Meridian Mail

Message Services Module
Product Guide

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December 1994

This MSM Product Guide is released as Standard 1.0. This version documents Release 9.0 of Meridian Mail on the Message Services Module platform.

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About this document

This document contains a general description of the features and operation of Meridian Mail Release 10.0 and the Message Services Module (MSM). The hardware and software components of the MSM are also described, and references are included to all other relevant documentation.

Who should read this document

This guide is intended as introductory reading for a general audience including administrators and technical personnel. This document is written for all customers who use Meridian Mail Release 10.0 operating on a Message Services Module.

How MSM documentation is organized

MSM documentation is a subset of the Meridian Mail library.

MSM documents and other documents that contain related information are listed in the chapter entitled “Finding information.”

Chapter 1: Understanding the Message Services Module

This chapter includes a description of the capabilities and operation of Meridian Mail Release 10.0 and the Message Services Module (MSM).

The Message Services Module

The MSM is a large-capacity voice processing hardware platform designed to provide call answering, voice messaging, and fax services to private business, institutional customers, telephone companies, and service providers. Meridian Mail is the software which operates on the MSM to provide the voice processing functionality and fax services.

The MSM is sold as customer premise equipment (CPE) and can be installed in one of the following situations:

- A private business maintains its own PBX or switch and MSM on site. In this situation both the switch and the MSM are administered by the customer.
- A private business does not have its own PBX or switch but does have its own MSM on site. In this situation, the business is a carrier customer, but maintains its own voice messaging system (that is, an MSM) on its premises. This is referred to as a CPE carrier.

The MSM provides high reliability and feature-rich content to address both carrier and CPE environments.

Port types

Communication services are provided to users through ports on the MSM. A port is the point at which a speech or message link is connected to the MSM system. Ports can be one of two types, voice or multimedia, and can supply one of two levels of service, basic service or full service. These types and capabilities can be combined to create three distinct kinds of ports:

- basic service voice
- full service voice
- full service multimedia

A voice port is capable of supporting all voice-related activities such as compression, recording, decompression, playback, and tone detection. Multimedia ports can support both fax and voice activities. However, to do so, multimedia ports require additional digital signal processing capabilities.

Basic service voice ports can be used to run interactive voice response (IVR) applications (created using Meridian ACCESS) and voice menus. Full service voice ports are required to run applications such as Voice Messaging, Networking services, Outcalling, or callback Fax (that is, a fax application in which the actual transmission of a fax is done after the application is terminated). A full-service voice port can handle all services that require basic voice or full-service voice capabilities. “Same call” and “caller choice” fax applications require the extra processing power of full-service multimedia ports. The MSM may have a combination of basic-service voice ports, full-service voice ports, and full-service multimedia ports depending on customer requirements.

MSM interfaces

Meridian Mail software operating on the MSM allows each customer group on the system to use one of two user interfaces: either the Nortel’s proprietary Meridian Mail User Interface (MMUI), or its version of the Voice Messaging User Interface Forum (VMUIF). Also, VMUIF comprises two interfaces: basic Call Answering and full Voice Messaging.

Meridian Mail User Interface

The Meridian Mail User Interface (MMUI) is Nortel’s full-featured proprietary voice mail interface and is primarily intended for business users. The following features are specific to the MMUI interface and are not available in the VMUIF interface:

- mailbox thru-dial (the user can press 0 + number to call a number while logged into the mailbox) during message taking and call answering
- name addressing (Users can address other users by name instead of by mailbox number.)
- Proprietary Networking
- Integrated AMIS (analog) Networking
- message tagging options
- retention of sent/unsent messages
- internal and external greetings (VMUIF supports a single greeting for each user.)
- administration of other users’ personal verification through the telephone handset
- customizable customer greeting and customer attendant
- custom operator revert

- User-changeable remote notification schedules
- Express messaging
- Bilingual prompting (if more than one language is installed)
- Record playback message tagging during call answering

Voice Messaging User Interface Forum

Voice Messaging User Interface Forum (VMUIF) is a self-contained, user-friendly, and menu-driven call answering and voice messaging interface. Its menu-driven structure makes it easy to learn and is ideal for either a user community or a novice voice mail user. This structure, as well as the sub-mailbox feature, makes VMUIF well-suited for large university dorms or hospital wards.

VMUIF can be set up to provide the user with simple call answering capabilities or full voice messaging functionality. VMUIF allows a user's mailbox to function much like an answering machine. Callers are able to leave messages for users who are away from or on the phone. The mailbox user is notified of a message by the message waiting indicator (either a light on the phone or an interrupted dial tone) and is able to retrieve and listen to the messages.

When a mailbox is set up under VMUIF for full voice messaging, the user is able to compose messages to, and receive composed messages from, other voice messaging users. The user is also allowed to

- reply to the sender of a message or reply to all recipients of the message
- forward a message
- immediately call the sender of a message (call sender)
- create personal distribution lists

However, composing and sending in a VMUIF environment does not support the following features which are available in the MMUI interface:

- message tagging (urgent, private)
- timed delivery
- adding to a recorded message (pressing the record key erases the previous message)
- saving a copy of the message

VMUIF does not support Nortel's proprietary Networking feature, and hence, cannot support private networking, with the exception of AMIS Networking.

System capacities

The maximum number of mailboxes on an MSM system is calculated by the total available hours of storage divided by the average time taken by each user's messages and greetings. The average time per mailbox depends on the mailbox size limits and message-deletion policy, both of which are set by the administrator.

The MSM is provisioned by selecting appropriate numbers of ports and hours of storage. Table 1-1 shows maximum mailbox capacities for systems with multiples of 24 ports. Table 1-2 presents a summary of detailed engineering parameters for a system with 192 ports.

Table 1-1
MSM maximum capacities

Max. Voice Ports	Max. number of storage hours	Max. number of mailboxes
48	150	5291
	300	10 582
72 or 96	300	10 582
	600	21 164
120 or 144	450	15 873
	900	31 746
168 or 192	600	21 164
	1200	42 328

Administration of the MSM Voice Mail

The administration and maintenance interface for an MSM can be monitored either locally or remotely by the administrator.

Up to four administrative positions can operate simultaneously from locally- or remotely-attached terminals. A typical administration configuration consists of one main system administration terminal and up to three multi-administration terminals (MATs). The secondary MATs have limited functionality. They provide access to user, voice service, and class of service administration features.

The system can be administered remotely through a modem. However, the system cannot be administered both locally and remotely at the same time. For security, remote administration access must be activated from the main system administration terminal.

In addition to the administration terminals, a dedicated system printer provides the system administrator with system events and error reports (SEERs). SEERs are generated by the system software to identify every significant event or error that occurs on the system.

Table 1-2
MSM maximum capacities for a 192-port system

Voice services
Languages on the system: 4
Voice messaging channels: 192
Customer groups per system: 2000
Registered mailboxes per system: 43 328
Levels per voice menu: 20
Messages
Messages per mailbox: 999
Recording time per message (minutes): 99
Storage
Voice storage (hours): 1200
Storage per mailbox (minutes): 360
If Voice Services are stored on Volume 1, then Voice Services and personal verification recordings cannot exceed 100 hours of storage in total.
If Voice Services are stored on Volume 203, then Voice Services recordings cannot exceed 150 hours of storage, and personal verification recordings cannot exceed 100 hours of storage, for a total of 250 hours of storage.
Networking
Networking sites per system: 49
Proprietary networking ports per system: 20
Greetings verification
System greeting (seconds): 25
Personal verifications (seconds): 12
Internal and external greetings (minutes): 7
Pages per fax: 99
—continued—

Table 1-2 (continued)
MSM maximum capacities for a 192-port system

Distribution lists
Personal distribution lists per mailbox: 9
Entries per personal distribution list: 99
Organizational directory entries per system: 50 000
Entries per organization distribution list: 120
Fax
Fax selections per Fax on Demand session: 25
SMDI links
Redundant ports: 8
Non-redundant ports: 16
Administration
System administration console: 1
Multi-administration Terminals (MATs): 3
Remote maintenance ports: 2
Maintenance printers: 2
Note: A 99-minute message can have a maximum of 290 addresses. As more addresses are added, the maximum length of a message is reduced. With 450 addresses, the maximum message length is one minute. Broadcast and system distribution lists are equivalent to one address unless the message is sent by networking. Networked messages are copied to VS1 before being sent, and the maximum length of the message may be limited by the space available on the VS1 volume.
—end—

MSM PBX/Switch connectivity

The MSM is a large-capacity voice processing system designed for customer premise installation. The MSM can operate in connection with several different PBXs/switches:

- Meridian SL-100 PBX (see Figure 1-1)
- Carrier switches (see Figure 1-2)
  - — DMS-100
  - — AT&T #1AESS
  - — AT&T #5ESS
- Other PBXs using Meridian Connections (see Figure 1-3)
  - — Meridian 1
  - — AT&T
  - — ROLM

Figure 1-1
MSM and the Meridian SL-100 PBX

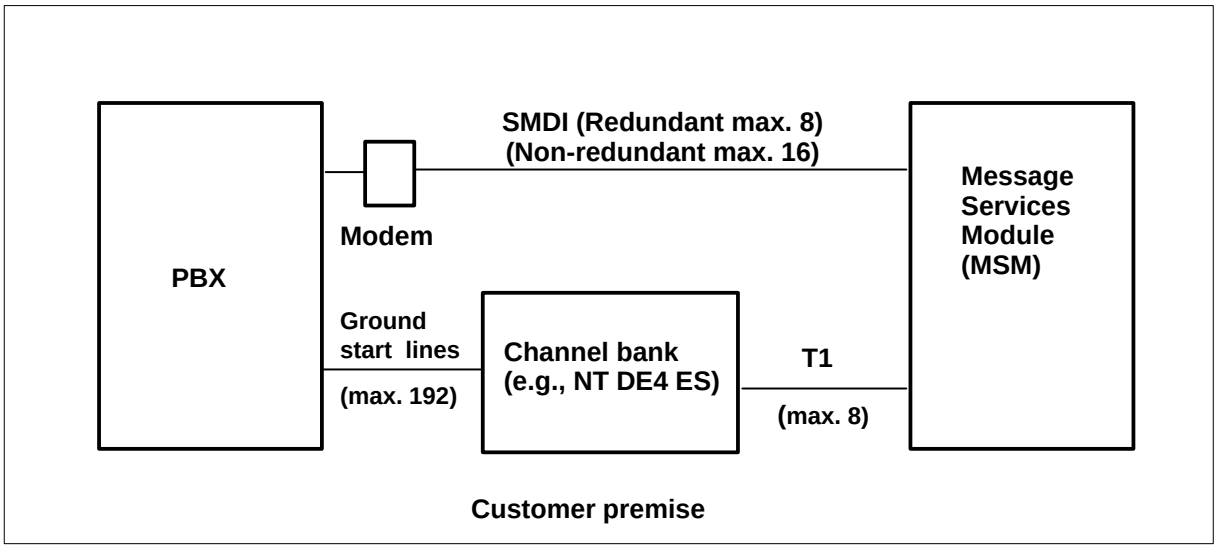


Figure 1-2
MSM and Carrier Switch (MSM connected to carrier switch)

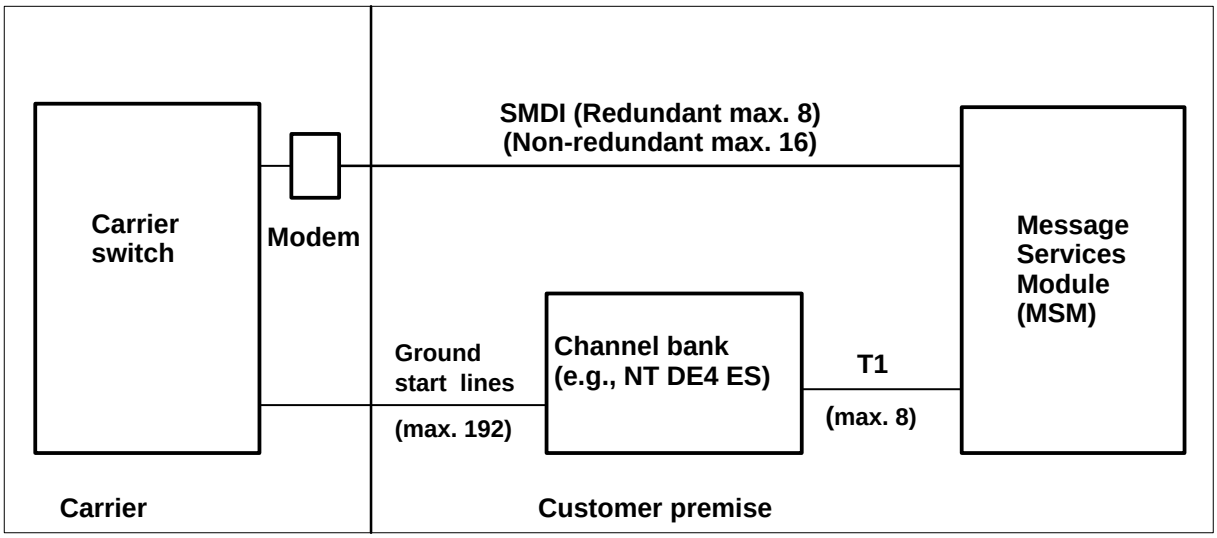
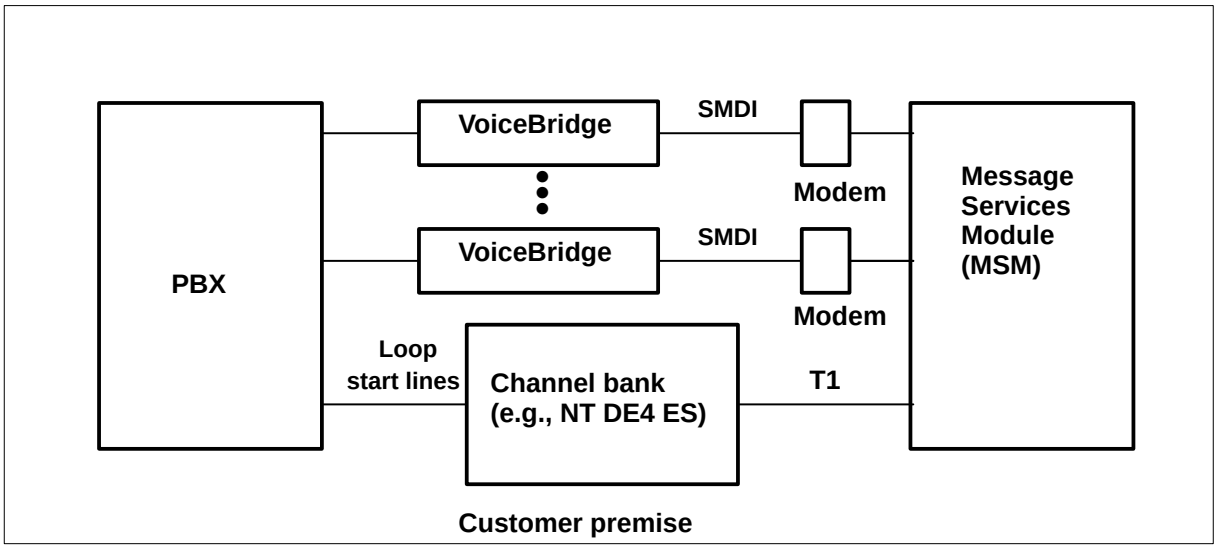


Figure 1-3
Meridian Connections (MSM connected to a Meridian 1 or to non-Nortel PBXs)



Chapter 2: MSM hardware for Meridian Mail

This chapter presents a hardware description of the MSM. Its hardware features include the following:

- 192-port, 1200-hour capacity
- disk shadowing
- high reliability
- paired MSP, T1, and SPN nodes
- T1 links
- multiple SMDI links
- SuperNode cabinet

Hardware components

The MSM cabinet contains one pair of multi-server processor (MSP) nodes, two or more pairs of signal processing nodes (SPNs), and one or two pairs of telephony interface nodes (TIFNs). A Meridian Mail bus transports signals between the nodes. The MSM cabinet also contains a storage module for each MSM and SPN, a tape drive (connected to the primary MSP), transition modules, and redundant power supplies. Refer to Figures 2-1 and 2-2 for illustrations of the main components and their locations within the MSM cabinet.

Multi-server processor

The Multi-server processor (MSP) consists of two full-size cards, the 68K processor card, and the bus controller. The 68K card provides the processing environment for common system data such as directory and message transfer. The bus controller provides system clocks and acts as bus master. A storage module is associated with each MSP to hold system data.

Signal processing node

The Signal processing node (SPN) has a 68K processor card, plus one or two VP12A cards (a 12-port voice processing card). The SPNs handle all voice processing up to a maximum capacity of 24 channels per SPN. A storage module is associated with each SPN to hold user data. SPNs are paired so that if one fails, the other can access its user messages.

Telephony interface node

The Telephony interface node (TIFN) consists of a 68K processor card and a T1 card. The 68K card provides processing for the T1 environment. The T1 card terminates four T1 links. Incoming voice calls are transported from TIFNs to SPNs over two parallel voice buses.

Meridian Mail bus

The Meridian Mail bus provides communication between the nodes. It has two components—an asynchronous packet bus for data transmission and a synchronous voice bus for pulse-coded-modulation (PCM) voice traffic. The voice bus allows separation between the voice processing and telephony interface functions to facilitate the development of advanced services in the future.

Storage modules

Disk drives

A storage module consisting of two disk drives is associated with each MSP and SPN. Information is written to two disks at the same time one primary disk and one shadow disk. In case of a disk drive failure, either disk drive has a complete set of information to allow it to continue full service alone.

> ***Note:*** Existing 5 1/4-inch disk drives have been manufacture discontinued and are being replaced with 3 1/2-inch disk drives. Disk drive replacement is not mandatory for customers converting to MM10.

Tape drive

A Tandberg 4220 tape drive with a 2.5-Gbyte capacity is supplied with the MSP node and is used for program loading and backup/restore procedures. A partial backup involving system data, user profiles, and spoken names for a 192-port system will take approximately one-and-a-half hours and one tape on a Tandberg drive. The disk shadowing capability of the system provides protection against any loss of data in the event of a single disk failure.

> ***Note:*** Customers converting to MM10 from an earlier release of Meridian Mail have the option of upgrading to the Tandberg 4220 tape drive at the time of software conversions or at a later date.

Transition modules

All electronics cards are inserted into a backplane from the front of the cabinet. Most cards have a transition module installed from the rear of the cabinet which provides the connection for all system input and output except battery, grounding, and frame supervisory panel connections.

68K transition module

The 68K transition module handles the I/O requirements for the 68K board.

Bus controller transition module

The bus controller transition module provides relays for alarm signals.

T1 transition module

The T1 transition module provides external connections and termination for the four T1 lines.

Modem transition module

The modem transition module provides four SMDI ports for use with the TIFN.

Bus extension transition module

This transition module is used to extend the Meridian Mail bus from shelf to shelf.

Bus termination transition module

This transition module provides the electrical termination for the Meridian Mail bus.

RS-232 transition module

This transition module replaces the 68K transition module in the SPN node.

System capacity

The MSM has a 192 voice-channel capacity, expandable in 24-channel increments from the base 48-port system. The system has a storage capacity of 75 or 150 hours per SPN for a maximum system capacity of 1200 hours of shadowed message storage.

External hardware packaging

The MSM is housed in a SuperNode cabinet which provides two electronics and two disk shelves. Each half-shelf is powered by a pair of redundant power converters. The serial interfaces from the system to the outside are implemented by four I/O panels located on bulkheads of both electronics shelves.

Power requirements

The MSM is powered from a 48 V DC supply. All shelves are powered by NT9X91AB power units in a redundant A/B configuration. Estimated power drain for a fully configured (that is, 192-port/1200 hour) MSM is 50 amperes.

Connectivity

Multiple SMDI links

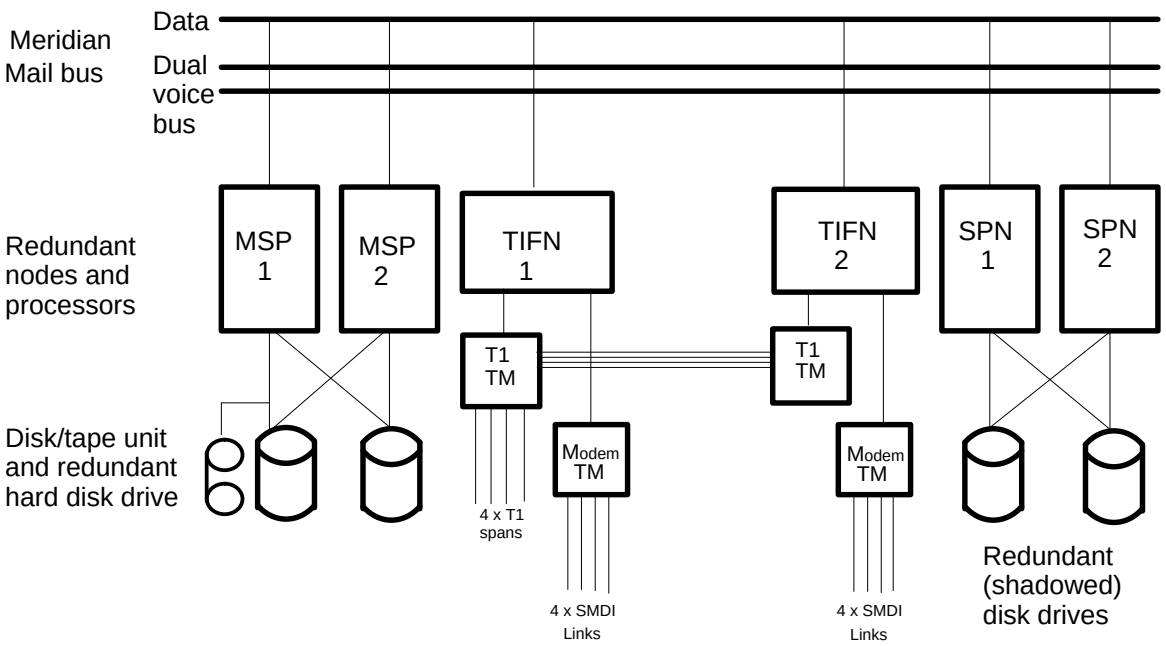
Up to four SMDI links can be supported for each TIFN pair. Each of the SMDI links is duplicated so that in the event of a TIFN failure, the link is switched to the redundant TIFN. This works out to a total of 8 redundant ports or 16 non-redundant ports.

T1 links

Up to eight T1 links transmit the digitized voice signals to the TIFN at the MSM, with a maximum of four T1s per redundant TIFN pair. A channel bank digitizes the analog signal arriving on the ground-start lines from the carrier switch (or loop-start lines from the PBX) before transmitting the signal to the T1 link.

Figure 2-1 shows the main hardware components of the MSM.

Figure 2-1
MSM hardware components



Legend

MSP - Multiserver processor
TIFN - Telephony interface node
SPN - Signal processing node
TM - Transition module

Note 1: This diagram represents a 48-port MSM. Additional SPNs and disks are added in pairs to expand the system's port and storage capacity. A second pair of TIFNs must be added when the system expands above 96 ports.

Note 2: SMDI port redundancy is provided at the distribution frame.

Hardware maintenance

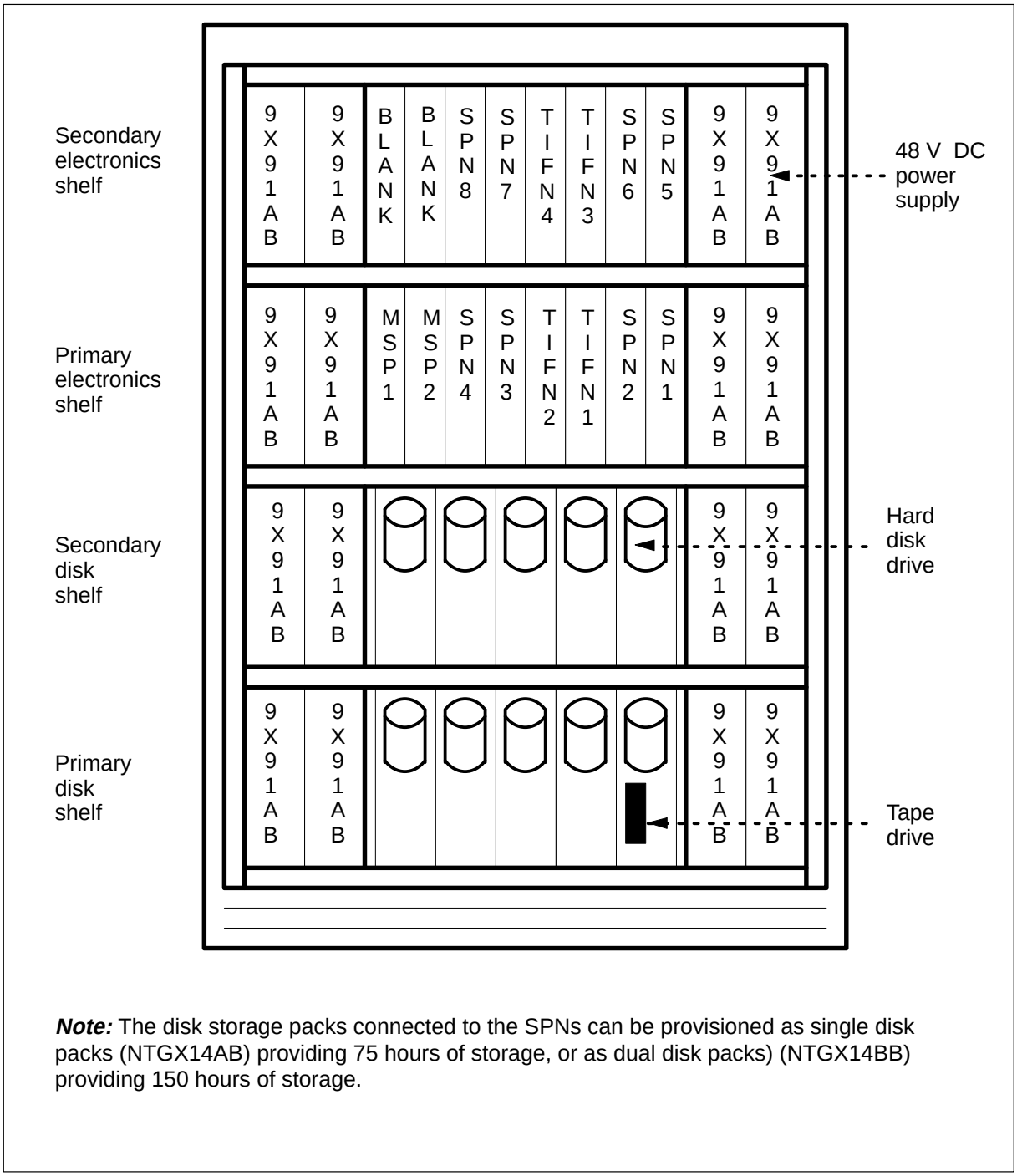
All components can be taken out of service immediately or through a courtesy-down process, which allows calls in progress to end first.

Note: A Yes or No option is provided with the courtesy-down prompt.

Diagnostics are executed automatically when a node or the system is powered up, or when a reset is requested. Voice ports are enabled only if the diagnostics are successfully passed. Cards are “hot-pluggable;” that is, cards can be inserted or removed while under power without damage to the card or backplane, and without affecting other system resources.

Figure 2-2 illustrates the physical layout of a fully configured 192-port MSM system.

Figure 2-2
Fully configured (192-port) Message Services Module



Note: The disk storage packs connected to the SPNs can be provisioned as single disk packs (NTGX14AB) providing 75 hours of storage, or as dual disk packs) (NTGX14BB) providing 150 hours of storage.

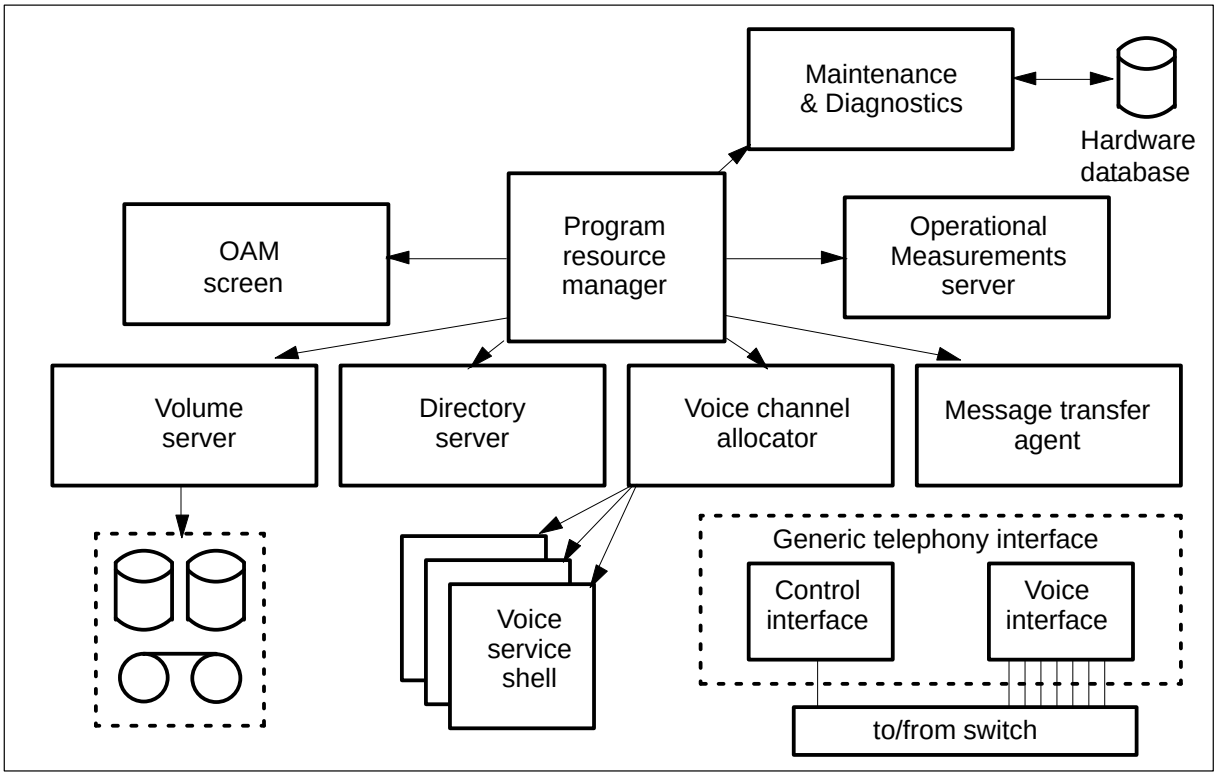
Chapter 3: MSM software

This chapter describes the software required to run Meridian Mail on the Message Services Module (MSM).

Software system architecture

Figure 3-1 illustrates the key elements of Meridian Mail system software.

Figure 3-1
Software system architecture



Program resource manager

The program resource manager starts and restarts system programs.

Volume server
The volume server manages disk partitions and the filing system.

Directory server
The directory server maintains and operates the user directory and database.

Voice channel allocator
The voice channel allocator coordinates the inbound and outbound use of voice channels.

Message transfer agent
The message transfer agent handles the transmittal of composed messages within and between sites, and implements various networking and delivery options.

Operation, Administration, and Maintenance (OAM) screen
The operation, administration, and maintenance screen functions as the man-machine interface. It controls the screen interactions between the administrator and Meridian Mail.

Operational measurement server
The operational measurement server accepts operational data from the system functions, generates traffic data, and stores and exports data to internal systems.

Voice service shell
The voice service shell provides an environment for voice service applications to process incoming calls and originate outgoing calls.

Generic telephony interface
The generic telephony interface manages the details of voice and control interfaces to the external switching environment.

Maintenance and diagnostics
The maintenance and diagnostics application maintains system status, performs startup/runtime and off-line diagnostics, and maintains the hardware database.

Hardware database
The hardware database describes system configuration and current component status.

Software packaging

MSM base software package

The MSM base software package is required to operate Meridian Mail on the MSM. The base software provides a number of capabilities which are standard to the system:

- Meridian Mail User Interface (MMUI)
- Voice Messaging User Interface Forum (VMUIF)
- Multilingual support
- Dual Language Greeting support
- Mailbox Class of Service
- Outcalling
- Support for single SMDI

Optional feature packages

Optional feature packages are available for the MSM, including

- ACCESS Enable

  Note: The MM10 ACCESS Enable option is developed for ACCESS Release 3 API libraries and supporting processes which are compatible with SCO UNIX on the MAS platform. ACCESS Release 3 will not be supported on the Motorola Delta 3000 or 4000 workstations.

- Meridian IVR
- Meridian Mail AdminPlus (on Mail side)
- AMIS (Analog) Networking
- Meridian Networking
- Multiple SMDI Links
- Multiple customer groups
- Voice Forms
- Voice Menus
- Meridian Mail Connections
- Fax on Demand

Other system capabilities

In addition to the user services provided by the base software package, many other system capabilities operate in the background to provide enhanced reliability and administrative flexibility:

- Support for multiple administrative terminals (MATs)
- MSM reliability and redundancy

MSM Base software

Meridian Mail User Interface

Meridian Mail User Interface (MMUI) is Nortel's full-featured voice mail interface. It is command driven, and provides the following items of functionality to the user.

Mailbox access

Users access their private mailboxes to retrieve and create messages, record a greeting, or change a password. Message waiting indication (MWI) is available depending on supporting switch capabilities. Mailbox numbers can be up to 18 digits long.

- ***Logon*** Users can log into Meridian Mail from their own or a remote phone, accessing their mailbox by dialing the system access number, mailbox number, and password as required.
- ***Auto-logon*** Auto-logon allows users to log on from their own phone without entering a mailbox number or password.
- ***Logon from call answering*** Users can log into their own mailbox without hanging up after leaving a message at another user's mailbox.
- ***Incorrect logon*** If too many logon attempts are made using an incorrect password, that mailbox will be "disabled" until the administrator restores access privileges.
- ***Logoff*** The user can enter a logoff command to exit Meridian Mail when all current actions are complete.

Greetings to callers

- ***Personal greetings*** Users can create separate customized personal greetings for external callers (external greeting) and for callers from within the same customer group (internal greeting). These greetings can be changed as frequently as required.
- ***Default greeting*** If the user does not record a personal greeting, the system default greeting plays instead.
- ***Custom system greeting*** This is a system greeting heard immediately before the user greeting. This can be customized by the system administrator. For example, the company name can be recorded as the custom system greeting and will be heard before every user's greeting.
- ***Personal verification*** Users can record their name, title, or extension number. This personally recorded name is used in system messages such as name dialing, message headers, and remote notification.
- ***Busy greeting*** This is a mailbox option which informs callers that the user is on the phone. The user's personal verification, if recorded, is played as part of the busy greeting.

- ***Revert to attendant*** This is an option which allows the administrator to designate an alternate answering position. This option might be selected if a mailbox has been disabled.
- ***Custom operator revert*** The custom operator revert feature allows individual users to designate an alternate answering position to which callers can transfer.

Options for callers

- ***Skip to record*** Frequent callers can skip over a person's mailbox greeting and proceed directly to recording a message.
- ***Rerecord/edit*** The caller can edit or rerecord a message before hanging up.
- ***Passwords*** The administrator can set a minimum password length and a validation period. Users can change their passwords whenever they wish.
- ***Password expiry warning*** Each user is warned when the password is near its expiry date, so that he or she will remember to create a new one.
- ***Password prefix*** If a password is required, the password prefix is defined, then the prefix is added to the beginning of a user's password when the mailbox is created by the administrator. This adds an extra level of security to the system.

Message playback

- ***Mailbox summary*** Once the user is logged on, the mailbox summary delivers a count of any new, unsent, and urgent messages. Messages are presented in order of arrival and can be played at once.
- ***Play messages*** The play feature begins playback of a message. Users can play messages as often as required and can skip forward or backward, and pause or resume while playing a message.
- ***Delete/restore*** Messages can be deleted, and deleted messages can be restored before logoff.
- ***Auto-play*** This is a mailbox option which causes messages to play automatically in sequence after logon. Auto-play can be used with Auto-logon to allow totally "hands-free" message retrieval.
- ***Play envelope*** All details of a message can be played back including name, mailbox number, and summary information such as private, urgent, and time at which the message was sent or received.
- ***Full-mailbox notification*** The system prompts the user to delete messages when the mailbox is almost full.
- ***Auto-delete*** Auto-delete operates automatically to delete all received messages which have been played after a preset time which is established by the administrator.

- ***Caller identification header*** Within a user group, the message header contains the name, mailbox number, or phone number of the caller. The caller's personal verification, if recorded, will be included in the message header.

Reply to messages

Reply features can be used to respond to messages in the same customer group.

- ***Call sender*** Using Call Sender, the call is returned immediately by pressing a single number on the keypad.
- ***Reply*** The Reply command allows the user to reply to a message by recording a message and sending it.
- ***Reply all*** The Reply all command allows the user to reply automatically to the sender and to all other recipients of the original message with a recorded message.
- ***Forward*** An existing message can be sent to other users, and a voice annotation can be attached to it.

Sending messages

Send features can be used to send messages to users.

- ***Compose message*** Instead of calling someone and waiting for that person's mailbox to answer, users can compose a message and send it directly to another user's mailbox. This can be done using Express Messaging if the message is for one person, or using compose and send if the messages are for more than one person. Messages can be edited during or after composition. Messages can be addressed to other mailboxes, to distribution lists, and to external numbers.
- ***Name addressing*** A message can be addressed to a person by spelling the name using the keypad instead of by entering the mailbox number. Name addressing can be used when addressing an individual message, using Express Messaging, and adding addresses to a personal distribution list. After entering the Name Addressing access number, the user spells the last name followed by the first name. When the system finds a match, it prompts the user to stop or offers a choice of names for selection.
- ***Distribution lists*** A distribution list is a list of frequently used mailbox numbers that can be used as a convenience to compose and send messages. A user can create up to 9 personal distribution lists, each containing a maximum of 99 entries. The administrator can create distribution lists for each customer group. External numbers cannot be included in distribution lists.
- ***Message classification*** A message can be classified, or tagged, so that it is treated in a special way. In each case, the user can follow prompts to select the following options:

— ***Urgent*** Urgent messages are transmitted immediately. A special announcement is heard when the recipient logs on.

— ***Standard*** Standard messages are used in networked systems to batch messages for transmission to remote sites.

— ***Economy*** Economy messages are used in networked systems to batch messages for transmission at regularly scheduled time periods.

— ***Private*** Private messages cannot be forwarded to a number other than the intended recipient. (Messages tagged private cannot be sent to AMIS [analog] networked sites.)

— ***Acknowledge*** Acknowledgement requested messages provide you with confirmation that the recipient(s) has heard your message. (If the recipient is an AMIS network user, the acknowledgement only indicates that the message was delivered to the user's mailbox.)

— ***Timed delivery*** Timed delivery messages are sent to the recipient at a specified time and date in the future.

- ***Broadcast messaging*** Users with broadcast capability can send a message simultaneously to all user mailboxes in a customer group.
- ***Express Messaging*** Express Messaging allows a user to send a message to another user's mailbox without first logging on to the system. The user dials the Express Messaging access number, and then enters the mailbox number of the recipient and records a message for that person. Express Messaging can be used to transfer a call meant for another person directly into that person's mailbox.
- ***Non-Delivery Notification*** The system notifies the sender if a message cannot be delivered.
- ***Delivery to Non-Users*** Composed messages can be addressed to external numbers. The recipient can leave a reply at the end of the message. The reply will be deposited in the sender's mailbox.
- ***Open AMIS network users*** Users can send a message to a mailbox on any voice messaging system which supports the AMIS-A message transfer protocol.

Remote Notification

This is a mailbox option which allows a user to be notified of messages at a remote telephone or pager. When a new message arrives at the user's mailbox, Meridian Mail places a call to the number or numbers defined. The defined number can be any telephone or pager (subject to dialing restrictions).

When notified that a message has arrived, the user can log into his or her mailbox to play the message. If more than one remote number is defined, Remote Notification cycles through the numbers until the call is answered or disabled, or the maximum number of retry attempts is reached.

Remote Notification can be set up with three schedules: Temporary, Business Days, and Non-business Days. A schedule contains up to three time periods. Each time period contains up to three numbers at which the user can be reached. A temporary schedule is defined for a short time which overrides the regular schedule. Time periods cannot overlap each other and cannot cross over to the next day.

The user can choose to be notified of *urgent* messages only.

Dialing options

- ***Thru-Dial*** Users can place calls while logged on to Meridian Mail. The Thru-Dial feature can be accessed from any mailbox function. Each customer group can have its own set of restricted dialing codes in a multi-customer system.
- ***Name-Dialing*** Similar to the way the Name-Addressing feature is used while composing a message, the Name-Dialing feature allows a user to call another person in the same customer group by spelling the name using the keypad instead of entering the extension number.
- ***Help*** The Help service provides the user or the caller with context-sensitive information and prompts. The user is told how to complete or cancel the current operation.

Voice Messaging User Interface Forum

Voice Messaging User Interface Forum (VMUIF) is Nortel's version of the ANSI/ISO VMUIF standard interface. In Meridian Mail Release 8.0, VMUIF was available for centralized call answering service (CCA) only. In Release 9.0, VMUIF has been implemented to offer additional messaging capabilities for MSM systems including message compose, volume control, personal distribution lists, and submailboxes. The VMUIF interface supports full type-ahead capability, with proper handling for error messages. All prompts are fully interruptible and can be preempted.

Mailbox access

Users access their private mailbox to retrieve messages, record a greeting, or create a password. Message waiting indication (MWI) is available depending on the supporting switch's capabilities. Mailbox numbers can be up to 18 digits long.

- ***Logon*** Users can log onto Meridian Mail from their own or a remote phone, accessing their mailbox by dialing the system access number, mailbox number, and password as required.
- ***Auto-logon*** Auto-logon allows users to log in from their own phone without entering a mailbox number or password.
- ***Custom logon greeting*** This is a mailbox option which welcomes users to voice mail when they log into their mailbox.

- ***Introductory tutorial*** An introductory tutorial plays for users the first time they log into their mailbox. The tutorial explains how to record a greeting and how to create a password.
- ***Logon from Call Answering*** Users can log into their own mailbox without hanging up after leaving a message at another user's mailbox.

Submailboxes

A mailbox can be partitioned into a main mailbox and up to eight submailboxes. The class of service (COS) assigned to the user determines the maximum number of sub-mailboxes that can be used. They are created and administered by the owner of the main mailbox. Submailboxes can receive call answering and redirected message only, and can redirect any message to the main mailbox or another submailbox. The main mailbox and all associated submailboxes have the same mailbox number but different passwords.

Greetings to callers

- ***Personal greetings*** A user can create customized personal greetings for his or her callers. This greeting can be changed as frequently as required.
- ***Default greeting*** If the user does not record a personal greeting, the system default greeting will play instead.
- ***Personal Verification*** A user may record his or her name, title, or extension number. This personally recorded name is used in system messages such as in name dialing, message headers, and remote notification.
- ***Busy greeting*** This is a mailbox option which informs callers that the user is on the phone. The user's personal verification, if recorded, plays as part of the busy greeting.
- ***Skip to record*** Frequent callers can choose to skip over a person's mailbox greeting and proceed directly to recording a message.
- ***Revert to Attendant*** The Revert to Attendant feature allows the administrator to designate an alternate answering position. The alternate number may also have a voice mail greeting.

Passwords

Users must create their own passwords to ensure the privacy of their mailbox. The administrator can set a minimum password length and a validation period. Users can change their passwords whenever they wish.

- ***Optional password*** Users can choose not to create a password if they intend to access their mailbox exclusively from their telephone.
- ***Password expiry warning*** Each user is warned when his or her password is near its expiry date, so that he or she remembers to create a new one.

- ***Password prefix*** If a password is required, the password prefix is defined, then the prefix is added to the beginning of a user's password when the mailbox is created by the administrator. This adds an extra level of security to the system.

Message playback

- ***Mailbox summary*** Once the user is logged on, the mailbox summary tells the user how many messages are in the mailbox and how many of them are new. New messages are presented in order of arrival and can be played at once.
- ***Play messages*** The play feature begins playback of a received or composed message. Users can play messages as often as required and can skip forward or backward in five second increments, and pause or resume while playing a message.
- ***Save as new*** A message that has been played can be saved as new so that it is included in the new message count and is automatically presented for playback the next time the user logs on.
- ***Delete/restore*** Messages can be deleted and deleted messages can be restored before logoff.
- ***Auto-play*** This is a mailbox option which causes messages to play automatically in sequence after logon. Auto-play can be used with Auto-logon to allow totally "hands-free" message retrieval.
- ***Full mailbox notification*** The system prompts the user to delete messages when the mailbox is almost full. If a mailbox is full, callers are unable to leave messages.
- ***Auto-Delete*** The Auto-Delete feature operates automatically to delete all played messages after a preset time which is established by the administrator.

Help

The Help service provides the user or caller with context-sensitive information and prompts. The user is told how to complete or cancel the current operation.

Simplified call answering for users with dial pulse sets

A special interface is available for users with dial pulse phones. Because the user does not have a phone keypad to enter commands, much of the interface is automated. No mailbox number or password is required. Message waiting indication (MWI) is available depending on supporting switch capabilities.

- ***Auto-logon*** Auto-logon operates only when the system is accessed from the user's own phone. No mailbox number or password entry is required when logging in.

- ***Auto-play*** After Auto-logon, the message summary and message playback follow automatically. Messages are played in sequence with any new messages first, followed by any old messages. Each message plays immediately after its announcement header. The user may hang up at any time or wait until the system terminates the session.
- ***Personal verification*** If a message is received from a member of the same customer group, the personal verification of the caller will be incorporated into the message header.
- ***Personal greeting*** Dial pulse users call a greeting change number if they wish to record personalized greetings. If he or she does not record a personal greeting, the default system greeting plays.
- ***DTMF access*** If a dial pulse user calls from other than his or her own phone to access the mailbox, the system requires a mailbox number and password. However, the system still operates as if it is being accessed from a dial pulse phone and does not require the user to enter any commands. If a DTMF command is received, the call reverts to the standard user interface as described previously.

Multilingual support

Meridian Mail can be configured to support several languages other than English and may be deployed in many countries around the globe. Meridian Mail may even be set up to provide four different language prompts for different groups of users on the same system.

Dual Language Greeting support

This feature is intended for multilingual systems. It allows certain system prompts to be played first in one language and then in a second language. This is especially useful in areas where there is more than one official language.

The administrator selects the first and second languages. The prompts that are affected by this feature are

- those heard by users during mailbox logon
- those heard by external callers during call answering sessions
- those heard by callers during Express Messaging sessions

Mailbox class of service

A class of service (COS) is a template that contains information about the capabilities subscribers have with their mailboxes and the values that are assigned to specific parameters for these capabilities. Each user can be assigned either to a personal class of service or to 1 of 15 system COSs to which the user’s customer group belongs.

Outcalling

This is a feature which provides for two types of external messaging:

- Remote Notification
- Delivery to Non-Users

Remote Notification

The Remote Notification (RN) feature monitors a user's mailbox. When a message is received, RN informs the user of the new message by contacting a remote device such as a pager (voice, tone-only, or numeric), a paging service, or another telephone.

Delivery to Non-Users

This feature allows a user to create and send a message to someone who does not have a mailbox. The non-user may be someone else within the organization or someone at a remote location.

Support for single SMDI

The Simplified Message Desk Interface (SMDI) is a standardized protocol used to connect a voice mail system to a switch. The MSM base configuration includes a single SMDI link through a single internal modem or a redundant internal modem pair.

Note: Multiple SMDI connections are available (up to 16 non-redundant or 8 redundant connections) but at additional cost.

Optional feature packages

ACCESS Enable

The Meridian ACCESS Enable option provides Meridian Mail with the ability to handle Application Programming Interface (API) requests from other applications. It is required on the MSM to run applications developed with Nortel's Meridian ACCESS product, or Meridian Interactive Voice Response products.

Meridian ACCESS is an optional C-language API library that provides value-added developers (VADs) with a wide variety of functions to create customized voice-processing applications.

The ACCESS Enable option is supported on all Meridian Mail platforms that support MM10. The new and modified features are available to applications developed with Meridian ACCESS Release 3.

The ACCESS Release 3 API libraries and supporting processes are compatible with SCO UNIX on the MAS platform. ACCESS Release 3 will neither be supported on Motorola Delta 3000 or 4000 workstations, nor on the Application Module.

Meridian Interactive Voice Response

The Meridian Interactive Voice Response (IVR) system is an application platform that includes the Meridian 1 switch and the Meridian Mail Release 9 voice processing system. Meridian IVR simultaneously supports multiple voice applications and a wide range of applications through a powerful and user-friendly graphical applications generator.

The Meridian IVR system supports a development facility that enables the user to develop applications using an X-terminal, which utilizes the OSF Motif Window manager and the X-window user environment. It also supports a run-time facility which permits a previously developed application to run.

Meridian Mail Reporter

Meridian Mail Reporter (MMR) is an application software package that runs on both the MSM and an IBM-compatible PC. MMR allows the administrator to download operational measurement data files from Meridian Mail to the PC for specialized post-processing, thereby allowing integration of this data with other billing and reporting systems.

AMIS (Analog) Networking

AMIS (Analog) Networking is an application software package which allows users to compose and send messages to any other users whose messaging system also supports the AMIS protocol.

Meridian Networking

Meridian Networking allows a business customer group to exchange messages with other related closed user groups who have Meridian Networking. The other user groups may be at a different location and served by another switch. Meridian Networking can only be enabled for one customer group within a multi-customer system.

Multiple SMDI links

The MSM supports multiple SMDI links for connections to multiple switches/PBXs or for multiple links to a single switch/PBX.

Multiple customer groups

The MSM can support up to 2000 voice mail customer groups. A given customer group can have the MMUI interface while another can have the VMUIF interface.

- ***Self-contained customer group features*** Each customer group can be self-contained with respect to Compose/Send, Broadcast, Internal versus External Call treatment, Name-dialing, Thru-dial, Voice Menus, and Voice Forms.

- ***Customer group billing*** A customer group identifier will be added to all billing records. Billing information can be viewed for a single customer group so that a report can be produced on each customer's data independently.

Voice Forms

Voice forms are applications created by the administrator that allow business users to collect information from callers over the telephone. A series of questions is played to a caller who responds to each question in sequential order. In responding to the questions, the caller is essentially filling out a form over the telephone. Once the information is collected, it can be retrieved and transcribed to suit individual requirements.

Voice Menus

The Voice Menu feature is a custom call-answering application that is created by the administrator. Single- or multi-layered menus can be created that present callers with a series of choices about the actions they perform. A caller selects an action by pressing the key on the telephone pad that corresponds to the action. Voice menus can be modified from a telephone by using the Voice Prompt Maintenance service.

Voice menus allow callers to

- listen to recorded announcements
- leave messages for specific users
- place calls (thru-dialers)
- activate voice services based on time-of-day controllers
- route callers to particular services based on the time of day

Fax item definitions can be added to voice menus to allow callers to select fax services. Voice menus that only use fax items are referred to as fax menus.

Meridian Mail Connections

Meridian Mail Connections is a hardware and software package that enables Meridian Mail to be integrated with selected models of PBXs from AT&T and ROLM, as well as with the Nortel Meridian 1. An intelligent device called VoiceBridge II is used to provide the integration. Through digital set emulation, the VoiceBridge enables the PBX to emulate a carrier switch to communicate with Meridian Mail via SMDI protocol.

Fax on Demand

Fax on Demand is a full-service multimedia option which allows the user to create and retrieve fax information using a fax phone, or by selecting fax items from a voice menu. Fax information can be sent to the caller on the same call (by means of a fax phone), or the caller is prompted for a callback number to which the fax can be sent after the call has been disconnected.

Other system capabilities

In addition to the user services provided by the base software package, the system capabilities listed in this section operate in the background to provide enhanced reliability and administrative flexibility.

Support for multiple user administrative terminals

The Message Services Module provides up to four administrative positions for multiple user administrative terminals. One of these is enabled for all administrative functionality; the other three are enabled for user, voice service, and class of service administration only.

More than one administrator can access user data to add or delete users for the same customer group at the same time. However, if an administrator attempts to update data currently being updated by another administrator, the system will notify them and prevent the duplication.

Reliability and redundancy features of the MSM

In general, on-line repair is made possible by these features, and powering down the system is unnecessary.

Disk shadowing

Disk shadowing is a reliability feature that is applied to the MSP and SPN nodes. This feature alternates the read and duplicates the write operations on two disks ensuring that a disk failure does not cause a loss of service.

MSP failure recovery

A Program Resource Manager (PRM) monitors all other system software and is responsible for starting and sanity testing all other programs in the system.

The MSM is equipped with two MSP nodes, each with a PRM running on it. Only one PRM is active at one time; the other is in hot-standby mode. Should the prime MSP fail, the second MSP can take over and operate alone while the backup PRM proceeds with sanity checking. When an MSP switchover occurs, new calls will not be accepted for 45 seconds. Calls in progress, however, are unaffected by the MSP switchover.

SPN failure recovery

Signal processing nodes (SPNs) are paired on the MSM, ensuring that a failure at an SPN cannot cause loss of service to users whose mailboxes are on that node. Calls in progress on an SPN will be dropped if an SPN fails. However, callers can be reconnected immediately by redialing the system.

Small computer system interface bus failure recovery

Each MSP and SPN is connected to two SCSI buses. Should a SCSI bus fail, the disks attached to that bus may still be accessed by the alternate bus.

SMDI link recovery

The status of each SMDI link is continuously monitored and displayed on the system status screen. If the error rate exceeds the configured threshold, the link is disabled and an alarm is generated. If an SMDI link fails, no calling or called party information is available. In this case, the administrator normally invokes an announcement such as “Service temporarily unavailable.”

TIFN failure recovery

If a TIFN fails, the attached SMDI and T1 links will not be taken out of service. They are routed through the modem transition module to the redundant TIFN. Calls in progress in the TIFN will be dropped if the TIFN fails. However, callers can be reconnected immediately by redialing the system.

Chapter 4: Finding information

This chapter lists reference documents that are associated with the MSM and Meridian Mail, and related documents for configurations that use Nortel's family of switches.

> ***Note:*** If the MSM is connected to a switch other than Nortel's family of switches, refer to the manufacturer's documentation for information related to switch administration, operation, and maintenance.

Administration

Administration documents, listed in Table 4-1, are used for establishing and ensuring the accuracy of the MSM database, as well as monitoring service performance. These documents provide the procedures required to gather and validate system operational measurement data, evaluate system performance and capacity, and ensure effective use and operation of the MSM.

Table 4-1
MSM administration documents

Document	Title
557-7001-300	*System Administration Guide for Multi-Customer Systems*
557-7001-301	*Customer Administration Guide for Multi-Customer Systems*
557-7001-302	*System Administration Guide*
557-7001-305	*System Administration Tools*
555-7001-335	*Networking Services Administration Guide*
557-7001-340	*AdminPlus on the MSM*

Installation

Installation documents, listed in Table 4-2, are used for establishing and ensuring proper installation and performance of the MSM and the SMDI networking systems.

Table 4-2
MSM installation documents

Document	Title
557-7001-214	*Networking Installation (SMDI) Guide*
555-7001-216	*VoiceBridge Installation Procedures for AT&T Switches*
555-7001-217	*VoiceBridge Installation Procedures for ROLM Switches*
557-7001-219	*VoiceBridge Installation Procedures for Meridian 1 Switches*
557-7001-504	*System Installation and Modification Guide*

Application guides

Application guides, listed in Table 4-3, are used to describe how to administer features that are available for the MSM.

Table 4-3
MSM application guides

Document	Title
555-7001-315	*ACCESS Configuration Guide*
555-7001-316	*ACCESS Developer's Guide*
555-7001-317	*ACCESS Application Programming Interface (API) Reference Guide*
555-7001-318	*ACCESS Voice Prompt Editor User's Guide*
557-7001-320	*Outcalling Application Guide for Single-Customer Systems*
557-7001-321	*Outcalling Application Guide for Multi-Customer Systems*
557-7001-325	*Voice Forms Application Guide*
557-7001-326	*Voice Menus Application Guide*
557-7001-327	*Fax on Demand Application Guide*

Maintenance

Maintenance documents, listed in Table 4-4, are used to keep an MSM operating normally or to restore it to normal operation if it fails. These documents contain procedures and descriptive information required to keep the MSM hardware and Meridian Mail software working fully, including operation and maintenance strategies, procedures and data for preventive and corrective maintenance, and methods for testing and validating MSM performance.

Table 4-4
MSM maintenance documents

Document	Title
557-7001-501	*Routine Maintenance Procedures*
557-7001-502	*Card Replacement Procedures*
557-7001-503	*Trouble-locating and Alarm-clearing Procedures*
557-7001-504	*System Installation and Modification Guide*
555-7001-510	*Maintenance Messages (SEER) Manual*

Planning and engineering

The planning and engineering document, listed in Table 4-5, is used for sizing and ordering the MSM. The document contains detailed equipment physical characteristics, compatibilities, limitations, test equipment needs, and ordering information. The document also provides detailed traffic descriptions including engineering procedures and algorithms.

Table 4-5
MSM planning and engineering documents

Document	Title
557-7001-100	*Planning and Engineering Guide*

Translations

The translations document, listed in Table 4-6, provides information and instructions for creating, verifying, retrieving, and changing data. This data may include information about lines, trunks, service circuits, customer features, routing and charging characteristics, equipment assignments, and miscellaneous office information such as traffic measurement schedules.

Table 4-6
MSM translation document

Document	Title
557-7001-310	*Translation Guide*

Meridian Mail user documentation

The documentation listed in Table 4-7 provides the instructions and procedures on the use of Meridian Mail Release 10.0.

Table 4-7
Meridian Mail user documents and user aids

P0 Number	Title
P0741309	*Meridian Voice Forms Transcriber User Guide*
P0746541	*Meridian Voice Forms Application Guide*
P0746543	*Call Answering User Guide (VMUIF)*
P0746544	*Call Answering "Quick Reference" Card (VMUIF)*
P0746545	*Call Answering "At a Glance" Card (VMUIF)*
P0746546	*Voice Messaging User Guide (VMUIF)*
P0746547	*Voice Messaging Quick Reference Card (VMUIF)*
P0748230	*Voice Messaging "At a Glance" Card (VMUIF)*
P0746548	*Voice Messaging User Guide*
P0746549	*Voice Messaging "Quick Reference" Card*
P0746550	*Voice Messaging "At a Glance" Card*
P0722629	*Voice Messaging "Updating Voice Menu Prompts"*

List of terms

68K card

A printed-circuit card with a 12 Mhz 68010 processor, SCSI interface, serial port, and the capability of addressing 8 Mbyte of accessible RAM.

ACCESS

ACCESS is a software package that allows customers to develop and maintain their own telephone-based voice applications. The most common application is an interactive voice response (IVR) system, which provides a caller with information or accepts a command from a caller.

AMIS

See Audio Messaging Interchange Specification (AMIS).

Analog transmission

Transmission of a continuously variable signal as opposed to a discrete signal.

Audio Messaging Interchange Specification (AMIS)

An industry standard specification that allows users of voice messaging products residing on different hardware platforms to exchange voice messages.

Basic service voice port

Basic service voice ports support only voice menu services and voice-related ACCESS applications.

Card

Card is the preferred term for a plug-in, printed-circuit board.

Carrier

A term equivalent to central office. *See* central office (CO).

Centrex

Centralized service that provides a business telephone subscriber with direct inward dialing to extensions on the same system and direct outward dialing from all extensions. Centrex switching equipment is normally located at the central office but may be located on the client's premises.

Central office (CO)

A switching office for terminating subscriber lines and establishing connections to and from other switching offices. It is synonymous with class 5 office, end office and local office. See *carrier.*

CO

See central office (CO).

CPE

See customer premises equipment (CPE).

Cumulative baud rate

The total baud rate for the Access and AdminPlus features per card or node. The cumulative baud rate can vary from 9.6 kbps for single node, single link, to 172.8 kbps for a 5 node, 8-link system.

Customer premises equipment (CPE)

Refers to equipment that is located on the customer's premises.

Dial pulse (DP)

A method of transmitting signaling information from a telephone set or a trunk circuit. Dial pulses are generated by alternately opening and closing a contact in a rotary dial telephone.

Digital

Pertaining to discrete signals or to the representation of data or physical quantities by discrete signals. Contrast with analog.

Directory number (DN)

The full complement of digits required to designate a subscriber's station—usually a three-digit central office or exchange code followed by a four-digit station number.

DN

See directory number (DN).

DP

See dial pulse (DP).

DTMF dialing

See dual-tone multifrequency (DTMF) dialing.

Dual-tone multifrequency (DTMF) dialing

A service-related telephony feature that provides for the generation of address information from a telephone set in the form of DTMF signals by pressing non-locking buttons. Contrast with pulse dialing.

Frame supervisory panel (FSP)

Accepts the frame battery feed and ground return from the power distribution center and distributes the battery feed to the shelves of the frame or bay in which it is grounded. The FSP also contains alarm circuits.

FSP

See frame supervisory panel (FSP).

Full service multimedia port

Full service multimedia ports are required to support the transmit and receive functions required by the fax feature. This port configuration provides more digital signal processing power. All Voice-Only features can also be supported on multimedia ports.

Full service voice port

A full service voice port may be used for voice menus and ACCESS applications such as interactive voice response (IVR). It also supports all other Meridian Mail voice-related features including Express Messaging, Voice Administration, AMIS, Outcalling, Hospitality, Voice Forms, and Networking.

Input/output (I/O)

Refers to a device or medium that is used to achieve a bi-directional exchange of data.

Interactive Voice Response (IVR)

A voice processing application that gives callers specific information based on unique information callers have given it, for example, a bank account query.

I/O

See input/output (I/O).

IVR

See Interactive Voice Response (IVR).

Meridian Mail (MMail)

Voice processing software designed for use with Nortel's family of messaging products.

Meridian Mail Reporter

Application software that runs on a PC to provide local and/or remote access to Meridian Mail systems. Also, allows Operational Measurement data files to be downloaded from Meridian Mail to a PC for specialized post-processing, allowing integration of this data with other billing and reporting systems.

Meridian Mail User Interface (MMUI)

This is Nortel's proprietary voice messaging user interface.

Message Services Module (MSM)

A voice processing system designed to provide call-answering and voice messaging services to private business and institutional customers. MSM subscribers are assigned voice mailboxes which they access using private passwords. Recorded prompts guide users whenever necessary and also assist callers to leave messages. An MSM system consists of at least one Message Services Module and Meridian Mail voice processing software.

MMail

See Meridian Mail (MMail).

MMUI

See Meridian Mail User Interface (MMUI).

MSM

See Message Services Module (MSM).

MSP

See multiserver processor (MSP).

Multiserver processor (MSP)

A node running multi-server programs in a multi-node environment on the MSM.

Node

A collection of replaceable modules that are equipped with 68K CPU processor cards. Each MSM is equipped with three types of nodes: an MSP node which is responsible for running system programs; SPN nodes which are signal processors; and TIFN nodes.

PBX

See private branch exchange (PBX).

Private branch exchange (PBX)

A private telephone exchange (switch) that is either automatic or attendant-operated, serving extensions in an organization and providing access to the public network.

Signal processing node (SPN)

A node on the MSM that is used for signal processing.

Simplified Message Desk Interface (SMDI)

An interface feature that enables a switch to communicate with Meridian Mail. It provides the directory number of the called station, the calling station number (if available), and the reason for the call being forwarded to Meridian Mail. In addition, it provides Meridian Mail with the ability to activate or deactivate the message waiting indication for any station able to forward calls to Meridian Mail.

SMDI

See Simplified Message Desk Interface (SMDI).

SPN

See signal processing node (SPN).

T1

The standard 24-channel, 1.544 Mbyte/s pulse code modulation system used in North America. This digital carrier carries a signal whose designation is DS1.

T-link

An adaptation protocol designed to transfer synchronous or asynchronous data over a digital circuit at a digital trunk equipment data rate of up to 64 kbps.

Telephony interface node (TIFN)

A node that is used to interface between incoming telephony lines and place the communications on the Meridian Mail bus of the MSM.

TIFN

See telephony interface node (TIFN).

UAT

See User Administration Terminal (UAT).

User Administration Terminal (UAT)

A secondary MSM administration terminal that is used to perform user administrative functions but not system administrative functions.

VMUIF

See Voice Messaging User Interface Forum (VMUIF).

Voice Messaging User Interface Forum (VMUIF)

The call answering interface that has been defined by the Voice messaging User Interface Forum.

Voice processor-12A card (VP12A)

A 12-port card that is used in the Message Service Module for voice processing.

VP12A

See voice processor-12A card (VP12A).

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NORTEL

Reader's Response Form for:

Message Services Module
Product Guide (NTP 557-7001-010)
August **1995**

Tell us about yourself:

Name: _____ **Date:** _____

Company: _____

Address: _____

_____

Occupation: _____ **Phone:** _____

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

   ❑ New user ❑ Intermediate ❑ Experienced ❑ Programmer

2. How do you use this book?

   ❑ Learning ❑ Procedural ❑ Problem solving ❑ Reference

3. Did this book meet all of 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? (For example, books can also be evaluated in many other ways, including: ease of information retrieval, presentation, and use of reading aids, such as diagrams.)

   _____

   _____

   _____

   _____

Please return your comments by fax to (416) 597-7104, or mail your comments to: Customer Documentation, Northern Telecom, Toronto Lab, 522 University Ave., 12th Floor Toronto, Ontario, Canada M5G 1W7

NORTEL

Reader's Response Form

Meridian Mail

Message Services Module

Product Guide

Nortel Customer Documentation
522 University Avenue, 12th Floor
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M5G 1W7

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#1AESS and #5ESS are trademarks of AT&T.

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