in box 14 of "Worksheet for calculating busy hour activity and the number of voice ports required" on page 1-9.
8	Add boxes 8 and 11 through 14 together. Record the result in box 15.

Port capacity   *Note:* The capacity is based on 40-second sessions and
                          two percent of busy hour calls being queued for more than
                          one-sixth the average hold time.

Number of ports	Capacity of system (in CCS)
2	0 to 14
4	15 to 54
6	55 to 103
8	104 to 157
12	158 to 273
16	274 to 396
20	397 to 522
24	523 to 651
28	652 to 782
32	783 to 915
36	916 to 1049
40	1050 to 1183
44	1184 to 1318
48	1319 to 1455
52	1456 to 1591
56	1592 to 1729
60	1730 to 1866
64	1867 to 2004
68	2005 to 2143
72	2144 to 2282
76	2283 to 2421
80	2422 to 2561
84	2562 to 2700
88	2701 to 2839
92	2840 to 2980
96	2981 to 3120

In the sample calculations shown so far in this chapter, Voice
Messaging and other voice applications generate approximately
495 CCS in the busy hour. In the preceding table, you can see
that to accommodate that level of traffic, you need a 20-port
system. Remember to add allowances for busy hour traffic
generated by Networking or Outcalling, if applicable.

Operational measurements reports, available to the system administrator, provide statistics on system traffic and activity. Monitor these reports to track system activity and forecast when an increase in the number of ports is necessary (for example, when the busy hour CCS exceeds your estimates).

Number of multimedia ports required

Introduction

If you purchase the Fax Outcalling/Fax on Demand feature (voice menu with fax items, fax callback delivery, fax announcements), your system will require multimedia ports. Each multimedia port is configured from two full-service port locations, whereas each voice port is configured from one port location. As a result, it is necessary to calculate the multimedia port requirements separately, and then convert this number to an equivalent number of full-service port locations by doubling the number of multimedia ports. You can then use this number to determine the overall system size required in terms of physical port locations.

Same call delivery versus callback delivery

The number of multimedia ports that your site requires depends on how you plan to offer fax services. The options are same call delivery and callback delivery.

Same call delivery

With same call delivery, a caller who has accessed a voice menu with fax items can select and receive a fax during the same call (that is, using the same line). For this type of voice menu service, the voice menu must run on a multimedia port. Only a multimedia port can provide both the voice and multimedia services required for a voice menu with same call fax delivery.

Similarly, fax announcements that use same call delivery (the caller reaches the announcement service, hears a greeting, and receives the fax in the same call) must also use a multimedia port.

To calculate the traffic requirements for a voice menu with fax items and same call delivery, refer to "Voice menus with fax items (same call delivery)" on page 1-22. To calculate the traffic requirements for a fax announcement service with same call delivery, refer to "Fax announcement (stand-alone fax service)" on page 1-24.

Callback delivery

With callback delivery, the caller who has accessed a voice menu with fax items must provide a fax number for the fax

delivery. After the caller completes the call, Meridian Mail then uses a multimedia port to deliver or send the selected fax items to the specified fax number. With this type of voice menu service, the voice menu can run on a full-service voice port.

Similarly, fax announcements that use callback delivery (the caller reaches the announcement service, hears a greeting, and enters a fax callback number) only require a multimedia port for the fax delivery, not the announcement.

To calculate the	refer to the
traffic requirements for voice menus with callback delivery	section called "Determining the number of voice ports required" on page 1-7.
requirements for the fax delivery	subsection called "Fax callback activity" on page 1-23.
traffic requirements for a fax announcement service with callback delivery	subsection called "Fax announcement (stand-alone fax service)" on page 1-24.

If you plan to use only the callback method to deliver fax items, you can configure a more efficient system by dedicating multimedia ports to fax callback deliveries. See "Dedicated ports for fax callback deliveries" on page 1-26 for more details.

Keep in mind that the traffic requirements you need to estimate are those requirements you anticipate during the busy hour. If you set up your system so that callback deliveries are made outside of the busy hour, then the callback traffic will not impact your busy hour calculations. However, you must ensure that busy hours for voice and multimedia are accommodated by the number of ports.

Note 1: If a voice menu or announcement provides the option of same call or callback delivery, then the number of each type of request (same call delivery or callback delivery) and the resulting traffic requirements must be estimated separately**.**

For example, if you anticipate ten voice menu calls where same call delivery is requested in the busy hour, and 15 voice menu calls where callback delivery is requested, estimate the traffic requirements for ten same call deliveries and 15 callback deliveries.

Note 2: "Worksheet for calculating the number of multimedia ports required" on page 1-22 helps you with your estimates and calculations for each step**.**

Worksheet for calculating the number of multimedia ports required

Multimedia busy hour activity and ports required		Activity (Call-seconds)	
1	Voice menus with fax items (see "Estimating the call connect time for multimedia voice menus" on page 1-23)	1	
2	Fax callback activity (see "Estimating the total busy hour connect time for fax callback deliveries" on page 1-24)	2	
3	Fax announcement activity (same-call delivery) (see "Estimating the connect time for fax announcements with "same cal" fax delivery" on page 1-25)	3	
4	Activity required to calculate the number of non-dedicated multimedia ports (see "Calculating the number of non-dedicated multimedia ports required" on page 1-26)	4	
	Add lines 1 through 3.		
5	Divide the total by 100 to determine the total activity in CCS.	5	
6	Look up the CCS in "Port capacity" on page 1-17 to determine the number of non-dedicated multimedia ports required.	6	
7	Number of dedicated multimedia ports required (see "Calculating the number of dedicated multimedia ports required for fax callback deliveries" on page 1-27)	7	
8	Add lines 6 and 7.	8	

Voice menus with fax items (same call delivery)

With the Fax on Demand feature, you can set up voice menus that offer faxes as some of the menu items. These voice menus can be referred to as multimedia voice menus. A caller who reaches a multimedia voice menu can select faxes to receive. If the caller calls from a phone line that is also connected to a fax machine, the fax can be delivered during the same call (same call delivery).

Estimating the call connect time for multimedia voice menus

To estimate the call connect time (traffic) for multimedia voice menus during the busy hour, follow these steps.

Step	Action
1	Select a multimedia voice menu and estimate the average duration of calls during the busy hour. When you estimate this duration, include the following: • time to listen to the menu greeting • time to listen to the voice menu and select as many faxes as required • time to receive "same call" faxing instructions • time to transmit the faxes selected – about 12 seconds to establish protocol – 40 seconds per page in normal resolution; 80 seconds per page in fine resolution – about 10 seconds to complete the fax delivery (that is, end protocol/disconnect)
2	Estimate the number of calls to this menu during the busy hour. This depends on the specific function of the multimedia voice menu in your organization.
3	Multiply the result of step 1 by the result of step 2 to determine the estimated total activity generated from this multimedia voice menu during the busy hour.
4	Record the total.
5	Repeat steps 1 through 4 for each multimedia voice menu.
6	Add all the voice menu totals together and record the result in box 1 of "Worksheet for calculating the number of multimedia ports required" on page 1-22.

Fax callback activity

A voice menu with fax items may require the caller to specify a fax number to receive the selected faxes. With this type of voice menu, Meridian Mail uses a multimedia port to call the specified fax number and deliver the selected faxes. The voice menu and fax selection part of the process can use a full-service voice port or multimedia port. Only the actual fax delivery call requires a multimedia port.

Estimating the total busy hour connect time for fax callback deliveries

To estimate the total busy hour connect time for the fax callback deliveries, follow these steps.

Note: If you want to dedicate ports to fax callback deliveries, see "Dedicated ports for fax callback deliveries" on page 1-26.

Step	Action
1	Estimate the average duration of fax callback delivery calls during the busy hour. When you estimate this duration, include the following: • 10 seconds to set up the call • 14 seconds to answer the call • 12 seconds to establish the protocol • 40 seconds per page in normal resolution; 80 seconds per page in fine resolution • 10 seconds to complete the fax delivery (that is, end protocol/disconnect)
2	Estimate the number of fax callback deliveries during the busy hour.
3	Multiply the result of step 1 by the result of step 2 to determine the estimated total connect time used by fax callback deliveries in the busy hour.
4	Record the result in box 2 of "Worksheet for calculating the number of multimedia ports required" on page 1-22.

Fax announcement (stand-alone fax service)

A fax announcement service that requires the caller to enter a fax callback number requires a multimedia port only for the callback delivery. For this type of announcement, refer to the section "Determining the number of voice ports required" on page 1-7. To estimate the traffic generated by the actual fax delivery, use "Estimating the total busy hour connect time for fax callback deliveries" on page 1-24.

A fax announcement service that delivers the fax during the same call (no callback number is required) must use a multimedia port for the entire call. The procedure for estimating the connect time for these types of announcements is similar to the procedure for voice menus with fax items.

Estimating the connect time for fax announcements with "same call" fax delivery

To estimate the connect time for fax announcements with same call fax delivery, follow these steps.

Step	Action
1	Select a fax announcement and estimate the average duration of calls to this fax announcement during the busy hour. When you estimate this duration, include the following: • time to listen to the announcement greeting • time to receive same call faxing instructions • time to transmit the fax – about 12 seconds to establish protocol – 40 seconds per page in normal resolution; 80 seconds per page in fine resolution – about 10 seconds to complete the fax delivery (that is, end protocol/disconnect)
2	Estimate the number of calls to this fax announcement during the busy hour. This depends on the specific function of this fax announcement in your organization.
3	Multiply the result of step 1 by the result of step 2 to determine the estimated total activity generated from this fax announcement during the busy hour.
4	Record the total on a piece of note paper.
5	Repeat steps 1 through 4 for each fax announcement.
6	Add all the fax announcement totals together and record the result in box 3 of "Worksheet for calculating the number of multimedia ports required" on page 1-22.

Calculating the number of non-dedicated multimedia ports required

To calculate the number of non-dedicated multimedia ports required, follow these steps.

Step	Action
1	Add the totals from "Estimating the call connect time for multimedia voice menus" on page 1-23. "Estimating the total busy hour connect time for fax callback deliveries" on page 1-24, and "Estimating the connect time for fax announcements with "same cal" fax delivery" on page 1-25. Record the result in box 4 of "Worksheet for calculating the number of multimedia ports required" on page 1-22.
2	Divide the result in box 4 by 100 to get the estimated busy hour multimedia activity in centi (hundred) call seconds (CCS). Record the result in box 5.
3	Determine the number of non-dedicated multimedia ports required based on the estimated busy hour system activity.
	See "Port capacity" on page 1-27. In the column labeled "Capacity of system," find the range within which the calculated total CCS falls. The corresponding value in the column labeled "Number of ports" is the number of non-dedicated ports required to accommodate the estimated total system activity.

Dedicated ports for fax callback deliveries

Note: If you plan to use dedicated ports for fax callback delivery, calculate the non-dedicated port requirements for other Fax on Demand services separately (see the preceding steps). Then add those port requirements to the number of dedicated fax callback ports to determine the total number of multimedia ports required*.*

Multimedia ports that are dedicated to callback delivery can support a much higher volume of traffic than non-dedicated multimedia ports. Specifically, each dedicated port can support 36 CCS because the system can make continuous use of these ports.

By contrast, four non-dedicated multimedia ports can support 48 CCS altogether, or 12 CCS per port on average. Therefore, if you want to use the callback method of delivering fax items, you should consider dedicating multimedia ports to callback delivery.

The maximum wait time must be less than 3600 seconds (1 hour), or else the system can become overloaded.

Calculating the number of dedicated multimedia ports required for fax callback deliveries

To calculate the number of dedicated multimedia ports required for fax callback deliveries, follow these steps.

Step	Action
1	Use the following formula to determine how many dedicated ports you would require: Ports required = (Total fax callback delivery call seconds in busy hour)/(Maximum wait time for delivery in seconds)
2	Record the result in box 7 of the "Worksheet for calculating the number of multimedia ports required" on page 1-22.

Port capacity

Note: The capacity is based on 40-second sessions and 5 percent of busy-hour calls being queued for more than one-sixth of the average hold time.

Number of ports	Capacity of system (in CCS)
2	0 to 12
3	13 to 29
4	30 to 48
5	49 to 70
6	71 to 93
7	94 to 117
8	118 to 142
10	143 to 194
12	195 to 248
14	249 to 303
16	304 to 360
18	361 to 418

Number of multimedia ports required

Number of ports	Capacity of system (in CCS)
20	419 to 477
22	478 to 536
24	537 to 596
26	597 to 657
28	658 to 718
30	719 to 779
32	780 to 841
34	841 to 904
36	905 to 966
38	967 to 1029
40	1030 to 1092
42	1093 to 1156
44	1157 to 1219
46	1220 to 1283
48	1284 to 1347

In the preceding table, you can see that a traffic capacity (total activity) of 145 CCS would require 10 ports.

Total number of voice and multimedia ports required

Multimedia ports and voice ports

Note: If you do not need multimedia ports (for example, you have not purchased Fax on Demand), then system size can be based solely on the number of voice ports. You do not need to convert to physical ports since one voice port equals one physical port location.

Multimedia applications require more processing than voice applications. As a result, you need two physical port locations to configure one multimedia port, whereas you only need one physical port location to configure one voice port. Therefore, a system with multimedia ports is larger than a system with the same number of voice ports.

For example, if you require a system with five multimedia ports and six voice ports as per your calculations to this point, you actually need a system with 16 physical port locations (ten ports to configure five multimedia ports, and six ports to configure six voice ports). As a result, to determine the actual system size that you need in terms of the number of physical port locations, you must convert the multimedia port requirements to an equivalent number of voice ports. Then, add this to the number of voice ports required to determine the overall system size required.

Number of ports required (voice and multimedia)

Use "Calculating the total number of voice and multimedia ports" on page 1-31 to calculate the total number of ports required to support voice and multimedia services. Use "Worksheet for calculating the total number of ports required for voice and multimedia services" on page 1-30 as your worksheet.

Worksheet for calculating the total number of ports required for voice and multimedia services

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Ports required for Voice and Multimedia services

1   Number of ports required for voice services   1
        (including dedicated ports) from box 15 of
        "Worksheet for calculating busy hour activity and the
        number of voice ports required" on page 1-9

2   Number of ports required for multimedia (including   2
        dedicated ports) from box 8 of "Worksheet for
        calculating the number of multimedia ports required"
        on page 1-22

3   Equivalent number of physical ports required to   3
        support multimedia services (multiply line 2 by 2)

4   Total number of physical ports required   4
        (add lines 1 and 3)

5   If the result in box 4 cannot be divided evenly by 4, 5
        add more basic-service ports until the total can be
        divided evenly by 4.

   Note: To determine the minimum number of nodes required, refer to "Determining the number of nodes" on page 1-42.

Calculating the total number of voice and multimedia ports

To calculate the total number of voice and multimedia ports, follow these steps.

Step	Action
1	Copy the figure from box 15 (total voice ports) of "Worksheet for calculating busy hour activity and the number of voice ports required" on page 1-9 into box 1 of "Worksheet for calculating the total number of ports required for voice and multimedia services" on this page.
2	Copy the figure from box 8 (total multimedia ports) of "Worksheet for calculating the number of multimedia ports required" on page 1-22 into box 2 of "Worksheet for calculating the total number of ports required for voice and multimedia services" on this page.
3	Multiply box 2 by 2. For MSM systems, multiply box 2 by 1.5. This value is the equivalent number of voice ports. Record the result in box 3.
4	Add boxes 1 and 3 together. Record the result in box 4.
5	If required, add more basic ports until the total number of ports can be divided evenly by 4. (Ports are provided on voice processor cards in multiples of 4.) Record the new total in box 5.
6	Look up the total in "Node configurations" on page 1-42 to determine the number of nodes your system requires.

Determining storage hours required

Introduction   The storage hours on a system, combined with the number of
                           nodes, defines the system size. For example, a 2-node 54-hour
                           system has a greater message storage capacity than a 2-node
                           26-hour system. Note that the storage hours referred to here
                           do not include basic system storage hours (that is, for the basic
                           software, and for voice prompts for one language).

                           The storage hours that your system requires depend on the
                           requirements for

                           •   message storage, which includes stored messages, personal
                                verifications, and responses to voice forms
                           •   voice services, which includes voice menus,
                                announcements, voice forms definitions, and fax
                                definitions
                           •   personal verifications

                           These sources of storage requirements are discussed in
                           "Message storage requirements" on page 1-33, "Voice services
                           storage requirements" on page 1-37, and "Personal verification
                           storage requirements" on page 1-41. These sections are
                           followed by "Determining system size based on traffic (nodes
                           and ports) and storage hour requirements" on page 1-43, which
                           explains how to calculate the total storage hours required and
                           the overall system size that your site requires.

Message storage requirements

Introduction

Message storage includes received messages or unsent composed messages stored in your mailbox, greetings, and responses to voice forms.

Total message storage time required depends on

- number of users
- average storage per user (for messages and personal verifications)
- voice forms response times

The method for determining the required amount of message storage time, based on the preceding items, is divided into three procedures that are outlined in the remainder of this section.

Storage time required for messages and personal verifications

The average storage per user is based on the average number of stored messages per user (received and composed but not sent), and the average length of each message, plus the length of the greetings. This varies depending on the organization and applications. The minimum storage time that should be allowed per user is one minute. Average message length is about 30 seconds. If each user is allocated 10 minutes of storage time, then approximately 20 messages (including greetings) can be stored per user.

Note: The storage requirements for personal verifications are calculated separately. Refer to "Personal verifications storage time calculation example" on page 1-41.

When you determine storage requirements for messages, consider the average storage time required per user, since this time reflects the storage time that will actually be used. The maximum allocated time is the limit on message storage, not the amount that you expect will be used, on average, by each user.

There are a number of factors to consider when you estimate average message storage time, including

- user training to use the delete messages command

- maximum allocated time
- Read Message Retention period (automatic deletion of read messages)
- whether sent messages are kept or automatically deleted after sending
- messages received per user per day

Calculating the storage time required for messages and personal verifications

To calculate the storage time required for messages and personal verifications, follow these steps.

Step	Action
1	Estimate the total number of users on the Meridian Mail system.
2	Estimate the average number of minutes of storage that each user requires.
3	Multiply the result of step 1 by the result of step 2.
4	Multiply the result of step 3 by 1.2 (to add a 20 percent safety margin).
5	Divide by 60 to convert the storage time to hours.

Example

If there are 1000 Meridian Mail users and average storage per user is 5 minutes, the total storage time is 5000 minutes. With a 20 percent safety margin added on, total storage time is 6000 minutes or 100 hours as shown in the following table.

Message storage time calculation example

Number of Meridian Mail users	x	Storage per user (minutes)	x	Storage time with 20% safety margin	=	Total storage time
1000		5		1.2		6000/60 = 100 h

Storage time required for responses to voice forms

Voice forms allow subscribers to call the system and provide verbal information to prerecorded prompts.

A typical voice form contains ten prompts, and a response to each prompt is typically ten seconds long for each prompt. Thus, you require a total of 100 seconds of response storage time for each call to a typical voice form. If you know what the voice forms are going to be and have an idea of what response time you can expect, you can estimate more precisely the storage time required.

Calculating the storage time required for voice forms responses

To calculate the storage time required for voice forms responses, follow these steps.

Step	Action
1	Determine the number of prompts in each voice form.
2	Multiply the number of prompts by the expected response time (in seconds) for each prompt.
3	Estimate the number of calls to each voice form before the responses are transcribed and deleted.
4	For each form, multiply the number of calls by the expected total response time in seconds.
5	Divide the storage time by 3600 to convert to hours.

Voice forms response time calculation example

Voice form number	Number of calls to voice form prior to deletion	x	Estimated total response time (seconds)	=	Required storage time (seconds)
1	50		100		5000
2	20		100		2000
3	50		100		5000
	Total storage time in hours =				12 000 seconds/3600 = 3.3 h

Calculating the total message storage requirements

To calculate the total message storage requirements, follow these steps.

Step	Action
1	Add the storage times determined in "Calculating the storage time required for voice forms responses" on page 1-35.
2	If you have not already done so, convert the storage times to hours.

Total message storage requirements calculation example

Storage for users	100 hours
Storage for voice forms responses	3.3 hours
Total message storage time required	103.3 hours

Voice services storage requirements

Introduction

Voice services includes voice menus and announcements, voice forms, and fax on demand.

The voice services storage time depends on the following factors:

- voice menus and announcements storage requirements
- voice forms definitions requirements
- fax definitions requirements

The method for determining the required amount of voice services storage time, based on the factors listed above, is divided into four procedures. These procedures are outlined in the remainder of this section.

Voice menus and announcements storage requirements

Estimate the storage time required for voice menus and announcements (if you have purchased that option). This depends on the type of applications you want to have. Information-type menus require more storage time than call-handling applications (automated attendants, for example). The following procedures help you to determine the voice menus and announcements storage requirements.

Estimating the storage time required for voice menus and announcements

To estimate the storage time required for voice menus and announcements, follow these steps.

Step	Action
1	Estimate the number of voice menus and announcements required.
2	Determine the wording of each voice menu and announcement.

Step	Action
3	Once you determine the wording of each menu and announcement, estimate the time (in minutes) each will take for playback.
4	Add the playback times for all the voice menus and announcements.
5	Divide the storage time by 60 to convert to hours.

Voice menus and announcements storage time calculation example

Voice menus and announcements	Estimated playback time (minutes)
Auto-attendant prompt	1
Auto-attendant choices	2
Announcement 1	1
Announcement 2	1
Thru-dial announcement	1
Voice menu 1 greeting	1
Voice menu 1 choices	2
Voice menu 1 announcement 1	1
Voice menu 1 announcement 2	1
Voice menu 1 announcement 3	1
Voice menu 2 greeting	1
Voice menu 2 choices	2
Voice menu 2 announcement 1	2
Voice menu 2 announcement 2	1
Total voice menus and announcements storage time =	18 minutes or 0.3 hours

Voice forms definitions storage requirements

Voice forms definitions are similar to voice menus. Therefore, the procedure for calculating the voice form definitions storage requirements is similar to the procedure for calculating voice

menu storage requirements. See "Estimating the storage time required for voice forms definitions" on page 1-39.

Estimating the storage time required for voice forms definitions

To estimate the storage time required for voice forms definitions, follow these steps.

Step	Action
1	Estimate the number of voice forms required.
2	Determine the wording to be used for each form.
3	Estimate the playing time (in minutes) of each form.
4	Add the playback times for all forms. Include the voice form's initial greeting as well as any greeting, prompt, or other instructions played for each field.
5	Divide the storage time by 60 to convert to hours.

Voice forms definitions storage time calculation example

Voice form	Estimated playback time (minutes)
Voice form 1	2
Voice form 2	2
Voice form 3	2
Total voice forms definitions storage =	6 minutes or 0.1 hours

Fax storage requirements

The number of storage hours required for faxes depends on the number of fax pages and the resolution (quality) as follows:

- *normal resolution* 0.3 minutes per page or 200 pages per hour
- *fine resolution* 0.6 minutes per page or 100 pages per hour

Use these figures to estimate your fax storage requirements as outlined in "Estimating the fax storage requirements" on page 1-40.

Estimating the fax storage requirements

To estimate the fax storage requirements, follow these steps.

Step	Action
1	Estimate the total number of *normal resolution* fax pages you plan to have on the Meridian Mail system.
2	Multiply the result of step 1 by 0.3 to get the total number of minutes of storage required.
3	Estimate the total number of *fine resolution* fax pages you plan to have on the Meridian Mail system.
4	Multiply the result of step 3 by 0.6 to get the total number of minutes of storage required.
5	Add the totals from steps 2 and 4 to get the total fax storage requirements in minutes.
6	Divide the storage time by 60 to convert to hours of storage.

Fax storage time calculation example

Number of pages	Minutes per page =	Total storage time
20 normal	x 0.3	6 minutes
20 fine	x 0.6	12 minutes
Total storage in hours =		18/60 = 0.3 hours

Estimating the total hours of storage required for voice services

Add the storage times determined in "Estimating the storage time required for voice menus and announcements" on page 1-37, "Estimating the storage time required for voice forms definitions" on page 1-38, and "Estimating the fax storage requirements" on this page. See "Total voice services storage requirements calculation example" on page 1-41 for a sample.

Total voice services storage requirements calculation example

Storage for voice menus and announcements	0.3 hours
Storage for voice forms definitions	0.1 hours
Storage for fax items	0.3 hours
Total storage time required for voice services	0.7 hours

Personal verification storage requirements

Allow about 3.5 seconds per personal verification. Therefore, if you have 1000 subscribers, required storage time is 1000 x 3.5 = 3500 seconds or approximately 1.0 hour.

If your system does not have any user mailboxes (that is, your system is strictly a voice menus system), then no personal verifications are necessary and you can ignore this storage requirement.

Personal verifications storage time calculation example

Number of users x	**Estimated average personal verification length (seconds)** =	**Required storage time**
1000	3.5	3500 seconds/ 3600 = 0.9 hour

Determining the number of nodes

The following table shows the number of ports and the range of storage hours available with different numbers of nodes (with only one language installed).

Node configurations

Ports	Nodes	Total storage hours	Total storage hours with disk-to-disk backup
4-24	1	5	n/a
		11	n/a
		24	n/a
		36	n/a
		54	n/a
		100	n/a
		200	n/a
28-48	2	26	n/a
		54	46.2
		84	76.2
		114	106.2
		200	190.1
		400	384.8
28-32	3	30	n/a
		60	36.3
		90	66.3
		120	96.3
		200	176.3
		400	342.4
52-72	4	45	n/a
		90	65.3
		120	95.3
		180	155.3
		300	275.3
		600	524.5
76-96	5	60	n/a
		120	92.4
		180	152.4
		240	212.4
		400	372.4
		800	704.6

Determining system size based on traffic (nodes and ports) and storage hour requirements

At this point, you should have determined the following:

- the number of nodes required (based on the number of ports required)
- the number of hours required for voice services
- the number of storage hours required for messages (including greetings and voice forms responses)

These three criteria are discussed in earlier sections of this chapter.

Use "Message storage and Voice Services storage hours available per system size" on page 1-44 to select the system size that your site requires, based on the previously mentioned criteria. The table shows the full range of system sizes available, classified by the number of nodes and total storage hours. It also shows the maximum number of hours available for voice services for each system size.

Message storage and Voice Services storage hours available per system size

Total storage hours			Maximum hours available for Voice Services and messages (per disk volume)			
Number of nodes	(without disk-to-disk backup)	(with disk-to-disk backup)	VS1	VS2	VS202 (without disk-to-disk backup)	VS202 (with disk-to-disk backup)
1	5	n/a	2.0	5		
	11	n/a	2.0	11		
	24	n/a	3.5	24		
	36	n/a	3.5	36		
	54	n/a	3.5	54		
1.2 Gbyte disk	100	n/a	5.5	100		
2.0 Gbyte disk	200	n/a	10	200		
2	26	n/a	2.0	11	15	n/a
	54	46.2	3.5	24	30	22.2
	84	76.2	3.5	24	60	52.2
	114	106.2	3.5	54	60	52.2
1.2 Gbyte disk	200	190.1	5.5	100	100.0	90.1
2.0 Gbyte disk	400	384.8	10	200	200.0	184.8
3	30	n/a	18.4		15	n/a
	60	36.3	18.4		30	6.3
	90	66.3	18.4		60	36.3
	120	96.3	18.4		60	36.3
1.2 Gbyte disk	200	176.3	18.4		100.0	76.3
2.0 Gbyte disk	400	342.4	51.9		200.0	142.4
4	45	n/a	18.4		15	n/a
	90	65.3	18.4		30	5.3
	120	95.3	18.4		60	35.3
	180	155.3	18.4		60	35.3
1.2 Gbyte disk	300	275.3	18.4		100.0	75.3
2.0 Gbyte disk	600	524.5	68.6		200.0	124.5
5	60	n/a	19.6		15	n/a
	120	92.4	19.6		30	2.4
	180	152.4	19.6		60	32.4
	240	212.4	19.6		60	32.4
1.2 Gbyte disk	400	372.4	19.6		100.0	72.4
2.0 Gbyte disk	800	704.6	86.6		200.0	104.6

Note 1: If a second language is installed, subtract three hours from VS2 for 1- or 2-node systems only.

Note 2: If three languages are installed, subtract three hours from VS1 for 3-, 4-, or 5-node systems, or six hours from VS2 for 1- or 2-node systems.

Note 3: If four languages are installed, subtract six hours from VS1 for 3-, 4-, or 5-node systems, or nine hours from VS2 for 1- or 2-node systems.

Before you continue, you need to understand the following points:

- All systems have a disk volume VS1 (Volume Server 1). This volume is used primarily for the system software and for personal verifications. However, some of the storage space on VS1 that is available for personal verifications can also be used for voice services. This space is indicated in "Message storage and Voice Services storage hours available per system size" on page 1-44 under the VS1 heading.

- Messages (message storage) are not stored on VS1. The disk volumes available for message storage depend on the system size, as follows:

    - 1-node system - VS2 disk volume

    - 2-node system - VS2, VS202 disk volumes

    - 3-node system - VS202, VS203 disk volumes

    - 4-node system - VS202, VS203, VS204 disk volumes

    - 5-node system - VS202, VS203, VS204, VS205 disk volumes

    These volumes are also referred to as the user volumes.

- If the hours available on VS1 are enough to satisfy the expected voice services and personal verifications storage requirements, then voice services can be stored on VS1. If you can do this, then the storage hours available on the user volumes (see previous list item) can be used for message storage only.

- If both voice services and personal verifications cannot fit entirely on VS1, then the voice services must be stored on VS2 or VS202.

    Note: VS2 is not available for voice services or message storage for 3-, 4-, and 5-node systems. These volumes are also used for message storage.

As a result, you must combine the voice services and message storage requirements to determine the total message storage hours required. This also means that every hour of voice services storage that you add decreases the storage hours available for messages by one hour. Voice services storage cannot be shared over separate disk volumes. Voice services must be stored on a single volume.

- The shaded areas in "Message storage and Voice Services storage hours available per system size" on page 1-44 indicate disk volumes that are unavailable for that system size or cannot be used for voice services for that system size. For example, disk volume VS202 is not available on 1-node systems. Also, on 3-, 4-, and 5-node systems, VS2 cannot be used for voice services or message storage.

Adjustments for prompts for additional languages

The storage space for Meridian Mail voice prompts for one language (for example, English) is part of the basic software package, therefore, it is not counted in the storage hours figures in "Message storage and Voice Services storage hours available per system size" on page 1-44. However, if you are going to have additional languages installed, this will reduce the storage hours available on either VS1 or VS2, depending on where the language prompts are stored for your particular system size.

The amount of storage space used up by the additional language prompts and where they are stored depends on the system size and the number of additional languages, as shown in "Additional language storage requirements for VS1 and VS2" on this page. For example, on 1- and 2-node systems, additional language prompts reduce the storage hours available on VS2. On 3-, 4-, and 5-node systems, the first and second languages are part of the basic software package and do not impact storage hours available for messages or voice services. The third and fourth languages impact storage hours available on VS1.

Additional language storage requirements for VS1 and VS2

	Number of languages			
Number of nodes	1	2	3	4
1	0 hours	3 hours on VS2	6 hours on VS2	9 hours on VS2
2	0 hours	3 hours on VS2	6 hours on VS2	9 hours on VS2
3, 4, or 5	0 hours	0 hours	3 hours on VS1	6 hours on VS1
3, 4, or 5	0 hours	0 hours	3 hours on VS1	6 hours on VS1

When you refer to "Message storage and Voice Services storage hours available per system size" on page 1-44, you must adjust the storage hour figures on VS1 and VS2 accordingly. Keep in mind that if the VS2 storage hours are decreased, the message storage hours available are also decreased by the same amount.

Establish whether disk-to-disk backup is required

On multi-node systems, disk-to-disk backup allows the system configuration (not user messages) to be manually or automatically copied to another disk in the system to allow recovery from a disk failure.

Note: Disk-to-disk backup is not supported in single-node systems, or in the 3-node 30-hour, 4-node 45-hour, or 5-node 60-hour systems. See "Message storage and Voice Services storage hours available per system size" on page 1-44.

Selecting the required system size

The steps required for selecting the system size based on traffic and storage requirements are listed below in "Determining the system size". You must refer to "Message storage and Voice Services storage hours available per system size" on page 1-44 when you follow these steps.

Determining the system size

To determine the system size, follow these steps.

Step	Action
1	Consider the number of nodes required based on the traffic calculations earlier in this chapter.
2	Refer to "Message storage and Voice Services storage hours available per system size" on page 1-44. Find the smallest system size with enough nodes to satisfy the traffic requirements and enough message storage hours to satisfy your message storage requirements.
3	Once you select your system size, review the following table to confirm your decision.

Validating your system selection decision

Note: Use "Message storage and Voice Services storage hours available per system size" on page 1-44 to determine the system size. Then use this table to validate your decision.

IF	THEN
both voice services and personal verifications can fit on VS1 on the system you selected	you can use the message storage hours entirely for messages and voice form responses.
voice services cannot fit on VS1 for the system you selected	you must store voice services on VS2 or VS202. In this case, voice services must share space with message storage, so add the two numbers together to determine the combined storage requirements.
the number of nodes you selected has enough message storage hours available for the combined voice services and message storage requirements	that system is acceptable. Otherwise, you must select a system with more nodes. See if a system with one more node can be configured with sufficient storage hours.
the storage hours on the system you selected are close to your estimated storage requirements	you may prefer to choose the next larger system to allow for growth.

Examples

Example 1 lists the requirements for a system followed by the steps you follow to determine the system size required. Example 2 is a variation of Example 1.

Example 1
Traffic requirement: 28 voice port equivalents (2 nodes)

- voice services storage: 0.7 hours
- personal verifications storage: 2.0 hours
- message storage: 103.3 hours
- additional languages: none
- disk-to-disk backup: no

The smallest system that can support the anticipated traffic is a 2-node system.

The smallest system with a minimum of two nodes that can provide enough message storage hours is the 2-node 114-hour system.

The voice services plus personal verifications storage requirement is 2.7 hours. The 2-node 114-hour system has 3.5 hours available for voice services plus personal verifications on VS1, so voice services can be stored there.

You must also decide if the 114 hours available on the system are enough to allow for growth since this system provides only 11.7 hours above the estimated requirements.

Example 2
If the voice services requirement is larger (for example 4.0 hours), voice services plus personal verifications cannot both fit on VS1. Voice services must share space with messages (on VS2 or VS202 for a 2-node system). However, the 114 message storage hours available on the selected system size are enough to accommodate message storage and voice services (103.3 + 4.0 = 107.3).

Again, you may prefer to choose the next larger system to allow for growth (a 2-node 200-hour system).

Determining system size for hospitality systems

Hospitality systems are not used as heavily as other Meridian Mail systems. As a result, many of the estimates and guidelines presented earlier in this chapter for estimating system usage and system requirements are not realistic for hospitality systems. To determine the required system size for hospitality systems, refer to the following table, which provides estimates based on normal conditions for hotel environments.

Determining system size for hospitality systems

Number of rooms (R)	Staff users (S)	Total CCS (T)	Hours req'd (H)	Minimum system		Message storage hours			
				Nodes	Ports	1 Lang	2 Lang	3 Lang	4 Lang
1 to 227	32	38.6	5.0	1	4	5	11	11	24
228 to 319	45	54.2	7.0	1	4	11	11	24	24
320 to 500	71	85.0	11.0	1	8	11	24	24	24
501 to 927	132	157.6	20.4	1	8	24	24	36	36
928 to 1225	175	208.3	27.0	1	12	36	36	36	36
1226 to 2330	332	396.1	51.3	2	16	54	84	84	84
2331 to 3073	439	522.4	67.6	2	20	84	84	84	84
3074 to 3832	547	651.4	84.3	2	24	114	114	114	114
3833 to 4603	657	782.5	101.3	3	28	120	120	120	120
4604 to 5382	768	914.9	118.4	3	32	120	120	120	120
5383 to 6169	881	1048.7	135.7	4	36	180	180	180	180
6170 to 6961	994	1183.4	153.1	4	40	180	180	180	180
6962 to 7758	1108	1318.9	170.7	4	44	180	180	180	180

For the preceding table, make the following assumptions:

- There is one staff mailbox for every seven rooms ($S = R/7$).

- A staff mailbox uses 80 seconds of storage and 0.27 CCS in busy hour.

- A guest mailbox uses 50 seconds of storage and 0.1 CCS in busy hour in a full hotel.

- Allow a 30 percent safety margin in required storage hours.

- Other features (for example, auto-attendant, menus, forms, Outcalling, Networking) use at most another 20 percent of busy hour port time.

- Message Waiting Indication (MWI) is not on for the introductory greeting. If the system will be set up so that the MWI is turned on for the introductory greeting, then increase traffic (that is CCS) by another 20 percent. This may increase port requirements but will not affect storage requirements.

- Busy hour traffic is calculated as follows:
$T = 1.2 \times (0.27S + 0.1R) = 0.17R$

- Hours of message storage required is calculated as follows:
$H = 1.3 \times (80S + 50R)/3600 = 0.022R$

Meridian Integrated Communication Links

Introduction

Multiple Integrated Communication Links (ICL) are supported on a single node where more than one serial port is available. This means that, for example, AdminPlus and Meridian IVR can run on the same node.

The number of links that can be created on a single node depends on the type of node and its position in the system, as shown in the following table.

Maximum number of links supported

Number of nodes	Number of links
1	4
2	6
3	8
4	8
5	8

Note: Only one link can be used to run AdminPlus. Any one ICL link can be configured for use by AdminPlus.

The table "Data ports that can be used for ICLs (recommended setup for nodes 1 and 2)" on page 1-55 shows which data ports can be used for ICL links and the maximum bit rate (in kbps) that can be used on those ports. The table "Bit rate limitations for data links" on this page lists both the minimum and maximum bit rates.

**Bit rate limitations for
data links**

For	Minimum bit rate (per port)	Maximum bit rate (per port)	Maximum combined bit rate (per node)
RSM/Utility card	2400 bps	9600 bps	19 200 bps
CPU card	2400 bps	38 400 bps	38 400 bps
ICL	4800 bps	38 400 bps	not applicable

Note: The combined bit rate for all configured ICLs cannot exceed 38 400 bps.

Data port configuration for Modular Option EC systems

Data port configuration   The table below provides information on configuring data ports for Modular Option EC systems

Node	Circuit pack	Port	Console	Remote access	Network	AML	GAC	MAT	Printer	ICL	PMSI to PMS	PMSI to SL-1
1	MMP40	1	X									
		2				X						
	Utility 1	1			X		X	X	X	X		
		2			X		X	X	X	X		
		3			X		X	X	X	X	X	
		4			X		X	X	X	X		X
2	MMP40	1					X	X	X	X		
3	MMP40	2					X	X	X	X		
4	MMP40	1					X	X	X	X		
		2					X	X	X	X		
5	MMP40	1					X	X	X	X		
		2					X	X	X	X		
6	MMP40	1					X	X	X	X		
		2										
	Utility 2	1			X		X	X	X			
		2			X		X	X	X			
		3			X		X	X	X			
		4			X		X	X	X			

Data ports that can be used for ICLs (recommended setup for nodes 1 and 2)

Note: Baud rates are shown in kbps. For nodes 3, 4, and 5, see the next table.

System limits				Node 1						Node 2	
# of nodes	Data links	Max. voice ports	Cum. baud rate	68040 #1	68040 #2	UTL #1	UTL #2	UTL #3	UTL #4	68040 #1	68040 #2
1	0	24									
	1	24	9.6			9.6					
	2	24	19.2			9.6	9.6				
	3	24	19.2			9.6	4.8	4.8			
	4	24	19.2			4.8	4.8	4.8	4.8		
2	0	48									
	1	48	38.4							38.4	
	2	48	38.4							19.2	19.2
	3	48	48.0			9.6				19.2	19.2
	4	48	57.6			9.6	9.6			19.2	19.2
	5	48	57.6			9.6	4.8	4.8		19.2	19.2
	6	48	57.6			4.8	4.8	4.8	4.8	19.2	19.2
3	0	48									
	1	48	38.4							38.4	
	2	48	76.8							38.4	
	3	48	76.8							19.2	19.2
	4	48	76.8							19.2	19.2
	5	48	86.4			9.6				19.2	19.2
	6	48	96.0			9.6	9.6			19.2	19.2
	7	48	96.0			9.6	4.8	4.8		19.2	19.2
	8	48	96.0			4.8	4.8	4.8	4.8	19.2	19.2
4	0	72									

System limits				Node 1						Node 2	
# of nodes	Data links	Max. voice ports	Cum. baud rate	6 8 0 4 0 # 1	6 8 0 4 0 # 2	U T L # 1	U T L # 2	U T L # 3	U T L # 4	6 8 0 4 0 # 1	6 8 0 4 0 # 2
	1	72	38.4							38.4	
	2	72	76.8							38.4	
	3	72	115.2							38.4	
	4	72	115.2							19.2	19.2
	5	72	115.2							19.2	19.2
	6	72	115.2							19.2	19.2
	7	72	124.8			9.6				19.2	19.2
	8	72	134.4			9.6	9.6			19.2	19.2
5	0	96									
	1	96	38.4							38.4	
	2	96	76.8							38.4	
	3	96	115.2							38.4	
	4	96	153.6							38.4	
	5	96	153.6							19.2	19.2
	6	96	153.6							19.2	19.2
	7	96	153.6							19.2	19.2
	8	96	153.6							19.2	19.2

Data ports that can be used for ACCESS links (recommended setup for nodes 3, 4, and 5)

System limits				Node 3		Node 4		Node 5	
# of nodes	Data links	Max. voice ports	Cum baud rate	6040 #1	6040 #2	6040 #1	6040 #2	6040 #1	6040 #2
1	0	12	9.6						
	1	12	19.2						
	2	12	19.2						
	3	12	19.2						
	4	12							
2	0	24	38.4						
	1	24	38.4						
	2	24	48.0						
	3	24	57.6						
	4	24	57.6						
	5	24	57.6						
	6	24							
3	0	32	38.4	38.4	19.2				
	1	32	76.8	38.4	19.2				
	2	32	76.8	19.2	19.2				
	3	32	76.8	19.2	19.2				
	4	32	86.4	19.2	19.2				
	5	32	96.0	19.2					
	6	32	96.0	19.2					
	7	32	96.0						
	8	32							

Note: the column headers read vertically as "6 8 0 4 0 # 1" and "6 8 0 4 0 # 2" (i.e., 68040 #1 and 68040 #2).

System limits				Node 3		Node 4		Node 5	
# of nodes	Data links	Max. voice ports	Cum baud rate	6 8 0 4 0 # 1	6 8 0 4 0 # 2	6 8 0 4 0 # 1	6 8 0 4 0 # 2	6 8 0 4 0 # 1	6 8 0 4 0 # 2
4	0	48	38.4	38.4	19.2				
	1	48	76.8	38.4	19.2				
	2	48	115.2	38.4	19.2				
	3	48	115.2	19.2	19.2				
	4	48	115.2	19.2					
	5	48	115.2	19.2					
	6	48	124.8	19.2					
	7	48	134.4						
	8	48							
5	0	64	38.4	38.4	19.2				
	1	64	76.8	38.4	19.2				
	2	64	115.2	38.4	19.2				
	3	64	153.6	38.4					
	4	64	153.6	19.2					
	5	64	153.6	19.2					
	6	64	153.6	19.2					
	7	64	153.6						
	8	64							

Chapter 2

Selecting a site

In this chapter

Overview

Introduction   The location of the Meridian Mail equipment can have an
                              overall effect on system performance and costs. The location of
                              the various system components relative to one another and to
                              power sources can affect the operation of the system. For
                              efficient operation of Meridian Mail, consider the following:

- space required
- location
- floor plan
- power and cable requirements
- environmental specifications

Space requirements

Introduction

The space requirements for the Meridian Mail unit are itemized, followed by other Meridian Mail space requirement information (storage space, maintenance, and operator area requirements).

Width	80 cm (32 in.)
Depth (cube/top cap)	53 cm (21 in.)
Depth (pedestal)	64 cm (25.5 in.)
Height (1-node)	78 cm (31 in.)
Height (each additional node)	43 cm (17 in.)

The first UEM, when fully loaded, weighs approximately 60 kg (132 lb). Each additional UEM weighs either 50 kg (110 lb) or 55 kg (121 lb). For shadowed systems, the weights are about 5 kg (11 lb) higher.

The card set includes the MMP40 card, the utility card, and the 4- or 8-port voice processor cards.

For easy maintenance, the floor space for the Meridian Mail Modular Option EC must include at least 90 cm (36 in.) of unobstructed space at the front, 90 cm (36 in.) at the rear, and 30 cm (12 in) on each side of the equipment column.

Module placement

Place Meridian Mail modules according to the following guidelines (see "Meridian Mail module placement" on page 2-4).

The module that contains node 1 (the primary node, which contains the tape drive) can be placed in the first or second position of a stack when operating in ambient temperatures of up to 40°C (104°F). It can also be placed in the third position of a stack when the ambient temperature will not exceed 35°C (95°F).

Meridian Mail module placement
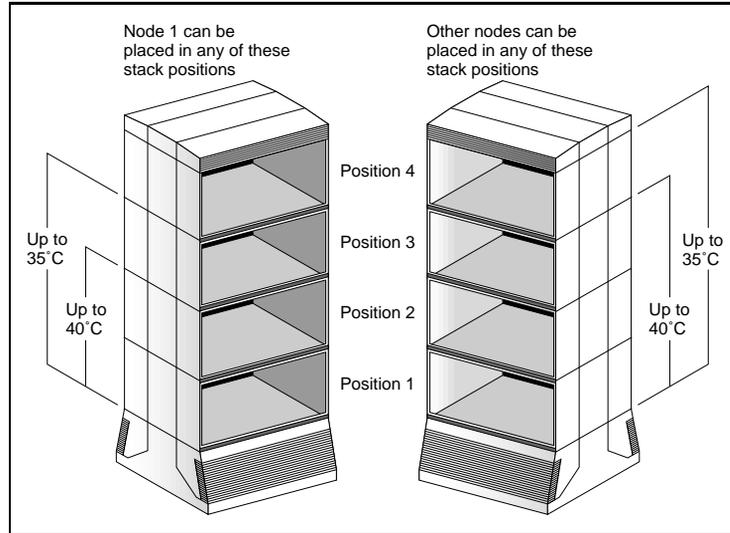
Storage space   Provide space for the storage of tapes, printer paper, printouts, and daily reports.

Space for maintenance and operator   The maintenance and operator area is primarily for the administrator's terminal and printer. You must coordinate the operator area with the PBX equipment area if Meridian Mail and PBX equipment are in the same room. For Meridian Mail use, this area must have

• a shelf for instruction books

• an administration terminal (HP700/32, for example) or IBM PC (or compatible)

• a printer, paper supply, and stand

• a table or desk big enough for the administration terminal and printer

• a modem (optional)

• an A/B switchbox (optional)

The distance between the administration terminal, printer, and Meridian Mail cannot exceed the 15.38 m (50 ft) limit imposed by the RS-232 interface standard unless you use Limited Distance Modems.

Draw up a floor plan of the equipment room that shows the
relative locations of the system components:

- administration/maintenance terminal and printer
- AC panel and outlets
- cable racks
- modem
- A/B switchbox
- switch
- Meridian Mail

Power requirements

Introduction   Power supply requirements are described on the following
                          pages for Meridian Mail, administration terminal, printer, and
                          remote access and networking modems.

Meridian Mail   Meridian Mail uses an NT8D40 power distribution unit. One
                          power supply unit is located in modules with one node, and two
                          power supply units are located in 2- or 3-node modules.

                          The following table indicates the required power supply for
                          each system size.

**EC power supply
requirements**

Power	1-node	2-node	3-node	4-node	5-node
240 V AC	2.0 A	4.0 A	6.0 A	8.0 A	10.0 A
-48 V DC	6.0 A	12.0 A	18.0 A	24.0 A	30.0 A

**Meridian Mail Reporter
terminal**
                          In previous releases of Meridian Mail, you could use a PC using
                          AdminPlus to administer Meridian Mail. That feature is
                          discontinued.

                          AdminPlus on the PC has been replaced with Meridian Mail
                          Reporter, a package that enables you to download billing
                          records from Meridian Mail and produce management reports.

                          Note: You cannot use Meridian Mail Reporter to perform
                          Meridian Mail administration tasks.

                          If you use a PC with Meridian Mail Reporter, check with the
                          manufacturer for the PC power requirements. You can also refer
                          to

                          •   "Meridian Mail Reporter terminal power supply
                               requirements" on page 2-7
                          •   *Meridian Mail Reporter User Guide*

Meridian Mail Reporter terminal power supply requirements

Terminal type	Power input	Power usage
NT220/Ampex 220	115 V AC at 0.5 A 235 V AC at 0.25 A	55 W (193 BTU/hour) 50–60 Hz
VT220	120 V AC at 0.48 A 240 V AC at 0.24 A	60 W maximum 47–63 Hz
HP700/22	120 V AC at 0.3 A 240 V AC at 0.15 A	35 W (110 BTU/hour) 50–60 Hz
VT320	120 V AC nominal at 0.4 A	50 W maximum 57–63 Hz
HP700/32	120 V AC at 0.3 A 240 V AC at 0.15 A	35 W (110 BTU/hour) 50–60 Hz
VT420	120 V AC at 0.56 A 240 V AC at 0.28 A	67 W maximum 50–60 Hz
VT520	120 V AC at 0.56 A 240 V AC at 0.28 A	67 W maximum 50–60 Hz

Printer   The power supply requirements for the printers are shown in the following table

Printer type	Power input	Power usage
LA75	100 or 120 V AC at 1.6 A, 50/60 Hz	50 W
LA30N	100 to 120 V AC; -10%, +6%; 50/60 Hz	120 W to 240 W (maximum)

Modems   The power supply requirements for modems are shown in the
                             following table.

Modem type	Power input	Power usage
Ven-tel 2400	120 V AC, 60 Hz	8 W nominal
Ven-tel 9600plus II	120 V AC, 60 Hz	8 W nominal
UDS EC 224A/D	115 V AC +/- 10, 50/60 Hz	8 W nominal
UDS 2440	115 V AC +/- 10, 50/60 Hz	8 W nominal
Racal ALM 3223	120 V AC, 50/60 Hz	8 W nominal
Hayes Optima 144	120 V AC, 50/60 Hz	8 W nominal
U.S. Robotics Sportster 14.4	120 V AC, 50/60 Hz	8 W nominal

Heat dissipation

Introduction   The air conditioning in the equipment room must be able to
                          maintain the operating temperature for the equipment (see
                          "Equipment temperature and humidity specifications" on
                          page 2-16) while it handles heat produced by the following
                          sources:

• Meridian Mail

• switch

• peripheral devices

• equipment room personnel

• lighting

• external walls, windows, floors, and ceilings that enclose
  the room (if they permit heat to enter the equipment room)

Cable requirements

Introduction The customer is responsible for supplying risers, feeders, and access to station cabling, including the following where necessary:

- conduit
- floor boring
- wall boring
- hung ceiling access, which includes removal and replacement of ceiling tiles

Cable types Meridian Mail uses the following types of cabling:

- 25-pair twisted cable
- power cable
- RS-232 cable
- network loop cable
- 2-pair twisted cable (only if Local Data Sets are used)

25-pair twisted cables
These cables carry voice information between Meridian Mail and the PBX. One end of the cables must have an Amphenol 25B male cable-to-panel connector that terminates on the cabinet I/O panel. The other end terminates on the Main Distribution Frame (MDF) with bare wire. Each node requires a separate 25-pair cable.

Power cable
The AC power cables are grounded 3-wire cables used for the module/cabinet, administration terminal, printer, and modem. They are 1.84 m (6 ft), 16-gauge, 3-conductor type SJT cables. The DC cables are 8 AWG stranded cables.

RS-232 cables
The RS-232 cables connect Meridian Mail to the PBX, auxiliary equipment, and peripheral equipment. The maximum unaided RS-232 cabling distance is 15.38 m (50 ft). This distance can be extended up to 1231 m (4000 ft) by use of limited distance modems.
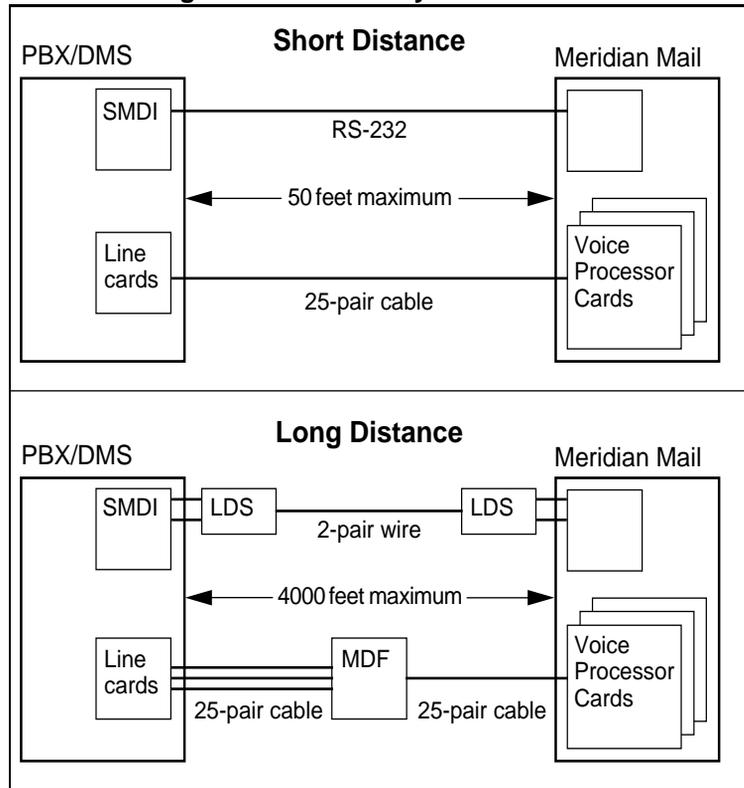
Network loop cable

For each group of 24 channels, the network loop cable has a
maximum length of 15.38 m (50 ft).

2-pair twisted cable

The 2-pair twisted cable connects the Local Data Sets in
installations where Meridian Mail is between 15.38 m and
1231 m (50 ft and 4000 ft) from the switch.

Short and long distance cable layouts

Creating the cable plan

Introduction   Include the following information in the cabling plan:

- cable plan for the building
- ownership of any existing wire, clearly defined
- location of all distribution points (main and intermediate)
- telephone directory number and features
- location of conduits, floor ducts, and other relevant information

The cabling plan must show the routing of all wiring, which includes the start and end point of each cable relative to the location of devices in the office. This plan must indicate the location of each device, its features, and any other relevant information. It should also show the location of all power outlets.

Each power outlet must be equipped with a safety ground.

Sometimes wires are run inside conduits. The conduits may run between utility closets and jack locations, and may connect to other conduits that pass through walls or ceilings. *When telephone cable is run in a conduit, that conduit must not be used for any wiring other than telephone cabling.*

Telephone utility closets are usually located one above the other with a hole or short conduit passing through the ceiling of one utility closet to the floor of the one above. Only licensed personnel should install conduit.

Maintain a cable record such as the one given in Appendix C, "Cable and Wiring Plan."

Decide upon the termination points for wires once you have determined the wire routes. The voice cables terminate at the main distribution frame (MDF), typically in the equipment room.

House cables terminate on the vertical side of two-sided frames and cross-connect to equipment usually located on the horizontal side. When a color field approach is taken, the house cables terminate in the blue field, and the equipment terminates on the purple (USA) or white (Canada) field. In all cases, clearly designate the block where the cables are terminated, showing the cable location information and the cable pair assignments.

Environmental specifications

Introduction   When the Meridian Mail system is in the same room as the PBX
                          or the DMS, and the environment is suitable for the PBX, then
                          the primary environmental specifications for Meridian Mail are
                          satisfied. Whether or not they are located in the same room, also
                          consider the points discussed in the following "General
                          requirements" section when deciding upon the exact location
                          for Meridian Mail in the equipment room.

General requirements   Locate equipment in an area that is

- not subject to static electricity

    IEEE Standard 142-1982 recommends that flooring
    resistance should be more than 25 000 megohms and less
    than 1 million megohms, measured by two electrodes
    0.92 m (3 ft) apart on the floor. Each electrode must
    weigh 2.2 kg (5 lb), and have a dry flat contact area of
    6.4 cm (2.5 in.) in diameter.

- not subject to vibration

    The cabinet should be subject to minimum vibrations (less
    than 0.5 g at 400 Hz). since vibration can cause slow
    deterioration of mechanical parts. If severe, it can cause
    errors on disks. Avoid structure-borne vibration and
    consequent noise transferred to the equipment room.
    Raised floors should have extra support jacks to prevent the
    transmission of vibration.

- away from a sprinkler system, water, steam, or other liquid-
  carrying pipes

    If sprinklers are required for insurance or local ordinance
    reasons, install the minimum allowable number of heads,
    and set to operate at the highest allowable temperature. A
    dry pipe system is preferred. Equip sprinkler heads with
    wire cages. Equipment cabinets must not be located
    directly below sprinkler heads.

- physically safe for personnel and equipment

- away from windows where sunlight may fall directly on
  any part of any cabinet

- not subject to corrosive fumes or exhaust from machinery or where steam vents are present
- away from any passageways for moving machinery or vehicles
- away from sources of radiated interference (maximum 5 V / m at a distance of 3 m [10 ft])
- not subject to electromagnetic interference (EMI)

  Sources of EMI located close to the equipment may have an effect on system operation. Some common EMI sources known to disturb system operation are

  - broadcast stations
  - radar
  - mobile communications
  - high-voltage power lines
  - power tools
  - office business machines, such as copiers
  - fluorescent lights
  - dimmer switches

Ambient temperature and humidity

High temperatures tend to increase the rate of deterioration of most materials. Temperature cycling can cause temporary or permanent changes to equipment and can affect the grade of service. Refer to *IEC 68-2-14* (Test Nb) for temperature cycling guidelines. Low humidity can increase the buildup of static electricity, while high humidity can adversely affect the performance of disks, tapes, and printers.

Maintain the system within an ambient temperature range of 10° to 40°C (5 to 104°F) and 10 to 80 percent RH non-condensing humidity (see "Equipment temperature and humidity specifications" on page 2-16). The rate of change should not exceed 1.8°C (1°F) per minute. For non-operative equipment, the applicable specifications are a temperature range of –20° to +60°C (–4 to +140°F) and an RH non-condensing humidity range of 10 to 80 percent.

Equipment temperature and humidity specifications

Equipment	Temperature	Humidity
Module	5-40°C (41-104°F)	5-80% RH non-condensing
Disk unit	10-50°C (50-122°F)	8-80% RH non-condensing
VT220 (or compatible) terminal	10-40°C (50-104°F)	10-90% RH non-condensing
Printer	10-40°C (50-104°F)	10-90% RH non-condensing
A/B switchbox	0-40°C (32-104°F)	5-95% RH non-condensing
Modem	0-40°C (32-104°F)	5-95% RH non-condensing
Overall system	10-40°C (50-104°F)	10-80% RH non-condensing
VoiceBridge	0-55°C (32-131°F)	5-95% RH non-condensing

Dust density   The recommended maximum dust density in the equipment room is no more than 1 000 000 particles (0.5 microns and up) per cubic foot. Dust density must be Zone 4 (0.00014 g/cubic meter) or better. Average residential dust density is Zone 3 (0.00030 g/cubic meter). False ceilings and tiled floors contribute to maintaining dust density requirements.

Altitude   The system can operate at an altitude of 3076 m (10 000 ft) without special conditioning. Contact Nortel Networks if your system operates at an altitude above 3076 m (10 000 ft).

Air conditioning   The amount of air conditioning required can be estimated at a rate of 1 Mg (1 ton) for every 3516.85 W (12 000 BTU) per hour of heat generated by the equipment and equipment room personnel, plus 1 Mg (1 ton) for each 46.45 m^2 (500 sq ft) of floor space. Each person in the equipment room generates 175.84 W (600 BTU) per hour. Use these figures when you calculate air conditioning requirements.

Energy-saving measures, such as the shutdown of air conditioning on weekends, may be dangerous to your system. These measures can result in temperatures that might harm system operation.

A qualified air conditioning engineer should determine specific requirements.

Fire protection   Building fire and safety codes provide adequate protection for Meridian Mail. Additional information is available from the National Fire Protection Association in its publications entitled *Standards for the Protection of Electronic Computer/Data Processing Equipment* (NFPA 75), and *National Electrical Code* (NFPA 70).

Safety procedures   Train personnel in such emergency measures as how to properly shut off all electrical power, notify the fire department clearly and promptly, handle fire extinguishers, and evacuate personnel and records.

Check services such as steam, water, and power regularly, and inspect pipes for excess condensation, leaks, and corrosion. If power connections are made beneath a raised floor, use waterproof electrical receptacles and connectors.

Security

Ensuring data security   Take special precautions to protect critical data such as business
records or other information that is expensive or impossible to
duplicate. Store duplicate copies of data away from the
equipment area. In most cases, a regular updating program is
necessary to maintain the value of such duplicate data storage.

It is particularly important to ensure that you store both the
keycodes and the backup tapes in a safe place.

**Ensuring equipment
security**   If necessary, extend and improve existing practices of building
security and fire protection to provide adequate protection for
the equipment.

**Equipment room
accessories**   Use a CO_2 fire extinguisher on electrical fires. Do not use water
on electrical fires.

Install temperature and humidity monitoring devices that
contain both visual and audible alarm signals in the equipment
and storage room so that personnel can act if the environmental
conditions approach critical limits.

Chapter 3

Preparing for installation

Meridian 1 equipment requirements

Introduction   To connect Meridian Mail to Meridian 1 equipment, the
                         Meridian 1 requires

- one ESDI port (QPC513H, or later version) or MSDL port
  (NT6D80A) for the Meridian (AML/CSL) link

  Note: QPC45 SDI cards are not compatible and should not
  be installed on the same Meridian 1.

- one or more network loops, as required
- appropriate CPU BootROM daughterboard (containing
  AML/CSL-related firmware)
  - Meridian 1 ST (Release 12-14)   QPC717
  - Meridian 1 ST (Release 15 or later) QPC940
  - Meridian 1 N   QPC782
  - Meridian 1 LE   QPC573
  - Meridian 1 XL   QPC599
  - Meridian 1 XN   QPC600
  - Meridian 1 XN (Memory Enhanced)   QPC601
  - Meridian 1 RT/NT/XT   QPC602
  - Meridian 1 MS   QPC662
  - System 21/21A   QPC940
  - System 51/61/71   QPC939
  - System 51C/61C   QPC939C
- 18-pair cables for voice ports
- proper commercial power line cord
- full-powered cabinet connected to a 220 V 20 A or 110 V
  30 A AC power supply.

Note: The Modular Option EC card set supports System 21/21
A and System 51/61/71 only.

Meridian 1 software requirements

Introduction

Along with the above hardware requirement, the following Meridian SL-1 software packages are also needed:

- Meridian 1 X11 Release 14 or later
- Make Set Busy (MSB 17)
- Basic ACD features (BACD 40)
- Automatic Call Distribution, Package A (ACD 45)
- AML/CSL link (Option 77)
- Integrated Message System (IMS 35)
- Message Waiting Center (MWC 46)
- End-to-end signalling (EES, Option 10)

Network Message Service

Network Message Service (NMS) is an optional feature which allows a single Meridian Mail system to support multiple Meridian 1 sites. If you need NMS, the additional requirements *for each site* are as follows:

- Meridian 1 software release X11 Release 16.55 or later
- AML/CSL Primary Rate Access or AML/CSL Signalling Link (PRA/ISL) (Option 145/6 or 145/7)
- Advanced AML features (NTWK, Option 148)
- Network Message Services (NMS, Option 175)
- Message Waiting Center (MWC 46, and ACD options 40, 45)

  Note: Tandem nodes, which are nodes in the NMS network that pass information between the originating (remote site) and terminating nodes (main sites), do not require the MWC (40, 45, 46) and NMS (175) options.

Hospitality Voice Services

Hospitality Voice Services (HVS) is a voice messaging system that is designed specifically for the hospitality industry (hotels, inns, resorts, and so on). Some of the software requirements for HVS are listed below.

If you are purchasing a property management system, it must follow specifications 3.1 or later. To support a property

management system, the following basic packages are required on the Meridian 1:

- Controlled Class of Service (CCOS)
- Background Terminal Facility (BGD)
- Property Management System Interface (PMSI or PMS)
- Room Status (RMS)

For lamp status, the following is required:

- Message Center (MWC)

Optional packages for PMSI are

- Message Registration (MR)
- Automatic Wake Up (AWU)

Note: PMSI is not compatible with the following packages: AUTOVON (DSN), Centralized Attendant Services (CAS), and Coordinated Dialing Plans (CDP).

For HVS, the additional requirements are

- Meridian 1 X11 Release 16 or later
- Recorded Announcement (RAN)
- Do-Not-Disturb, Individual (DNDI)
- End-To-End Signaling (EES)
- Intercept Treatment (INTR)
- Make Set Busy (MSB)
- Digit Display (DDSP)
- Integrated Message System (IMS)
- Basic Automatic Call Distribution
- ACD CDR Queue Record
- Auxiliary Processor Link (APL)
- Hospitality Voice Services (HVS)
- Digit Key Signaling (DKS)

   Note: DKS may also be referred to as Automatic End to End Signaling.

Information to have on hand

Introduction

The following items should be available at the time of installation:

- equipment room floor plan
- building cable plan
- installation plans
- Meridian Mail NTPs
  - *System Administration Guide*
    (NTP 555-7001-30x)
  - *Installation and Maintenance Guide*
    (NTP 555-7061-250)
  - *System Installation and Modification Guide*
    (NTP 555-7001-215)
  - *Maintenance Messages (SEERs)*
    (NTP 555-7001-510)
- Meridian 1 NTPs
  - *Meridian 1 System Options 21, 51, 51C, 61, 61C, 71, 81, 81C Power Engineering Guide*
    (NTP 553-3001-152)

The work order should include

- system and terminal cross-connect assignments
- a detailed listing of the equipment and services ordered

Pre-installation inspections

Introduction The following table identifies the items that should be inspected and signed off before starting the installation.

Pre-installation inspection checklist

For	Ensure that the following are completed	Check	Signature
Equipment room	• The equipment room complies with physical and environmental requirements. • Utility outlets are installed. • Lighting is installed. • The equipment room is cleaned and prepared. • The cabinet location is marked on the equipment room floor.		
Peripheral device locations	• The terminal, printer, modem, A/B switchbox, and PC locations are ready. • AC outlets are provided. • Sufficient and appropriate terminal connecting blocks are provided.		
General inspections	• Building cross-connect terminals are provided. • Conduits or floor-ducts to terminal locations (including service fittings) are installed. • Access conduit for raceway is placed. • Sufficient terminal blocks are provided. • Sufficient cross-connect wires are provided.		

Preparing for Meridian Mail delivery

Introduction   The following arrangements should be made before equipment
                         delivery:

- availability of unloading/unpacking facilities
- unobstructed access and transportation route from
  unloading area to equipment room
- transportation to premises
- availability of a list of the equipment ordered
- method of transportation from unloading area to equipment
  room

Heavy cabinets and equipment should be placed and unpacked
in their final location at delivery time.

Equipment handling precautions

Introduction

Follow these guidelines when handling Meridian Mail equipment:

- When positioning or moving any cabinet or shelf, either on casters or with leveling feet, be sure to use sufficient manpower and exercise caution.

- Handle cards by the edges only. Do not handle cards by the components or the edge connector. They are static-sensitive. Set cards down on an antistatic bag only.

CAUTION
Risk of damage to equipment

Cards may become damaged if you do not wear an electrostatic discharge (ESD) wrist strap while handling the cards, attaching cables, or doing any other assembly or maintenance on the hardware. An ESD strap is included with the equipment. When using the ESD strap, be sure it is attached to a grounding point on the frame of the equipment.

- Do not remove or insert components from a node which is powered on.

- Do not place or store any materials (cables, manuals, packing material, and so on) on top of or below any equipment cabinet; they may restrict airflow.

Chapter 4

Web server setup

In this chapter

Overview

Introduction   There are several new features in Meridian Mail 13 that run on a PC.

The Personal Mailbox Administration (PMA) feature gives the mailbox owner the ability to view and, if necessary, modify mailbox settings using a web browser.

The Text Messaging and Notification feature provides the capability of sending a text message to an e-mail account, a PCS device, or a pager. It provides the ability to send and receive short alphanumeric messages of up to 160 characters.

The Simple Network Management Protocol (SNMP) has two system management features. The first system management feature is SNMP Notification that sends selected System Event and Error Reports (SEERs) as SNMP traps. The second system management feature is SNMP Reports. It provides information on the number of messages that are received, sent or failed. It also provide statistics for individual or combined sites.

This chapter provides information on the system, software, and PC requirements needed to set up the web server. This chapter also provides information on the system requirements for the web server.

Assumptions   This guide assumes that Meridian Mail is correctly installed and operational. For more information about configuring the Meridian Mail to support the Meridian Mail PC software, consult the *Meridian Mail PC Applications Guide*.

System requirements

Introduction

Depending on the application, Meridian Mail PC software requires a PC running Windows NT Server or Windows 95.

Refer to the following chart for information on each of the PC Applications.

PC Application	Windows 95	Windows NT
ICL	X	X
PMA		X
Text Messaging		X
SNMP	X	X

Hardware requirements

The minimum hardware requirements to run the Meridian Mail PC software are listed below. Hard disk space does not include the space required for third-party software:

- Pentium 90 or better
- minimum of 32 Mbytes memory
- hard disk space: 500 Mbytes on NTFS partition
- 800 x 600 pixel resolution monitor

Integrated Communication Link
- available COM port
- ethernet connection

PMA
- PMA installed on the Meridian Mail

Text Messaging requirements
- Text Notification feature installed on Meridian Mail
- One 16550 UART serial port and modem for dial-up notifications

SNMP support
- SNMP support installed on the Meridian Mail

Note: All of the PC Applications must be installed by a CD.

Software requirements

Meridian Mail PC Applications require the following third-party software:

- WinNT Server 4.0. Some applications can run on Windows 95 OSR 2 or later. For more information on platform requirements, see the Operating System section below.
- WinNT Server Service Pack 3
- WinNT Server 4.0 Option Pack
- Web Browser: IE 4.01 or Netscape 4 or later. (You must have Javascript, Java, cookies, and SSL enabled.)
- TCP/IP

Text Messaging requirements
- Microsoft Data ICL Components (MDAC) 2.1.1.3711.11 (GA) for x86
- IIS SMTP Service for e-mail notifications

SNMP support
- any network management system that is SNMP (version 1) compatible such as the M1 Meridian Administration Tool (MAT) or Hewlett-Packard's Openview
- SNMP service installed as a Windows NT Service to be started on boot up

Operating system

The following PC applications run on the Microsoft Windows NT 4.0 (or later) server with IIS 4:

- Personal Mailbox Administration (PMA)
- Text Messaging and Notification
- Simple Network Management Protocol (SMNP)

Note: While the above applications can only be run on a Windows NT server, they can be used by any computer connected to the network with an Internet browser.

The following Meridian Mail PC applications can run on the Microsoft Windows NT 4.0 or Windows 95 platform:

- Meridian Mail AutoAdmin
- Integrated Communication Link (ICL)
- SNMP Support for OMs
- SNMP Support for SEERS

Setting up third-party applications

Introduction   Before you can install the Meridian Mail PC application
                            software, you need to install and configure your third-party
                            applications.

                            The setup requirements for the PC server are itemized, followed
                            by other software requirements:

                            1.   Install Windows NT 4.0 SRV.

                            2.   Install the Service Pack 3.

                            3.   Install Internet Explorer 4.01 or later.

                            4.   Install Option Pack 4 (including IIS 4).

                            5.   Install Microsoft Data ICL Components (MDAC)
                                  2.1.1.3711.11 (GA) for x86.

                            Refer to the appropriate Microsoft documentation for details.
                            You can find the MDAC software on the Microsoft support web
                            site.

Security issues   To protect data, administrators should take the following
                            precautions:

                            •   All applications should be installed on an NTFS partition
                                  when installed on an NT server. FAT does not support
                                  security.

                            •   You can set up a certificate server through IIS. This is
                                  recommended, particularly if you are administering web
                                  applications from a remote or unsecure site.

                            •   You should set up directory security for your web-based
                                  applications. For more information, see Chapter 1,
                                  "Configuring Web-Based PC Applications."

Installing the software

Introduction   The Nortel Networks PC System Operations software can install, uninstall, and upgrade the Meridian Mail PC applications. Installation can be done via a CD or a network. The following Meridian Mail PC applications can be installed:

- Integrated Communication Link (ICL)
- Meridian Mail AutoAdmin
- Personal Mailbox Administration (PMA)
- SNMP Support for Network OMs
- SNMP Support for SEERs
- Meridian Text Messaging

Installation methods   You can install the PC software from the Web or from a CD. The SysOps software installs and uninstalls the PC applications.

Note: If the CD does not automatically start, use the Windows Explorer to view the contents of the CD. Double-click the Setup.exe file to start the SysOps software.

Configuring features

Introduction
After you install the Meridian Mail PC software, you need to configure each application.

The following applications start immediately after installation:

- AutoAdmin Configuration Utility
- Integrated Communication Link (ICL)
- SNMP Configuration Utility (configures SNMP for SEERS and SNMP for OM)

The following applications are web-based and must be configured before use:

- PMA
- Text Messaging

Assumptions
The configuration instructions assume the Meridian Mail is correctly installed and configured to support the PC Application software. For more information on configuring Meridian Mail to support the PC Application software, consult the *Meridian Mail PC Applications Guide*.

The configuration instructions also assume that the Windows NT Server and Internet Information Server are correctly installed and configured.

Specific changes in Windows NT and IIS needed to support the PC Applications are documented in the configuration instructions.

Configuring Integrated Communications Links

Introduction The Integrated Communications Link (ICL) allows a PC to communicate with the Meridian Mail over an RS-232 cable. To use the Meridian Mail PC Applications software, at least one PC must have an ICL configured. The distance from the PC to the Meridian Mail system can not exceed 15.38 m (50 ft) as they are connected by a serial link.
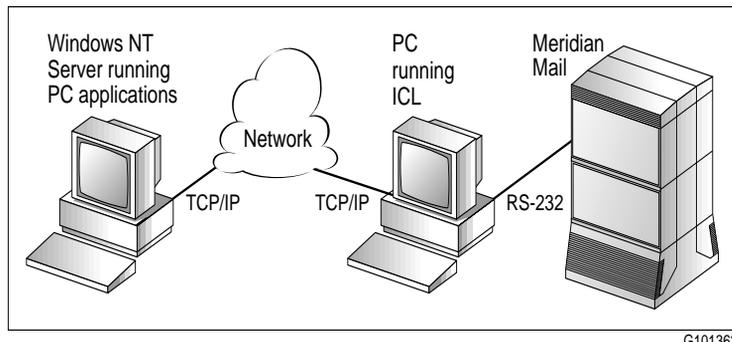
All PC applications require an ICL to be set up except Meridian Mail Reporter and Alternate User Interface. ICLs are flexible: each ICL can support multiple PC applications, and PC applications can use one or more ICLs.

Configuring AutoAdmin The AutoAdmin Configuration Utility sets up your PC so you can run the Meridian Mail AutoAdmin software. The Configuration Utility starts automatically after installing AutoAdmin through the SysOps Setup wizard.

Configuring web-based PC applications The PMA and Text Messaging configurations can be done over a web browser.

Configuration requires several steps:

1. Create application administrators.

2. Configure directory security for web-based applications.

3. Configure IIS for web-based applications.

Note: For details on configuring your PC applications refer to the *Meridian Mail PC Applications Guide.*

Before you begin   You must configure Windows NT and install Internet Information Server (IIS) to manage your web-based applications.

Each mailbox must have the PMA feature enabled through the Administrator.

Create application administrators   The first step is to create one or more Windows NT administrator accounts for your web-based applications. A web-based application administrator may be different than the administrator for the NT server.

Refer to the *Meridian Mail PC Applications Guide* for more information on how to create application administrators.

Configure directory security for web-based applications   You need to configure directory security for your web-based applications to protect them against malicious or accidental tampering.

Refer to the *Meridian Mail PC Applications Guide* for more information on how to configure directory security for web-based applications.

Configure IIS for web-based applications   To configure IIS, follow these steps:

1. Create Virtual Directories.

2. Configure User Authentication.

3. Configure Default Document.

Create Virtual Directories
A virtual directory points to a real directory on the web server, but is easily accessed through a URL. For example, if there is a virtual directory called "PMA" on the web server "torweb," then a browser can reach the directory at http:\\torweb\pma.

You must create separate virtual directories for PMA and Text Messaging.

A virtual directory must be created for each Meridian Mail customer group.

Configure user authentication

If you are using Internet Explorer to configure your web-based applications, then your sessions are secure via Window NT's built-in security features.

Configure Default Document

Make sure that the file Default.asp is found in the Enable Default Document field.

Configuring SNMP

Introduction   The SNMP Configuration Utility configures the SNMP
                          extension agents necessary to use SNMP to transmit SEERS
                          and OM data. You need to configure SNMP support on the
                          Meridian Mail.

                          There are four possible system configurations:

                          1.   A PC containing both an SNMP agent and an SNMP
                               manager is connected to a Meridian Mail switch using ICL
                               over an RS-232 cable.

                          2.   A PC containing an SNMP agent is connected to a
                               Meridian Mail switch using ICL over an RS-232 cable.
                               One or more SNMP managers communicate with the agent
                               over the corporate network; that is, the Intranet.

                          3.   A PC containing an SNMP agent is connected to a
                               Meridian Mail switch using ICL over an RS-232 cable.
                               One or more SNMP managers communicate with the agent
                               through the corporate firewall over the public network; that
                               is, the Internet.

                          4.   A PC containing an SNMP agent is connected to a
                               Meridian Mail switch using ICL over an RS-232 cable.
                               One or more SNMP managers communicate with the agent
                               through dial-up modems.

Network configuration

Introduction   The following section describe various network configurations.

Examples of networks All of the following examples assume that they are being run behind a corporate firewall. For a more detailed breakdown of the PC application's minimum requirements refer to the *Meridian Mail PC Applications Guide.*

Basic configuration
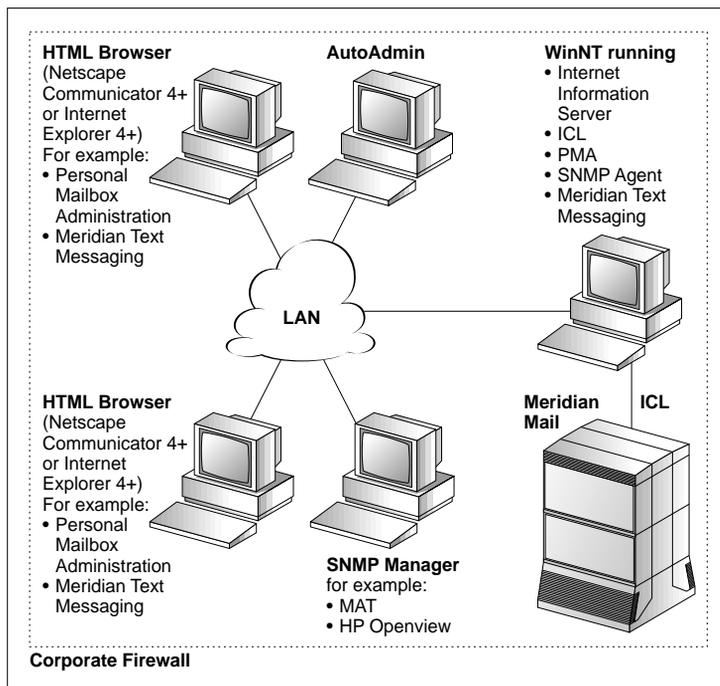
G101380

- This configuration is desirable if you do not already have a web server running and you want to run all your Meridian Mail applications from one PC.

- Minimum requirement for WinNT running IIS and all PC applications: Pentium 90 CPU with 32 Mb RAM (64 Mbytes recommended), Windows NT 4.0 Server with Option Pack 4 and Service Pack 3 or 5 installed, 50 Mbytes of free disk space, CD-ROM drive, SVGA monitor, keyboard and mouse, one 16550 UART serial port for connection to Meridian Mail and an ethernet card and TCP/IP installed for connection to the LAN.

- One ICL port is required to be defined on Meridian Mail.

**Basic configuration
with seperate web
server**

The diagram shows:

HTML Browser
(Netscape
Communicator 4+
or Internet
Explorer 4+)
For example:
• Personal
  Mailbox
  Administration
• Meridian Text
  Messaging

AutoAdmin

WinNT running
• Internet
  Information
  Server
• PMA
• Meridian
  Text
  Messaging

Win95/98 running
• ICL • SNMP Agent

LAN

HTML Browser
(Netscape
Communicator 4+
or Internet
Explorer 4+)
For example:
• Personal
  Mailbox
  Administration
• Meridian Text
  Messaging

SNMP Manager
for example:
• MAT
• HP Openview

Meridian Mail   **ICL**

Corporate Firewall

G101381

- This configuration is desirable if you already have a web
  server running. You can then use a less expensive PC (with
  Windows 95/98) as a gateway to connect to your Meridian
  Mail system.

- Minimum requirement for Win95/98 running ICL &
  SNMP Agent: Pentium 90 CPU with 32 Mbytes RAM,
  Windows 95 with OSR2 installed or Windows 98, 15
  Mbytes of free disk space, CD-ROM drive, SVGA monitor,
  keyboard and mouse, one 16550 UART serial port for
  connection to Meridian Mail and an ethernet card and TCP/
  IP installed for connection to the LAN.
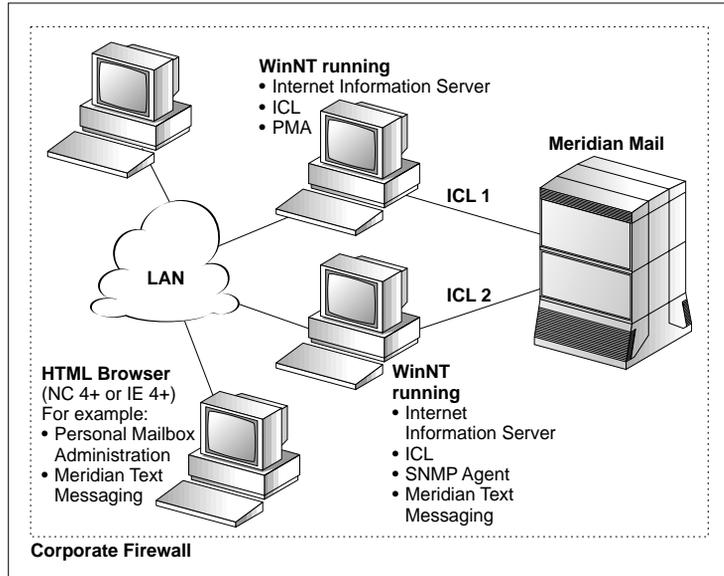
- This configuration is desirable if you already have a web
  server running. You can then use a less expensive PC (with
  Windows 95/98) as a gateway to connect to your Meridian
  Mail system.

- Minimum requirement for Win95/98 running ICL & SNMP Agent: Pentium 90 CPU with 32 Mbytes RAM, Windows 95 with OSR2 installed or Windows 98, 15 Mbytes of free disk space, CD-ROM drive, SVGA monitor, keyboard and mouse, one 16550 UART serial port for connection to Meridian Mail and an Ethernet card and TCP/IP installed for connection to the LAN.

Multiple server configuration

G101383

- This configuration is desirable if you want to run a dedicated server for one of the PC applications (for example, PMA) and use the second PC for the other applications. This is sometimes desirable because you may want dedicated bandwidth for the solo PC application. The connected PCs can either be running Windows 95/98 or Windows NT.

- The minimum configuration of these PCs will be the same as for the Basic Configuration diagram.

- Two ICL ports are required to be defined one the same node of Meridian Mail. The Cumulative baud rate limitation on the node has to be observed.

Multiple server configuration with load sharing
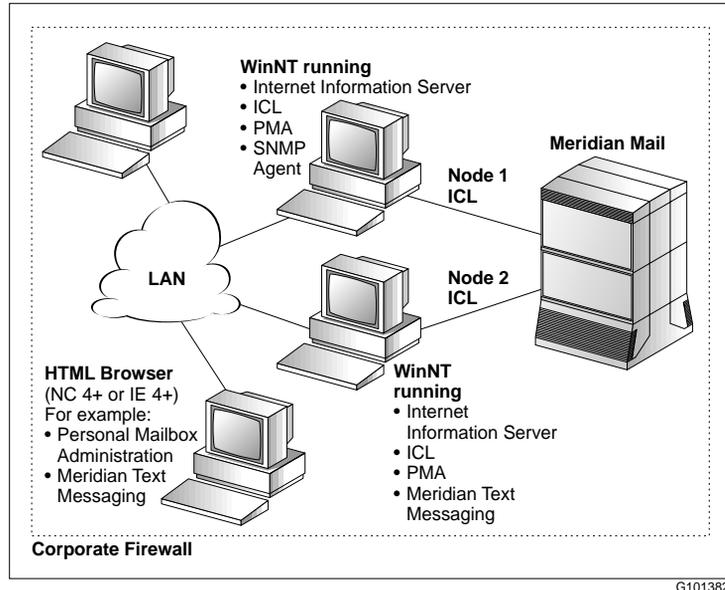
G101382

- This configuration is desirable if you have a multi-node system and you want to load share between 2 or more PCs. The connected PCs can either be running Windows 95/98 or Windows NT.

- The minimum configuration of these PCs will be the same as for the Basic Configuration diagram.

- Two ICL ports are required, one on each node of Meridian Mail.

Note: Both SNMP Agent and Text Messaging can only be run on *one* of the PCs.

Multiple Meridian Mail configuration with shared web server

G101384
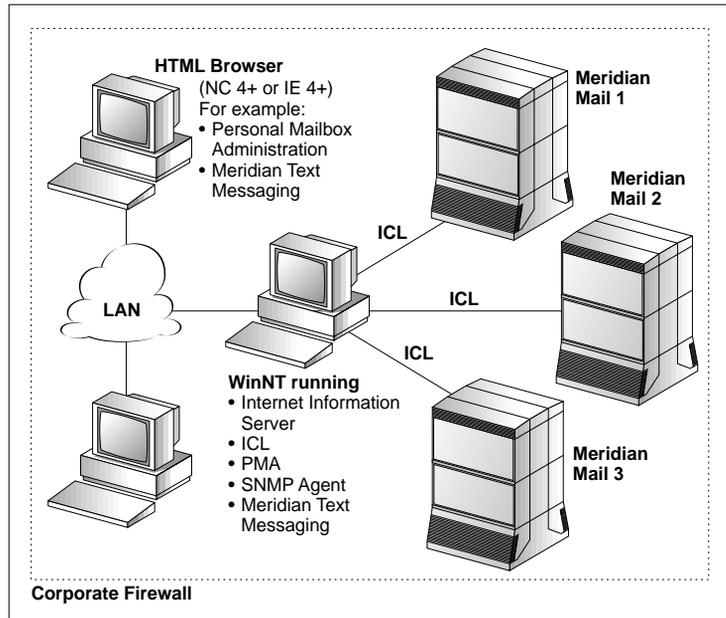
- This configuration is desirable if you have a number of Meridian Mail systems that are sitting very close to each other and you want to share the same PC among them. The connected PC can either be running Windows 95/98 or Windows NT.

- The minimum configuration of these PCs will be the same as for the Basic Configuration diagram.

- One ICL ports is required to be defined on each of the Meridian Mail systems.

Note: All Meridian Mail systems have to running Meridian Mail 13 and have the applicable PC applications installed.

Multiple Meridian Mail configuration with multiple links

HTML Browser
(NC 4+ or IE 4+)
For example:
• Personal Mailbox Administration
• Meridian Text Messaging

WinNT running
• Internet Information Server
• PMA
• SNMP Agent
• Meridian Text Messaging

Meridian Mail

Win95/98 running
• ICL

ICL

Meridian Mail

Win95/98 running
• ICL

ICL

Meridian Mail

LAN

Win95/98 running
• ICL

ICL

Corporate Firewall
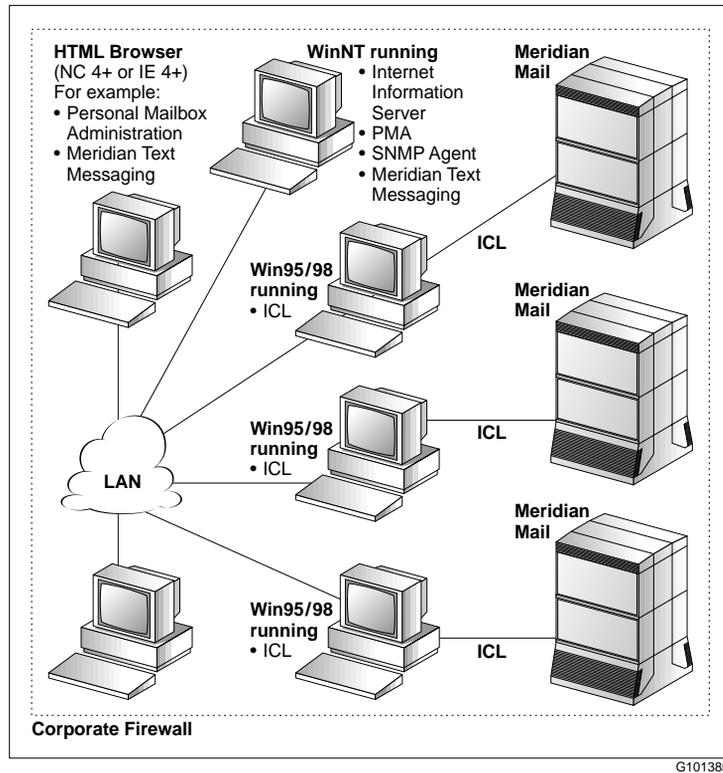
G101385

- This configuration is desired if you have a network of Meridian Mail systems and you want to share the same web server PC among them. Although the connected PCs can either be running Windows 95/98 or Windows NT, Windows 95/98 is recommended in this case since it provides a less expensive alternative.

- The minimum configuration of these PCs will be the same as for the Basic Configuration diagram.

- One ICL port is required to be defined on each of the Meridian Mail systems.

Note: All Meridian Mail systems have to running Meridian Mail 13 and have the applicable PC applications installed.

Chapter 5

Planning spares requirements

In this chapter

Overview

Introduction   The following table lists the mean time between failures
                              (MTBF) for the field-replaceable components of the Meridian
                              Mail system. Table 5-5-5-2 lists the number of spares of each
                              item a branch should stock.

                              Some systems have multiples of the listed components. For
                              example, an eight-port system has two four-port voice processor
                              cards

                              The MTBF of the disk drives used in Meridian Mail is 17 years
                              for the 3.5-inch drives, 11 years for the 5.25-inch drives, and 5.7
                              years for the 8-inch drives. Note that this is the *mean time*. It
                              does not mean that every drive can be expected to operate
                              without failure for the full duration of this time.

Spares planning tables

Spares planning—Mean time between failures (MTBF)

Components serviced	Code	MTBF (years)
300-Mbyte disk (no power)	NT6P06AA	11.0
300-Mbyte disk (with power)	NT6P43AA	11.0
1-Gbyte disk (no power)	NT6P07AA	16.0
1-Gbyte disk (with power)	NT6P44AA	16.0
2-Gbyte disk (no power)	NT6P07BA	16.0
2-Gbyte disk (with power)	NT6P44BA	16.0
MMP40	NT6P97AA	15.0
Utility with modem	NT6P03AA	34.6
Utility without modem	NT6P42AA	34.6
VP4	NT6P04AA	54.0
VP8	NT6P08AA	27.0
CEPS	NT8D29AA	90.0
DCEPS	NT6D41AA	187.0
Viper tape drive	NT6P05AA	2.9
2.5-Gbyte Tandberg tape drive unit	NT6P05BA	2.9
Total system	–	6.0

Note 1: The mean time between failure of disk drives is based on electrical failures and therefore not conclusive with regard to disk drive life expectancy. You should expect to replace the disk drive within five years.

Note 2: System MTBF uses the Markhov model. A component failure does not necessarily cause a system failure.

Note 3: The total system MTBF is based on a 3-node unshadowed 32-port, 200-hour system.

Spares planning—Number of spares required

Components serviced	Code	Number of units serviced by branch *				
		1	<5	<10	<20	<30
300-Mbyte disk (no power)	NT6P06AA	1	2	3	3	3
300-Mbyte disk (with pow er)	NT6P43AA	1	2	3	3	3
1-Gbyte disk (no power)	NT6P07AA	1	2	3	3	3
1-Gbyte disk (with power)	NT6P44AA	1	2	3	3	3
2-Gbyte disk (no power)	NT6P07BA	1	2	3	3	3
2-Gbyte disk (with power)	NT6P44BA	1	2	3	3	3
MMP40	NT6P97AA	1	2	2	3	3
Utility with modem	NT6P03AA	1	2	2	2	2
Utility without modem	NT6P42AA	1	1	2	2	2
VP4	NT6P04AA	1	1	2	2	2
VP8	NT6P08AA	1	2	2	3	3
CEPS	NT8D29AA	1	1	2	2	2
DCEPS	NT6D41AA	1	1	2	2	2
Viper tape drive	NT6P05AA	1	1	2	2	2
2.5-Gbyte tape drive unit	NT6P05BA	1	1	2	2	2
* Assumes that when a spare is committed, a replacement will be available within one week.						

Appendix A

Reference documents

In this appendix

Overview

Introduction   The following documents contain information that may be of
                            value during the site planning and preparation process. If local
                            or national codes conflict with the those listed below, follow the
                            local or national code.

Document list

- ANSI/IEEE Standard 484-1981
- ANSI/IEEE Standard 142-1982
- ANSI/IEEE Standard 81-1983
- *Gaseous Hydrogen Systems 1984-NFPA 50A*
- *National Electrical Code (*NFPA 70-1984*)*
- *Grounding Electrode System* (NEC Articles: 250-23, 250-26, 250-54, 250-81, 250-83, 250-84, and 250-86)
- *Grounding Electrode Conductor* (NEC Articles: 250-23, 250-26, 250-51, 250-53, 250-91, 250-92, and 250-94)
- *Grounding Conductor* (that is, Neutral) (NEC Articles: 250-26, 250-50, 250-51, 250-53, and 250-61)
- *Equipment Grounding Conductor* (NEC Articles: 250-50, 250-51, 250-53, 250-57, 250-91, 250-32, 250-92, and 250-95)
- *Main Bonding Jumper* (NEC Articles: 250-23, 250-26, and 250-61)
- *Grounding Evaluation Practices and Equipment,* ECOS Electronics Corporation, 205 West, Harrison Street, Oak Park, IL U.S.A. 60304
- *Protection of Electronic Computer/Data Processing Equipment*—NFPA 75
- *MIL-Handbook-419* (raised floor installation requirements)
- *IEC 68-2-14 Test Nb* (temperature cycling)
- *OSHA Occupational Safety and Health Administration Standards* (29 CFR 1910)
- *Recommended Practice on Static Electricity*—NFPA 77
- *Soares Grounding Electrical Distribution Systems for Safety*
- *Uniform Building Code 1982*
- the most recent issues of local building codes

Appendix B

Component list

In this appendix

Overview

Introduction   This appendix identifies Meridian Mail equipment components
                         that can be ordered individually

Component list

Component	PEC code	Part no.	Order code
300-Mbyte disk drive	NT6P06AA	A0351371	—
300-Mbyte disk drive plus power	NT6P43AA	A0394780	—
300-Mbyte disk pack (Seagate ST3390N)	NT6P06AA	A0602257	—
1.0-Gbyte disk drive module	NT6P07AA	A0391976	—
1.0-Gbyte disk drive module with auxiliary power (Maxtor or Seagate)	NT6P44AA	A0394781	—
1.2-Gbyte disk drive (Seagate ST31230N)	A0616792	—	—
2.0-Gbyte disk drive module	NT6P07BA	A0656257	—
2.0-Gbyte disk drive with auxilliary power	NT6P44BA	A0656258	—
MMP40 card	NT6P97AA	A0405603	—
Utility card (with modem)	NT6P03AA	A0391972	—
Utility card (without modem)	NT6P42AA	A0394182	—
VP4 Card	NT6P04AA	A0391973	—
VP8 Card	NT6P08AA	A0392020	—
32K NVP Card*	NT4R01AC	A0364796	—
Viper tape unit	NT6P05AA	A0391974	—
Viper tape drive cleaning kit	—	A0378220	—
Tandberg tape unit	NT6P05BA	A0630014	—
Tandberg tape drive cleaning kit	—	A0633585	—
CEPS (ac)	NT8D29AA	A0358724	—
CEPS (dc)	NT6D41AA	A0359960	—

Component	PEC code	Part no.	Order code
Power and cable equipment			
Ground extension cable	QCAD310	A0336878	—
Alarm modem cable	NT6P0112	A0393845	—
Adapter cable	NT6P0113	A0393846	—
EVB cable 76.2 cm (30 in.)	NT6P0124	A0407824	—
EVB cable 152.4 cm (60 in.)	NT6P0125	A0407825	—
EVB cable 243.84 cm (96 in.)	NT6P0126	A0407826	—
RS-232 5-port fanout cable	NT6P0109	A0393842	—
RS-232 4-port fanout cable	NT6P0110	A0393843	—
I/O to backplane cable	NT6P0123	A0407823	—
I/O to QPC414 cable	NT8D86AD	A0362869	—
I/O to QPC513 cable	—	P0695822	—
CSL to I/O cable	NT6D4410	A0363749	—
Net Loop to I/O cable	NT6P0122	A0366395	—
INMAC 328 terminal adapter	—	A0351509	—
RS-232 terminal to printer cable	NT4R59AA	A0347499	—
RS-232 cable	—	A0363518	—
RS-232 modem cable, 7.69 m (25 ft) (null-modem)	NTND82AB	A0398762	—
RS-232 printer cable	—	A0376171	—
RS-232 printer cable (for NT220 terminal)	NTND82AA	A0398761	—
SCSI cable	P0695169-05	—	—
Communications equipment			
HP 700/22 terminal (any VT220 compatible terminal may be used)	NT3M20AA	A0330842	—
VT520 monochrome text terminal (14" flat surface)	—	A0637761	—
A/B data switchbox	NT3M50AD	A0345353	—
Ven-Tel 2400-33 MNP/X.modem (Rev 5.2)	NT3M50AF	A0345963	—

Component	PEC code	Part no.	Order code
Ven-Tel 9600plus II	—	A0381458	—
2400-BPS UDS modem (EC 2440)	NT3M50AC	A0345346	—
NT Personal Printer	NT3M56AC	A0345125	—
DEC LA30N printer kit	NTZR40BA	A0654974	—
Networking kit	NT9D67AA	AS7007	—
Racal ALM 3223 modem	—	A0658286	—
Hayes Optima 144 modem	—	A0658287	—
U.S. Robotics Sportster 14.4 (model 268) modem	—	A0638645	—
50-position EMI filter and mounting	—	A0361136	—
User guides			
Meridian Mail user guides (15)	NT5R25AA	A0403732	P0741311
Guest Administration Console/Guest Voice Messaging Guide	—	—	P0741307

Note: The Message Playback Speed Control feature does not work with the 16K NVP card.

Appendix C

Cable and wiring plan

In this appendix

Overview

Introduction   Use this form in this appendix to make notes on your cabling
                          and wiring plan.

Cabling and wiring plan data form

DN	TN	Name	Features/ Remarks	Terminal device	Blocks	Color
						W/BL
						W/OR
						W/GR
						W/BR
						W/SL
						R/BL
						R/OR
						R/GR
						R/BR
						R/SL
						BK/BL
						BK/OR
						BK/GR
						BK/BR
						BK/SL
						Y/BL
						Y/OR
						Y/GR
						Y/BR
						Y/SL
						V/BL
						V/OR
						V/GR
						V/BR
						V/SL

Appendix D

Site survey checklist

In this appendix

Overview

Introduction   This appendix contains a comprehensive site survey checklist to
                          aid in planning your site installation.

Checklist

1. General information

( ) End user

Name: _____

Address: _____

City, State/Province: _____

Country, Zip/Postal code: _____

Telephone number: _____

Primary contact: _____

Secondary contact: _____

( ) Distributor

Name: _____

Address: _____

City, State/Province: _____

Country, Zip/Postal code: _____

Telephone number: _____

Primary contact: _____

Secondary contact: _____

2. Delivery information

( )   Address: _____

       City, State/Province: _____

       Country, Zip/Postal code: _____

       Telephone number: _____

       Primary contact: _____

       Secondary contact: _____

       Vehicle restrictions: _____

       Permit(s) required: _____

       Hours of delivery: _____

( )   Security clearance: _____

( )   Freight company: _____

( )   Pre-delivery notification _____

       Hours for delivery: _____

       Contact person: _____   Telephone number: _____

( )   Unloading/Unpacking

       Equipment required: _____

       Responsible party: _____

( )   Equipment route: _____

( )   Delivery constraints: _____

( )   Elevator: ___ Capacity: _____

3. Software considerations

( )   Current Meridian Mail software release:_____

( )   Current system size (number of voice ports or voice port equivalents): _____

( )   Current system size in terms of storage hours:_____

( )   Current Meridian 1 software release:_____

       Meridian 1 Generic X11 Release 14 (or later) required

       Meridian 1 Generic X11 Release 16.55 (or later) required if the Network Messaging Service (NMS) feature is purchased

( )   Meridian 1 software conversion required

       Release _____ to Release _____

( )   Meridian 1 software packages equipped

MSB 17	( )
BACD 40	( )
ACDA 45	( )
CSL 77 (ISDN/AP link)	( )
IMS 35	( )
MWC 46	( )
NMS 175 (for NMS)	( )
ISDN PRA/ISL 145/6 or 145/7 (for NMS)	( )
NTWK 148 (for NMS)	( )
EES 10 (for NMS)	( )

4. Meridian Mail model considerations
(See Chapter 1 "Determining system size" in this manual for configurations.)

Number of Meridian Mail basic-service voice ports required: _____

Number of Meridian Mail full-service voice ports required: _____

Number of Meridian Mail multimedia ports required:_____

Hours of voice storage (for messages) required: _____

Hours of voice storage (for menus/services) required: _____

Number of voice users: _____

5. Meridian Mail optional services desired

Primary language (1):   _____

Extra/Alternate language (2):   _____

Extra/Alternate language (3):   _____

Extra/Alternate language (4):   _____

(See your Nortel Networks representative for a list of available languages.)

Voice Menus	Yes ( ) No ( )
Networking	Yes ( ) No ( )
Meridian Mail ACCESS	Yes ( ) No ( )
AdminPlus/Meridian Mail Reporter	Yes ( ) No ( )
Network Message Services	Yes ( ) No ( )
Outcalling	Yes ( ) No ( )
Fax Outcalling	Yes ( ) No ( )
AMIS	Yes ( ) No ( )
Voice Forms	Yes ( ) No ( )
HVS	Yes ( ) No ( )
SMDI Links	Yes ( ) No ( )
Hospitality	Yes ( ) No ( )
Multi-SMDI	Yes ( ) No ( )
Multiple Administration	Yes ( ) No ( )
Multi-Customer	Yes ( ) No ( )
Bilingual Prompting	Yes ( ) No ( )
Meridian Mail Connections	Yes ( ) No ( )
Install/Data Tape	Yes ( ) No ( )
Backup Tape(s)	Yes ( ) No ( )
Keycode Available	Yes ( ) No ( )

6. Hardware

PBX equipment cabinets   Quantity   Type

_____

_____

( ) Meridian 1 CPU compatibility

    CPU ROM upgrades required: Yes ( ) No ( )

    Memory upgrade required: Yes ( ) No ( )

( )   Input/Output devices

    Space available for ESDI/MSDL: Yes ( ) No ( )

( )   NMS requirements (if needed)

    ISDN/PRI hardware: Yes ( ) No ( )

7. Equipment room information

( ) Existing floor plan: Yes ( ) No ( )

8. Power and ground considerations

Separately grounded 110 V AC outlet for Meridian Mail:Yes ( ) No ( )

( ) Calculate maximum cable distance

    PBX to Meridian Mail (Link cable):_____

    RS-232 (< 15.38 m [50 ft.])   Yes   ( )
    LDM (15.38-1231 m [50-4000 ft.])   Yes   ( )

*Meridian Mail to A/B switchbox: _____ 7.69 m (25 ft.) maximum

*A/B switchbox to Admin terminal:_____ 7.69 m (25 ft.) maximum

*A/B switchbox to modem: _____ 7.69 m (25 ft.) maximum

Modem to phone jack: _____

Printer to Admin terminal: _____ 15.38 m (50 ft.) maximum

*If you are using Meridian Mail Reporter on the PC, or the internal modem, these cables are not used. Check for the applicable cables in the *Meridian Mail Reporter User Guide*.

9. Current environmental conditions

( ) Equipment room cooling

Type: _____ Ambient temperature: _____

( ) Humidifier/Air conditioner: _____

( ) Customer restrictions: _____

Notes on current environmental conditions:_____

_____

_____

10. Additional considerations

Does the existing PBX installation conform to NTP and Product Bulletins? Yes ( ) No ( )

Does the existing PBX/DMS installation conform to NTP and Product Bulletins? Yes ( ) No ( )

Does the end user have any complaints with the existing PBX? Yes ( ) No ( )

Does the end user have any complaints with the existing PBX/DMS? Yes ( ) No ( )

Does the end user have any complaints with the existing Meridian Mail system? Yes ( ) No ( )

11. Comments and recommendations

_____

_____

_____

_____

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_____

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Appendix E

Data forms and site log form

In this appendix

Overview

Introduction   This appendix contains data entry forms that help in the
planning and configuration of Meridian Mail. They should be
completed by the customer or distributor when planning the
system installation. The appendix includes

- *System Data Form (SYS-1)* This form contains basic
configuration information for Meridian Mail and the PBX.

- *Meridian Mail TNs (SYS-2)* This is a table for planning
the port locations and the corresponding TNs.

- *Meridian 1 Data Forms (PBX-x)* This form contains data
corresponding to Meridian 1 prompts that require an entry.
This data should be written in before initiating the system
start-up procedures.

  The filled-in PBX Data Forms should be used with the
Installation and Maintenance Guide (NTP 555-7061-250).
The person inputting PBX data must be familiar with the
use of the Meridian 1 overlay programs.

- *Meridian Mail Data Forms (MM-x)* These forms contain
administrative information for the initial configuration of
Meridian Mail voice messaging, and information on the
configuration of optional services (for example, Voice
Services or Networking). Each data form refers to the
Meridian Mail NTP that provides more detailed instruction
and description. For references to the *System
Administration Guide*, please refer to the section called
"NTP references" in the "About this document" chapter for
the exact NTP number.

  Also, the default values or responses are listed on the data
form where possible. These are the default values that
would appear on the screen during data entry, or the values
that are assumed if no entry is made. For fields where you
are required to choose from a list of options (for example,
Enabled or Disabled, Yes or No), the default is underlined.

- *Site Log Form (LOG-1)* This form contains blank space in
which to record significant events, service calls, known
problems, and work-around procedures. It can serve as a
place to keep release notes, problem reports, and
configuration notes.

Forms

```
                    System data form              SYS-1
   Customer: _____  Rep:_____

   Customer rep: _____  Location:_____

   Date: _____Job #: _____  Meridian Mail release: _____

   Serial number                                             _____

   System name                                               _____

   System DN length                                          _____

   Meridian 1 customer number (0-99):                        _____

   System DNs                            Default        Site

   Voice Messaging (Full-Service Voice) ACD DN:  3600        _____

   Express Messaging ACD DN:             3601               _____
   (if service is desired)

   Prompt Maintenance ACD DN:            3601               _____
   (if Voice Menus are installed)

   Basic-Service Voice ACD DN:           3602               _____
   (Voice Menus, ACCESS)

   Full-Service Multimedia ACD DN:       3603               _____
   (if Fax on Demand is installed)
```

Meridian Mail TNs							SYS-2	
Port number	Basic or full	Multi-media or voice	Loop (0-159)	Shelf (0-1)	Card (2 or 3)	Unit (0-7)	ACD DN XXXX	Key1-SCN XXXX
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

Port number	Basic or full	Multi-media or voice	Loop (0-159)	Shelf (0-1)	Card (2 or 3)	Unit (0-7)	ACD DN XXXX	Key1- SCN XXXX
Meridian Mail TNs						SYS-2		
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
50								
51								
52								
53								
54								
55								
56								
57								
58								
59								
60								
61								

Port number	Basic or full	Multi-media or voice	Loop (0-159)	Shelf (0-1)	Card (2 or 3)	Unit (0-7)	ACD DN XXXX	Key1-SCN XXXX
Meridian Mail TNs							**SYS-2**	
62								
63								
64								
65								
66								
67								
68								
69								
70								
71								
72								
73								
74								
75								
76								
77								
78								
79								
80								
81								
82								
83								
84								
85								
86								
87								
88								
89								
90								
91								
92								

Port number	Basic or full	Multi-media or voice	Loop (0-159)	Shelf (0-1)	Card (2 or 3)	Unit (0-7)	ACD DN XXXX	Key1-SCN XXXX
Meridian Mail TNs							**SYS-2**	
93								
94								
95								
96								

The Meridian 1 DN and Meridian Mail System DNs should not conflict with existing DNs in the Meridian 1 numbering plan. If the System DNs are not provided with the customer order, the defaults are used.

For Loop, Shelf, Card, and Unit, the allowable responses are shown in parentheses.

Voice ports must be filled sequentially starting at number 0. For example, for an eight-port system, the ports must be filled in the order 0,1, 2, 3, 4, 5, 6, then 7, using available TNs. For example,
7-0-1-0 (Basic Voice)
7-0-1-1 (Basic Voice)
7-0-1-2 (Full Voice)
7-0-1-3 (Full Voice)
7-0-1-4 (Full Voice)
7-0-1-5 (Full Voice)
7-0-1-6 (Full Voice)
7-0-1-7 (Full Voice)

Multimedia ports use two TNs. When you list a multimedia port, the Unit portion of the TN for the next port should increase by 2. For example,
7-0-1-0 (Basic Voice)
7-0-1-1 (Basic Voice)
7-0-1-2 (Full Multimedia)
7-0-1-4 (Full Multimedia)
7-0-1-6 (Full Voice)
7-0-1-7 (Full Voice)

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Meridian 1 data form   PBX-1

Customer: _____ Rep:_____

Customer rep: _____ Location:_____

Date: _____ Job #: _____ Meridian Mail release: _____

This form contains all site-specific data required to configure the Meridian 1 for Meridian Mail. Only those prompts specific to Meridian Mail configuration are listed below. For more information on these overlays, see the *Installation and Maintenance Guide* (NTP 555-7041-7061-250) and the *X11 Input/Output Guide* (NTP 553-3001-400).

Overlay	Prompt	Site response	Comments
15	CUST	_____	PBX customer number (range 0-99)
	ATDN	_____	Attendant DN
	FNAD	_____	DN to which Call Forward No Answer DID calls are routed
	FNAN	_____	DN to which Call Forward No Answer non-DID calls are routed
	FNAL	_____	DN to which Call Forward No Answer are routed
	CFNA	_____	Number of ring cycles before calls are forwarded (range is 1-15, default is 4)
17	CTYP	_____	Card type (MSDL or ESDI)
11	TN	_____	ACD agent TN in the form ll ss cc uu (loop shelf card unit) (Use values from the SYS-2 data form.)
	CUST	_____	PBX customer number
	KEY	0 ACD xxxx yyyy	Define key 0 as an ACD agent key. DN xxxx is the Primary ACD DN. Basic-service, full-service, and multimedia ports each have a unique Primary DN. The Primary DN can be any unused number. yyyy is the position ID that Meridian 1 uses to distribute calls to agents. It can be any unused number.
		1 SCN zzzz	Define key 1 as a single call non-ringing DN, where zzzz is an unused DN.
		____MSB	Define key (1-9) as a make set busy key.
		____NRD	Define key (1-9) as a not ready key.
		____TRN	Define key (1-9) as a transfer key.
		____AO3	Define key (1-9) as a 3-party conference key (this is necessary for Thru-dial).
		____RLS	Define key (1-9) as a release key.

</div>

Meridian 1 data form for each queue: PBX-2
basic-service, full-service, multimedia

Customer: _____ Rep:_____

Customer rep: _____ Location:_____

Date: _____ Job #: _____ Meridian Mail release: _____

Basic-service voice

Overlay	Prompt	Site response	Comments
23	CUST	_____	PBX customer number
	ACDN	_____	Basic-Service Voice DN
	EES	_____	End-to-End Signalling (Enabled or Disabled)
	VSID	_____	Meridian Mail identifier (defined in LD 17)
	MAXP	_____	Maximum number of ACD agents (voice ports)
	NCFW	_____	Night call forward DN for ACD calls (attendant DN)

Full-service voice

Overlay	Prompt	Site response	Comments
23	CUST	_____	PBX customer number
	ACDN	_____	Voice Messaging DN (Full-Service Voice DN)
	EES	_____	End-to-End Signalling (Enabled or Disabled)
	VSID	_____	Meridian Mail identifier (defined in LD 17)
	MAXP	_____	Maximum number of ACD agents (voice ports)
	NCFW	_____	Night call forward DN for ACD calls (attendant DN)
	ACDN	_____	Express Messaging DN (optional)

Full-service multimedia

Overlay	Prompt	Site response	Comments
23	CUST	_____	PBX customer number
	ACDN	_____	Multimedia DN
	EES	_____	End-to-End Signalling (Enabled or Disabled)
	VSID	_____	Meridian Mail identifier (defined in LD 17)
	MAXP	_____	Maximum number of ACD agents (voice ports)
	NCFW	_____	Night call forward DN for ACD calls (attendant DN)

Meridian Mail NMS data form   PBX-3

Customer: _____   Rep:_____

Customer rep: _____   Location:_____

Date: _____ Job #: _____   Meridian Mail release: _____

This form contains all site-specific data required to configure the NMS option on the Meridian 1 for Meridian Mail. Only those prompts specific to Meridian Mail configuration are listed below. For more information on these overlays, see the appropriate Meridian 1 data administration manuals. See also the chapter on "Configuring the Meridian 1" in the Meridian Mail *Installation and Maintenance Guide* (NTP 555-7011-210 for Options systems or 555-7041-210 for Modular Option).

Overlay	Prompt	Site response	Comments
15	REQCHG		
	TYPE	CDB	Customer Data Block
	MATT	NO	
	ISDN	YES	
	PNI	_____	Private Network Identifier
	HLOC	_____	Home Location code (ESN) of the Meridian 1 (Range 100-999)
	LSC	_____	Local Steering Code (CDP) of the Meridian 1
16	REQ	_____	NEW or CHG
	TYPE	RDB	Route Data Block
	CUST	_____	Meridian 1 customer number
	ROUTE	_____	Route number
	PNI	_____	Customer Private Network ID of the non-local target Meridian 1
	VCRD	YES	
	TRO	YES	
	INAC	YES	
16	REQ	CHG	
	ISDN	YES	To update the ISDN records
	IFC	Meridian 1	Interface type is Meridian 1
	RLS	16	Minimum switch software release at the far end
23	NCFW	_____	Meridian Mail DN. (Use network format if this is an NMS satellite site.)

General options data form   MM-1
(for single-customer systems)

Customer: _____ Rep:_____

Customer rep: _____ Location:_____

Date: _____ Job #: _____ Meridian Mail release: _____

This form contains site-specific data required for Meridian Mail configuration. For more information, see the *System Administration Guide*. Default responses are underlined.

Fields   **Possible values**

System general options (for single-customer systems)

Fields		Possible values
System name:	_____	PBX customer name
System number :	_____	PBX customer no.
System addressing length:	_____	(0 to 18)
Voice Menus & Announcements:	_____	Disabled or Enabled
Voice Forms:	_____	Disabled or Enabled
Fax on Demand:	_____	Disabled or Enabled
Hospitality:	_____	Disabled or Enabled
Meridian Mail Networking:	_____	Disabled or Enabled
Networking Messages Services:	_____	Disabled or Enabled
Class of Service selection:	_____	(up to 15 COSs)
Attendant DN:	_____	(default 0, up to 30 digits)
Date format for administration and maintenance reports:	_____	mm/dd/yy yy/mm/dd dd/mm/yy
SEER printing:	_____	Disabled or Enabled
SEER printer port name:	_____	Blank implies the console port
Reports printer port name (for OM reports and general printing from the administration menus):	_____	Blank implies the console port

Note: The General Options screen will contain additional fields that are read-only. All the modifiable fields are listed above. In addition, the modifiable fields will already contain the default value (if there is one) that can be modified, if necessary, or left as is.

<div style="border:1px solid black">

General options data form   MM-2
(for system administration on multi-customer systems)

Customer: _____   Rep:_____

Customer rep: _____   Location:_____

Date: _____Job #: _____   Meridian Mail release: _____

This form contains site-specific data required for Meridian Mail configuration. For more information, see the *System Administration Guide*. Default responses are underlined.

Fields	**Possible values**

System general options
(for system administration in a multi-customer system)

System name:	_____	PBX customer name
System number :	_____	PBX customer no.
ACCESS default customer number		
(only if ACCESS is installed):	_____	PBX customer no.
Integrated mailbox administration default		
customer number	_____	PBX customer no.
Class of Service selection:	_____	(up to 15 COSs)
Date format for administration and		
maintenance reports:	_____	mm/dd/yy yy/mm/dd dd/mm/yy
SEER printing:	_____	Disabled or Enabled
SEER printer port name:	_____	Blank implies the console port
Reports printer port name (for OM reports and		
general printing from the administration menus):	_____	Blank implies the console port

Note: The General Options screen will contain additional fields that are read-only. All the modifiable fields are listed above. In addition, the modifiable fields will already contain the default value (if there is one) that can be modified, if necessary, or left as is.

</div>

General options data form   MM-3
(for customer administration on multi-customer systems)

Customer: _____ Rep:_____

Customer rep: _____ Location:_____

Date: _____Job #: _____ Meridian Mail release: _____

This form contains site-specific data required for Meridian Mail configuration. For more information, see the *System Administration Guide*. Default responses are underlined.

Fields	**Possible values**
System general options (for customer administration in a multi-customer system)	
System name:	_____ PBX customer name
System number :	_____ PBX customer no.
ACCESS default customer number (only if ACCESS is installed):	_____ PBX customer no.
Integrated mailbox administration default customer number	_____ PBX customer no.
Customer name:	_____ Up to 30 characters
Customer number:	_____ Up to 4 characters
Customer type (Residential is valid for DMS or SL-100 systems; Hospitality is valid for Meridian 1 systems.):	_____ Private, Residential, or Hospitality
Multi-Customer:	_____ <u>Disabled</u> or Enabled
Multiple Administration Terminals:	_____ <u>Disabled</u> or Enabled
Disk-to-disk backup:	_____ <u>Disabled</u> or Enabled
Meridian ACCESS:	_____ <u>Disabled</u> or Enabled
AdminPlus (Meridian Mail Reporter):	_____ <u>Disabled</u> or Enabled
Integrated Mailbox Administration:	_____ <u>Disabled</u> or Enabled
Voice Messaging:	_____ <u>Disabled</u> or Enabled
AMIS:	_____ <u>Disabled</u> or Enabled
Dual Language Prompting:	_____ <u>Disabled</u> or Enabled
Outcalling:	_____ <u>Disabled</u> or Enabled
Voice Menus & Announcements:	_____ <u>Disabled</u> or Enabled
Voice Forms:	_____ <u>Disabled</u> or Enabled
Fax on Demand:	_____ <u>Disabled</u> or Enabled
Hospitality:	_____ <u>Disabled</u> or Enabled
Meridian Mail Networking:	_____ <u>Disabled</u> or Enabled

General options data form (continued)   MM-3
(for customer administration on multi-customer systems)

Class of Service selection: _____ (up to 15 COSs)
Attendant DN: _____ (default 0, up to 30
                                                            digits)

Date format for administration and
maintenance reports   _____ mm/dd/yy yy/mm/dd
                                                            dd/mm/yy

SEER printing: _____ Disabled or Enabled
SEER printer port name: _____ Blank implies the
                                                            console port

Reports printer port name (for OM reports and
general printing from the administration menus): _____ Blank implies the
                                                            console port

Note: The General Options screen will contain additional fields that are read-only. All the
modifiable fields are listed above. In addition, the modifiable fields will already contain the
default value (if there is one) that can be modified, if necessary, or left as is.

Voice messaging options data form   MM-4
(for MMUI systems)

Customer: _____ Rep:_____

Customer rep: _____ Location:_____

Date: _____ Job #: _____ Meridian Mail release: _____

This form contains site-specific data required for Meridian Mail configuration. For more information, see the *System Administration Guide*. Default responses are underlined.

Fields		**Possible values**
Voice messaging options (for MMUI single-language systems)		
Maximum delay for timed delivery (days):	_____	Range 0-365, default 31
Name dialing and name addressing:	_____	Disabled or <u>Enabled</u>
Prefix for name dialing and name addressing:	_____	Range 01-99, default 11
Broadcast mailbox number:	_____	Up to 18 digits, default 999
Billing DN:	_____	Up to 30 digits, default null
*Local addressing lengths (leave blank if system DN length on General Options screen is 0):	_____	must be less than System DN length; one or two lengths can be specified
Default message delivery priority (this field appears only if Meridian Networking is installed and enabled):	_____	<u>Standard</u> or Economy
Mailbox full warning threshold (percentage):	_____	Default is 0
Maximum read message retention (days):	_____	Range 0-31, default 7, 0 means no limit

* These fields appear only during customer administration on a multi-customer system.

Note: The Voice Messaging Options screen will contain additional fields that are read-only. All the modifiable fields are listed above. In addition, the modifiable fields will already contain the default value (if there is one) that can be modified, if necessary, or left as is.

Voice messaging options data form   MM-5
(for VMUIF systems)

Customer: _____ Rep:_____

Customer rep: _____ Location:_____

Date: _____ Job #: _____ Meridian Mail release: _____

This form contains site-specific data required for Meridian Mail configuration. For more information, see the *System Administration Guide*. Default responses are underlined.

Fields	**Possible values**
Voice messaging options (for VMUIF single-language systems)	

Fields		Possible values
Lockout revert DN:	_____	Up to 30 digits, default is null (no Revert DN)
Personal distribution list prefix:	_____	Range 1-99, default 14
Name dialing and name addressing:	_____	Disabled or Enabled
Prefix for name dialing and name addressing:	_____	Range 1-99, default 14
Broadcast mailbox number:	_____	Up to 18 digits, default 999
Billing DN:	_____	Up to 30 digits, default null
* Local addressing lengths (leave blank if System DN length on General Options screen is 0):	_____	Must be less than System DN length; one or two lengths can be specified
Maximum read message retention (days):	_____	Range 0-31, default 7, 0 means 99 days or until the user deletes them

* These fields appear only during customer administration on a multi-customer system.

Note: The Voice Messaging Options screen will contain additional fields that are read-only. All the modifiable fields are listed above. In addition, the modifiable fields will already contain the default value (if there is one) that can be modified, if necessary, or left as is.

<div style="border:1px solid">

Voice security option   MM-6
(for single-customer systems)

Customer: _____ Rep:_____

Customer rep: _____ Location:_____

Date: _____ Job #: _____ Meridian Mail release: _____

This form contains site-specific data required for Meridian Mail configuration. For more information, see the *System Administration Guide*.

Voice security options fields   **Possible values**

Password Prefix: _____ 4 digits, no default
Maximum Invalid Logon Attempts Permitted per session: _____ Range 1-99, default 3
Maximum Invalid Logon Attempts Permitted per mailbox: _____ Range 1-99, default 9
Maximum Days Permitted Between Password Changes: _____ Range 0-90, default 0
Password Expiry Warning (days): _____ Range 0-60, default 5
Minimum Number of Password Changes Before Repeats:_____ Range 0-5, default 5
Minimum Password Length: _____ Range 4-16, default 4
Call Answering/Express Messaging Thru-Dial
restriction/permission codes: _____ Unrestricted,
On_switch, Local, Long_distance_1,
Long_distance_2

On_switch restriction/permission codes (restriction codes are 0 to 9 by default,
permission codes are 1 to 5 digits each) (read-only for customer administration):
Restriction codes: 0 1 2 3 4 5 6 7 8 9
Permission codes:____ ____ ____ ____ ____ ____ ____ ____ ____ ____

Local restriction/permission codes (restriction codes are 0 to 9 by default, permission codes
are 1 to 5 digits each) (read-only for customer administration):
Restriction codes: 0 1 2 3 4 5 6 7 8 9
Permission codes:____ ____ ____ ____ ____ ____ ____ ____ ____ ____

Long_distance_1 restriction/permission codes (restriction codes are 0 to 9 by default, permission
codes are 1 to 5 digits each):
Restriction codes: 0 1 2 3 4 5 6 7 8 9
Permission codes:____ ____ ____ ____ ____ ____ ____ ____ ____ ____

Long_distance_2 restriction/permission codes (restriction codes are 0 to 9 by default, permission
codes are 1 to 5 digits each):
Restriction codes: 0 1 2 3 4 5 6 7 8 9
Permission codes:____ ____ ____ ____ ____ ____ ____ ____ ____ ____

These fields appear only during customer administration on a multi-customer system.

</div>

Voice security option   **MM-7**
(for multi-customer systems)

Customer: _____   Rep:_____

Customer rep: _____   Location:_____

Date: _____Job #: _____   Meridian Mail release: _____

This form contains site-specific data required for Meridian Mail configuration. For more information, see the *System Administration Guide*.

Voice security options fields   **Possible values**

* Password Prefix: _____   4 digits, no default

* Maximum Invalid Logon Attempts Permitted per session:_____   Range 1-99, default 3

* Maximum Invalid Logon Attempts Permitted per mailbox:_____   Range 1-99, default 9

\# * Maximum Days Permitted Between Password Changes: _____   Range 0-90, default 0

\# *Password Expiry Warning (days):   _____   Range 0-60, default 5

\# *Minimum Number of Password Changes Before Repeats:_____   Range 0-5, default 5

\# *Minimum Password Length: _____   Range 4-16, default 4

\# *Call Answering/Express Messaging Thru-Dial
restriction/permission codes: _____   Unrestricted,
                                          On_switch, Local, Long_distance_1,
                                          Long_distance_2

On_switch restriction/permission codes (restriction codes are 0 to 9 by default, permission codes are 1 to 5 digits each) (read-only for customer administration):

**Restriction codes: 0   1   2   3   4   5   6   7   8   9

**Permission codes:_____ ____ ____ ____ ____ ____ ____ ____ ____

Local restriction/permission codes (restriction codes are 0 to 9 by default, permission codes are 1 to 5 digits each) (read-only for customer administration):

**Restriction codes: 0   1   2   3   4   5   6   7   8   9

**Permission codes:_____ ____ ____ ____ ____ ____ ____ ____ ____

Long_distance_1 restriction/permission codes (restriction codes are 0 to 9 by default, permission codes are 1 to 5 digits each):

**Restriction codes: 0   1   2   3   4   5   6   7   8   9

**Permission codes:_____ ____ ____ ____ ____ ____ ____ ____ ____

Long_distance_2 restriction/permission codes (restriction codes are 0 to 9 by default, permission codes are 1 to 5 digits each):

**Restriction codes: 0   1   2   3   4   5   6   7   8   9

**Permission codes:_____ ____ ____ ____ ____ ____ ____ ____ ____

\#   These fields appear only for MMUI systems.

*   These fields do not appear during system administration on multi-customer systems.

**   These fields are read-only during customer administration on multi-customer systems.

Mailbox Class of Service data form   MM-8
(for MMUI systems)

Customer: _____ Rep:_____

Customer rep: _____ Location:_____

Date: _____ Job #: _____ Meridian Mail release: _____

This form contains site-specific data required for Meridian Mail configuration. For more information, see the *System Administration Guide*. Default responses are underlined.

Mailbox Class of Service fields		**Possible values**
Class of Service Number (automatically generated by the system)		
Class of Service Name:	_____	Up to 30 characters
Personal Verification Changeable by User:	_____	Yes or <u>No</u>
Voice Storage Limit (minutes):	_____	Range 1-360, default 3
Maximum Message Length (mm:ss): second	_____	00:30 to 99:00, 10 increments; default 03:00
Delayed Prompts:	_____	<u>Yes</u> or No
Dual Language Prompting (this field appears only on multilingual systems):	_____	Yes or <u>No</u>
Auto Logon:	_____	Yes or <u>No</u>
Administrator Capability:	_____	Yes or <u>No</u>
Auto Play:	_____	Yes or <u>No</u>
Callers Notified of Busy Line:	_____	Yes or <u>No</u>
Maximum Call Answering Message Length (mm:ss): second	_____	00:30 to 99:00, 10 increments; default 01:00
Receive Composed Messages:	_____	<u>Yes</u> or No
Receive External Messages:	_____	<u>Yes</u> or No
Message Waiting Indicating Options:	_____	None, <u>Any</u>, or Urgent
External Call-Sender Restriction/Permission Codes:	_____	Unrestricted, On_switch, Local, Long_distance_1, Long_distance_2
Maximum Read Message Retention (days):	_____	Range 0-31, default 0, 0 means 99 days or until the user deletes them
Broadcast Capability:	_____	Yes or <u>No</u>
Send Messages to External Users:	_____	Yes or <u>No</u>
Retain Copy of Sent Messages:	_____	Yes or <u>No</u>

–continued–

Mailbox Class of Service (continued)   **MM-8**
(for MMUI systems)

Customer: _____   Rep:_____

Customer rep: _____   Location:_____

Date: _____ Job #: _____   Meridian Mail release: _____

This form contains site-specific data required for Meridian Mail configuration. For more information, see the *System Administration Guide*. Default responses are underlined.

Mailbox Class of Service fields	Possible values
Delivery to Non-Users Capability:	_____ Yes or <u>No</u>
* Delivery to Non-User Restriction/Permission Codes:	_____ Unrestricted, On_switch, Local, Long_distance_1, Long_distance_2
* Send Message via DNU if Mailbox Not Found:	_____ Yes or <u>No</u>
* DNU DTMF Confirmation Required:	_____ Yes or <u>No</u>
Remote Notification Capability:	_____ Yes or <u>No</u>
** Remote Notification Restriction/Permission Codes:	_____ Unrestricted, On_switch, Local, Long_distance_1, Long_distance_2
** Remote Notification Keypad Interface	_____ <u>Yes</u> or No
Remote Notification Retry Limits and Frequency:	
** Busy Retry Limit:	_____ 0–10, default 3
Busy Retry Interval:	_____ 00:00 to 23:59
No Answer Retry Limit:	_____ 0–10, default 10
No Answer Retry Interval:	_____ 00:00 to 23:59
Answered Retry Limit:	_____ 0–10, default 1
Answered Retry Interval:	_____ 00:00 to 23:59
RN Business Days:	
** Sunday	_____ Yes or <u>No</u>
Monday	_____ <u>Yes</u> or No
Tuesday	_____ <u>Yes</u> or No
Wednesday	_____ <u>Yes</u> or No
Thursday	_____ <u>Yes</u> or No
Friday	_____ <u>Yes</u> or No
Saturday	_____ Yes or <u>No</u>
Receive AMIS messages:	_____ Yes or <u>No</u>
# Compose/Send AMIS messages:	_____ Yes or <u>No</u>
# AMIS Restriction/Permission Codes:	_____ Unrestricted,
! #	On_switch, Local, Long_distance_1, Long_distance_2
External Dialing Restriction/Permission Codes:	_____ Unrestricted, On_switch, Local, Long_distance_1, Long_distance_2
Custom Revert Restriction/Permission Codes:	_____ Unrestricted, On_switch, Local, Long_distance_1, Long_distance_2

* These fields appear only if Delivery to Non-Users Capability is set to "Yes."
** These fields appear only if Remote Notification Capability is set to "Yes."
# These fields appear only if AMIS Networking is installed.
! This field appears only if Compose/Send AMIS messages is set to "Yes."

Voice services data form   MM-9

Customer: _____   Rep:_____

Customer rep: _____   Location:_____

Date: _____Job #: _____   Meridian Mail release: _____

This form contains guidelines for Voice Services configuration. For more information, see the *Voice Menus Application Guide* (NTP 555-7001-325).

Voice services profile

Command entry time-out: _____default 3.5 seconds

Short disconnect time-out (time with no user response):   _____default 10 seconds

Record time-out: _____default 2 minutes

Maximum prompt size for announcements: _____default 30 seconds

Maximum prompt size for other voice recordings: _____default 2 minutes

Act on AMIS initiation tone (only if AMIS installed):   _____Yes or No, default is No

Enable update logging: _____Yes or No, default is No

Business hours: _____default 08:30 to 17:00

Holidays	Start date	End date	Start time	Comments
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____
8	_____	_____	_____	_____
9	_____	_____	_____	_____
10	_____	_____	_____	_____
11	_____	_____	_____	_____
12	_____	_____	_____	_____

(up to 20 holidays)

Voice Form Definition data form   MM-10

Customer: _____   Rep:_____

Customer rep: _____   Location:_____

Date: _____Job #: _____   Meridian Mail release: _____

This form contains guidelines for defining a voice form. For more information, see the *Voice Forms Application Guide* (NTP 555-7001-326).

Voice form ID: _____
Title: _____
Transcription password: _____ (4 to 16 digits)
Form name recorded (Yes or No) (read-only; indicates whether or not the voice form prompts have been recorded)
Maximum untranscribed responses: _____ (1000 or less is recommended)
Overflow handling DN: _____ (1 to 30 digits; the symbols #, *, (,), -, _, $ are also allowed, but can't start with $)
New responses notification DN: _____ (1 to 30 digits; the symbols #, *, (,), -, $ are also allowed, but can't start with $)
Special responses notification DN: _____ (1 to 30 digits; the symbols #, *, (,), -, $ are also allowed, but can't start with $)
Transcription field separator: _____ (Field Name, Tone, or Silence)
Default field separator delay: _____ (Stop, or Delay _____ deciseconds)
Play envelope for header: _____ (No or Yes)
Delay after header (deciseconds): _____ (0 to 32767)
Caller confirmation mode: _____ (None, At Each Field, or Whole Form)
Default revert DN: _____ (1 to 30 digits; the symbols #, *, (,), -, $ are also allowed, but can't start with $)
Caller '0' allowed: _____ (No or Yes)
System messages file (this field appears only on systems with more than one language installed): _____ (English or French)

Voice Menu Definition data form   MM-11

Customer: _____   Rep:_____

Customer rep: _____   Location:_____

Date: _____ Job #: _____   Meridian Mail release: _____

This form contains guidelines for defining a voice menu and planning the greeting and the menu choices. For more information, see the *Voice Menus Application Guide* (NTP 555-7001-325).

Voice Menu ID: _____ (up to 8 digits)

Title: _____ (up to 29 characters)

Revert DN: _____ (Optional)

Access password: _____ (Optional, 4 to 16 digits)

Update password: _____ (Optional, 4 to 16 digits)

Greeting recorded (Yes or No) (read-only; indicates whether or not the menu greeting has been recorded)

Menu choices recorded (Yes or No) (read-only; indicates whether or not the menu choices have been recorded)

Silent disconnect: _____ (Yes or No)

Language for prompts (this field appears only if multiple languages are installed on your system): _____

Key	Action	Comment
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____
6	_____	_____
7	_____	_____
8	_____	_____
9	_____	_____

Initial No response: _____

Delayed response: _____

–continued–

Voice Menu Definition data form (continued)   **MM-11**

Customer: _____   Rep:_____

Customer rep: _____   Location:_____

Date: _____ Job #: _____   Meridian Mail release: _____

Greeting (plan what you want to record):

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Menu choices (plan what you want to record):

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

–end–

Announcement Definition data form   MM-12

Customer: _____ Rep:_____

Customer rep: _____ Location:_____

Date: _____Job #: _____ Meridian Mail release: _____

This form contains guidelines for defining a voice menu and planning the greeting and the menu choices. For more information, see the *Voice Menus Application Guide* (NTP 555-7001-325).

* Customer number: _____ (PBX customer number)

* Customer name: _____ (PBX customer name)

Announcement ID: _____ (up to 8 digits)

Title: _____ (up to 29 characters)

Revert DN: _____ (Optional)

Access password: _____ (Optional, 4 to 16 digits)

Update password: _____ (Optional, 4 to 16 digits)

Announcement recorded (Yes or No) (read-only; indicates whether or not the announcement has been recorded)

Language for prompts (this field appears only if multiple languages are installed on your system): _____

Announcement (Plan what you want to record. This will not appear on the Announcement Definition screen.)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

*These fields appear only during system administration on a multi-customer system.

Fax Item Definition data form   **MM-13**

Customer: _____   Rep:_____

Customer rep: _____   Location:_____

Date: _____ Job #: _____   Meridian Mail release: _____

This form contains guidelines for defining a fax item. For more information, see the *Fax on Demand Application Guide* (NTP 555-7001-327).

Fax Item ID: _____ (1 to 8 digits)

Title: _____ (up to 29 characters; do not use _, +, or ?)

Access Password: _____ (0 to 16 digits; default is blank, which means no password required)

Update Password: _____ (0 to 16 digits; default is blank, which means the fax item cannot be updated)

Language for prompts (this prompt appears on multilingual systems only): _____ (choose from the listed available languages)

Confirmation prompt recorded (Yes or No) (read-only; indicates whether or not the confirmation prompt has been recorded)

Fax content stored (Yes or No) (read-only; indicates whether or not the fax item has been stored)

Confirmation prompt modifiable via telset: _____ (Yes or No, default is No)

Verification fax number: _____ (the default fax number to send verification to when fax item content is changed)

Verification fax number modifiable via telset: _____ (Yes or No, default is No)

Verification contact ID: _____ (up to 31 characters for the name and/or phone number to appear on the cover of the call back verification fax)

Confirmation prompt (plan what you intend to record as the confirmation prompt when loading the fax item as this will not appear on the Fax Item Definition screen):

_____

_____

Networking data form (part 1)   MM-14

Customer: _____   Rep:_____

Customer rep: _____   Location:_____

Date: _____Job #: _____   Meridian Mail release: _____

This form contains site-specific data for Networking configuration. For more information, see the Meridian Networking administration chapter in the *Networking Services Administration Guide* (NTP 555-7001-335).

Networking DN: _____
Networking modem DNs: _____   _____(up to 20)

Site Networking administration parameters (copy this form and repeat for local and remote sites)
Site number: _____   Range 1-500
Site name: _____   Max. 32 characters
Dialing plan: _____   ESN/CDP/hybrid/none
Maximum number of digits in local mailbox: _____
* ESN access codes :   _____
* Number of digits in common between ESN prefix and local ext:_____
** Number of digits in common between CDP Steering Code and local ext:_____
*** ESN prefix and/or CDP steering codes (max. length 8 for CDP/hybrid, 1 for ESN):
1. _____ 2._____ 3._____ 4. _____
5. _____ 6._____ 7._____ 8. _____
Mailbox numbering follows Dialing Plan?   Yes _____No _____
- If Yes, Mailbox = DN? Yes _____No _____   If Yes, no mailbox prefix
                                                                         If No, enter mailbox prefix: _____
- If Yes, Mailbox = DN? Yes _____No _____   If Yes, enter dial prefix   _____
                                                                         If No, enter mailbox prefix: _____

Remote sites   (Fill out this part of the form for each remote site)
Site number   Site name   Network connection DNs   Passwords (Initiate, Respond)
_____   _____   _____   Init _____Resp _____

*   Fill this in if the dialing plan is ESN or hybrid (CDP/ESN).
** Fill this in if the dialing plan is CDP or hybrid.
*** Fill this in if the dialing plan is ESN or CDP or hybrid.

Networking data form (part 2)   **MM-14**

Customer: _____   Rep:_____

Customer rep: _____   Location:_____

Date: _____ Job #: _____ Meridian Mail release: _____

This form contains site-specific data for Networking configuration. For more information, see the Meridian Networking administration chapter in the *Networking Services Administration Guide* (NTP 555-7001-335).

To set the message delivery thresholds for the remote site, fill in the network scheduling parameters listed below. Create a separate form for each remote site.

Networking scheduling parameters

Site number:	_____	Range 1-500
Site name:	_____	Max. 32 characters
Economy class initiation time:	_____	default 18:00
Economy class stale time:	_____	default 6 hours
Standard class holding time:	_____	default 3 hours
Standard class stale time:	_____	default 9 hours
Urgent class holding time:	_____	default 30 minutes
Urgent class stale time:	_____	default 1.5 hours
Batch threshold:	_____	default is 20
Wakeup interval (minutes):	_____	default is 5
Networking call maximum:	_____	default is 4

NMS data form   MM-15

Customer: _____   Rep:_____

Customer rep: _____   Location:_____

Date: _____Job #: _____   Meridian Mail release: _____

This form contains site-specific data for Networking configuration. For more information, see the Meridian Networking administration chapter in the *Networking Services Administration Guide* (NTP 555-7001-335).

Networking DN: _____

Networking modem DNs: _____   _____

NMS Networking Administration Parameters

Location number: _____Range 1–500

Location name: _____Max. 32 characters

Location is network message center? (NMS+Network sites)   _____Yes/No

Dialing plan: _____ESN/CDP/hybrid

Maximum number of digits in local mailbox: _____

* ESN access codes :   _____

* Number of digits in common between ESN prefix and local ext:_____

** Number of digits in common between CDP steering code and local ext:_____

*** ESN prefix and/or CDP steering codes (max. 49 for CDP/hybrid, 1 for ESN):

1. _____   2. _____   3. _____   4. _____

5. _____   6. _____   7. _____   8. _____ up to 50)

Mailbox numbering follows dialing plan: Yes _____No _____

If No, enter Mailbox Prefix:

* Fill in if dialing plan is ESN or hybrid (CDP/ESN).

** Fill in if dialing plan is CDP or hybrid.

*** Fill in if dialing plan is ESN or CDP or hybrid.

If your system has both NMS and Networking features installed, fill in the Networking Data Form (MM-14) too. Also, fill out the list of remote locations. Message Center = Yes defines location as a Network Message Center serving other locations.

Location Number	Location Name	Message Center (Yes/No?)
_____	_____	_____
_____	_____	_____
_____	_____	_____

Site Log form   LOG-1

Customer: _____ Rep:_____

Customer rep: _____ Location:_____

Date: _____ Job #: _____ Meridian Mail release: _____

Site log number: _____

Date   **Event**

_____

_____

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**Meridian Mail Modular Option EC 13
Site and Installation Planning Guide
555-7061-200**

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Company: _____

Address: _____

_____

Occupation: _____ **Phone:** _____

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

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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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